Evaluation of the Implementation of the Free Trade Agreement between the EU and its Member States and the Republic of Korea

Final Report:

Main Report

Prepared by Civic Consulting and the Ifo Institute
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Acronym	Meaning
ACEA	European Automobile Manufacturers' Association
ADB	Asian Development Bank
ASF	African swine fever
BOP	Balance of payments
BOT	Build-Operate-Transfer
BSE	Bovine spongiform encephalopathy
CB	Certified body
CCS	Carbon capture and storage
CEDAW	United Nations Convention on All Forms of Discrimination Against Women
CET	Common Express Terminal
CETA	Comprehensive Economic and Trade Agreement (between the EU and Canada)
CGE	Computable general equilibrium
CH^4	Methane
CHUNKYOJO	Korean Teachers' and Educational Workers' Unions
CN	Combined Nomenclature
CO_2	Carbon dioxide
COMEXT	EU database on trade in goods
CPI	Corruption Perception Index
CSF	Civil society forum
CSD	Civil society dialogue
CSR	Corporate social responsibility
CTSD	Committee on Trade and Sustainable Development
CVEA	Korean Corporate Vitality Enhancement Act
DAG	Domestic advisory group
DESTA	Design of Trade Agreements project
DG AGRI	Directorate General for Agriculture and Rural Development
DG GROW	Directorate General for Internal Market, Industry, Entrepreneurship and SMEs
DG TRADE	Directorate General for Trade
EBIT	Earnings before interest and taxes
EDD	Exporter Dynamics Database
EESC	European Economic and Social Committee
EGA	Environmental Goods Agreement
EGS	Environmental goods and services
EI	Education International
EKC	Environmental Kuznets Curve
EMC	Electromagnetic compatibility
EPI	Environmental Performance Index
EPS	Employment Permit System (Korea)
EQ	Evaluation question
ESF	European Services Forum
ETS	Emissions trading system
EU	European Union

Acronym	Meaning
EUR	Euro
FAO	Food and Agriculture Organization of the United Nations
FCA	Fiat Chrysler Automobiles
FDI	Foreign direct investment
fict	Fédération Française des industriels Charcutiers, Traiteurs, Transformateurs de Viandes
FKTU	Federation of Korean Trade Unions
FSC	Korean Financial Services Commission
FTA	Free trade agreement
FTAPPAA	Korean Free Trade Agreement Promotion and Policy Adjustment Authority
GDP	Gross domestic product
GE	General equilibrium
GI	Geographical indication
GPA	WTO Agreement on Government Procurement
GTAP	Global Trade Analysis Project
HMMC	Hyundai Motor Manufacturing Czech
HS	Harmonised System
HSK	Harmonized Tariff Schedule of Korea
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Civil Rights
ICTFU	International Confederation of Free Trade Unions
IEC	International Electrotechnical Commission
IFBWW	International Federation of Building and Woodworkers
IFFTU	International Federation of Free Teachers' Unions
IFJ	International Federation of Journalists
IFPI	International Federation of the Phonographic Industry
ILO	International Labour Organization
IMF	International Metalworkers' Federation
IPR	Intellectual property rights
ISO	International Organisation for Standards
ITF	International Transport Workers' Federation
ITU	International Telecommunication Union
ITUC	International Trade Union Confederation
IUF	International Union of Food, Agriculture, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations
KAMA	Korean Automobile Industry Association
KATS	Korean Agency for Technology and Standards
KAWF	Korean Automobile Workers Federation
KCDC	Korean Centre for Disease Control
KCS	Korea Customs Service
KCTU	Korean Confederation of Trade Unions
KFTC	Korea Fair Trade Commission
KFTWU	Korean Federation of Tourism Workers' Union
KGEU	Korean Government Employees Union
KIEP	Korea Institute for Economic Policy

Acronym	Meaning
KMS	Kia Motors Slovakia
KMWU	Korean Metal Workers' Union
KMWF	Korean Metal Workers' Federation
KONEPS	Korea Online E-Procurement System
KORUS	US-Korea Free Trade Agreement
KOSHA	Korea Occupational Safety and Health Agency
KPA	Korean Postal Authority
KPTU	Korean Public Service and Transport Workers' Union
KPU	Korean Professors Trade Union
KRW	Korean won
KRWU	Korean Railway Workers' Union
KTU	Korean Teachers and Education Workers Union
MAFRA	Korean Ministry of Agriculture, Food and Rural Affairs
MCST	Korean Ministry of Culture, Sport and Tourism
MFN	Most-favoured nation
MLC	Maritime Labour Convention
MoE	Korean Ministry of Education
MoHW	Korean Ministry of Health and Welfare
MoLIT	Korean Ministry of Land, Infrastructure and Transport
MoTIE	Korean Ministry of Trade, Industry and Energy
MRFTA	Monopoly Regulation and Fair Trade Act
MS	Member State
MSIP	Korean Ministry of Science, ICT and Future Planning
MTU	Migrants' Trade Union (Korea)
N_2O	Nitrous oxide
NGO	Non-governmental organisation
NTTC	Non-tariff trade cost
NQTT	New Quantitative Trade Theory
OECD	Organisation for Economic Co-operation and Development
OLAF	European Anti-Fraud Office
OLS	Ordinary least squares
OPZ	Outward processing zone
PDI	Pre-delivery inspection
PI	Partnership instrument
PMR	Product Market Regulation (OEC D indicator)
PPML	Maximum Likelihood estimator
PPS	Korean Public Procurement Service
PSA	Korean Postal Service Act
PSI	Public Services International
PUR	Preference utilisation rate
R&D	Research and development
RASFF	Rapid Alert System for Food and Feed
Rapex	Rapid Alert System for non-food dangerous products

Acronym	Meaning
RCA	Revealed comparative advantage
RoO	Rules of origin
RoW	Rest of the world
RTA	Regional trade agreement
SCP	Sustainable consumption and production
SDoC	Suppliers declaration of conformity
SME	Small- and medium-sized enterprises
SPS	Sanitary and phytosanitary
STC	Specific trade concerns
STRI	Services Trade Restrictiveness Index (developed by the OECD)
SWIID	Standardized World Income Inequality Database
TARIC	Integrated Tariff of the EU (database)
TFI	Trade Facilitation Indicator (developed by the OECD)
TBT	Technical barriers to trade
TOR	Terms of reference
TRQ	Tariff rate quota
TSD	Trade and sustainable development
TUAC	Trade Union Advisory Committee to the OECD
TULRAA	Trade Union and Labour Relations Adjustment Act
UDHR	Universal Declaration of Human Rights
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
UN WFP	United Nations World Food Programme
US	United States
USD	United States Dollar
WCOTP	World Confederation of Organisations of the Teaching Profession
WEF	World Economic Forum
WIOD	World Input-Output Database
WIPO	World Intellectual Property Organization
WTI	World Trade Institute
WTO	World Trade Organisation

1. Introduction

The Directorate General for Trade (DG TRADE) of the European Commission has commissioned an evaluation of the implementation of the Free Trade Agreement (FTA) between the EU and its Member States and the Republic of Korea (hereafter referred to as "Korea") to Civic Consulting and the Ifo Institute. This report is the final deliverable of the evaluation.

The EU-Korea FTA was provisionally applied on 1 July 2011, and formally entered into force on 13 December 2015. It is the first of a new generation of FTAs, characterised by its comprehensive nature and high level of ambition, and is the first FTA concluded by the EU with an Asian country.

At present, most provisions of the FTA have been applied. As highlighted in the Terms of Reference (TOR) of this project, it is important to conduct an interim evaluation of the implementation of the EU-Korea FTA, as the lessons learned could help improve the design of other EU FTAs that are currently being negotiated, as well as inform the implementation of EU FTAs that have recently been concluded.

In light of the above, and as outlined in the TOR, this evaluation examines:

- The effectiveness and efficiency of the EU-Korea FTA in view of achieving its objectives;
- The relevance of the EU-Korea FTA regarding current trade issues faced by both Parties;
- The coherence of the EU-Korea FTA with the EU-Korea Framework Agreement and with the objectives of EU-Korea trade policy; and,
- The impact of the implementation of the EU-Korea FTA on sustainable development in its economic, social and environmental dimensions, as well as on human rights.

This report is the evaluation's final deliverable. Its purpose is to present the work undertaken in the context of the stakeholder consultations, case studies, and specific analyses (tasks 6, 7, and 8 of the TOR, respectively), to answer the evaluation questions, and to provide conclusions and recommendations.

The report consists of two parts. The main report is structured as follows:

- Section 2 presents the objectives and scope of the evaluation;
- Section 3 describes the methodology;
- Section 4 provides a description of the EU-Korea FTA;
- Section 5 presents the results of the economic analysis;
- Section 6 presents an analysis of non-tariff measures and FTA implementation;
- Section 7 presents the results of the social analysis;
- Section 8 presents the results of the human and labour rights analysis;
- Section 9 presents the results of the environmental analysis;
- Section 10 presents the case studies; and,
- Section 11 presents the answers to the evaluation questions and recommendations.

The Stakeholder Consultation Report provides detailed results of the open public consultation and the complementary surveys conducted.

2. Objectives and scope of the evaluation

This section outlines the objectives and scope of the evaluation. It then describes the approach of the evaluation and presents the tasks and subtasks that completed during the evaluation, as stated in the TOR.

2.1. Objectives

According to the TOR, the purpose of this project is to provide an interim evaluation of the implementation of the EU-Korea FTA, which will form the basis of a Staff Working Document of the Commission. In particular, the evaluation examines the effectiveness and efficiency of the EU-Korea FTA in view of achieving its objectives, the relevance of the EU-Korea FTA regarding current trade issues faced by the EU and Korea, and the coherence of the EU-Korea FTA with the EU-Korea Framework Agreement and with the objectives of the EU trade policy.

In addition, the evaluation analyses the impact of the implementation of the EU-Korea FTA on sustainable development in its economic, social and environmental dimensions, as well as on human rights. The evaluation also provides an in-depth ex-post analysis of the effectiveness of the EU-Korea FTA, in line with the European Commission's new trade strategy "Trade for All".

2.2. Scope

The evaluation covers all areas of the EU-Korea FTA except those which have not yet been applied pending the final conclusion of the FTA, i.e. certain provisions of the Protocol on Cultural Cooperation and the criminal enforcement provisions with respect to the protection of intellectual property rights (IPR).

2.2.1. Geographical coverage and time period

The evaluation covers the impact of the EU-Korea FTA in the EU and, to a certain extent, in Korea, with the main focus being on the EU and its Member States. A separate study commissioned by the Delegation of the European Union to South Korea focuses on the impact of the EU-Korea FTA in Korea.

The evaluation covers the period from the date of the start of the provisional application of the EU-Korea FTA (1 July 2011) until the date of the latest available data. In order to capture the impact of the implementation of the FTA, the evaluation also examines data going back a minimum of five years prior to the start of the provisional application of the FTA (i.e. data from at least 1 July 2006).

2.2.2. Approach and tasks

The TOR emphasises that the evaluation shall provide well-supported assessments based on objective analysis and consequent conclusions and recommendations. The TOR defines 10 main tasks, several of which consist of multiple sub-tasks. In total, there are 37 tasks (including sub-tasks and evaluation items) structured into the inception phase (5 tasks) and implementation phase (5 tasks, with a total of 27 sub-tasks and evaluation items). All tasks are described in more detail in the table below.

Table 1: Overview of tasks for the evaluation of the implementation of the EU-Korea FTA

Phase	Task	Description	Sub-tasks/details
Inception	1	Comment on and revise, if necessary, the intervention logic	For the intervention logic, a reference to the roadmap was provided (Evaluation and fitness check roadmap), dated September 2015.
	2	Define and develop the evaluation tools	▪ Identify information sources; ▪ Establish a list of relevant indicators; ▪ Define the scope, the assumptions and the methodology for modelling simulations; ▪ Establish a consultation strategy and develop consultation tools; ▪ Propose a methodology for the conduct of the case studies; ▪ Outline the main risks/challenges to the project and propose concrete ways to address them.
	3	Review existing studies and reports	▪ Summarise the results of reports and studies regarding trade between the EU and Korea; ▪ Provide information on methods and data used.
	4	Provide a concise but comprehensive description of the FTA	Also provide: ▪ Context in which it operates; ▪ Institutional structure; ▪ Implementation and its interaction with other instruments, including the EU-Korea Framework Agreement and other trade agreements of the EU and Korea or other policies.
	5	Create a website dedicated to the evaluation	Home page with summary on the state of play of the evaluation process and all evaluation-related information, including: ▪ Link to the Roadmap; ▪ Information on stakeholder consultations, including the consultation strategy; ▪ Planned dates of various consultation activities, the contributions by the stakeholders to different consultations; ▪ Summary minutes, speeches or presentations from stakeholder events; ▪ Final versions of all reports produced by the evaluation.
Implementation	6	Stakeholder consultations	The consultation must include: ▪ 12-week online public consultation; ▪ Targeted interviews, roundtables, workshops, etc.; ▪ Representative survey on the impact of the EU-Korea FTA on SMEs; ▪ Representative survey on the impact of the EU-Korea FTA on consumers.

Phase	Task	Description	Sub-tasks/details
	7	Conduct case studies	8 case studies to capture the impact of the EU-Korea FTA on sustainable development in its economic, social and environmental dimensions, as well as on human rights. One or several of the case studies shall in particular contribute to the analysis of the impact on: employment in the EU and its Member States; EU SMEs; EU markets' functioning and sectoral competitiveness; and EU consumers.
	8	Carry out specific analyses that shall be integrated into the replies to the evaluation questions	▪ 8.1. Analyse the evolution of trade in goods between the EU and Korea ▪ 8.2: Analyse econometrically the relationship between the implementation of the EU-Korea FTA and the development of bilateral and overall trade of the EU and Korea ▪ 8.3: Analyse the evolution of trade in services and FDI between the EU and Korea ▪ 8.4: Identify the non-tariff measures affecting EU-Korea trade ▪ 8.5: Analyse the effects (if possible, in economic terms too) of the implementation of the customs-related provisions ▪ 8.6: Analyse the implementation of other areas of the EU-Korea FTA ▪ 8.7: Identify issues in areas of the EU-Korea FTA which may prevent exploiting the full potential/benefits of the FTA ▪ 8.8: Identify regulatory changes undertaken by the EU and Korea due to the implementation of the FTA, assess elements of regulatory convergence and analyse the impact on regulatory costs on administrations and businesses ▪ 8.9: Analyse the impact of the EU-Korea FTA on SMEs ▪ 8.10: Analyse the impact of the EU-Korea FTA on consumers ▪ 8.11: Analyse the impact of the EU-Korea FTA on the EU budget ▪ 8.12: Analyse the effect of the implementation of the EU-Korea FTA on sustainable development in its economic, social and environmental dimensions, with sub-tasks a) effects of the implementation of the trade and sustainable development chapter b) impact on employment, wages, and household income c) environmental impacts ▪ 8.13: Examine the impact of the EU-Korea FTA on human rights ▪ 8.14: Consider the significance of the informal economy, and if it is considerable, distinguish the FTA's impacts in the formal economy from those occurring in the informal economy ▪ 8.15: Analyse the impact of the EU-Korea FTA on developing countries and Least Developed Countries
	9	Reply to the evaluation questions	**Effectiveness:** ▪ EQ 1: To what extent have the objectives as laid down in Article 1.1(2) of the EU-Korea FTA been

Phase	Task	Description	Sub-tasks/details
			achieved? ▪ EQ 2: Has the EU-Korea FTA had unintended side effects, and if so, which ones? **Efficiency:** ▪ EQ 3: To what extent has the EU-Korea FTA been efficient with respect to achieving its objectives? **Coherence:** ▪ EQ 4: To what extent has the EU-Korea FTA been coherent with the EU-Korea Framework Agreement and with current EU trade policy? **Relevance:** ▪ EQ 5: To what extent are the provisions of the EU-Korea FTA relevant for addressing current trade issues faced by the EU and Korea?
	10	Provide conclusions and recommendations	Conclusions and recommendations will be based on the analysis carried out under the previous tasks.

Source: Civic Consulting, based on TOR.

3. Methodology

This section presents an overview of the methodology of the evaluation.

3.1. Overview of approach

The main methodological tools used for this evaluation are as follows::

- *Review of literature and data*, covering a total of 160 reports, documents and academic articles, as well as data from numerous databases and sources, including TARIC, WITS, COMEXT, UN-Comtrade, the World Input-Output Database (WIOD), the Exporter Dynamics Database (EDD) and others.
- *Stakeholder consultation*, consisting of an open public consultation, a survey on the impact of the EU-Korea FTA on SMEs, a survey on the impact of the EU-Korea FTA, complemented by a civil society dialogue meeting and a stakeholder workshop, and an evaluation website that informed stakeholders throughout the evaluation process;
- Eight *sectoral and cross-cutting case studies*;
- A total of 94 *in-depth interviews*, covering stakeholder organisations in various sectors at the EU level and in Member States, as well as Korea;
- *A total of 15 specific analyses*, most notably a descriptive analysis of trade data regarding goods and services, econometric analysis of trade flow data, simulation analysis with the help of a computable general equilibrium (CGE) model, in-depth analyses of FTA impacts on SMEs and consumers, a social analysis, an analysis of FTA impacts on human and labour rights, as well as an analysis of environmental impacts.

The work completed for each of the above listed steps is described in more details below.

3.2. Conducting a literature review

In order to avoid duplicating previous work and studies, as well as build upon existing knowledge concerning the substance of the FTA and relevant methodologies, we reviewed a total of 160 existing studies, academic articles, documents, and reports that focused on the EU and Korea, as well as trade in general.

Following the identification of all relevant literature, we developed a tagging system and uploaded all documents in a dedicated database for ease of access throughout the evaluation.

3.3. Stakeholder consultation

The online public consultation was launched on December 9, 2016. The complementary survey on consumer interests and sustainable development was launched on December 21, 2016. We assembled an extensive database of contact information for relevant stakeholders in the public sector, private sector and civil society, and sent emails notifying these stakeholders of the launch of the public consultation and the survey. In parallel, news of the launch was also published on the evaluation website *www.eukorea-eval.com,* as well as on the website of DG TRADE, the TRADE newsletter and Twitter. Three rounds of email invitations and reminders were sent to about 230 key stakeholder organisations at the EU and Member State level, and dozens of phone calls to selected organisations were conducted to further increase participation. The public consultation and the survey were closed on March 6, 2017. In total, 50 responses were received to

the open public consultation and seven complete responses were received to the survey on consumer interests and sustainable development.

The survey on SMEs was also launched on December 21, 2016. A link to the survey was provided to DG GROW, which subsequently disseminated the survey via the Enterprise Europe Network. The survey was also made available on the evaluation website, the DG TRADE website, and advertised in the TRADE newsletter. Intensive efforts were undertaken to boost the response rate. DG GROW reminded stakeholders of the survey at meetings with SME organisations, and provided relevant information and links via email. In response to the low turnout for the SME survey, we contacted over 100 EU-level and national-level business organisations with a request to distribute the survey to members, first by email and then (for selected organisations) by phone. The survey on SMEs was closed on March 6, 2017. In total, six responses were received.

Following their respective closure dates, results of the public consultation, survey on consumers, and survey on SMEs were downloaded and analysed. The results of the public consultation and the complementary surveys are presented in the stakeholder consultation report.

To discuss the methodology of the study, a one-day civil society dialogue (CSD) was held in Brussels on October 18, 2016. We also presented the inception report and exchanged views on issues relevant for the evaluation. Finally, a one-day stakeholder workshop on the interim results of the evaluation was held in Brussels on July 10, 2017. The purpose of the workshop was to present and discuss interim results, as well as to obtain additional input from interested stakeholders to be considered in the final stage of the evaluation. The workshop minutes are presented in Annex VI.

3.4. Implementing the case studies

The following eight case studies were selected to provide both sectoral and cross-cutting perspectives of the EU-Korea FTA:

- Automotive (passenger cars);
- Agriculture;
- Electronic goods;
- Environmental goods/services;
- Postal services;
- Rules of origin;
- Use of tariff preferences; and,
- Implementation of institutional mechanisms of the trade and sustainable development (TSD) chapter.

Each case study is based on in-depth desk research (covering past studies and reports, academic literature, documents received from stakeholders, and the text of the agreement itself), the results of the economic analysis, the results of the stakeholder consultation and the complementary surveys, and the in-depth interviews conducted throughout the study. The case study reports are presented in section 10 of this report.

3.5. Conducting in-depth interviews

We conducted interviews with 94 EU and MS-level business associations, EU companies, government entities, and other stakeholders (including the ILO, European, international

and Korean trade union federations, and other organisations in the EU and Korea).[1] The number of interviews conducted by country is presented in the table below. For a full list of interviewees, see Annex IX.

Table 2: Stakeholder organisations interviewed by country

Country	Number of interviews
Austria	1
Belgium	1
Bulgaria	1
Croatia	1
Czech Republic	2
Denmark	6
Estonia	1
Finland	1
France	5
Germany	12
Greece	2
Ireland	2
Italy	2
Korea	9
Latvia	2
Lithuania	1
Malta	1
Netherlands	4
Poland	1
Portugal	2
Spain	1
Sweden	4
UK	4
EU-level organisations	24
International organisations	4
Total	*94*

Source: Civic Consulting.

[1] Interviews were mostly conducted face-to-face or by phone. Some interviewees preferred to provide their answers in writing.

3.6. Carrying out specific analyses

The specific analyses foreseen under Task 8 were carried out according to the detailed methodology as provided in the inception report. The results are presented in sections 5 to 9 of this report. Key elements of the analyses were:

(1) *Description and initial inspection of data* at a disaggregate level and using—where appropriate—econometric tools to obtain simple conditional correlations with the purpose of obtaining first insights into the data. This includes trade data (goods and services), various margins of trade (extensive and intensive), foreign direct investment (FDI) and different leads and lags (to capture anticipation and phase-in effects). This also presents key statistics on measurable trade policy instruments (tariffs) and tariff income (for the pre-agreement situation), as well as the number of jobs associated with the agreement.

(2) *Econometric analysis* of the relevant trade flow data at the appropriate level of aggregation to obtain causal estimates of the relevant parameter required for a full general equilibrium analysis of the EU-Korea FTA.

(3) *Simulation analysis* with the help of a computable general equilibrium (CGE) model to obtain information on how the status quo (with the FTA in place) compares to a counterfactual situation (without the FTA in place) in terms of bilateral trade flows, aggregate welfare, sectoral employment, wages, workers' purchasing power, government income, greenhouse gas emissions, and other equilibrium objects of interest.

Complementary analyses considered FTA impacts on SMEs and consumers, social impacts, impacts on human and labour rights, as well as environmental impacts, among others. Further methodological information is provided in Annex VII.

3.7. Elaborating conclusions and recommendations

Based on the overall findings of the study we provided answers to the following evaluation questions (see section 11.1):

- EQ1: To what extent have the objectives as laid down in Article 1.1(2) of the EU-Korea FTA been achieved?
- EQ2: Has the EU-Korea FTA had unintended side effects, and if so, which ones?
- EQ3: To what extent has the EU-Korea FTA been efficient with respect to achieving its objectives?
- EQ4: To what extent has the EU-Korea FTA been coherent with the EU-Korea Framework Agreement and with current EU trade policy?
- EQ5: To what extent are the provisions of the EU-Korea FTA relevant for addressing current trade issues faced by the EU and Korea?

Finally, we elaborated recommendations regarding potential areas of improvement of the EU-Korea FTA (see section 11.2).

4. Description of the EU-Korea FTA

This section presents a description of the FTA, focusing on its structure and content (section 4.2), the context in which it entered into force (section 4.3), its links with other agreements such as the EU-Korea Framework Agreement (section 4.4), and its institutional framework (section 4.5).

4.1. Introduction

In the 2006 communication "Global Europe: competing in the world", Korea was already identified as a priority partner for EU FTA negotiations, given its large market potential, high level of protection with respect to imports from the EU, and active trade negotiations with the EU's trade competitors. Negotiations for the Free Trade Agreement between the EU and its Member States and the Republic of Korea began in 2007 and concluded two years later, with the FTA signed at the EU-Korea Summit in Brussels in October 2010. The FTA had been provisionally applied since July 2011 and entered formally into force on 13 December 2015, following ratification by EU Member States.

The EU-Korea FTA was the first FTA negotiated by the EU with an Asian country, and went further than any previous agreement in lifting trade barriers. While certain components of this FTA are in line with previous bilateral free trade agreements (such as provisions on tariff reduction), other aspects of the EU-Korea FTA break new ground. Several chapters contain provisions that go beyond the relevant WTO obligations, and specific annexes on electronic goods, motor vehicles and parts, pharmaceutical products and medical devices, and chemicals present detailed sector-specific provisions. The chapter on services, establishment and e-commerce has broad coverage in terms of sectors and market access commitments. Another chapter that represents a novel approach for FTAs is Chapter 13 on trade and sustainable development, which links trade with labour rights and environmental protection.

The EU-Korea FTA also provides for a comprehensive institutional framework established to oversee the implementation of the agreement. Specifically, the FTA created several committees and working groups which meet on a regular basis—providing both Parties with the means to discuss and cooperate on issues related to the FTA, as well as develop solutions for any problems that arise.

In this section, we first describe the structure and content of the EU-Korea FTA, before focusing on the context of the agreement, including its interaction with other instruments, such as EU-Korea Framework Agreement. Finally, we describe the institutional framework of the agreement.[2]

4.2. Structure and content of the EU-Korea FTA

The EU-Korea FTA contains the following 15 chapters and related annexes:

1. Objectives and general definitions;
2. National treatment and market access for goods, complemented by Annexes on Elimination of customs duties (2-A), Electronics (2-B), Motor vehicles and parts (2-C), Pharmaceutical products and medical devices (2-D), Chemicals (2-E);
3. Trade remedies, complemented by Annex 3 on Agricultural safeguard measures;

[2] Note that this section focuses on the description of the provisions of the FTA as provided in the agreement. The analysis of FTA implementation and related economic, social and environmental effects follows in subsequent sections.

4. Technical barriers to trade, complemented by Annex 4 on the TBT coordinator;
5. Sanitary and phytosanitary measures;
6. Customs and trade facilitation;
7. Trade in services, establishment and electronic commerce, complemented by Annexes on Lists of commitments (7-A), the most favoured nation (MFN) treatment exemption (7-B), List of MFN exemptions (7-C), The additional commitment on financial services (7-D);
8. Payments and capital movements;
9. Government procurement, complemented by Annex 3 on BOT contracts and public works concessions;
10. Intellectual property, complemented by Annexes on Geographical indications for agricultural products and foodstuffs (10-A), Geographical indications for wines, aromatised wines and spirits (10-B);
11. Competition;
12. Transparency;
13. Trade and sustainable development, complemented by Annex 13 on Cooperation on trade and sustainable development;
14. Dispute settlement, complemented by Annexes on the Mediation mechanism for non-tariff measures (14-A), Rules of procedure for arbitration (14-B), Code of conduct for members of arbitration panels and mediators (14-C);
15. Institutional, general and final provisions.

For a detailed overview of the structure of the agreement, including a detailed list of protocols, annexes and understandings, refer to Annex I.[3]

Objectives of the EU-Korea FTA

The broad scope of the agreement is already obvious in Chapter 1 (Objectives and general definitions), which mainly presents the objectives of the FTA, while also providing general definitions of the Parties and other terms. Specifically, Article 1.1(2) (a) to (h) lists a total of eight objectives of the FTA as follows:

- *To liberalise and facilitate trade in goods* between the Parties, in conformity with Article XXIV of the General Agreement on Tariffs and Trade 1994;
- To *liberalise trade in services and investment* between the Parties, in conformity with Article V of the General Agreement on Trade in Services;
- To *promote competition in their economies*, particularly as it relates to economic relations between the Parties;
- To further liberalise, on a mutual basis, the *government procurement markets* of the Parties;
- To adequately and effectively *protect intellectual property rights*;

[3] The full text of the Agreement is available under: http://www.eukorea-eval.com/s/EU-Korea-FTA-full-text.pdf. The following descriptive analysis is based–if not stated otherwise–on the text of the agreement itself, as well as publications and studies on the agreement, including *The EU-Korea Free Trade Agreement in Practice*, European Commission - Directorate-General for Trade, 2011; *EU-Korea Free Trade Agreement – Putting the FTA Into Practice*, Seminar Booklet; and *The European Union and South Korea: The Legal Framework for Strengthening Trade, Economic and Political Relations*, Edinburgh University Press, 2013.

- To contribute, by removing barriers to trade and by developing an environment conducive to increased investment flows, to the *harmonious development and expansion of world trade*;
- To commit, in the recognition that sustainable development is an overarching objective, to the development of international trade in such a way as *to contribute to the objective of sustainable development* and strive to ensure that this objective is integrated and reflected at every level of the Parties' trade relationship; and,
- To *promote foreign direct investment* without lowering or reducing environmental, labour or occupational health and safety standards in the application and enforcement of environmental and labour laws of the Parties.

Market access for goods and non-tariff measures

A free trade agreement first and foremost concerns the abolition of customs duties between the Parties. Before the FTA was provisionally applied in 2011, most-favoured nation tariffs applied to trade between the EU and Korea. While the majority of tariffs were eliminated with the start of the provisional application of the agreement, the reduction of the remaining customs duties follows the schedules of both Parties as agreed in the FTA, to grant the sectors concerned sufficient time for structural adjustments. Chapter 2 (National Treatment and Market Access for Goods) presents provisions regarding the elimination of existing customs duties on trade in goods, with the full tariff schedules for the EU and Korea presented in Annex 2-A. Under Annex 2-A, 70 percent of tariff lines were duty free immediately upon the start of the provisional application of the agreement (i.e. on 1 July 2011), and by year five, nearly all tariffs in most sectors were phased out. A small number of sensitive agricultural products were granted longer transitional periods before full elimination of Korean import tariffs, in recognition of the importance of the agricultural sector for the country (Korea is a net-importer of food, has historically struggled with food insecurity, and its agricultural industry has been heavily protected by the government as a consequence). This is illustrated in the table below, which presents the tariff schedule of Korea for selected sectors.[4]

[4] Note that certain products such as rice, sweet peppers, garlic, and onions were excluded from the EU-Korea FTA altogether.

Table 3: Tariff schedule of Korea for selected sectors

Sector	Average tariff (%) in Korea before FTA	% of tariff lines on which customs duties are eliminated		
		Year of start of provisional application	Year 3	Year 5
Medical devices	5	74.3	89.7	97.8
Pharmaceuticals	6.2	90.5	100	100
Agricultural products	35	40	45	65
Chemicals	6.2	87.3	94.7	99.9
Machinery and electric appliances	7.2	88.7	97.5	99.5

Note: average tariffs are not trade-weighted. "Year of start of provisional application" refers to the 12-month period beginning on July 1, 2011. Full tariff schedules are provided in Annex 2-A of the FTA.

Article 2.6 of the FTA also prohibits the introduction of new duties—this standstill clause, combined with the aforementioned elimination of existing tariffs, effectively guarantees a permanent end to tariff barriers between the EU and Korea. Chapter 2 also contains provisions regarding the administration and implementation of tariff rate quotas (TRQs, see the case study on agriculture in section 10.2 for further details) and provisions regarding non-tariff measures.

These provisions are complemented by four sector-specific annexes on non-tariff measures. Non-tariff measures may lead to barriers such as regulatory barriers related to technical standards and testing and certification procedures that create additional burdens and costs, which are referred to in this study as non-tariff trade costs (NTTC). NTTCs are often side-effects of the legitimate pursuit of public policy objectives, and addressing such negative side effects therefore requires careful balancing. The sector-specific annexes are a novelty aspect of the agreement (according to one academic analysis, "the truly innovative part about the FTA"),[5] as no prior FTAs included such sector-specific disciplines on non-tariff measures. More details on these annexes are provided below:

- Annex 2-B on *electronics* stipulates that both Parties are to recognise the International Organisation for Standards, the International Telecommunication Union and the International Electrotechnical Commission as the relevant international standard-setting bodies; it also introduces the Suppliers Declaration of Conformity (SDoC) for electronic goods covered by the annex with a view to mitigating the burden associated with third-party testing and certification for producers. (For more details, see the case study on electronics in section 10.3.)

- Annex 2-C on *motor vehicles and parts* states that both Parties are to recognise the World Forum for Harmonisation of Vehicle Regulations within the framework of the United Nations Economic Commission for Europe (UNECE) as the relevant international standard-setting body for the products covered by the Annex. Additionally, it stipulates inter alia that the Parties shall not introduce any new

[5] Rigod, Boris, "Trade in Goods under the EU–Korea FTA: Market Access and Regulatory Measures", in James Harrison (ed.), *The European Union and South Korea: The Legal Framework for Strengthening Trade, Economic and Political Relations*, Edinburgh University Press, 2013.

regulatory measures that nullify or impair market access benefits accruing to the other Party for the sector covered by this Annex. Additionally, it establishes a working group on motor vehicles and parts. (For more details, see the case study on cars in section 10.1)

- Annex 2-D on *pharmaceutical products and medical devices* stipulates that each Party shall ensure that its rules regarding any matter related to the pricing, reimbursement or regulation of pharmaceutical products or medical devices are promptly published or otherwise made available at an early appropriate stage. It also requires the Parties to adopt or maintain appropriate measures to prohibit improper inducements by manufacturers and suppliers of pharmaceutical products or medical devices to health care professionals or institutions for the listing, purchasing or prescribing of pharmaceutical products and medical devices eligible for reimbursement under health care programmes and establishes a working group on pharmaceutical products and medical devices.

- Annex 2-E on *chemicals* states that the Parties are to recognise the importance of ensuring transparency regarding the content of their laws, regulations and other measures of general application in the area of chemicals as well as the importance of cooperating in the area of Good Laboratory Practices and Test Guidelines, in order to seek a more harmonised approach to chemical assessment and management for the purpose of seeking international harmonisation of approaches thereto. It also establishes a working group on chemicals.

These specific rules are in addition to Chapter 4 of the FTA, which contains provisions on technical barriers to trade (TBT). Among other things, this chapter stipulates that the Parties are to strengthen their cooperation in the field of standards, technical regulations and conformity assessment procedures with a view to increasing the mutual understanding of their respective systems and facilitating access to their respective markets. It also establishes a coordination mechanism to facilitate the implementation of this chapter. Overall, commitments on TBT under this Chapter (such as those regarding cooperation on regulatory issues, transparency and marking/labelling) exceed obligations contained in the WTO Agreement on Technical Barriers to Trade. Also relevant in the context of NTTCs is Chapter 5 on sanitary and phytosanitary measures, which has the objective of minimising the negative effects of SPS measures on trade while protecting human, animal or plant life or health in the Parties' territories. In Article 5(8) it states that the Parties shall recognise the concept of pest- or disease-free areas and areas of low pest or disease prevalence, in accordance with the SPS Agreement, OIE and IPCC standards, and shall establish an appropriate procedure for the recognition of such areas, taking into account any relevant international standard, guideline or recommendation. The Parties shall establish close cooperation on the determination of such areas. Among other things, it also commits the Parties to exchange information on matters related to the development and application of SPS measures that affect, or may affect, trade between the Parties (Article 5.6), and specifies that the general import requirements of a Party shall apply to the entire territory of the other Party, i.e. establishes the EU as a single entity (Article 5.7). Chapter 5 also aims to enhance cooperation on animal welfare, and contains related provisions (in Article 5.9).

Rules of origin

Rules of origin define the "economic nationality" of a product and therefore whether tariff preferences under a trade agreement apply or not. The FTA's Protocol concerning the definition of originating products and methods of administrative cooperation (Protocol on RoO) lays out various provisions regarding the rules of origin that apply to goods exported from the EU to Korea and vice versa. The Protocol on RoO defines originating products (for which tariff preferences under the agreement apply) as those that are either *wholly obtained in a Party* (e.g. vegetable products grown and harvested in the EU

or Korea), or products that have undergone *sufficient working or processing* in either Party. The criteria for determining "sufficient processing" are described for each product in product-specific rules, e.g. a car originates in the EU if no more than 45 percent of the value of the inputs has been imported from outside Korea or the EU to manufacture it. A specific Annex provides the list rules of the working or processing required to be carried out on non-originating materials in order for the product manufactured to obtain originating status.[6] These list rules of the EU-Korea FTA were part of an ongoing simplification process of the rules of origin in EU trade agreements. Operations such as washing, cleaning, simple painting and polishing operations, and change of packaging do not constitute sufficient working and processing (for more details, see the case study on rules of origin in section 10.6).

The EU-Korea FTA is the first EU FTA where only self-certification (the origin declaration) is relied on for exporting goods. In order for exporters to be able to issue an origin declaration under the EU-Korea FTA and to then benefit from the tariff preferences of the FTA, they have to apply for approved exporter status, unless they export consignments of products whose total value does not exceed EUR 6 000. National customs authorities are responsible for granting exporters this status, provided they have offered to the satisfaction of the customs authorities all guarantees necessary to verify the originating status of their products, as well as fulfil the other requirements of the Protocol on RoO.

Trade remedies

Chapter 3 of the FTA concerns trade remedies, and relates to the use of instruments already existing in WTO legislation, such as anti-dumping and global safeguard measures. Section A of the section concerns bilateral safeguard measures. It states that if, as a result of the reduction or elimination of a customs duty under the agreement, originating goods of a Party are being imported into the territory of the other Party in such increased quantities and under such conditions as to cause or threaten to cause serious injury to a domestic industry producing like or directly competitive goods, the importing Party may adopt a bilateral safeguard measure which suspends further reduction of the rate of customs duty on the good concerned provided for under the FTA, or which increases the rate of customs duty on the good to a level which does not exceed the lesser of the most favoured nation applied rate of customs duty on the good in effect at the time the measure is taken, or the base rate of customs duty specified in the Schedules included in Annex 2-A pursuant to Article 2.5.2. (Bilateral safeguard measures) can be adopted for a maximum of two years, and can be extended by up to two years, for a total of four years (Article 3.2). Other sections of this chapter include provisions on agricultural safeguard measures, global safeguard measures, and anti-dumping and countervailing duties.

Customs and trade facilitation

Chapter 6 covers customs and trade facilitation. It commits the Parties inter alia to adopt and apply simplified and efficient customs and other trade-related requirements and procedures in order to facilitate trade between them. It also commits the Parties to pursuing the harmonisation of documentation and data elements used in trade according to international standards for the purpose of facilitating the flow of trade between them in customs-related matters regarding the importation, exportation and transit of goods. In addition, it creates a Customs Committee to ensure the proper functioning of this

[6] Annex II of the protocol: List of working or processing required to be carried out on non-originating materials in order that the product manufactured can obtain originating status.

chapter and the related protocols. The provisions of Chapter 6 also go beyond WTO customs obligations, particularly in the dimension of enforcement.[7]

Trade in services

The EU-Korea FTA was also considered at the time of the start of its provisional application to be the most ambitious FTA ever concluded by the EU in terms of the liberalisation of trade in services. The scope of the agreement covers a broad range of services, including telecommunications, environmental services, transport, shipping, construction, financial services, postal services and express delivery, and professional services (legal, accounting, engineering, architectural services).

Various types of barriers can affect trade in services, such as quotas and licences, persisting monopolies preventing foreign services providers from accessing certain markets, foreign ownership ceilings, and differences in regulations across countries. Considering these obstacles, the FTA introduced a number of changes in specific services sectors. Chapter 7 makes advances in opening the Korean services market to EU providers, and provides that each Party shall accord to services and service suppliers of the other Party treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in the specific commitments contained in Annex 7-A. Further, in the sectors where market access commitments are inscribed in Annex 7-A and subject to any conditions and qualifications set out therein, each Party shall accord to services and service suppliers of the other Party, in respect of all measures affecting the cross-border supply of services, treatment no less favourable than that it accords to its own like services and service suppliers. Specific sections of the chapter include detailed provisions on cross-border supply of services, establishment, temporary presence of natural persons for business, regulatory framework, electronic commerce, as well as exceptions for measures e.g. to protect public security or to maintain public order.

Payments and capital movements

Chapter 8 concerns payments and capital movements—it stipulates that the Parties undertake to impose no restrictions on, and to allow, all payments and capital transfers on the current account of balance of payments between their residents to be made in freely convertible currency. With regard to transactions on the capital and financial account of balance of payments, the Parties undertake to impose no restrictions on the free movement of capital relating to direct investments made in accordance with the laws of the host country, to investments and other transactions liberalised in accordance with Chapter 7 and to the liquidation and repatriation of such invested capital and of any profit generated therefrom. Chapter 8 also provides for safeguard measures which are "strictly necessary" to be activated for a period of up to 6 months (with the possibility to be extended once for another 6 months) in exceptional circumstances where payments and capital movements between the Parties cause or threaten to cause serious difficulties for the operation of monetary policy or exchange rate policy in Korea or one or more Member States of the European Union.

Government procurement

Prior to the start of the provisional application of the FTA, mutual commitments were already in place between the EU and Korea concerning government procurement. Both

[7] Rigod (2013), 79.

parties agreed to apply transparent and non-discriminatory rules for conducting tenders for goods and services. However, Chapter 9 on government procurement expands the commitments of both parties to areas that are not covered by the WTO Agreement on Government Procurement (GPA), namely public works concessions and Build-Operate-Transfer (BOT) contracts (e.g. highway construction). Additionally, it establishes a working group on government procurement.

Intellectual property

A 2007 study identified the implementation of intellectual property rights (IPR) as a critical issue for Korea.[8] As such, the FTA provides a legal framework building on the WTO TRIPS (trade-related aspects of intellectual property rights) Agreement for the protection and enforcement of IPR. This includes but is not limited to mechanisms for exchange and cooperation, standards for the protection of rights related to patents, standards for the protection of IPR of authors and rights of performers and producers of phonograms, as well as procedures for registering trademarks and for ensuring effective action against potential infringements.

Chapter 10 of the FTA covers intellectual property and states that the Parties are to ensure an adequate and effective implementation of the international treaties dealing with intellectual property to which they are party. (For the purposes of the agreement, IPR embody copyright, the rights related to patents, trademarks, service marks, designs, layout-designs (topographies) of integrated circuits, geographical indications, plant varieties, and protection of undisclosed information.) Further, under Chapter 10, the Parties recognise and undertake to protect the geographical indications listed in Annex 10-A. The FTA thereby provides protection to products such as *Champagne*, *Scotch* or *Irish whisk(e)y*, *Prosciutto di Parma* and *Parmigiano Reggiano*. The Parties also commit to holding regular dialogue in order to monitor the implementation of the agreement and address other emerging relevant issues. The chapter also specifies enforcement measures for cases of infringement of IPR.

Competition

In addition to the liberalisation of goods, services and investments, the EU-Korea FTA includes provisions to promote competition by prohibiting and sanctioning certain practices which distort competition and trade between the two Parties. This includes cartels, abusive behaviour by companies with a dominant market position, anti-competitive mergers, and subsidies, including the prohibition of certain types which are considered to be particularly distortive.

Under Chapter 11 of the FTA, the Parties recognise the importance of applying their respective competition laws in a transparent, timely and non-discriminatory manner and are to maintain appropriately equipped authorities responsible for the implementation of competition laws. It also stipulates that each Party shall adjust state monopolies of a commercial character so as to ensure that no discriminatory measure regarding the conditions under which goods are procured and marketed exists between natural or legal persons of the Parties. Additionally, it commits the Parties to using their best endeavours to remedy or remove, through the application of their competition laws or otherwise, distortions of competition caused by subsidies in so far as they affect international trade.

[8] Guerin et al., 2007.

Transparency

Chapter 12 contains provisions on transparency. Among other things, it stipulates that the Parties shall pursue an efficient and predictable regulatory environment for economic operators, especially small ones doing business in their territories, for example by providing reasonable opportunities for interested persons to comment on proposed measures of general application that may have an impact on any matter covered by the FTA, and endeavouring to take into account the comments received from interested persons with respect to such proposed measures.

Sustainable development

Chapter 13 of the FTA represents another innovative aspect of the EU-Korea FTA—it is the first agreement of its kind to recognise the linkage between trade and its economic, social and environmental effects, and to include a chapter on sustainable development. Chapter 13 of the FTA reaffirms the commitment of the EU and Korea to contributing to the objective of sustainable development, underlining that this objective is to be integrated into every level of their trade relationship. Key provisions in this chapter relate to environmental and labour protection. With respect to labour standards, both Parties reaffirm their commitment to effectively implementing the ILO standards that they have respectively ratified, as well as making continued and sustained efforts towards ratifying the remaining fundamental ILO conventions as well as the other conventions that the ILO classifies as up-to-date. In terms of environmental standards, the Parties reaffirm their commitments to the implementation in their laws and practices of the multilateral environmental agreements to which they are party. Domestic Advisory Groups (DAGs) were also established by each Party; both DAGs meet annually at a Civil Society Forum to conduct a dialogue encompassing sustainable development aspects of trade relations between the Parties.

Dispute settlement

Chapter 14 covers dispute settlement. Specifically, this chapter details the dispute settlement procedure, which entails consultations, an arbitration procedure, and the delivery of an arbitration panel ruling (delivered within 120 days after the establishment of the panel) that is binding upon the Parties. This mechanism is based on the model of the WTO Dispute Settlement Understanding, but its procedures are designed to be faster than the latter; it also grants the Parties access to a mechanism specifically designed to address disputes arising under the EU-Korea FTA. This chapter also sets out procedures to be invoked in the case of non-compliance with such a ruling. Annex A to this chapter concerns the mediation mechanism for non-tariff measures,[9] Annex B outlines the rules of procedure for arbitration, and Annex C provides the code of conduct for members of arbitration panels and mediators.

Final provisions and protocols

Chapter 15 contains institutional, general and final provisions. This chapter formally establishes the Trade Committee as well as the specialised committees and working groups, which are discussed in greater detail below. In addition, Chapter 15 includes amendment procedures, exceptions for balance-of-payments difficulties or essential

[9] The aim of the mediation mechanism is to find a quick and effective solution to a market access problem, rather than to review the legality of a given measure. Under this mechanism, the mediator will meet with the Parties and deliver an advisory opinion and propose a solution within 60 days of its nomination; neither the opinion nor the proposal are binding. Furthermore, the mediation mechanism does not exclude the possibility to have recourse to the dispute settlement procedure during or after the mediation procedure.

security interests, and general provisions regarding e.g. the entry into force and relations with other agreements.

The first protocol of the FTA covers Rules of Origin (RoO), and has been described above.

The second protocol covers mutual administrative assistance in customs matters. It stipulates that the Parties are to assist each other, in the areas within their competence, in the manner and under the conditions laid down in the Protocol, to ensure the correct application of customs legislation, in particular by preventing, investigating, and combating operations in breach of that legislation.

The final protocol of the FTA concerns cultural cooperation. It establishes a framework under which the Parties will facilitate dialogue and exchanges regarding cultural activities, goods and services, including in the audio-visual sector. It also created a Committee on Cultural Cooperation.

A table summarising the structure and content of the EU-Korea FTA as described in this section, while also highlighting the novelty aspects of the FTA, is presented in Annex I.

4.3. Context of the EU-Korea FTA

EU trade context

European trade policy has its origins in the 1957 signing of the Treaty of Rome. Subsequent treaties expanded EU competence from trade in goods to areas such as services and intellectual property, with the 2009 entry into force of the Lisbon Treaty ultimately providing the EU with exclusive competence over bilateral and multilateral negotiations regarding comprehensive trade and investment agreements. Already in 2006, the European Commission had set out a broad new approach to European trade policy priorities, which was entitled Global Europe.[10] It made the case that in a globalised economy, in which Europe sources and sells goods down long global supply chains, Europe's economic strength at home depended on its competiveness in the world. Subsequently negotiations for new bilateral free trade agreements were launched, including with Korea. The EU's most recent trade and investment strategy "Trade for all" announced in October 2015 emphasises the growing importance of international trade as a source of job creation and enterprise growth in the European economy, and the need for securing a European foothold in global supply chains as well as adjusting to trade in the digital age. It also covers issues of public procurement, competition, e-commerce, protection of innovation and regulatory cooperation. Additionally, it announced a commitment to greater transparency with regard to trade negotiations, as well as a commitment to using EU trade policy to promote sustainable development and human rights. In addition to its engagement in the Doha Round as a WTO member, the EU has put forth an agenda of bilateral trade agreements as part of its broader trade strategy, allowing the EU economy to better benefit from trade and investment abroad. The EU-Korea FTA is the first of a "new generation" of agreements that are comprehensive in scope and focus on substantially liberalising all trade. In Asia, the conclusion of the EU-Japan FTA is a key objective;[11] resuming FTA negotiations with India and launching negotiations with Australia and New Zealand are also priorities. In Latin America, the EU's focus is on continuing FTA negotiations with Mercosur and modernising its current

[10] "Global Europe", European Commission, 2006.

[11] Note that the EU and Japan reached a political agreement in principle on this agreement in July 2017, see http://europa.eu/rapid/press-release_IP-17-1902_en.htm.

FTAs with Mexico and Chile. In general, the EU also looks toward including mechanisms in future FTAs that will allow interested third countries to join.[12]

Korean trade context

Beginning in the 1950s and for several decades thereafter, Korean trade policy was heavily export-driven and characterised by government support to key industries, such as the petrochemical, steel, semiconductor, shipping and shipbuilding industries. Korea began to liberalise its economy in the 1980s with the introduction of the Comprehensive Liberalisation Policy and continued to deregulate throughout the 1990s.

For a time, Korean trade policy focused exclusively on multilateral negotiations in the framework of the WTO. However, Korea turned its focus toward FTAs with the 2001 launch of the Doha round in an effort to increase its national competitiveness, secure overseas markets for its export-driven economy, and obtain steady sources of energy and raw materials. This focus on FTAs also provided a greater impetus for Korea to push through important structural reforms, away from government-led policy towards market openness and deregulation.[13,14] Korea concluded negotiations for its first FTA with Chile in 2002, and has since completed FTAs with several politically and economically significant partner countries, including Singapore, India, the EU and the USA. Currently, Korea's trade policy is focused on securing comprehensive, high-quality FTAs with other countries.

This focus on FTAs has been successful in liberalising Korea's domestic market, particularly for the automotive, agriculture and services sectors.[15] The success of previously-concluded FTAs in boosting exports also contributed to growing support and demand for FTAs from Korean businesses.[16]

EU-Korea trade relations

Formal diplomatic relations between the EU and Korea began in 1963. The latter's rapid growth throughout the second half of the 20th century increased its appeal as an economic and political partner for Europe, which increasingly sought to engage Korea in trade.

Trade relations between both sides intensified in the 1990s with the signing of multiple agreements that established a framework for economic cooperation. In 1996, the EU and Korea signed the Framework for Trade and Cooperation, as well as a Joint Declaration on Political Dialogue.[17] The following year, both sides signed the Agreement on Cooperation and Mutual Administrative Assistance in Customs Matters, the primary objectives of

[12] "Trade for All", European Commission, 2015.

[13] Lee, Junkyu, "The Future of Korean Trade Policy: Korea's Trade Structure and Its Policy Challenges", Korea's Economy 2012, 2012, pp. 21–28. 25.

[14] Cho, Chang-Sang. "Korea-EU FTA: A Blueprint for Co-prosperity." EU-Korea Relations in a Changing World. Ed. Axel Marx, Jan Wouters, Woosik Moon, Yeongseop Rhee, Sunhee Park, and Matthieu Burnay. Leuven Centre for Global Studies, 2013. 1-358. 13.

[15] Choi, Nakgyoon, "Impacts and Main Issues of the Korea-China FTA", *The Future of Korean Trade Policy*, 2012, pp. 29–34. 31.

[16] Cho (2013), 14.

[17] Cho (2013), 4.

which were to create a level economic playing field for both sides, and to exchange information on customs legislation.[18]

As WTO members, both the EU and Korea are also parties to the Agreement on Government Procurement (GPA). The aim of the GPA is to open government procurement markets among its signatories through establishing rules on transparency and non-discriminatory procedures with respect to public tenders; it was originally signed in 1979, and the most recently revised GPA entered into force in April 2014.[19]

In 2009, the EU and Korea signed the Cooperation Agreement Concerning Cooperation on Anti-competitive Activities, with the goal of better enforcing competition laws by promoting cooperation and coordination between the competition authorities of both sides.[20] In May 2010, the EU and the Republic of Korea signed a new Framework Agreement on Trade and Cooperation (EU-Korea Framework Agreement), which is described in more detail in the following sub-section.

4.4. The EU-Korea Framework Agreement

The Framework Agreement between the European Union and its Member States, on the one part, and the Republic of Korea, on the other part (Framework Agreement) was signed on 10 May 2010 and entered into force on 1 June 2014, replacing the original 1996 agreement. Unlike its predecessor, the 2010 agreement no longer focuses on trade cooperation, as the latter topic has been addressed by the EU-Korea FTA. The Framework Agreement comprises a total of 53 Articles divided into ten Titles, which are:

I. Basis and scope;
II. Political dialogue and cooperation;
III. Cooperation in regional and international organisations;
IV. Cooperation in the area of economic development;
V. Cooperation in the area of sustainable development;
VI. Cooperation in the area of education and culture;
VII. Cooperation in the area of justice, freedom and security;
VIII. Cooperation in other areas;
IX. Institutional framework;
X. Final provisions.

As a review of the agreement concludes, the agreement is broad in scope, but does not contain particularly detailed obligations, focusing mainly on two types of provisions. The first category of provisions establishes obligations for the Parties related to shared values, such as attachment to democratic principles, human rights etc. in Article 1 of the agreement. The second category of provisions calls for cooperation in a wide range of areas.[21] For example, Title IV on cooperation in the area of economic development includes articles on trade and investment, economic policy dialogue, business cooperation, taxation, customs, competition policy, information society, science and technology, energy, transport, maritime transport policy and consumer policy. Finally,

[18]" International Customs Co-operation and Mutual Administrative Assistance Agreements." - European Commission.

[19] "Agreement on Government Procurement." World Trade Organization. Web. 7 July 2016.

[20] Agreement between the European Community and the Government of the Republic of Korea concerning cooperation on anti-competitive activities, EU-Kor., August 4, 2009, L 202.

[21] Harrison, James, "Overview of the EU-Korea Framework Agreement", in James Harrison (ed.), *The European Union and South Korea: The Legal Framework for Strengthening Trade, Economic and Political Relations*, Edinburgh University Press, 2013, pp. 149-159. 150.

the agreement creates an institutional framework within which the cooperation takes place (see below).

The EU-Korea Framework Agreement therefore serves as the basis for greater cooperation on a wide spectrum of areas of mutual interest matters at bilateral, regional and global levels such as security, human rights and climate change. Its signing was part of both sides' commitment to upgrade their relationship to the level of a strategic partnership, which was anticipated to further strengthen their bilateral dialogue and cooperation in regional and global affairs.[22]

The Framework Agreement is largely complementary to the FTA and the other agreements concluded between the EU and Korea in this context, which are:

- Agreement between the European Community and the Republic of Korea on cooperation and mutual administrative assistance in customs matters (in force since 1997); and,
- Agreement concerning cooperation on anti-competitive activities (in force since 2009).

There are several ways in which the Framework Agreement is linked to the EU-Korea FTA. Article 9 on trade and investment explicitly refers to the "agreement establishing a free trade area" (the EU-Korea FTA) as a "specific agreement giving effect to the trade provisions of" the Framework Agreement. It refers to Article 43 of the Framework Agreement, which provides that both Parties can adopt "specific agreements in any area of cooperation falling within its scope"—the FTA being one such agreement. The same Article stipulates that such specific agreements shall be "an integral part of the overall bilateral relations" and shall form "part of a common institutional framework". The Framework Agreement establishes a Joint Committee "to facilitate the implementation and to further the general aims of this Agreement as well as to maintain overall coherence in the relations and to ensure the proper functioning of other agreement between the Parties" (Article 44(2)). In this aim of creating overall coherence in the relations, it again links to the FTA, which provides for a comprehensive institutional framework on its own. This is described in the following sub-section.

4.5. Institutional framework of the EU-Korea FTA

The EU-Korea FTA is managed by the Trade Committee, which is co-chaired by the Korean Minister for Trade and the European Commissioner for Trade. The Committee has decision-making power in respect of all matters in the cases provided by the FTA and supervises the work of all committees, working groups and other bodies created under the FTA. The Trade Committee is scheduled to meet on an annual basis.

The FTA also established the seven following specialised committees:

- *Committee on Trade in Goods:* The committee's functions include promoting trade in goods between the Parties, including through consultations on accelerating and broadening the scope of tariff elimination and broadening the scope of commitments on non-tariff measures under the agreement.
- *Committee on Sanitary and Phytosanitary Measures:* The committee develops necessary procedures and arrangements for the implementation of Chapter 5 of the agreement, monitors progress, develops procedures for the approval of

[22] "South Korea." European Commission: Directorate-General for Trade, 1 July 2016. Web. 07 July 2016.

establishments for products of animal origin and, where appropriate, of production sites for products of plant origin, and provides a forum for discussion of problems arising from the application of certain SPS measures with a view to reaching mutually acceptable alternatives.

- *Customs Committee:* The committee meets to resolve any differences arising between the Parties on matters as included in Chapter 6 and the Protocol on RoO and the Protocol on Mutual Administrative Assistance in Customs Matters. The committee may also formulate resolutions, recommendations or opinions which it considers necessary for the attainment of the common objectives and sound functioning of the mechanisms established in Chapter 6, the Protocol on RoO, and the Protocol on Mutual Administrative Assistance in Customs Matters.

- *Committee on Trade in Services, Establishment and Electronic Commerce:* The committee is responsible for supervising and assessing the implementation of the Chapter on Services, Establishment and Electronic Commerce as well as for considering any issues referred to it by either Party.

- *Committee on Trade and Sustainable Development:* The committee is responsible for overseeing the implementation of Chapter 13, including cooperative activities undertaken under Annex 13.

- *Committee on Outward Processing Zones on the Korean Peninsula:* The committee is responsible for identifying geographic areas that may be designated as outward processing zones, determining whether any such outward processing zone has met the criteria established by the Committee, and establishing maximum thresholds for the value of the total input of originating final goods that may be added within the geographic area of the outward processing zone.

- *Committee on Cultural Cooperation:* The committee is responsible for overseeing the implementation of the Protocol on Cultural Cooperation.

Additionally, the FTA has established the seven following working groups:

- *Working Group on Motor Vehicles and Parts:* The working group is responsible inter alia for implementing Annex 2-C of the FTA as well as making recommendations, where appropriate, regarding the application of technical regulations to motor vehicles imported under different channels.

- *Working Group on Pharmaceutical Products and Medical Devices:* The working group is responsible for monitoring and supporting the implementation of Annex 2-D of the FTA.

- *Working Group on Chemicals:* The working group promotes cooperation with regard to Annex 2-E of the FTA and provides a forum for discussions envisaged in paragraph 3 of Annex 2-E.

- *Working Group on Trade Remedy Cooperation:* The functions of this working group are, among others, to oversee the implementation of Chapter 3 and provide a forum for the Parties to exchange information on issues relating to anti-dumping, subsidies and countervailing measures and safeguards.

- *Working Group on Mutual Recognition Agreements on Services:* The responsibilities of the working group include considering procedures for encouraging the relevant representative bodies in their respective territories to consider the interest in mutual recognition, as well as procedures for fostering the development of recommendations on mutual recognition by the relevant representative bodies.

- *Working Group on Government Procurement:* The working group meets to consider issues and exchange information relating to government procurement and BOT contracts or public work concessions that are referred to it by either Party.

- *Working Group on Geographical Indications:* The working group is responsible for ensuring the proper functioning of the sub-section on geographical indications and may consider any matter related to its implementation and operation. It may decide by consensus to modify Annexes 10-A or 10-B of the FTA to add or remove EU and Korean geographical indications following the necessary procedures.

In parallel to the abovementioned committees and working groups established by the FTA, two bilateral, sector-specific dialogues also regularly take place, namely the Electronics Dialogue and the Intellectual Property Dialogue.

Finally, Chapter 13 of the FTA provides for a separate institutional mechanism for consultation with civil society. It provides that each party establishes a domestic advisory group (DAG), whose purpose is to advise on the implementation of the Chapter. Representatives of the two DAGs are to meet annually at a Civil Society Forum (CSF) to conduct a dialogue encompassing sustainable development aspects of EU-Korea trade relations.

The functioning of the institutional framework during the evaluation period is further explored in section 6.4, as well as in the case study on the implementation of the institutional mechanisms of the TSD chapter (section 10.8). The coherence between the EU-Korea FTA and the EU-Korea Framework Agreement is analysed in further detail in section 11.1.4.

5. Economic analysis

The subsequent section analyses the economic effects of the FTA on Korea and the EU. It is structured as follows: after highlighting tariff cuts that occurred after the start of the provisional application of the EU-Korea FTA (section 5.1), it shows descriptive trade figures including a graphical difference-in-difference approach for both trade in goods and trade in services (section 5.2). Section 5.3 shows the evolution of bilateral foreign direct investments over time. In order to identify the causal effect of the FTA on EU-Korea trade, section 5.4 applies comprehensive econometric methods. The general equilibrium analysis in section 5.5 translates these trade effects into other macroeconomically relevant measures (e.g. GDP effects). Section 5.6 and onwards shed light on other aspects, such as the effect on SMEs, the EU budget, the informal economy, and least developed and developing countries. For the whole section, a variety of different data sources are used in order to ensure a comprehensive and detailed analysis; time periods, periodicity, or sector classification may therefore vary. Note that we have always used the most recent data available (often available until 2014 or 2015).

5.1. Evolution of tariffs between the EU and Korea

The key findings of the evaluation are that:

- **In line with the commitments undertaken by the EU and Korea, tariffs on the majority of goods fell to zero immediately after the start of the provisional application of the FTA. In certain industries, tariff cuts are being gradually phased-in.**
- **Before the start of the provisional application of the FTA, Korea had substantially higher import tariffs for European products than the EU had for Korean products. The FTA has corrected this imbalance.**
- **Applied trade-weighted average tariffs on EU exports to Korea have come down from more than 8 percent before the start of the provisional application of the FTA to half of a percent in the first five years and have fallen further since then, increasing the competitiveness of European products in Korea, such as cars, chemicals, and apparel.**
- **As of early 2017, applied trade-weighted average tariffs on Korean exports to the EU have been reduced to zero in nearly all relevant industries, reducing the prices of products imported from Korea to the EU, such as cars and electronics.**
- **Since 2011, preference utilisation rates have continuously increased for Korean exports, signalling that firms in Korea make use of the tariff preferences under the FTA. Preference utilisation rates for EU exports increased as well but remain at a lower level.**

The overriding objective of any FTA is the reduction of trade barriers, of which tariffs are the most visible ones. The EU-Korea agreement is no exception. Lower import tariffs on goods from Korea offer European consumers lower priced Korean goods. Vice versa, a reduction of tariffs on EU exports make European producers more competitive in the Korean market for cars, machinery, pharmaceuticals and electronics.

Hence, in this subsection, we address the evolution of tariffs. In order to provide a point of comparison, both EU and Korean tariffs are presented together with their most favoured nation (MFN) tariffs. MFN tariffs are the tariffs one country imposes on imports from all WTO members unless there exists a preferential trade agreement which grants lower, preferential tariff rates to specific trade partners.

There are various sources of data on tariffs. In this report, we rely on the integrated tariff database of the EU (TARIC).[23] Yearly tariff data at the 8-digit product level are available both for EU exports to and imports from Korea until 2016.[24] This information represents simple averages of tariff lines imposed at an ever finer product level (often referred to as the 10-digit product level).[25]

To obtain an aggregate measure of the importance of tariffs, one needs to further aggregate the data. In the following, we use simple averages and trade-weighted averages (see box below), where the necessary trade data at the 8-digit level comes from the COMEXT trade in goods data.

Simple vs. trade-weighted tariff averages

The simple average of tariffs refers to an arithmetic average of all tariffs that are legally in force. Note that this average can change slightly over time when classifications change (as happened in 2011/2012). A drawback of this measure is, however, that simple averages are upward-biased in the case of very high single ad valorem tariffs that are not applied because of their prohibitive effect on trade for these goods. Hence, one can overcome this issue by weighting tariffs with the respective trade share to get a more accurate picture on the economic importance of tariffs. Trade-weighted averages can also be biased measures of the overall trade restrictiveness of tariffs: a product which is not traded at all because of a prohibitive tariff enters the average with a weight of zero. Also note that average tariffs can change over time because of changing weights even if product-level tariffs do not change.

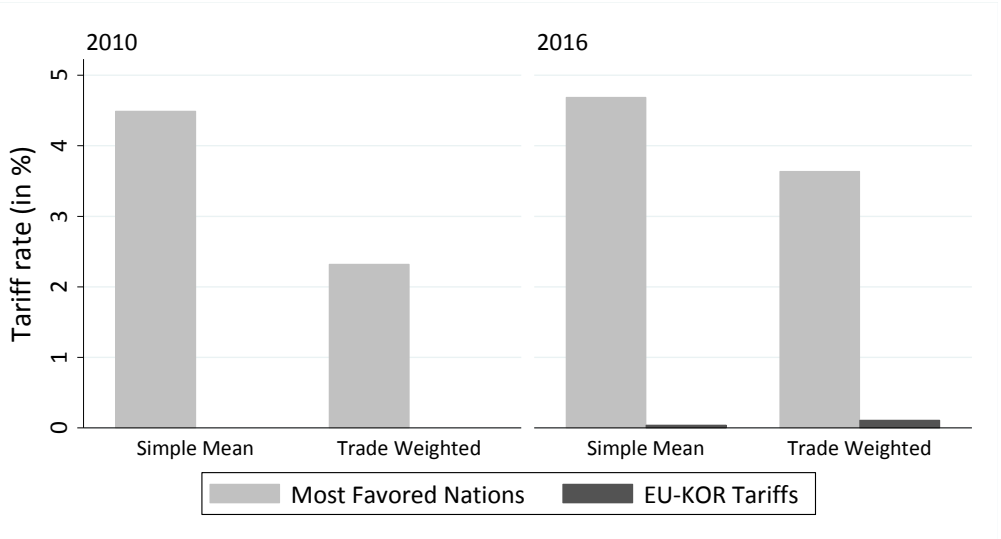
The figure below displays EU tariffs that were applied to MFN countries in 2010 and to Korea and MFN countries in 2016. In 2010 when Korea was treated as any other WTO member, we observe simple averages of MFN tariffs of around 4.5 percent. Applying trade weights, the resulting average tariff is about 2.2 percent; effectively about half the value compared to the simple average. After the start of the provisional application of the FTA, both the simple average and trade-weighted tariffs imposed by the EU on Korean imports were drastically reduced to nearly zero. Note that trade-weighted MFN duties for the post-FTA regime need to be interpreted with the help of a counterfactual: if Korea was not granted preferential tariffs, MFN tariffs would have to apply. With trade weights from 2016, the average tariff burden on Korean exports to the EU would be even higher in 2016 than it was in 2010 because a larger share of Korean exports now falls on goods that were strongly protected prior to the start of the provisional application of the FTA. Note that the simple average of MFN tariffs slightly changes because the goods basket on which it is based includes other products than in 2010.

[23] For further details, refer to https://ec.europa.eu/taxation_customs/business/calculation-customs-duties/what-is-common-customs-tariff/taric_en

[24] At the 6-digit level, products are classified using a 6-digit numerical system, the HS code. The global Harmonized Commodity Description and Coding System, also known as the Harmonized System (HS) of tariff nomenclature is the common international system for classifying goods. The EU's combined nomenclature (CN) is based on the HS but uses additional digits for a more detailed categorisation. With the classification at the 6-digit level we use, there are about 5 400 such products. Products can be aggregated to lower digit levels; the 2-digit level is often referred to as a "sector".

[25] Simple averages are computed because there is no trade data at the 10-digit level.

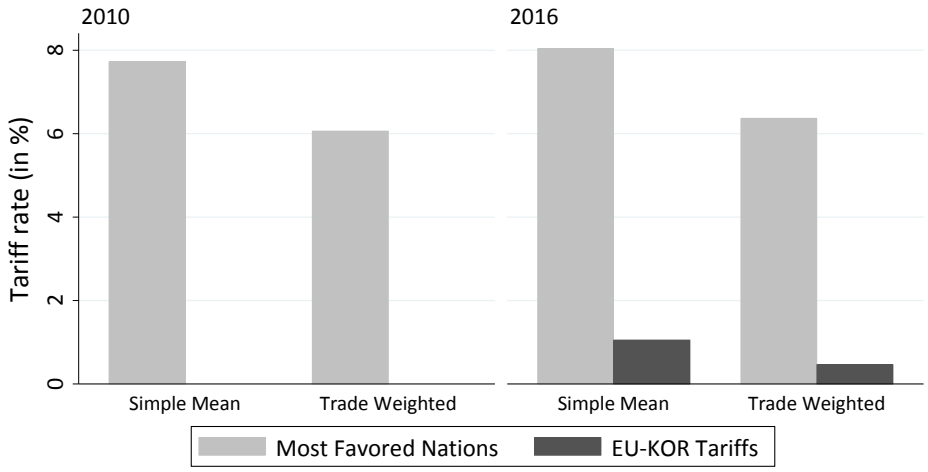
Figure 1: EU tariffs on imports, Korea vs. MFN countries



Source: Own compilation, based on TARIC (2017), COMEXT (2017). Note: The EU-Korea tariffs in the dark grey bars are those imposed by the EU on Korean imports in 2016 (the most recent year for which data are available). Before the start of the provisional application of the EU-Korea FTA, only MFN tariffs were imposed between the two Parties. The difference between MFN and EU-KOR tariffs in 2016 illustrates the effectiveness of the EU-Korea FTA with respect to tariff reduction.

The figure below plots the same tariff composition from the Korean perspective. At first glance, it stands out that Korean average tariffs before the start of the provisional application of the agreement were around 35 percent higher on average than EU tariffs. For 2016, we observe MFN tariffs as unchanged while preferential tariffs fell to 1 percent and less than 0.5 percent, respectively, depending on whether simple averages or trade-weighted averages are examined. Hence, the absolute tariff reduction was quite substantial in both the EU and Korea.

Figure 2: Korean tariffs on imports, EU vs. MFN countries

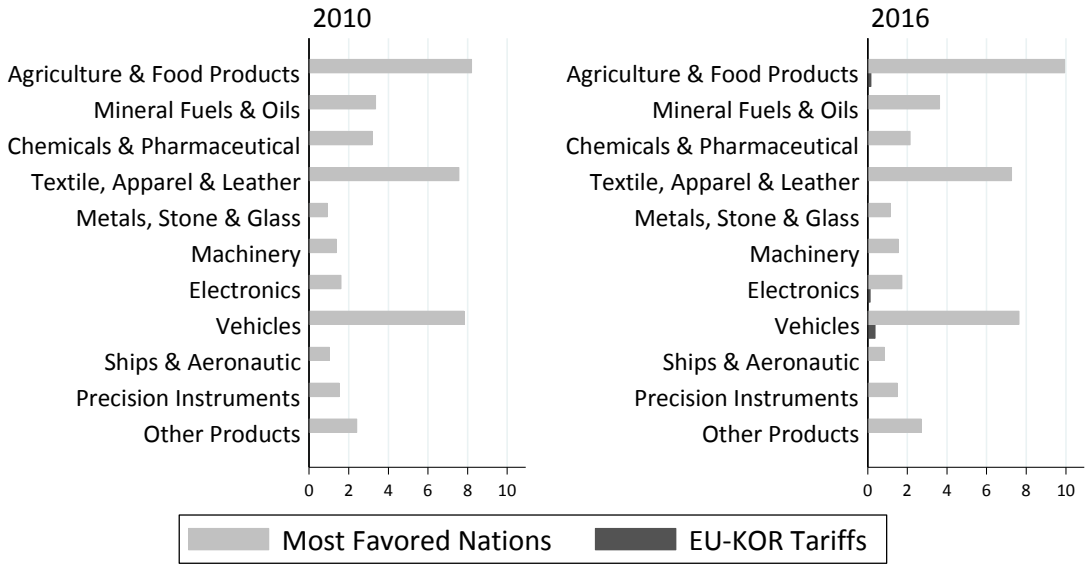


Source: Own compilation, based on TARIC (2017), COMEXT (2017). Note: The EU-Korea tariffs in the dark grey bars are those imposed by the EU on Korean imports in 2016 (the most recent year for which data are available). Before the start of the provisional application of the EU-Korea FTA, only MFN tariffs were imposed between the two Parties. The difference between MFN and EU-KOR tariffs in 2016 illustrates the effectiveness of the EU-Korea FTA with respect to tariff reduction.

However, one needs to keep in mind that in 2016, five years after the start of the provisional application of the FTA, the tariff reduction schedule was not yet fully implemented. About 55 percent of the overall tariff burden faced by EU exporters in Korea in 2010 (EUR 1.6 billion) disappeared in 2011. For some sensitive products such as cars with medium or large engines, the phase-in has already finished as of 2014. For other products such as cars with small engines, the phase-in of EU duty reductions ended in 2016. For most sensitive agricultural products, a phase-in period of 10 years is foreseen; however, for some other agricultural products, the phase-in will take 20 years or more. Overall, as of 2016, the phase-in of tariff reductions for EU imports from Korea has gone further than the phase-in of tariff reductions for EU exports to Korea. This can be seen through the difference in trade-weighted import tariffs in Figure 4 and Figure 4 above.

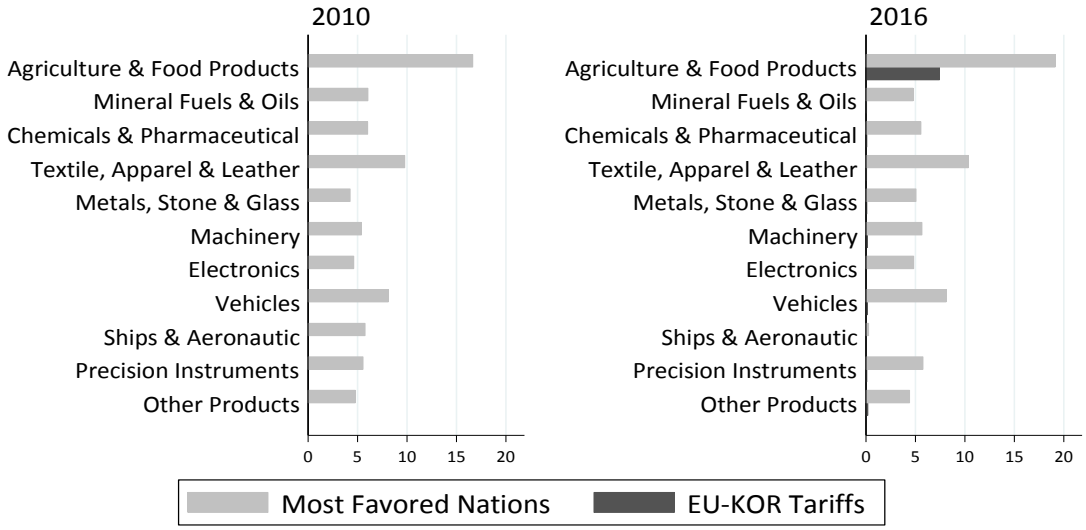
Figure 3 and Figure 4 show how average tariffs vary across industries and compare again MFN and EU-Korea preferential tariffs for the post-FTA regime. Figure 3 refers to EU tariffs, whereas Figure 4 illustrates those of Korea. For the sake of simplicity, and because they are economically more meaningful, only trade-weighted averages are presented below. Figure 3 mainly emphasises the fact that the EU lowered its preferential tariffs to Korea to almost zero in almost all sectors (and they are therefore hardly visible in the 2016 figure). However, it is worth mentioning that the automotive, electronics, and agrifood sectors still enjoyed some protection in 2016, albeit to a lesser extent.

Figure 3: European import tariffs per sector, MFN vs. preferential tariffs



Source: Own compilation, based on TARIC (2017), COMEXT (2017). Note: Figures show trade-weighted tariffs. The EU-Korea tariffs in the dark grey bars are those imposed by the EU on Korean imports in 2016 (the most recent year for which data are available). Before the start of the provisional application of the EU-Korea FTA, only MFN tariffs were imposed between the two Parties. The difference between MFN and EU-KOR tariffs in 2016 illustrates the effectiveness of the EU-Korea FTA with respect to tariff reduction. Figure 4 illustrates the sectoral tariffs from the Korean perspective. The striking difference to preferential EU tariffs in 2016 is that the agrifood industry is still subject to some duties of around 7 percent. Some duties also exist in the machinery and automotive industries, albeit to a negligible extent.

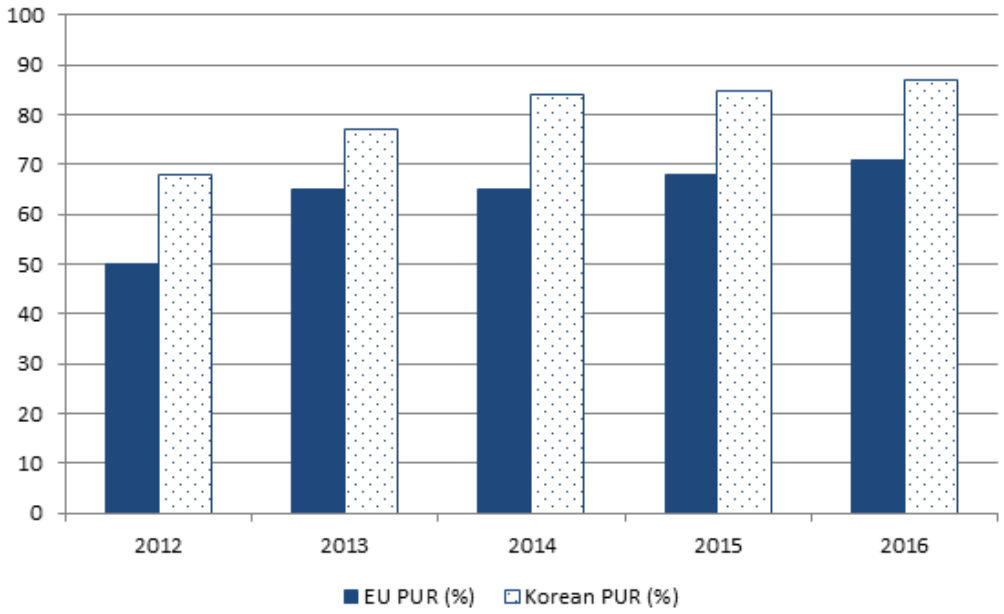
Figure 4: Korean import tariffs per sector, MFN vs. preferential tariffs



Source: Own compilation, based on TARIC (2017), COMEXT (2017). Note: Figures show trade-weighted tariffs. The EU-Korea tariffs in the dark grey bars are those imposed by the EU on Korean imports in 2016 (the most recent year for which data are available). Before the start of the provisional application of the EU-Korea FTA, only MFN tariffs were imposed between the two Parties. The difference between MFN and EU-KOR tariffs in 2016 illustrates the effectiveness of the EU-Korea FTA with respect to tariff reduction.

Exporters have made extensive use of the tariff savings offered in the EU-Korea FTA. Since utilisation of tariff preferences requires certain requirements to be met (see the case study on the use of tariff preferences in section 10.7 below), it cannot be expected that all firms use these preferences immediately at the start of the provisional application of the agreement. Rather, the share of exports making use of the preferences (the preference utilisation rate (PUR)) should gradually increase over time. Figure 5 shows that this is what has happened since 2011. The EU PUR increased from 50 percent in 2012 to 66 percent in 2013, remaining stable from 2013-2015 before increasing to 71 percent in 2016. In contrast, the Korean PUR increased steadily from 68 percent in 2012 to 87 percent in 2016. A further analysis of reasons for the differing use of tariff preferences under the agreement in the EU and Korea is provided in the aforementioned case study in section 10.7.

Figure 5: Preference utilisation rates in Korea and the EU (%)



Sources: Own compilation, based on the EU-Korea FTA annual reports, 2013-2016.

To conclude, the FTA has been very successful in reducing applied tariffs from 2010 to 2014. Moreover, as initial tariffs were higher in Korea, the liberalisation effort on the Korean side is greater. Data suggest that in 2014, both Parties still protected some of their industries, most importantly the automotive sector. This protection has disappeared to a significant degree as of 2017. The gradual phase-in of tariff reductions is on track and will continue into the next years for the few remaining sensitive products.

5.2. Evolution of trade between the EU and Korea

5.2.1. Evolution of trade in goods between the EU and Korea

The key findings of the evaluation are that:

- Exports of goods from the EU to Korea have increased by about 60 percent from the period before the start of the provisional application of the FTA to the period after. Due to the FTA, exports to Korea have strongly outperformed exports to other regional trade partners of the EU (Japan, Taiwan). Exports increased in most industries.
- Korean exports to the EU needed slightly more time to pick up but have outperformed exports to other regions since 2011. The relative importance of Korea as an export market for EU producers has gone up from 2.0 percent to 2.5 percent after the agreement; its relative importance as a source country for imports displays similar dynamics.
- Since the start of the provisional application of the FTA, the conventional bilateral EU trade deficit in goods with Korea has turned into a surplus.
- Total EU exports to Korea have increased both because exporters sell higher quantities and because they sell at higher prices, signalling an upgrading of quality. A similar phenomenon can be observed for Korean exports to the EU.

- **Both the number of products imported from Korea and the number of products exported to Korea increased significantly after 2011, suggesting gains in product availability in both the EU and Korea.**

The subsequent section describes the evolution of bilateral trade in goods between the EU and Korea from 2006 to 2016 and also highlights sectoral differences in this evolution. For the purpose of a before/after comparison of the EU-Korea FTA, the chosen time frame is divided into two periods, one before the start of the provisional application of the FTA and one thereafter. In the figures presented below, we draw a vertical line between the end of the second quarter of 2011 and the beginning of the third quarter to mark the start of the provisional application of the agreement on July 1st 2011. Besides this before/after comparison, we also contrast the evolution of trade between the EU and Korea with trade between the EU (and Korea) and other trade partners. This double comparison is a first step towards the identification of a causal effect of the trade agreement on trade flows. By looking at other trade partners, one obtains a "control group", i.e., countries that did not sign a trade agreement at the same time. The difference between the change over time in the "treated" pair (EU-Korea) and the change over time in the control group can be interpreted as a first indication of a causal effect. Clearly, to fully account for other determinants of trade flows with the objective to isolate the effect of the agreement, a more comprehensive econometric analysis is needed; this is done in sections 5.4 and 5.5.

Data on trade in goods were accessed through the COMEXT and the UN-Comtrade databases. The former is managed by Eurostat, the official statistical office of the European Commission, and is assembled on the basis of Member States' national statistics, which are compiled using common and largely harmonised rules. Data for the EU28 and all its current Member States (i.e. also those which joined later) is available from 1999 onwards. Because of the high product-resolution (CN8) and frequency (monthly data), this source was used whenever possible both to study bilateral trade between the EU, its Member States and Korea and to compare it with third countries' performances. However, COMEXT only contains data on trade flows involving a restricted number of countries (EU Member States and—for some datasets—geographically close countries). Thus, the UN-Comtrade database was used in order to have a closer look at the Korean perspective and in particular to benchmark the performance of EU exports vs. competitors' exports to Korea. This database is the United Nations' official source for trade data. It has a lower product-resolution (HS6) and contains only annual data for the period of interest. The similarities between the trade figures obtained from the two sources strengthen our confidence in the results.

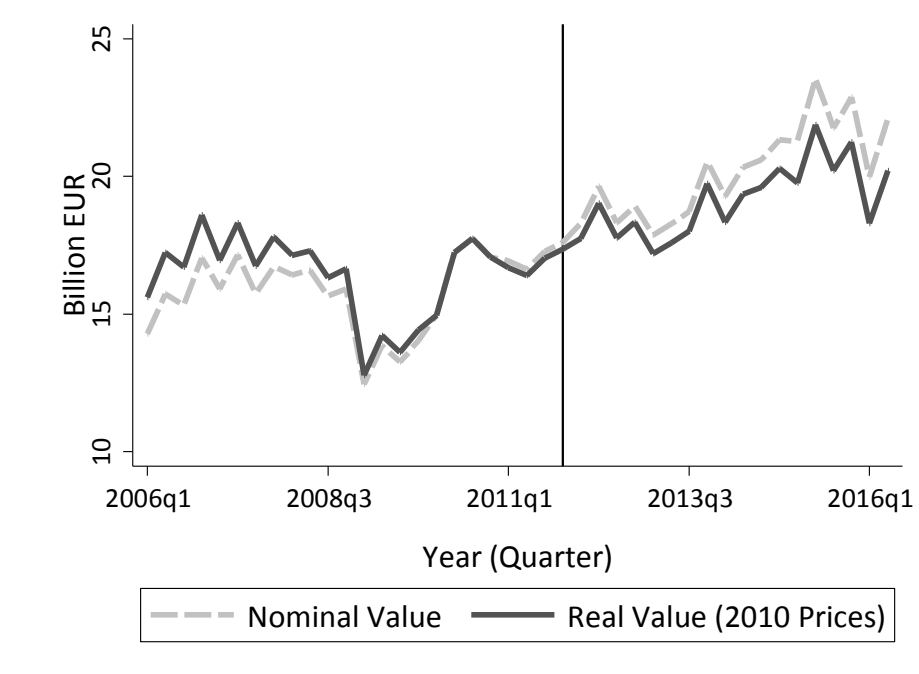
Description of trade flows

Note that trade flows report the sum of trade activities within a certain time period (monthly, quarterly, semi-annually, or annually). Different periodicities are used in the figures in order to best express the underlying data while illustrating them in a clear way. Note also that seasonal effects might cause some cyclical up and down movements within a year. Current prices refer to the actual prices at which the goods were traded and are illustrated by the light grey line (nominal value). To take price changes, e.g. inflation, into account, trade flows are deflated by the respective GDP deflator[26] (EU or Korea) and are illustrated by the dark grey line (real value). As prices typically increase over time, one would observe increases in trade statistics that are not driven by increased trade volumes, but rather by inflation. The deflation is only done for the first four figures; the reason is, firstly, that the GDP deflator is a quite rough measure for import and export prices; and, secondly, that the dynamics of the deflated trade flows do not differ structurally from the non-deflated ones.

Figure 6 illustrates the trade volume, which is defined as the sum of total imports of the EU from Korea and total exports from the EU to Korea, in both current and constant 2010 prices (see box above). Over the entire period, the trade volume increased from approximately EUR 14.3 billion per quarter to more than EUR 20 billion in constant prices corresponding to an overall increase of roughly 40 percent. Beginning in 2006, the quarterly trade volume remains at a constant level until a sharp drop during the global financial crisis in 2008 and 2009, which is followed by a quick recovery to the pre-crisis trade level. Coinciding with the start of the provisional application of the FTA, an upwards trend in the trade volume stands out. Thus, at first glance, the FTA seems indeed to have had positive effects on bilateral trade between the EU and Korea. The quarterly average of price-adjusted trade flows stood at about EUR 16 billion per quarter before the start of the provisional application of the agreement and increased to an average of about EUR 20 billion per quarter. This would suggest an increase in trade of about 25 percent between the pre- and the post-FTA averages.

[26] The GDP deflator is a measure of price level with respect to a specific base year. For an example of how the GDP deflator is calculated, see Eurostat: http://ec.europa.eu/eurostat/en/web/products-datasets/-/TEINA110

Figure 6: EU-Korea trade volume (quarterly, EUR billion)

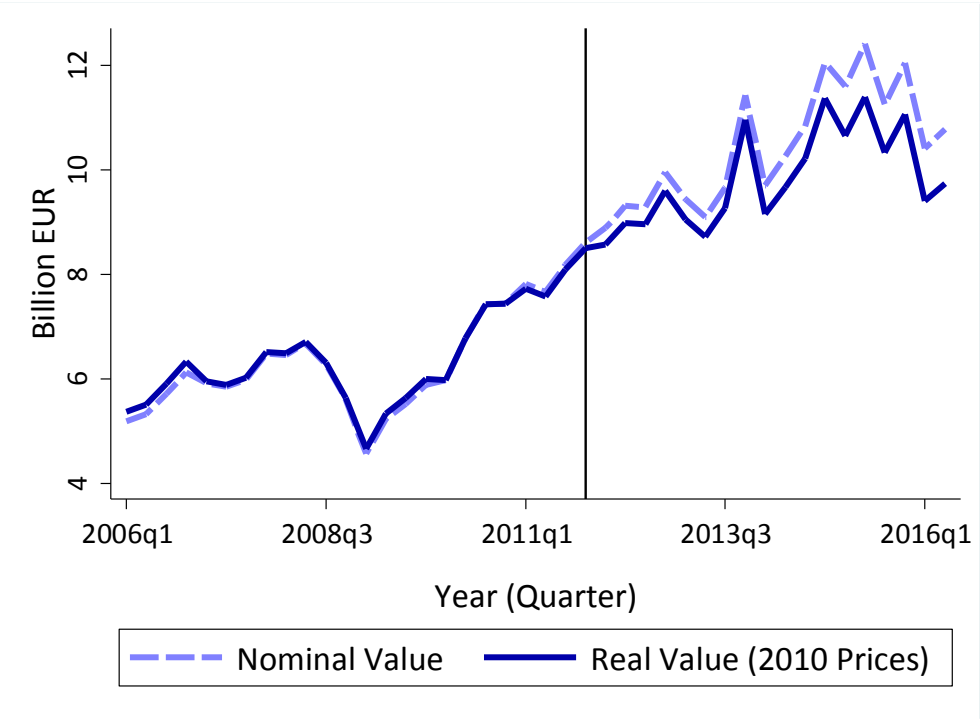


Sources: Own compilation, based on COMEXT (2017) and OECD (2016). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

Figure 7 and Figure 8 disentangle the aggregate effects and show EU exports and EU imports separately. Quarterly EU exports increased steadily over time but more significantly for the time after the financial crisis. Over the whole period, the real value of quarterly exports more than doubled from an initial value of EUR 4.6 billion to approximately EUR 10.4 billion. The pre-FTA average was about EUR 7 billion, while the post-FTA average is around EUR 11 billion. A first inspection of the data, therefore, suggests that exports have increased by some 60 percent between these two periods. The figure suggests that export behaviour could have been affected by anticipation effects,[27] as exports moved beyond pre-crisis levels before the start of the provisional application of the agreement.

[27] Anticipation effects refer to an increase in trade that occurs between two partners in the period before an FTA enters into force. For an analysis of anticipation effects in the context of the EU-Korea FTA conducted by DG TRADE, see: http://trade.ec.europa.eu/doclib/docs/2015/july/tradoc_153601.pdf

Figure 7: EU exports to Korea (quarterly, EUR billion)

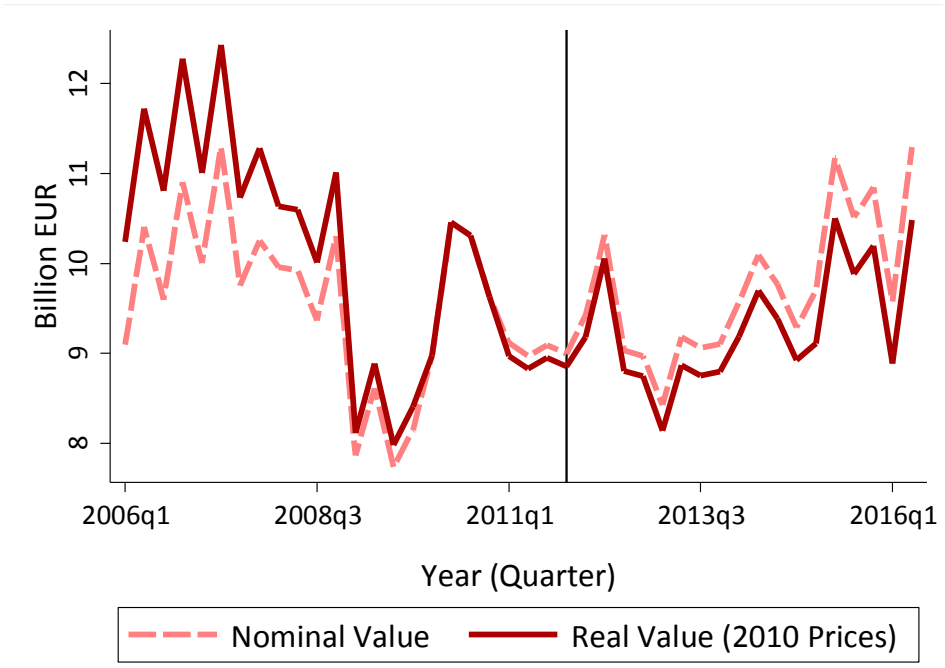


Sources: Own compilation, based on COMEXT (2017) and OECD (2016). Note: The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

Imports, however, behaved differently. First, quarterly flows are more volatile and already followed a decreasing trend by mid-2007. Even the recovery at the end of 2009 was not sustainable. After the FTA came into effect, imports remained more or less unchanged for two years and then began to rise again. Interestingly, the most recent quarterly imports are roughly as high as those in 2006 in real terms. Graphically, the dynamics of imports looks U-shaped, with the minimum (smoothing out the effects of the world economic crisis) close to the starting point of the FTA. So, while exports seemed to be on an increasing trend already in 2011 (probably due to anticipation effects), the start of the provisional application of the FTA marks a turnaround for imports.[28]

[28] In support of this point, 19 respondents to the open public consultation indicated that access to the Korean market for EU goods has either very much improved or slightly improved since the start of the provisional application of the EU-Korea FTA in 2011, while 15 respondents indicated that access to the EU market for Korean goods has either very much improved or slightly improved since the start of the provisional application of the FTA. (See stakeholder consultation report for more detail.)

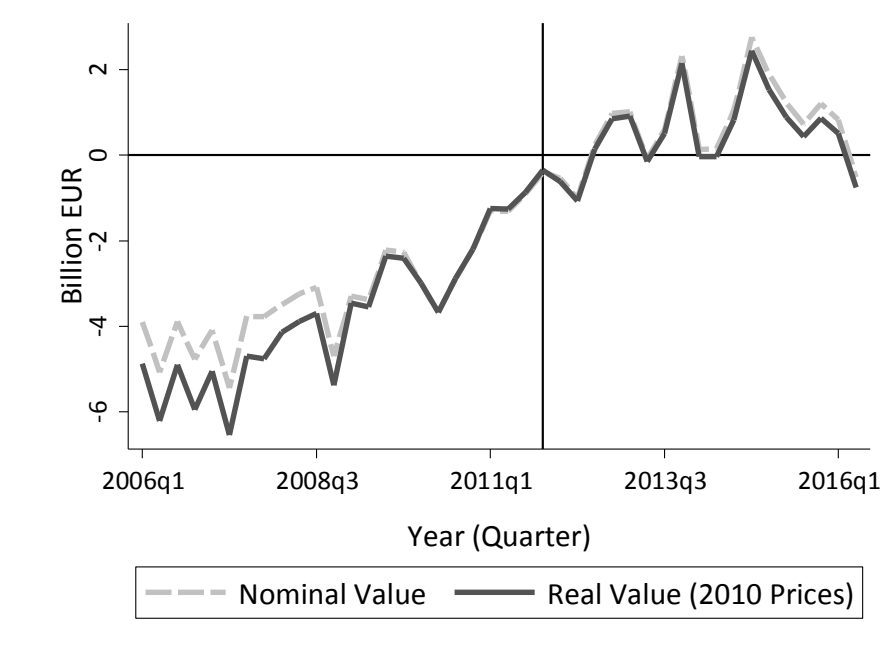
Figure 8: EU imports from Korea (quarterly, EUR billion)



Source: Own compilation, based on COMEXT (2017), OECD (2016). Note: The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

The figure below describes the quarterly trade balance between the EU and Korea. The trade balance here is defined as the EU exports to Korea minus EU imports from Korea; hence, a negative trade balance corresponds to a trade deficit for the EU (and a surplus for Korea). Clearly, its evolution reflects the different dynamics visible for exports and imports in Figure 7 and Figure 8.

Figure 9: EU-Korea trade balance (quarterly, EUR billion)



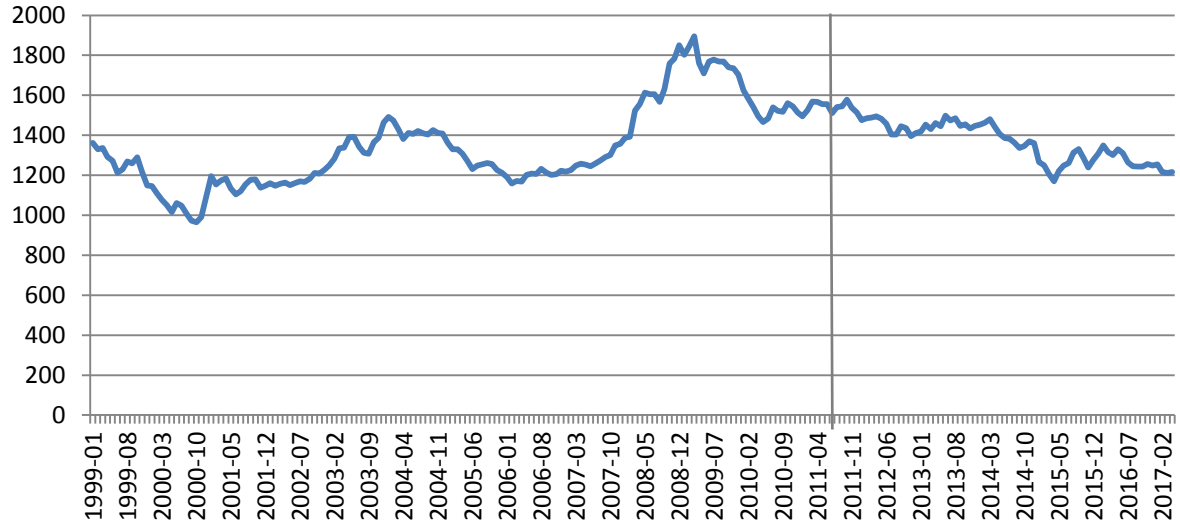
Source: Own compilation, based on COMEXT (2017), OECD (2016). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

In 2006 and the subsequent years, the EU ran a persistent trade deficit with Korea which reduced in the aftermath of the financial crisis. This upward trend continued after the start of the provisional application of the FTA and turned into a trade surplus in 2012. In real terms, the quarterly trade balance varied from EUR -6 billion to more than EUR 2 billion. For the most recent data, we observe EU-Korean trade to be approximately balanced.

The aforementioned trade statistics report trade values denoted in EUR only. However, for a clear picture, one needs to keep in mind that the exchange rate between the euro and the Korean won (KRW) is not fixed. Therefore, trade dynamics highly depend on the exchange rate dynamics of the currencies in which they are denoted. Figure 10 plots the exchange rate between the EUR and the KRW on monthly basis. A significant appreciation of the euro against the won occurred between 2006 and 2009, peaking at a 50 percent higher exchange rate compared to the initial level. In contrast, since 2009 the euro structurally devaluated against the won, and recently reached the 2006 level again. During the appreciation period, one would expect sluggish export growth and rapid import growth; during the depreciation period, the opposite pattern should hold.

Indeed, this is what Figure 7 and Figure 8 to some extent show. Note, however, that the exchange rate has moved from 1 200 won per euro in the second half of 1999 up and down again to about the same value at the beginning of 2017. So, over the entire period under investigation, currency effects should be neutral. Sections 5.4 and 5.5 provide an econometric analysis for the (isolated) impact of the FTA. Nonetheless, below we show the evolution of trade when measured in won relative to the situation when they are measured in euro. This makes clear that the broad patterns discovered in Figure 7 and Figure 8 do not depend on the choice of accounting unit.

Figure 10: Exchange rate EUR/KRW over time



Source: Own compilation, based on Deutsche Bundesbank (1999-01 to 2017-04). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

The figures below replicate the evolution of EU exports and imports but illustrate the respective trade flows in both currencies.[29] For the sake of comparison, exports and imports are normalised to 100 using the second quarter of 2011 as a basis (see box below).

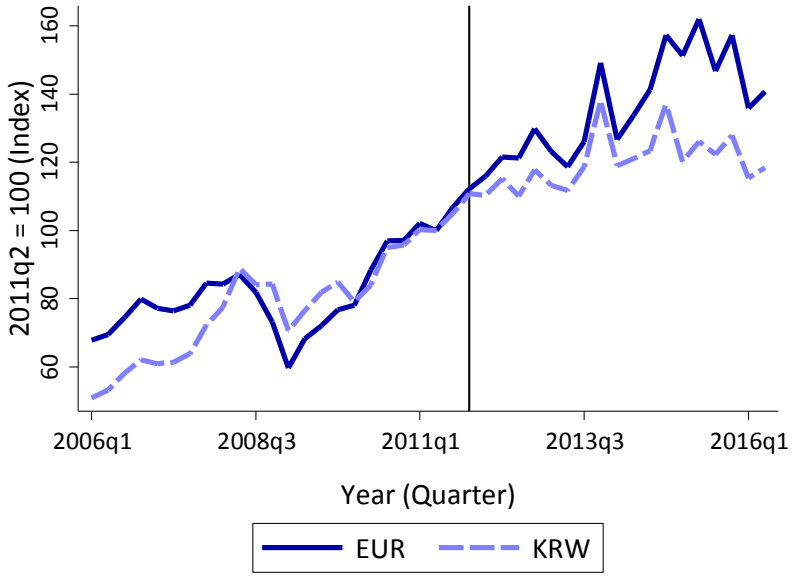
Index values

Indices are used to make time series, e.g. trade flows, comparable even if these are denoted in different units or have different magnitudes. By fixing one data point, all other data points need to be interpreted relative to this fixed point. For instance, an index value of 120 describes a 20 percent increase relative to the level that is normalised to 100. For clarity, as a fixed point, the first quarter/second semester 2011 or the whole year 2011 are chosen depending on the periodicity of the data.

The two following figures emphasise how exchange rate effects influence these kinds of descriptive statistics. Hence, bilateral trade flows denoted in just one currency need to be dealt with cautiously.

[29] Note that for simplicity, only nominal values are reported.

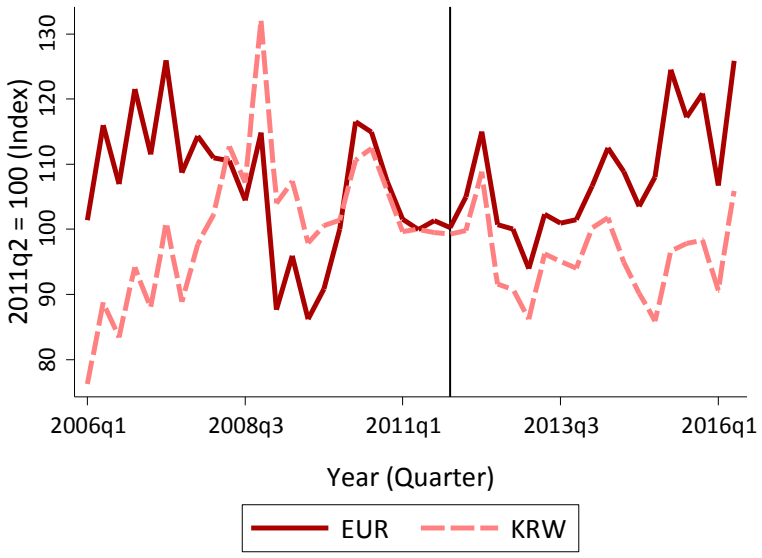
Figure 11: EU exports to Korea denoted in EUR and KRW (quarterly, 2011q2=100)



Source: Own compilation, based on COMEXT (2017), Deutsche Bundesbank (2016). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

EU import statistics of goods from Korea change structurally when denoted in KRW (see the next figure). There was a very sizeable increase in imports from Korea before the financial crisis followed by a long period of relatively moderate changes. For the whole period of observation, the nominal change in imports from Korea denoted in KRW corresponds to an increase of more than 40 percent.

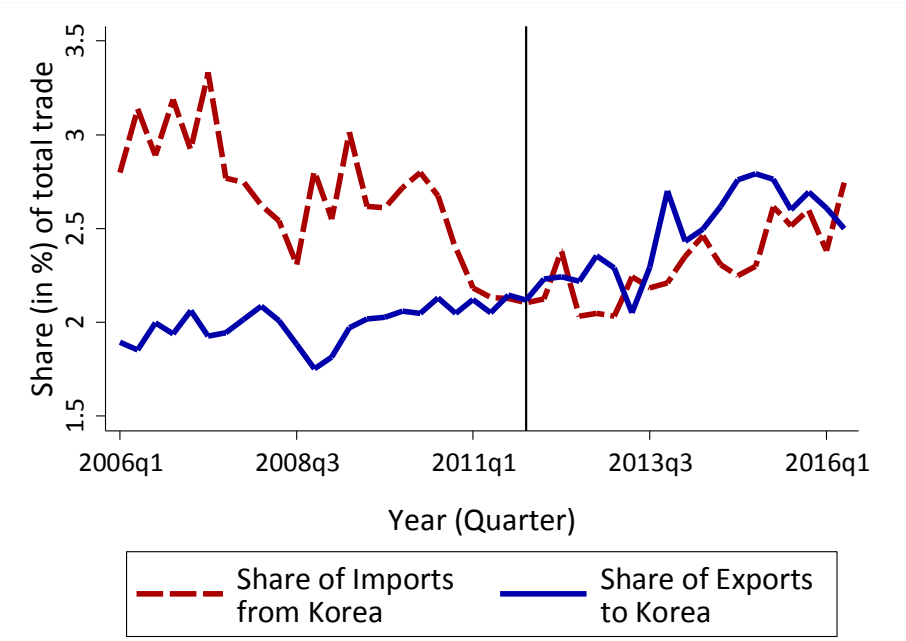
Figure 12: EU imports from Korea denoted in EUR and KRW (quarterly, 2011q2=100)



Source: Own compilation, based on COMEXT (2017), Deutsche Bundesbank (2016). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

Another aspect worth analysing is the relative importance of Korea as trade partner for the EU. Here, we set EU exports to and imports from Korea in comparison to total exports and imports, respectively. Figure 13 visualises the import share from Korea (red line) and the export share to Korea (blue line). We observe declining import shares from roughly 3 percent to 2 percent for the pre-FTA period. This negative trend bottomed out in 2011 and recently recovered almost to its initial level. Exports to Korea remained constant at 2 percent for the pre-FTA period, and increased afterwards to 2.5 percent. Thus, the importance of Korea as source of imports has slightly declined while its importance as export destination for the EU has risen modestly. Considering the size of the Korean economy and its geographical distance from Europe, this modest increase is still commendable. The same relationship from the perspective of Korea is shown in Annex II.

Figure 13: Share of EU exports to and imports from Korea (% of total)



Source: Own compilation, based on COMEXT (2017). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

Figure 6 to Figure 13 showed graphically the evolution of trade in goods between Korea and the EU over time. They strongly suggest that (i) the FTA had sizeable positive effects on trade flows between the EU and Korea, (ii) currency effects may explain some of this pattern, but the econometric analysis (below) does not show that this is the case, and (iii) Korea and the EU have become relatively more important to each other as trade partners, reversing a declining trend prior to the FTA.

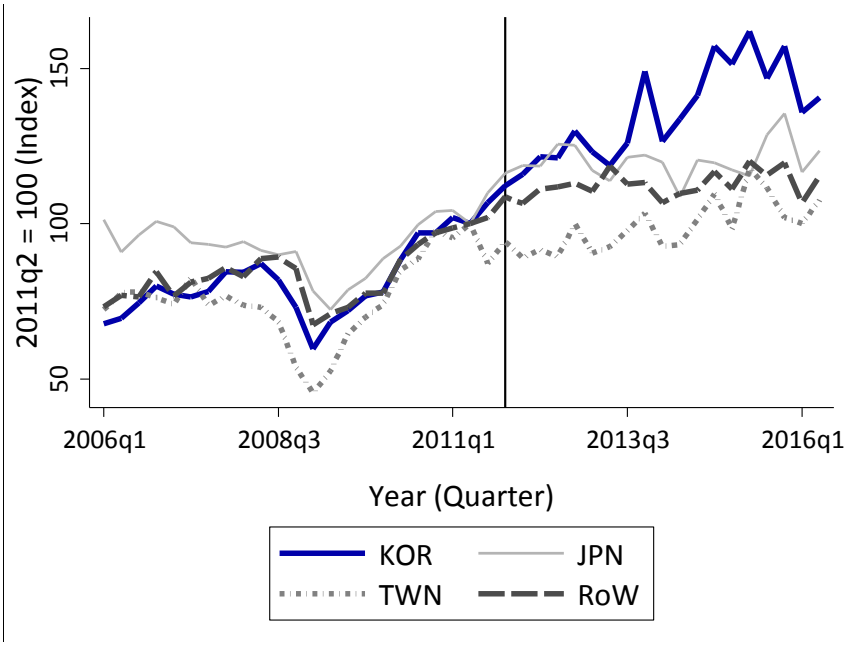
While the figures show clear trends in the data, a causal interpretation cannot be easily determined. Identifying a causal effect would require a comparison of a world without a free trade agreement between the EU and Korea with a world with an FTA; of course, we cannot observe the former counterfactual world. However, we can compare the trade dynamics between the EU and Korea with trade between the EU and other partners that do not have an FTA with the EU. If these partner countries are similar to Korea, one could isolate the effect of the EU-Korea FTA on trade flows (see the box below).

Difference-in-differences

Difference-in-differences is a widely used statistical method for the identification of causal effects of a specific policy treatment, which is in our case the EU-Korea FTA. Often the *first differences*, in our example the difference between pre-FTA and post-FTA trade growth rates, neglect the fact that variables other than the FTA may have caused the reported effect.[30] However, one can define a control group for which the treatment has not occurred, e.g. a group that has not concluded an FTA with the EU during the same time. This assumes that all other variables that influence trade remain the same. Hence, by calculating the *difference between the first differences of the treatment group and the control group*, the causal effect induced by the treatment is isolated.

The chosen countries for comparison (the control group in the figures below) are Japan and Taiwan, two economies that are relatively similar to Korea in terms of industry structure, and geographical and cultural distance to Europe.[31] From the Korean perspective, the US is chosen as a control for the EU (see Annex II). The US is similar to the EU in economic size and cultural distance. However, there is caveat to be made: similar to the EU-Korea FTA, the US and Korea also signed a Free Trade Agreement (KORUS), which became effective in 2012. Hence, the difference-in-differences results from the Korean perspective need to be interpreted as differences between the two FTAs. The aggregate "rest of the world" (RoW) serves as an additional control.

Figure 14: EU exports to different destinations (quarterly, 2011q2=100)



Source: Own compilation, based on COMEXT (2017). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

The figure above depicts the evolution of EU exports to Korea in comparison to EU exports to Japan, Taiwan and RoW.[32] Again, trade values are normalised to 100 for all

[30] For example, one can easily imagine that trade simply increases by following a specific upward time trend or because of increased world demand.

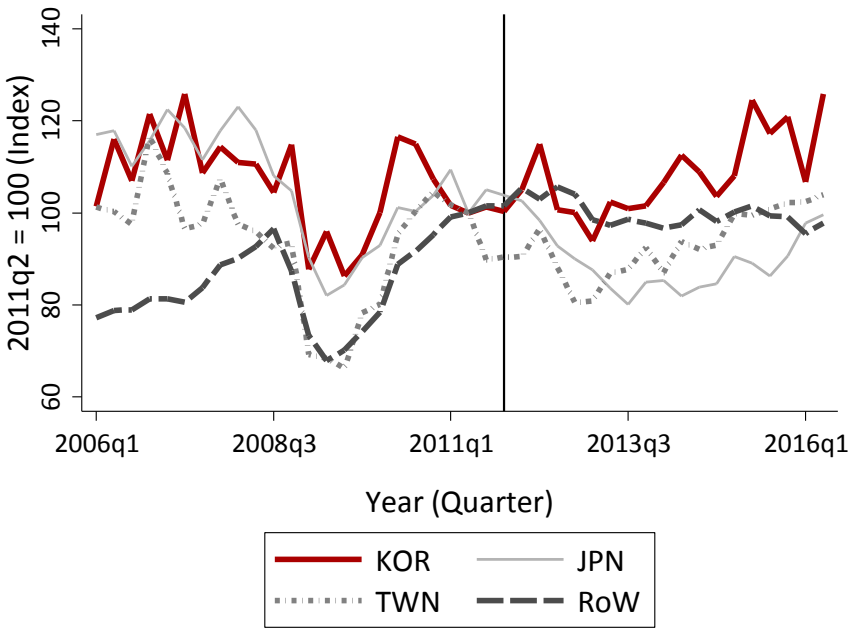
[31] A more rigorous comparison with a "control group" will be conducted in the econometric analysis in this report. For a full counterfactual analysis, refer to the simulation model.

[32] "Rest of the world" includes all export partners of the EU except Korea.

export flows in Q2 2011, which is the last quarter before the start of the provisional application of the EU-Korea FTA became effective. For the pre-FTA period, Korea was the fastest growing export destination for EU exports, but did not significantly outperform exports to Taiwan or RoW. Surprisingly, exports to Japan did not grow at all during the pre-FTA period. Evaluating the post-FTA period, we observe a strong increase of exports to Korea, which perfectly corresponds to export growth to Japan until 2013. Subsequently, for the following three years, only exports to Korea continued to rise on trend and end with a total increase of over 40 percent compared to base level. For the other countries, the increase during the same time ranges between 10 and 20 percent. A feature of this difference-in-differences approach is that difference of export growth to Korea relative to export growth to the countries of comparison can be interpreted as the effect causally induced by the FTA. Hence, we can attribute to the FTA a positive effect on EU exports to Korea.

Similar to the figure above for exports, the same analysis is performed for EU imports and is shown in the figure below. While for the pre-FTA period the import evolution from Korea was in line with imports from Japan and Taiwan, Korean imports grew noticeably faster than those of the reference group in the post-FTA period. EU imports from Korea increased by more than 25 percent, whereas imports from reference countries more or less stagnated. Imports from RoW increased the most during the pre-FTA period; however, they performed the worst in the post-FTA phase. Therefore, similarly to EU exports, we observe a positive impact of the FTA on EU imports from Korea.

Figure 15: EU imports per country of origin (quarterly, 2011q2=100)



Source: Own compilation, based on COMEXT (2017). The vertical line marks the start of the provisional application of the EU-Korea FTA (July 1st, 2011).

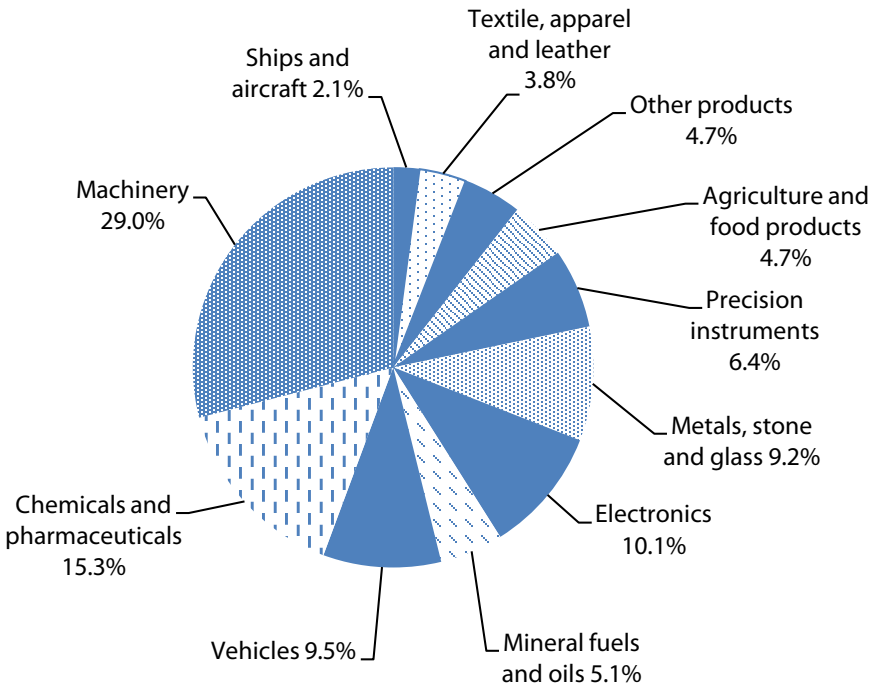
Symmetrically to the EU perspective, the same relationships from the two previous figures are shown from the Korean perspective in Annex II. A comparison between the EU-Korea FTA and the KORUS agreement can also be made in Figure 157 (in Annex II), which shows that EU exports to Korea grew more rapidly than US exports to Korea, while the opposite is true for imports—imports of Korean goods by the US increased more rapidly than imports on the part of the EU.

Sectoral Analysis

In this section, we discuss the evolution of sectoral exports and imports in order to provide better insights on which industries benefited most from the FTA. For this purpose, we have defined 10 sectors, plus the category "other products" that comprises all goods that could not be assigned to the other sectors.

Figure 16 and Figure 17 depict EU export composition to Korea based on 11 sectors before and after the start of the provisional application of the FTA.[33] Despite a decrease in relative importance, machinery is still the EU's most important export sector (with 22.4 percent of total goods exports in 2015). The share of the vehicles sector has nearly doubled from about 9.5 percent to 17.7 percent and is now ranked second instead of third in 2010. Chemicals and pharmaceuticals fell behind vehicles and lost 3.5 percentage points of its share. A similar decrease occurred for electronics, which fell from rank 3 to 5. Mineral fuels and oils improved their share from 5.1 percent to 9.6 and are now the EU's fourth most important export sector to Korea.

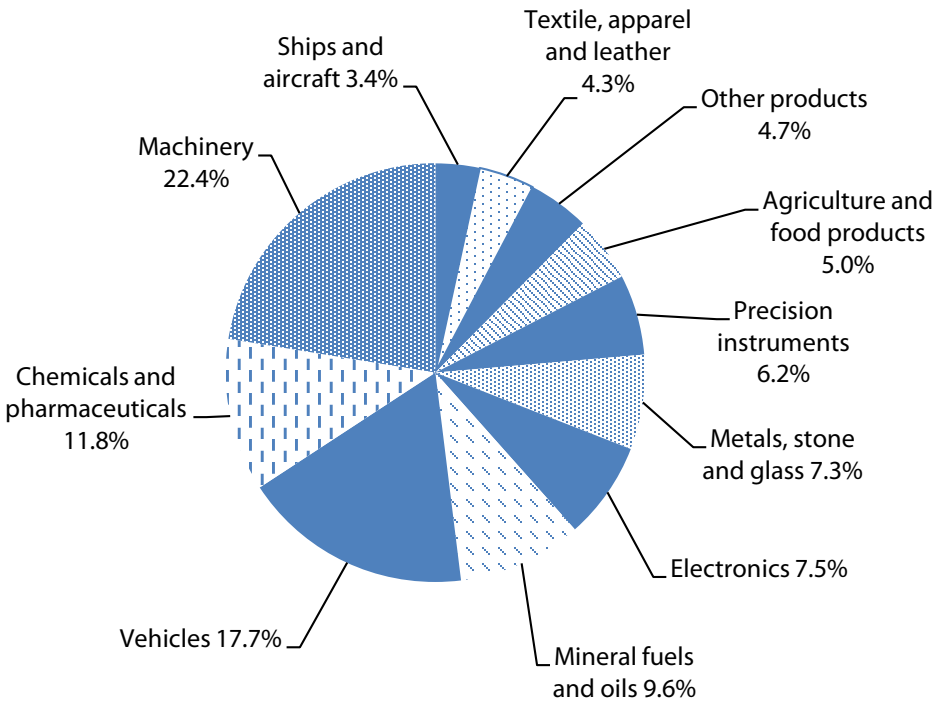
Figure 16: Composition of EU goods exports to Korea, 2010



Source: Own compilation, based on COMEXT (2017).

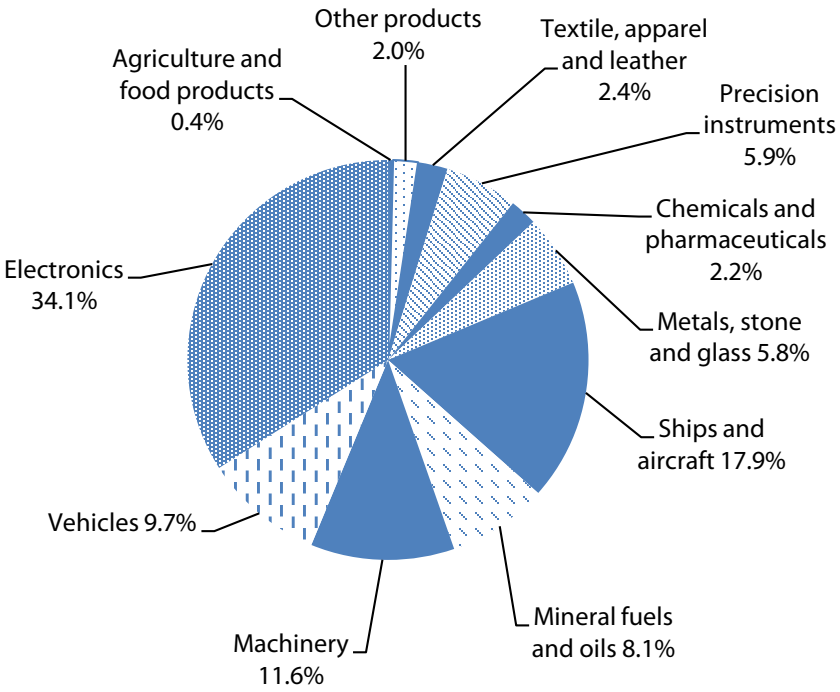
[33] 2010 is chosen as reference year for before the start of the provisional application of the FTA, and 2015 as the reference year for the post-FTA period.

Figure 17: Composition of EU goods exports to Korea, 2015



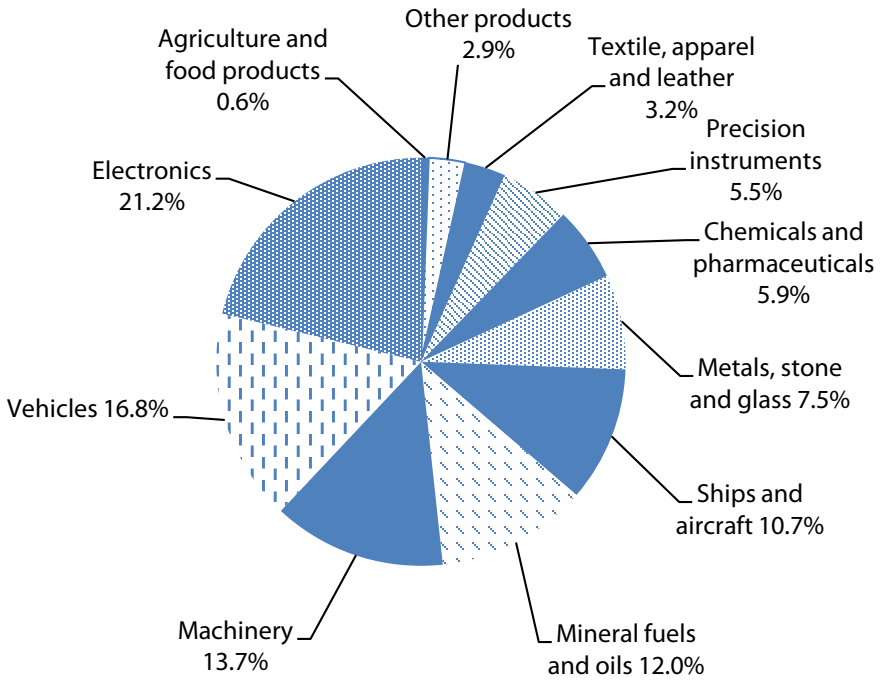
Source: Own compilation, based on COMEXT (2017).

Figure 18: Composition of EU goods imports from Korea, 2010



Source: Own compilation, based on COMEXT (2017).

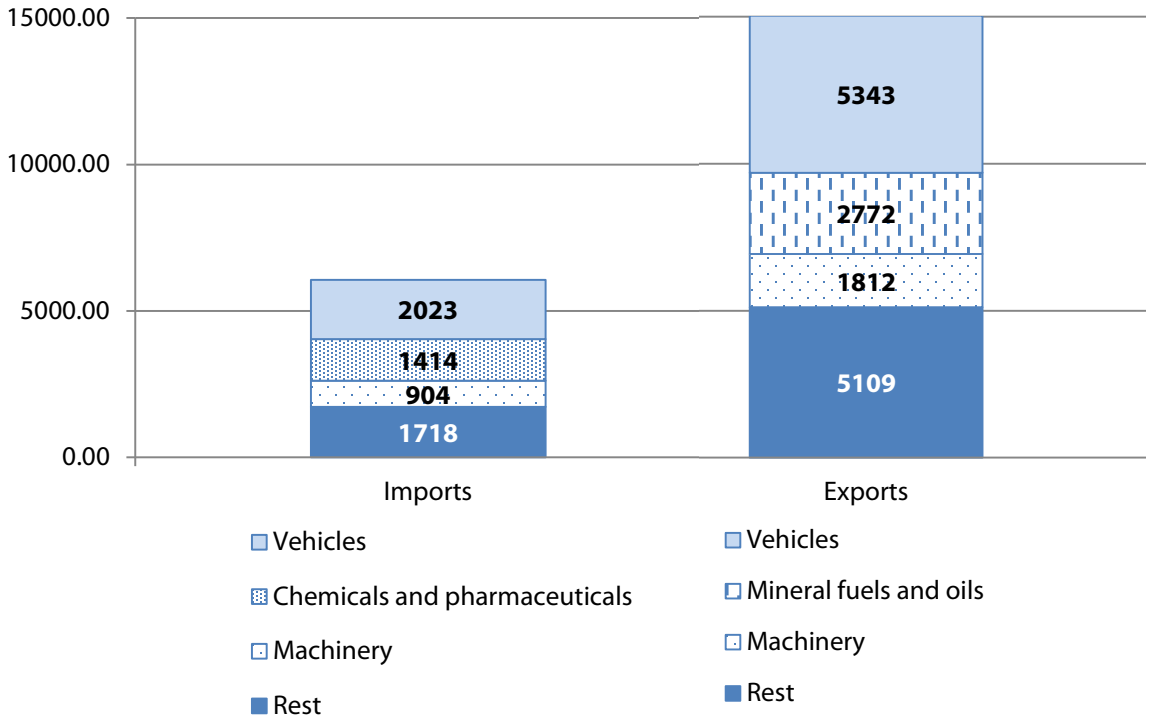
Figure 19: Composition of EU goods imports from Korea, 2015



Source: Own compilation, based on COMEXT (2017).

Changes have also occurred in the composition of EU imports from Korea as illustrated by Figure 18 and Figure 19. Whereas electronics was by far the most important import sector with a share of over 34 percent in 2010, its relevance has shrunk to approximately 21 percent in 2015. Vehicles, by contrast, have improved from roughly 10 to almost 17 percent and are now Korea's second most important export sector. Machinery increased only slightly and remained at rank three. The ships and aircraft industry lost its share notably and fell from 17.9 to 10.7 percent. However, this does not necessarily mean that imports of this industry decreased in absolute terms. Possibly, they simply did not grow as fast as other industries, e.g. the automotive industry. As a general remark, we observe for both EU export and import composition a slight trend towards diversification. This means that the sector proportions are more balanced and total exports and imports rely less on their largest sectors.

Figure 20: Fastest growing goods sectors (in absolute terms) between 2011 and 2015, EUR million



Source: Own compilation, based on COMEXT (2017).

As already mentioned, the compositions of exports and imports depicted in Figure 16 through Figure 19 do not reveal any absolute changes in the respective industries. These changes are presented in Figure 20, which illustrates the three sectors with the highest absolute growth in the post-FTA regime.[34] Note that the depicted values above show the absolute change in annualised trade flows in 2015 over the 2011 levels. For a sectoral analysis, annualised data are usually preferred over quarterly data because seasonality plays a more important role. Hence, annual data are a better measure for this purpose. Supporting the argument made above that the EU trade balance has improved over time, the fastest growing import sectors grew by only one-third compared to the fastest growing export sectors.[35] Interestingly, the most important growth industries are vehicles on both the EU export and import side. EU imports of machinery have increased by EUR 0.9 billion, while exports in the same sector have increased by twice as much. Hence, we conclude that intra-industry trade became more important.

Intra-industry trade

In the case when two countries import and export goods or services of the same product category and thus from the same industry, one refers to intra-industry trade. Inter-industry trade, in contrast, occurs when two countries import and export products from different industries.

[34] The less significant eight sectors including "Other Products" are aggregated and reported as "Rest".

[35] Note that these values are denoted in EUR only and tend to exaggerate EU exports.

Intensive margin and evolution of prices

Clearly, observing a 10 percent increase in export sales in a specific industry indicates that the traded quantity has increased or prices have changed (or both). Thus, we now turn the focus to the question of whether the increased trade volume between the EU and Korea was mainly induced by an increase in export prices (net of tariffs) or by an increase in export quantities. Hence, one has to consider prices and quantities in order to examine the source of trade volume changes. However, for the following analysis, note that only data on trade volumes and quantities are available. Therefore, prices are calculated by deducting the change in quantity from the change in trade volume. Thus, the reported price changes need to be seen as a residual and may also capture noise in the data, especially for goods for which quantity equivalents in tonnes are not straightforward to compare.[36] The trade-creating effects of the FTA with respect to the intensive margin (see below) and the evolution of prices cannot be disentangled using advanced econometric methods (c.f. to the partial equilibrium analysis), because only trade volume data are used; therefore, the subsequent sections aim to distinguish between potential channels that may have increased trade volumes. Higher export prices either mean that similar goods can be sold at higher prices, therefore increasing the value added per physical unit, or that the exported goods are of higher quality.

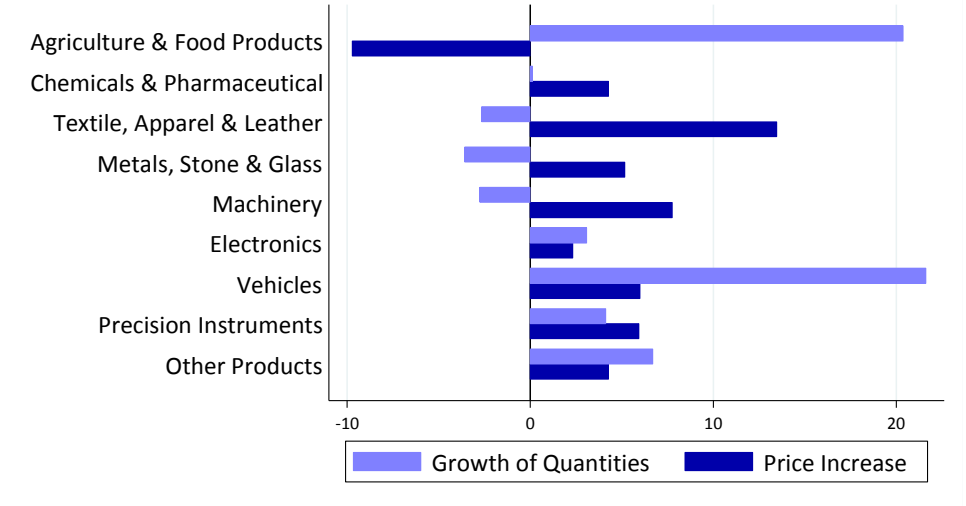
Intensive and extensive margin

Changes in trade volume are classified into price changes and changes in intensive and extensive margin. While the intensive margin depicts the change in traded quantities in already existing product categories, the extensive margin shows the amount of traded goods and services of new product categories. The percentage change in export sales can be approximately expressed as the sum of the percentage change in the export price and the percentage change in the export quantity ($\Delta\%X \approx \Delta\%P + \Delta\%Q$, where X denotes the export sales, P the export price, and Q the export quantity. The operator $\Delta\%$ denotes a percentage change).

For each sector, Figure 21 disentangles the annual growth of quantities and prices of exported goods for the post-FTA time period from 2011 to 2015. Across all sectors, an average reduction in traded quantities is observable for three sectors, of which machinery is a relatively important sector. It is worth noting that the price increase in these sectors could outweigh the loss in traded quantities, and thus they might account for a larger trade volume. The biggest quantity increases are recorded for the automotive and the agrifood industries with annualised growth rates of over 20 percent. Interestingly, the latter one was the only sector that faced a drop in prices, which decreased by almost 10 percent; however, this is the result of depressed global commodity prices rather than a reflection of Korea-specific effects. The lesson from Figure 21 is that, from 2011 to 2015, EU export sales grew both due to price increases and, in many sectors, due to quantity increases. Interestingly, in the chemicals and pharmaceuticals sector, the textiles, apparel and leather sector, the metals, stone and glass sector, and the machinery sector, European exporters have been able to impose substantially higher export prices, reflecting either higher product quality or higher margins.

[36] Please note that the data provide information only in tonnes, or tonnes equivalents for those goods that are traded in units.

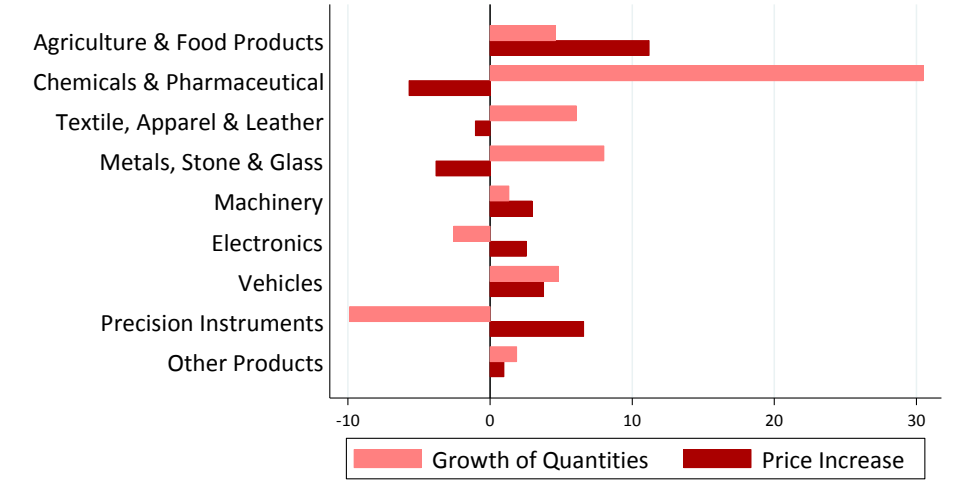
Figure 21: Annual growth of quantities and prices per EU export sector between 2011 and 2015 (%)



Source: Own compilation, based on COMEXT (2017). Note: Quantities measured in 1 000 tonnes, prices in EUR 1 000 per tonne.

Figure 22 repeats the decomposition of price and quantity changes for sectoral EU imports from Korea. The growth rates again refer to the annual increase that took place between 2011 and 2015. The largest growing sector by far was the chemicals and pharmaceutical industry, which experienced growth rates in quantity of more than 30 percent. This positive effect was partially offset by decreasing prices of approximately 6 percent annually. Minor price drops also occurred in the textile and metal industries. Emphasising the decreasing importance of the electronic sector mentioned above, its imported quantity fell by 3 percent. The net effect for electronics is, however, zero, due to a price increase of roughly the same size. The only remarkable losses were reported in imports of precision instruments, which fell by 10 percent in quantity each year.

Figure 22: Annual growth of quantities and prices per EU import sector between 2011 and 2015 (%)



Source: Own compilation, based on COMEXT (2017). Note: Quantities measured in 1 000 tonnes, prices in EUR 1 000 per tonne.

The sectors listed in Figure 21 and Figure 22 left out two industries that are appended in Table 4. For the sake of clarity, they are not presented in the figures because of their high changes in prices and quantities that would otherwise distort the diagrams. Interestingly, the ships and aeronautic sector was undergoing sharp annual price increases and large declines in quantities simultaneously. The reasons behind this are that presumably other sorts of ships were traded over time[37], or that the reference years are not fully representative.[38] Note also that mineral fuels and oils highly depend on commodity world market prices. Thus, price changes in this sector do not necessarily reflect compositional changes in the sort of goods that are traded.

Table 4: Annual growth of quantities and prices of sectors "Mineral Fuels & Oils" and "Ships and Aeronautic" between 2011 and 2015 (%)

Sector	Imports		Exports	
	Growth in Prices (p.a.)	Growth in Quantities (p.a.)	Growth in Prices (p.a.)	Growth in Quantities (p.a.)
Mineral Fuels & Oils	-2.22	6.79	-20.55	59.29
Ships & Aeronautic	373.53	-78.38	30.89	-19.65

Source: Own compilation, based on COMEXT (2017).

As a general remark, the reported quantity changes at the aggregate level can also imply a change in products traded within a certain sector. This can be the case especially in those industries for which price and quantity changes are of the opposite sign. It is possible that a shift towards higher quality products occurred within one sector, which corresponds to a drop in quantity measured in tonnes and explains why prices have increased. Hence, negative quantity changes do not necessarily indicate an undesirable development, but can rather indicate that trade is tending toward higher quality products.

Post-FTA extensive margin

Trade integration not only occurs if trade volumes or quantities increase; it also refers to the number of differentiated goods that are exchanged between partner countries. Ex-ante, we expect an FTA to increase the number of differentiated goods because products which were formerly not traded (in the presence of tariffs and non-tariff trade costs) are now worth being traded. Figure 23 visualises the evolution of the number of traded goods between the EU and Korea. For this purpose, the number of products is classified according to Combined Nomenclature (CN) and refers to its 8-digit product codes that are traded within one year.[39] The number of imported goods shown by Figure 23 below refers to the left hand y-axis. It peaked at approximately 5 800 goods in 2008 and fell then until 2011 to 5 600. Coinciding with the introduction of the FTA, the number of products increased again continuously. For the most recent observation, this recovery has almost offset the previous decline. In contrast, the number of exported goods from the EU to Korea (right hand y-axis) remained at a range between 7 200 and 7 400

[37] For example, bigger or higher quality ships are traded.

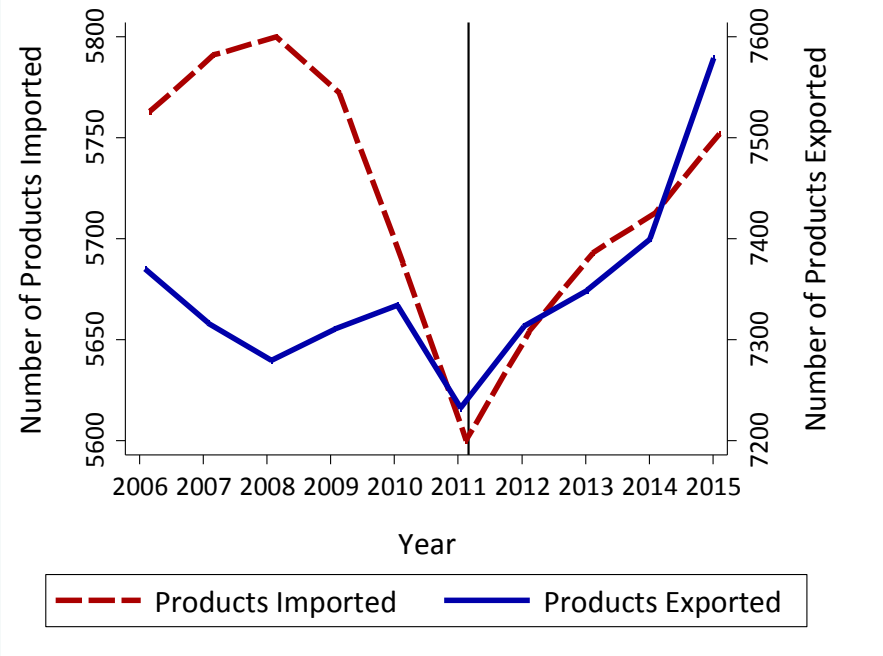
[38] Shipbuilding highly depends on a few single projects that account for a large amount of trade volume. Hence, if 2011 or 2015 were negative or positive outliers, respectively, the overall increase might be exaggerated.

[39] Note the European Commission publishes an updated version of the Combined Nomenclature each year. These updates include changes in classification; e.g., goods that are not produced anymore (because of their replacement by other products), will drop out while other novel products will be included. Since these effects are recurring annually, they do not cause structural breaks in the time series.

products for the period before the start of the provisional application of the FTA, and increased afterwards to a bit less than 7 600 at the upper end.

As a side note, it is not surprising that the EU exports more differentiated goods to Korea than it imports from Korea. Since the EU is a far larger economy, it is likely that it simply produces a higher variation of differentiated goods than Korea. Hence, the EU market offers a wider range of goods for Korean consumers than vice versa.

Figure 23: Number of exported and imported products by the EU[40]

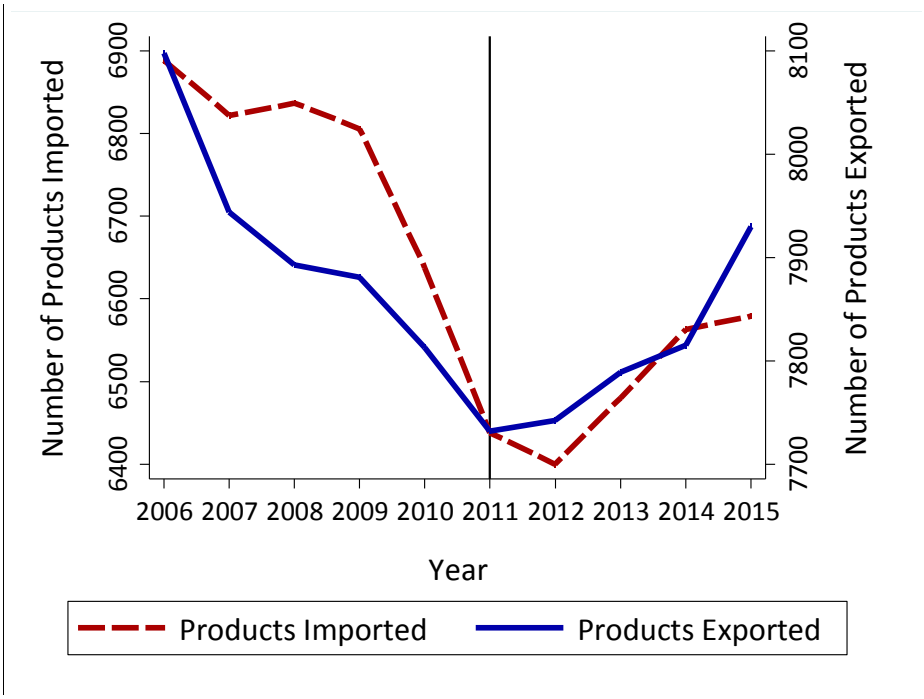


Source: Own compilation, based on COMEXT (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

As previously mentioned, the start of the provisional application of the EU-Korea FTA in 2011 coincides with a general phase of recovery for the world economy. Consequently, an increase in the extensive margin cannot be causally attributed to the FTA without controlling for these global effects. Hence, the evolution of extensive margins needs to be compared across countries. Figure 24 shows the extensive margin for the trade between the EU and Japan. Again, and for the same reason as above, the EU exports more products to Japan than vice versa (compare the different axis scales). We observe a decreasing number of exported products since 2006, while the number of imported goods declined more sharply after 2009. The extensive margin for exports and imports bottomed out in 2011 and 2012, respectively, and increased until 2015. Interestingly, both extensive margins have not yet reached their 2006 levels (300 products less on the import side, 150 products less on the export side). Thus, EU-Korea trade has performed relatively better compared to EU-Japan trade post-2011. However, this is only an indication rather than concrete proof that the FTA induced this relative outperformance.

[40] 8-digit products according to Combined Nomenclature (CN8).

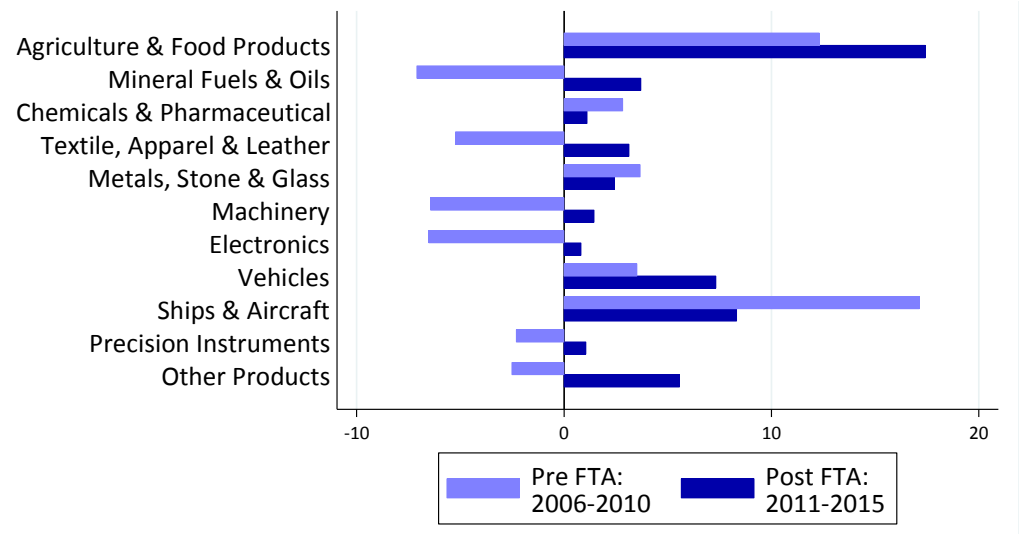
Figure 24: Number of traded products between the EU and Japan



Source: Own compilation, based on COMEXT (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Moving away from the aggregate picture and going into more detail, the extensive margin at the sectoral level is shown by Figure 25 and Figure 26. For both the pre- and the post-FTA period, the changes in the number of traded goods are illustrated. However, one has to keep in mind that the pre-FTA period coincides with the global financial crisis, which may drive the results. As Figure 25 highlights for EU exports, 6 out of 11 sectors recorded a decrease in number of traded goods for the pre-FTA period, whereas all sectors increased their number of traded goods in the post-FTA regime. Two sectors have experienced particularly outstanding growth rates in the pre- and post-FTA periods: the agrifood industry expanded its products by 13 and 17 percent, and ships and aircraft by 17 and 8 percent, respectively. Grosso modo, the FTA seems to have had a positive effect on the number of exported goods for the EU.

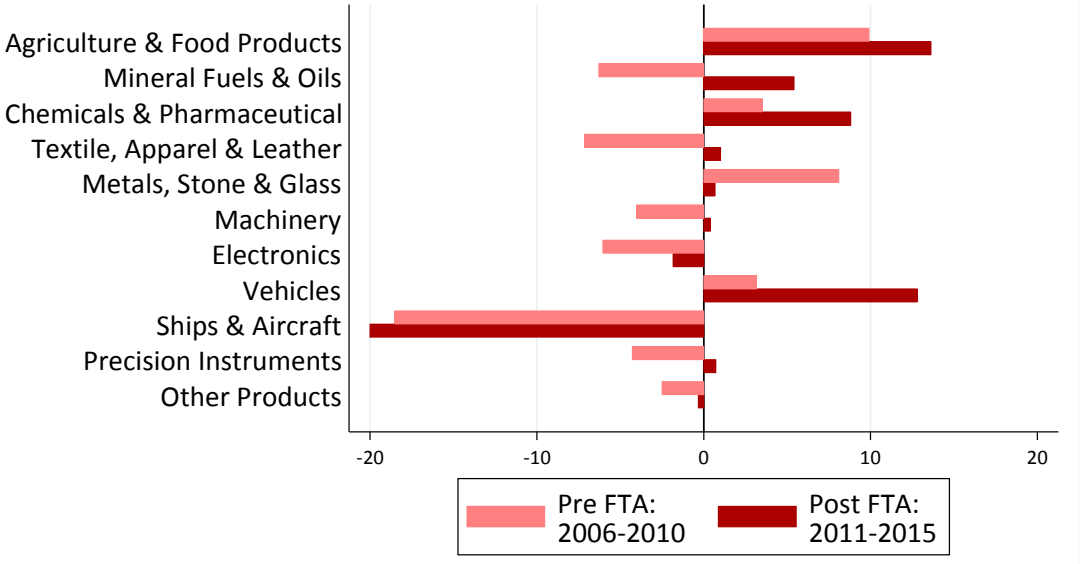
Figure 25: Growth (%) in number of products exported per sector by EU



Source: Own compilation, based on COMEXT (2017).

Figure 26 draws the same relation for EU imports from Korea. Here, the overall picture looks similar to that of exports. In the pre-FTA period, the number of traded goods declined in six sectors; for the post-FTA period, a decline was recorded in only three sectors. The large negative growth in the ships and aeronautic industry stands out and is in line with previous results (intensive margin). For this sector, during both periods the number of traded goods was reduced by roughly 20 percent, thereby overtaking all other sectors. Again, the agrifood industry benefited from the FTA with an increase in varieties exported by 13 percent, and the automotive sector also gained considerably in terms of the number of traded products.

Figure 26: Growth (%) in number of products imported per sector by EU



Source: Own compilation, based on COMEXT (2017).

Further figures describing the evolution of sectoral trade compared to other countries are presented in Annex II. While the success in terms of the trade creation effects of the EU-

Korea FTA and KORUS differ across sectors, the aggregate picture shows that the EU exports to Korea increased more than the respective US exports.

A detailed analysis at the product level is presented in section 10 for four of the case study sectors (automotive, agriculture, electronics, and environmental goods).

Table 85 and Table 86 in Annex II show the bottom 50 products for EU exports to and EU imports from Korea; these products are lagging behind the general positive trend in EU-Korea trade. For the most part, trade deteriorated in the product categories which are technically outdated, e.g. “Parts of Telephone Sets”.

Trade with Korea across EU Member States

Up to this point, only trade between Korea and the EU as a whole was evaluated. The subsequent tables and figures will therefore highlight the evolution of trade between all EU Member States and Korea. Specifically, Table 5 shows import volumes from Korea in 2010 and 2015, the respective shares of country imports within all EU imports from Korea, and the annual change of absolute imports compared to the change of imports from the rest of the world.

A caveat has to be made regarding the so-called Rotterdam effect, which describes the fact that many goods reach Europe via the Rotterdam harbour (though this is also true for other countries with important harbours). Hence, import statistics of the Netherlands are potentially misleading: if goods just come through the Netherlands en route to their ultimate destination (e.g. in Eastern Europe), Dutch import and export statistics may be inflated. Data sources try to correct for these statistical effects; however, the presence of these Rotterdam-type effects cannot be fully ruled out. Therefore, Member State trade data need to be interpreted cautiously.

Imports declined in absolute terms mostly for Sweden (15.7 percent annual decline), Malta (10.6 percent) and Cyprus (12.5 percent). Even Germany, Korea’s most important trade partner in the EU, imported 8 percent less each year since 2010. On the other hand, Denmark increased imports from Korea by 35 percent annually, Lithuania and Estonia by more than 20 percent, and also the UK, Korea’s second most important trade partner in the EU, imported almost 16 percent more each year since 2010. Overall, most of the shares and import volumes did not change substantially. This corresponds to the fact that EU imports grew annually at a moderate rate of 1.3 percent.

Table 5: Imports of goods from Korea at country level

MS	2010		2015		Change 2010-2015, % p.a.	
	EUR million	Share (%)	EUR million	Share (%)	Korea	RoW
AT	854	2.2	614	1.5	-6.4	4.2
BE	1 656	4.2	1 954	4.6	3.4	6.7
BG	74	0.2	84	0.2	2.6	3.3
CY	42	0.1	21	0.1	-12.5	-7.3
CZ	978	2.5	2 325	5.5	18.9	3
DE	9 927	25.1	6 533	15.5	-8	2.4
DK	349	0.9	1 577	3.7	35.2	3.5
ES	1 539	3.9	2 185	5.2	7.3	1.3
EE	15	0	39	0.1	20.5	4.7
FI	314	0.8	261	0.6	-3.6	-4.6
FR	2 136	5.4	2 349	5.6	1.9	2.4
GB	2 715	6.9	5 674	13.4	15.9	2.7
GR	1 831	4.6	1 472	3.5	-4.3	-3.1
HR	128	0.3	123	0.3	-0.7	-7.4
HU	1 895	4.8	1 236	2.9	-8.2	-1.5
IE	165	0.4	316	0.8	13.9	7.8
IT	2 986	7.6	3 198	7.6	1.4	-1.7
LT	49	0.1	125	0.3	20.6	1.2
LU	5	0	11	0	16.6	9.5
LV	24	0.1	43	0.1	12.2	4.9
MT	81	0.2	46	0.1	-10.6	10.8
NL	2 622	6.6	3 530	8.4	6.1	4
PL	2 711	6.9	2 365	5.6	-2.7	6.3
PT	245	0.6	338	0.8	6.6	0.3
RO	440	1.1	483	1.1	1.9	2.3
SK	3 486	8.8	3 642	8.6	0.9	0.4
SI	557	1.4	963	2.3	11.6	1.1
SE	1 659	4.2	707	1.7	-15.7	0.8
Total	*39 496*	*100*	*42 228*	*100*	*1.3*	*2.4*

Source: COMEXT (2017).

Table 6 shows how exports to Korea evolved at the country level. The picture here looks different: only two countries had negative growth rates of exports to Korea, namely Bulgaria (-10.1 percent) and Malta (-14.1 percent); however, these two countries account for only 0.1 percent of all EU exports to Korea. The countries with the highest growth rates are Greece (42.4 percent), Latvia (34.1 percent) and Lithuania (23.3 percent). Other countries with significant export volumes such as Germany, the UK and France increased annual exports by 12.1, 21.5 and 8.4 percent, respectively. They alone

account for over 60 percent of EU exports to Korea. Despite the dominance of these major economies, the smaller European economies increased their exports to Korea by the highest growth rates.

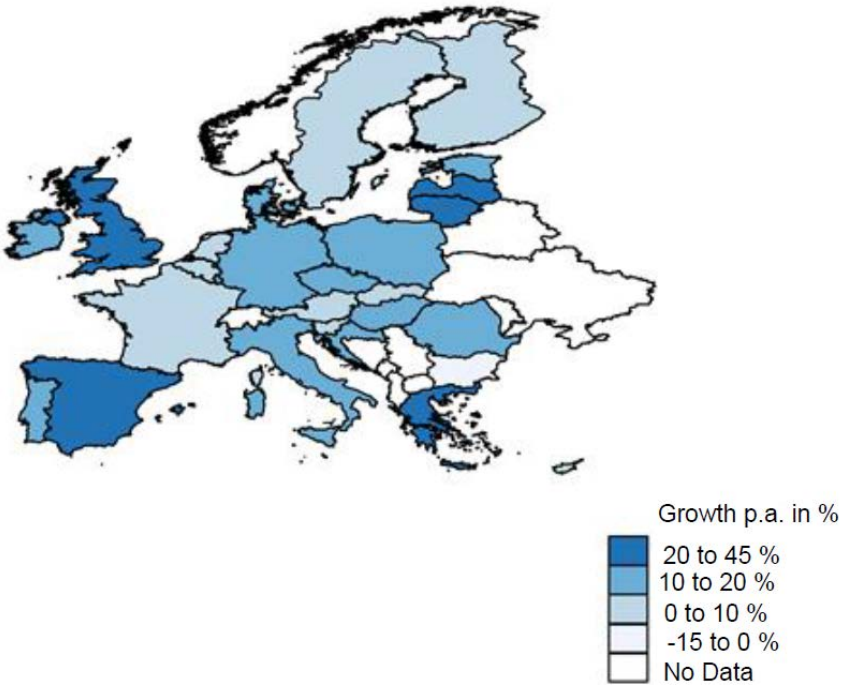
Table 6: Exports of goods to Korea at country level

MS	2010		2015		Change 2010-2015, % p.a.	
	EUR million	Share (%)	EUR million	Share (%)	Korea	RoW
AT	688	2.5	819	1.7	3.5	4.5
BE	1 152	4.2	1 361	2.9	3.4	3.9
BG	93	0.3	55	0.1	-10.1	6.5
CY	4	0	4	0	0.7	17.7
CZ	202	0.7	455	1	17.6	8.1
DE	10 210	37	18 038	38.1	12.1	5.7
DK	513	1.9	847	1.8	10.5	5.7
ES	732	2.7	1 845	3.9	20.3	7.9
EE	21	0.1	50	0.1	18.8	0.8
FI	611	2.2	693	1.5	2.5	-1.7
FR	3 213	11.6	4 820	10.2	8.4	3.9
GB	2 360	8.5	6 249	13.2	21.5	9
GR	50	0.2	298	0.6	42.4	4
HR	4	0	6	0	10.6	2.8
HU	223	0.8	361	0.8	10	0
IE	290	1.1	514	1.1	12.1	6.8
IT	2 484	9	4 476	9.5	12.5	5.2
LT	20	0.1	57	0.1	23.3	7.6
LU	22	0.1	44	0.1	14.5	0.5
LV	9	0	41	0.1	34.1	7
MT	33	0.1	15	0	-14.1	-4.2
NL	3 197	11.6	4 152	8.8	5.4	4.8
PL	209	0.8	382	0.8	12.8	8
PT	46	0.2	93	0.2	14.8	8.1
RO	215	0.8	414	0.9	14	6.5
SK	92	0.3	106	0.2	2.8	5.3
SI	49	0.2	70	0.1	7.5	1.6
SE	863	3.1	1 016	2.1	3.3	0.4
Total	*27 620*	*100*	*47 292*	*100*	*11.4*	*5.5*

Source: COMEXT (2017).

The two figures below visualise how annual export and import growth rates diverge across EU Member States. The following figure illustrates that the annual average growth rates for exports look relatively evenly distributed across Europe.

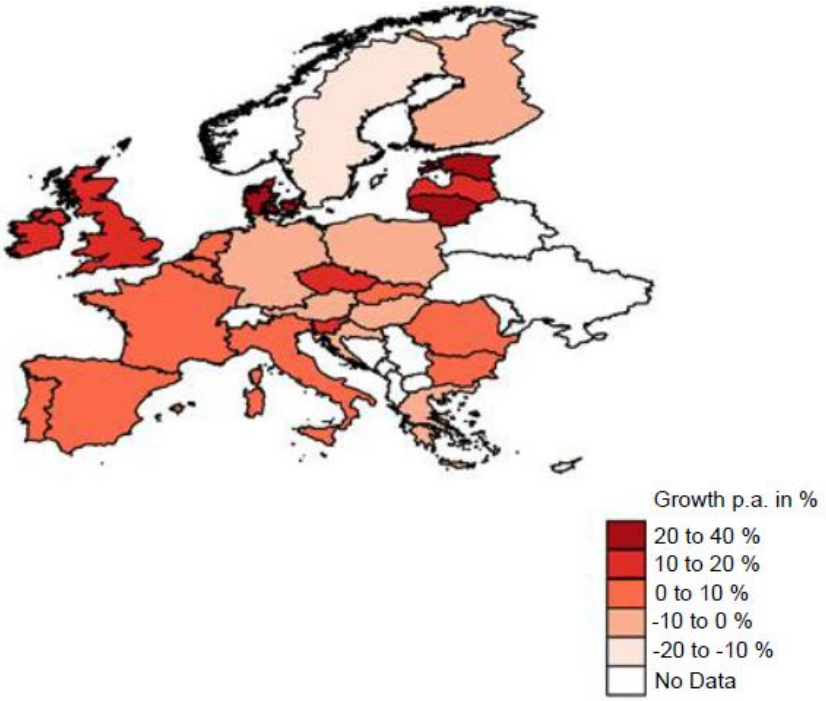
Figure 27: Growth of goods exports 2010-2015, % p.a.



Source: Own compilation, based on COMEXT (2017). The Figure shows the annual growth rates in exports of goods in percent. The darker the shaded area of a country is, the higher the growth rate. The legend – Growth p.a. in % - shows how the different shades are categorised.

On the other hand, we observe that especially countries in central and northern Europe had negative import growth rates, whereas the countries with the highest positive growth rates are smaller economies and the UK.

Figure 28: Growth of goods imports 2010-2015, % p.a.



Source: Own compilation, based on COMEXT (2017). The Figure shows the annual growth rates in imports of goods in percent. The darker the shaded area of a country is, the higher the growth rate. The legend – Growth p.a. in % - shows how the different shades are categorised.

5.2.2. Evolution of trade in services between the EU and Korea

The key findings of the evaluation are that:

- **Trade in services between the EU and Korea was relatively underdeveloped prior to the FTA. After the start of the provisional application of the latter, EU services exports to Korea grew from EUR 7 billion to about EUR 9 billion from 2011 to 2014; imports grew even more strongly from EUR 4 to 7 billion.**
- **The share of Korea in both EU services exports and imports increased from 2011 onwards, signalling that Korea outperformed other EU trade partners after the start of the provisional application of the FTA. The same is true for the share of the EU in Korean services trade.**

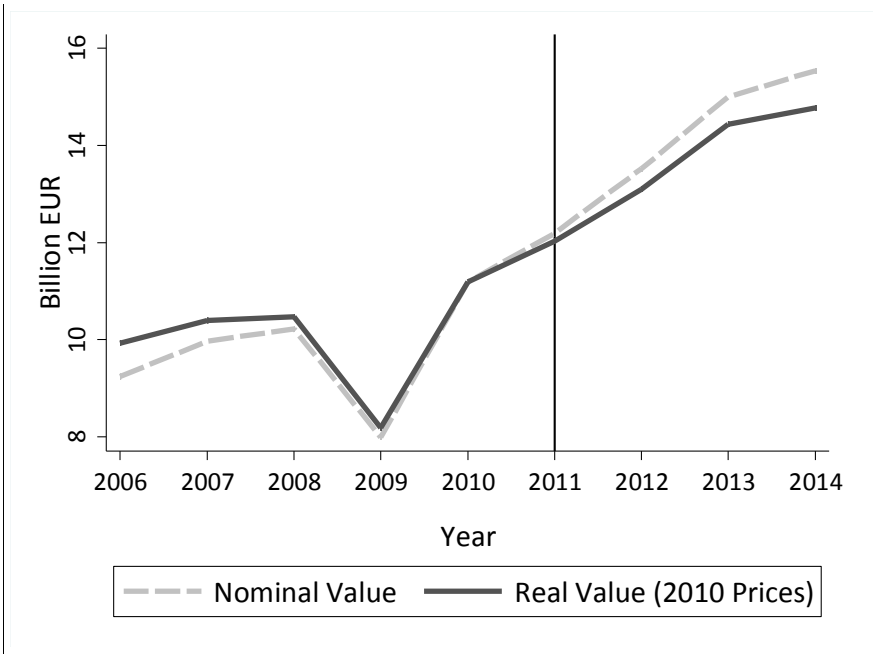
In the following, we analyse the impact of the EU-Korea FTA on trade in services. Including trade liberalisation for service sectors is a key feature of deep and comprehensive FTAs and differentiates the EU-Korea agreement from older trade deals. Hence, the effects on the service sectors are worth being evaluated. The subsequent section is structured similarly to the section above regarding the analysis of trade in goods. In order to avoid confusion, note that all figures shown in this section account only for trade in services on an annual basis.

Data on the trade in services were accessed through the World Input-Output Database (WIOD). The WIOD was developed by leading institutes for economic research with funding from the European Commission. It covers a long time span (2000 to 2014) and comprises yearly statistics for all EU Member States and 15 other major economies. Of

the 56 sectors for which the dataset has detailed information, we only focused on the service sectors.[41] This data source was preferred to the database "Balance of payments - International transactions (bop)" by Eurostat, which underwent a change in methodology (from BPM5 to BPM6[42]) in 2013. Using a single source to look at both Parties' perspectives makes the results highly comparable. However, this comes at the cost of not being able to directly match the official statistics for trade in services and goods. In fact, there might be some definitional overlapping between the two, which is why results have to be interpreted with caution. Because of this issue and the fact that the WIOD mirrors trade flows (i.e., information provided by the importer and by the exporter are both used to harmonise the data), it is not surprising that the figures differ from those provided by Eurostat.

Figure 29 plots the evolution of EU-Korea trade volume in services. Following already observed patterns, trade in services grew moderately until 2008, dropped sharply during the financial crisis and then recovered quickly. From 2011 to 2013, trade in services increased quite rapidly, whereas the growth decelerated toward the end of the data period. In constant 2010 prices, the trade volume increased from EUR 10 billion to almost EUR 15 billion over the whole period, thereby corresponding to an increase of slightly less than 50 percent.

Figure 29: Services: EU-Korea trade volume (annually, EUR billion)



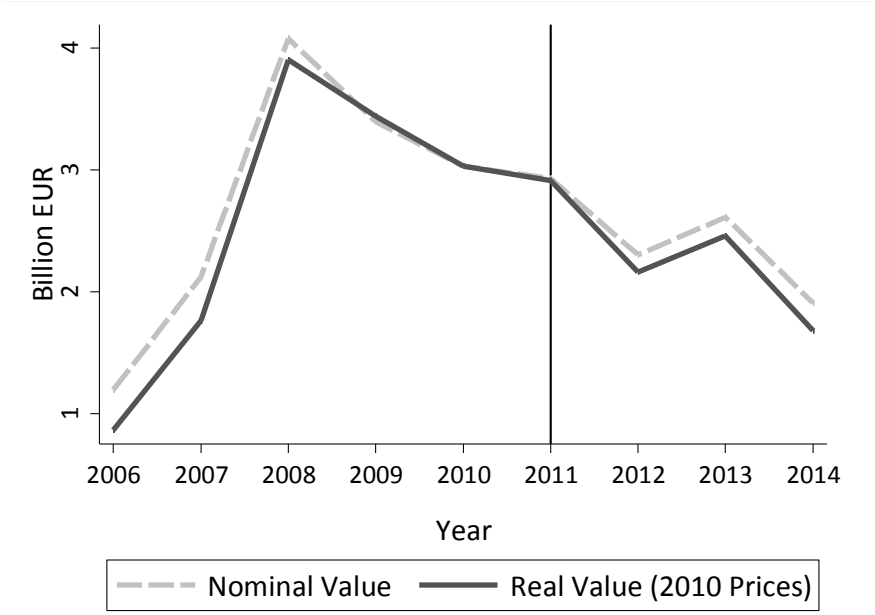
Sources: Own compilation, based on WIOD (2017) and OECD (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 30 displays the trade balance for trade in services between the EU and Korea. In contrast to trade in goods, here the EU ran a permanent trade surplus, meaning that it exported more services than it imported. The trade surplus peaked in 2008 at close to EUR 4 billion and declined steadily afterwards. In real terms, the surplus accounted for a bit less than EUR 2 billion in 2014.

[41] According to our definition, service sectors encompass sections D to U of the WIOD data.

[42] See http://ec.europa.eu/eurostat/statistics-explained/index.php/Measuring_international_trade_in_services_-_from_BPM5_to_BPM6, accessed on 8 November 2017.

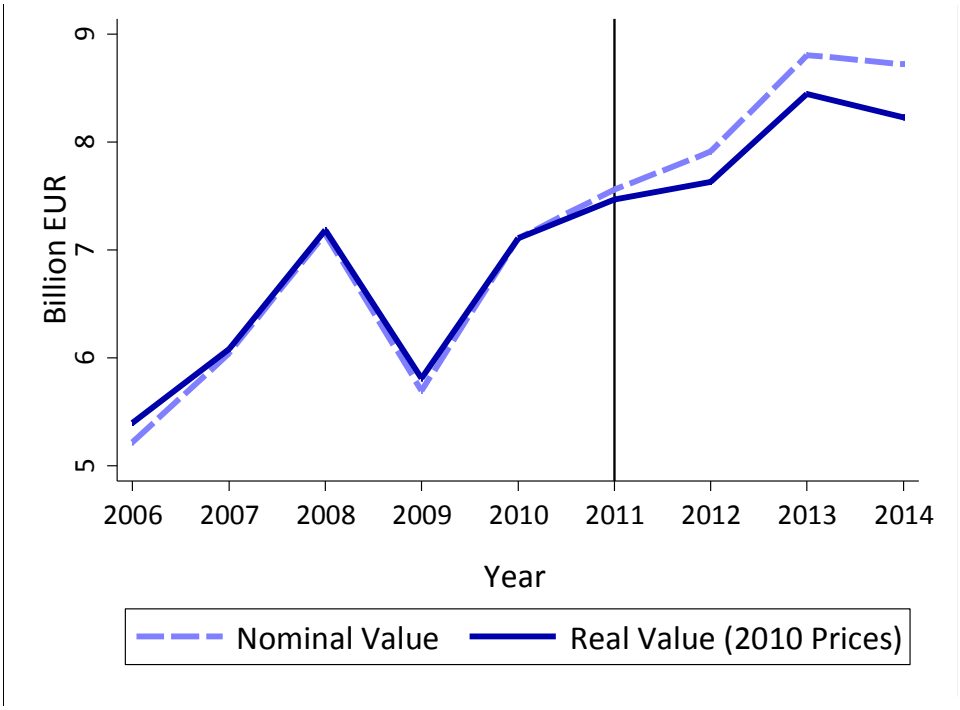
Figure 30: Services: EU-Korea trade balance (annually, EUR billion)



Sources: Own compilation, based on WIOD (2017) and OECD (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Both export and import figures show a similar development over time. The evolution of the former is depicted in Figure 31, in which nominal as well as real values of EU exports in services to Korea are shown between 2006 and 2014. Already before the financial crisis, an increase in real terms of EUR 1.5 billion was recorded. However, this increase was offset in 2009. After the recovery in 2010 and 2011, exports of services grew moderately and peaked in 2013. In total, exports of services have risen from EUR 5.5 billion to EUR 8 billion in constant prices over the whole time span.

Figure 31: Services – EU exports to Korea (annually, EUR billion)

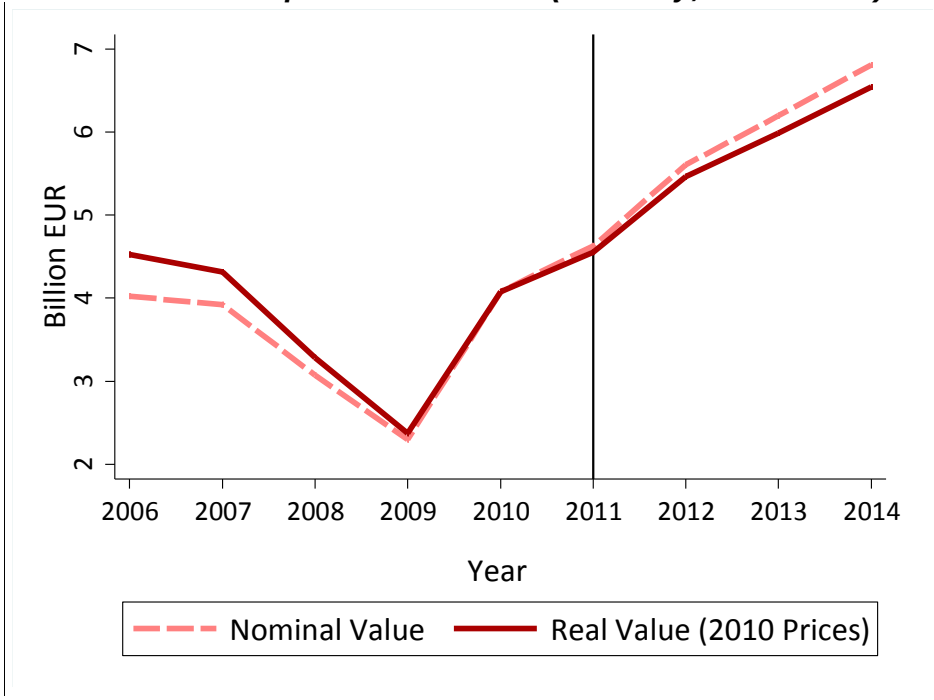


Sources: Own compilation, based on WIOD (2017) and OECD (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 32 draws the same picture for EU imports in services from Korea. Again, a sharp drop during the financial crisis is followed by a rapid increase afterwards. Since 2009, EU imports of services continuously increased and, in contrast to the previous figure, this increase did not decelerate. Measured in constant prices, the trade volume increased from EUR 4.5 billion in 2006 (and 2011) to almost EUR 6.5 billion in 2014.

Although the EU still runs a surplus in service trade with Korea, we observe that Korean exports increased more than European exports. This may be related to different types of business models, e.g. the sectoral structure of FDI and the complementarity to goods exports. Section 5.2.1 shows the compositions of trade in goods; given that goods and services are often complementary, meaning that certain goods exports result also in service exports and vice versa, variation in trade composition can lead to heterogeneous effects on complementary sectors. For instance, the share of machinery exports for Korea increased remarkably, while it declined for EU exports. Machinery exports are a typical example of goods exports that are positively linked with service exports (e.g. for construction and maintenance). However, these interconnections are best reflected by the results of the CGE analysis in section 5.5.

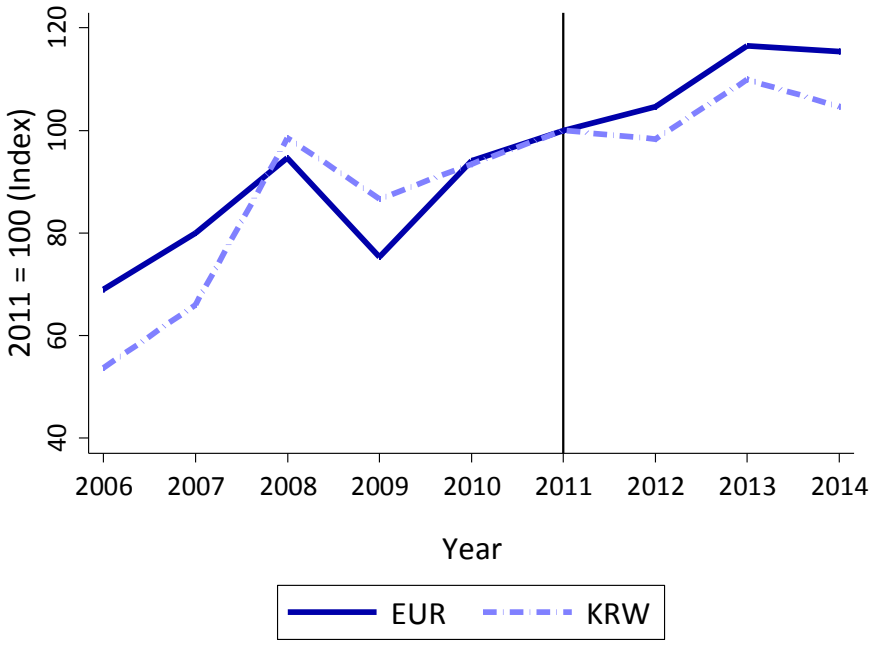
Figure 32: Services – EU imports from Korea (annually, EUR billion)



Sources: Own compilation, based on WIOD (2017) and OECD (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Similarly to the trade in goods analysis, exchange rate effects are also worth mentioning for trade in services. The reasons to do so are already stressed above. Denoted in both EUR and KRW, EU exports of services from Korea are normalised to 100 for the year 2011 and shown in Figure 33 below.

Figure 33: Services: EU exports to Korea denoted in EUR and KRW (annually, 2011=100)

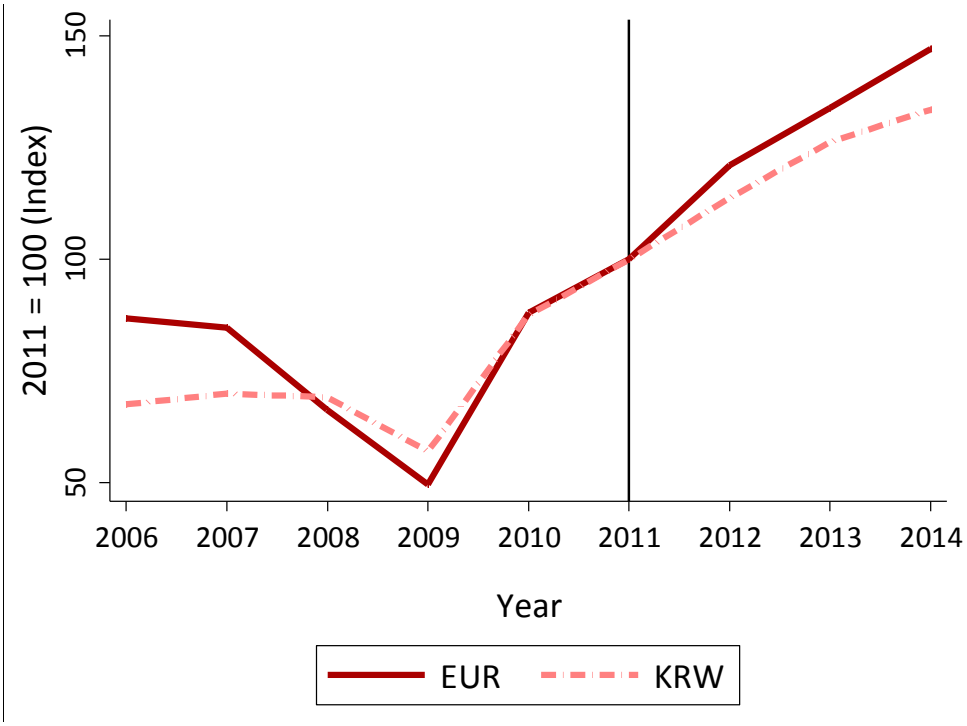


Source: Own compilation, based on WIOD (2017), Deutsche Bundesbank (2016).

Corresponding to the euro-won exchange rate depicted in Figure 10, we observe higher initial export growth denoted in KRW, with the drop during the financial crisis heavily mitigated by the KRW devaluation. We also observe slightly weaker growth in the post-FTA period, in which the euro devaluated against the won.

The picture for EU imports from Korea looks similar, as shown by Figure 34. Starting from lower initial values, the drop during the financial crisis was less sharp when denoted in KRW. From 2011 on, the increase in services import volume seems to be exaggerated in EUR values, which might be due to its devaluation.

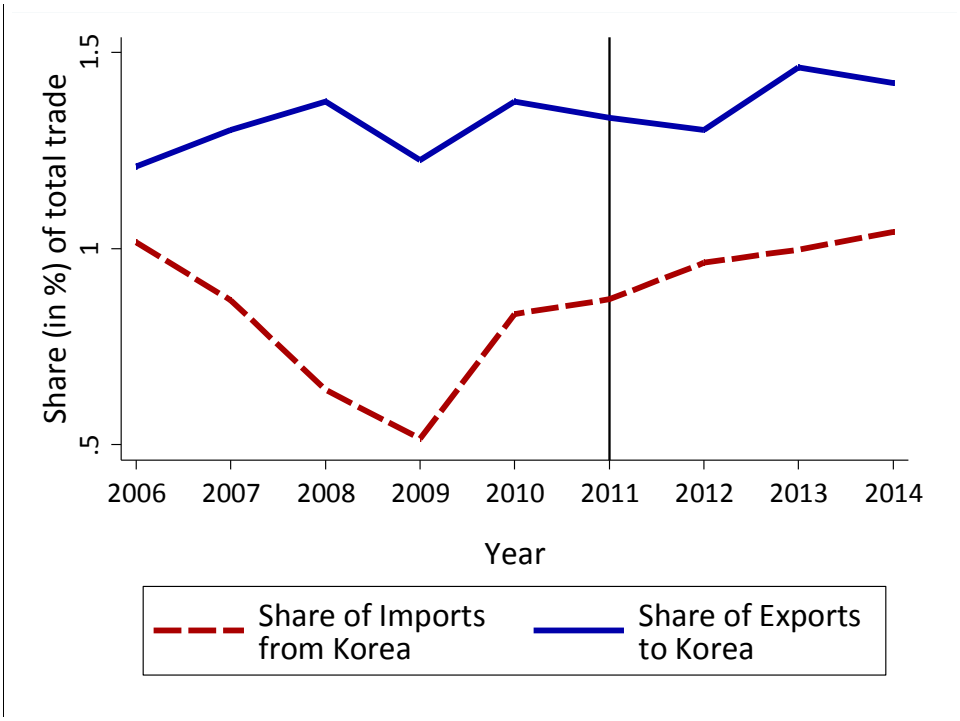
Figure 34: Services: EU imports from Korea denoted in EUR and KRW (annually, 2011=100)



Source: Own compilation, based on WIOD (2017), Deutsche Bundesbank (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Emphasising the importance of Korea as a destination for and source of EU trade in services, Figure 35 depicts both the share of total EU service imports that originate in Korea and the share of total EU services exports that reach Korea. The red line shows that the pre- and post-financial crisis levels are roughly the same, accounting for approximately one percent of total EU service imports. Exports of services to Korea play a slightly more important role for the whole period of observation. They also remained relatively stable and increased a bit from 1.2 percent to 1.4 percent from 2006 to 2014.

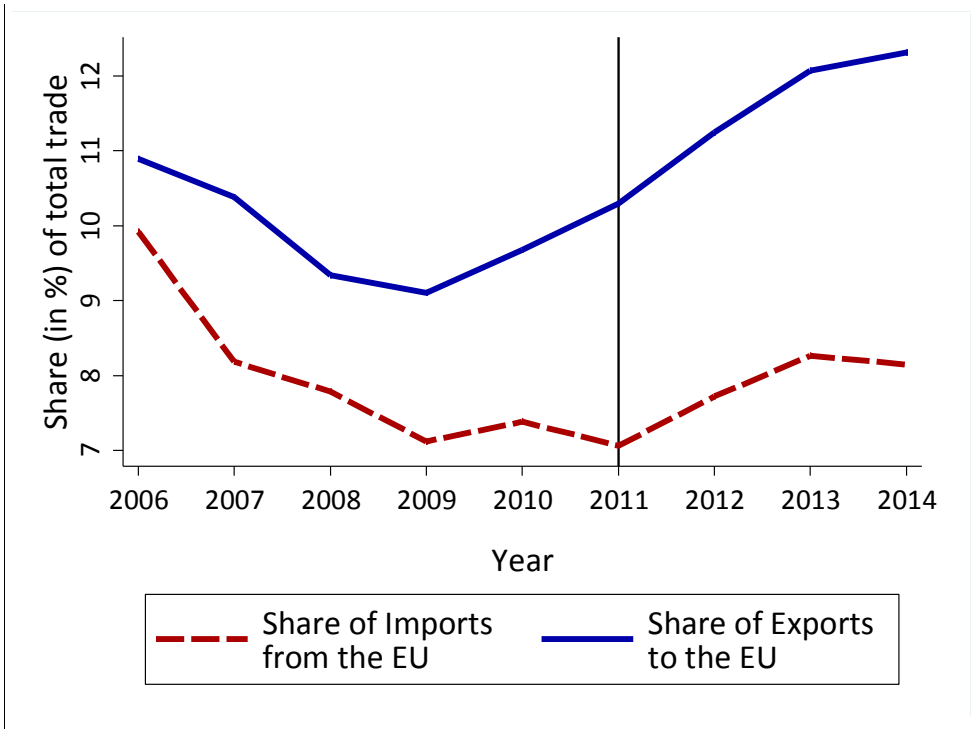
Figure 35: Services: Share of EU exports to and imports from Korea (% of total)



Source: Own compilation, based on WIOD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

From the Korean perspective, the picture looks different: The overall dependence of the Korean trade in services on the EU is far higher than vice versa. Of course, this fact should not surprise, given the different market sizes of the parties. In 2006, service imports from the EU accounted for 10 percent of all Korean service imports. This share fell continuously until 2009 and remained at the level of 7 percent until 2011. Coinciding with the start of the provisional application of the FTA, this share rose again in 2012 and stabilised at 8 percent. Similar to the EU perspective, services exports shares are also higher for Korea than the respective import shares. Beginning with a share of 11 percent in 2006, which declined to 9.5 percent during the financial crisis, the export share to the EU increased steadily afterwards and yields now 12 percent of total Korean services exports. Hence, the recovery of the EU market as an export destination for Korean services was accompanied by the EU-Korea FTA.

Figure 36: Services: share of Korean exports to and imports from the EU (% of total)

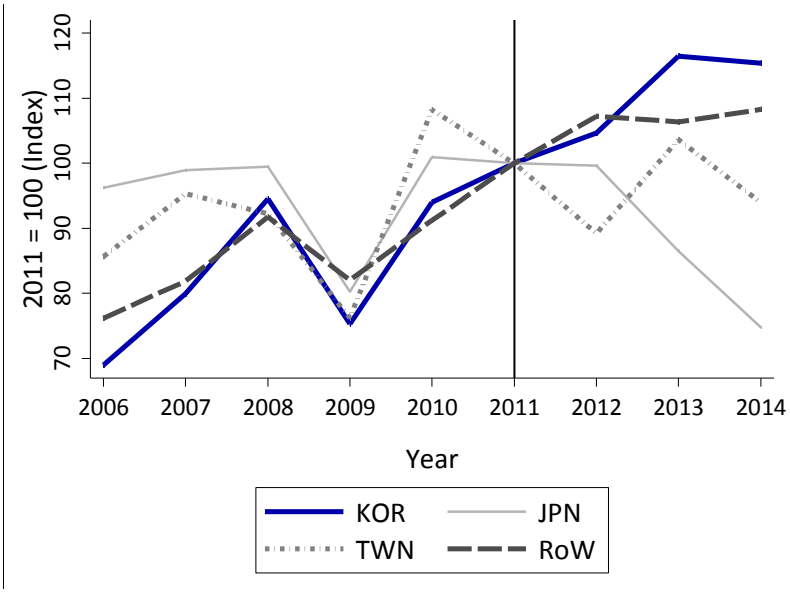


Source: Own compilation, based on WIOD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 37 illustrates the performance of EU services exports to Korea, Japan, Taiwan and RoW.[43] All values are normalised to 100 for the base year 2011. Services exports to Korea had already increased significantly in the pre-FTA period. Compared to the initial level, services exports were more than 40 percent higher in 2011, thereby outperforming the other partner countries. With respect to the post-FTA period, the increase continued and ended at an almost 20 percent higher level in 2014. Again, exports to Korea were able to outperform services exports to Japan, Taiwan and RoW. Thus, we attribute a positive causal effect on EU services exports to the FTA.

[43] The chosen countries for comparison (the control group in the figures) are Japan and Taiwan, two economies that are relatively similar to Korea in terms of industry structure, and geographical and cultural distance to Europe.

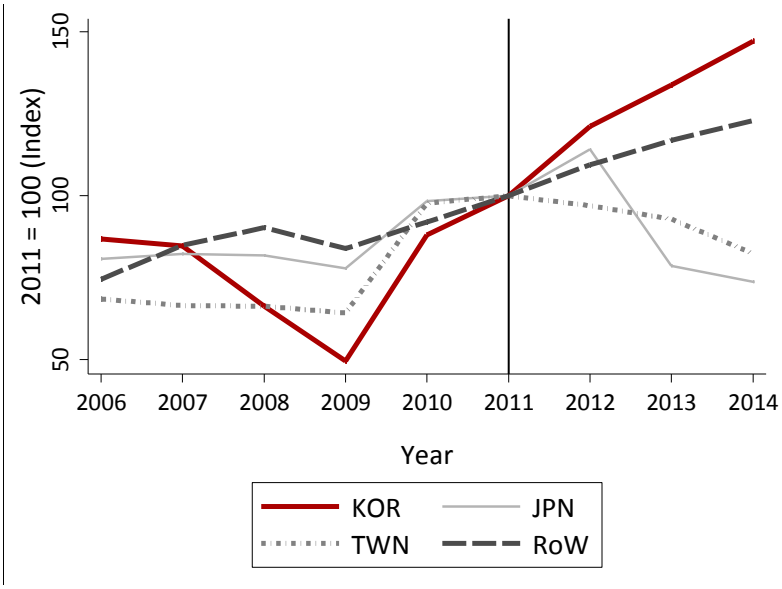
Figure 37: EU services exports to Korea compared with other countries (annually, 2011=100)



Source: Own compilation, based on WIOD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Addressing the question of relative trade performance for EU service imports as well, a similar picture needs to be drawn. Figure 38 highlights how EU service imports from Korea, Japan, Taiwan and the rest of the world have evolved over time. Focusing on the performance per period only, we observe service imports from Korea roughly in line with that of the other trade partners for the pre-FTA period. By contrast, for the post-FTA period, service imports from Korea increased drastically, thereby leaving behind imports from comparison countries. Again, the difference-in-differences approach allows us to conclude that FTA has had a clear positive impact on EU service imports from Korea.

Figure 38: EU Imports from Korea compared with other countries (annually, 2011=100)



Source: Own compilation, based on WIOD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

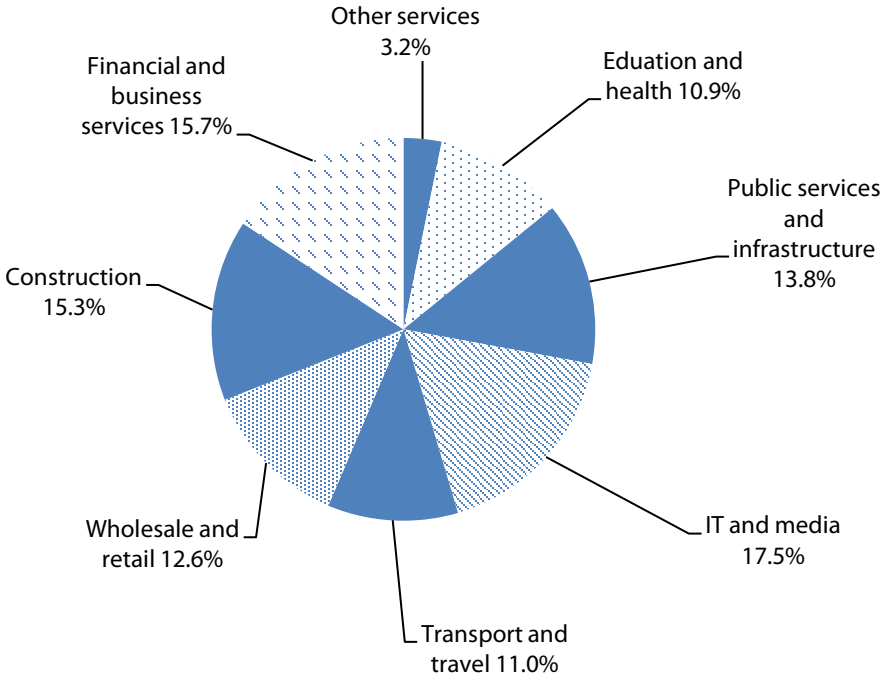
Applying this difference-in-differences approach to Korean services exports and imports is done in Annex II. In particular, a comparison between the EU-Korea FTA and the KORUS can be found in this annex. The aggregate figure shows that Korean service imports from the EU and the US grew at the same rate; Korean services exports to EU increased more than the respective US exports (see Figure 160).

In summary, the analysis clearly suggests that services trade between Korea and the EU developed quite dynamically after the start of the provisional application of the FTA. Again, to more carefully control for determinants of trade flows other than the agreement, one needs to turn to the full econometric analysis (see sections 5.4 and 5.5).

Sectoral Analysis

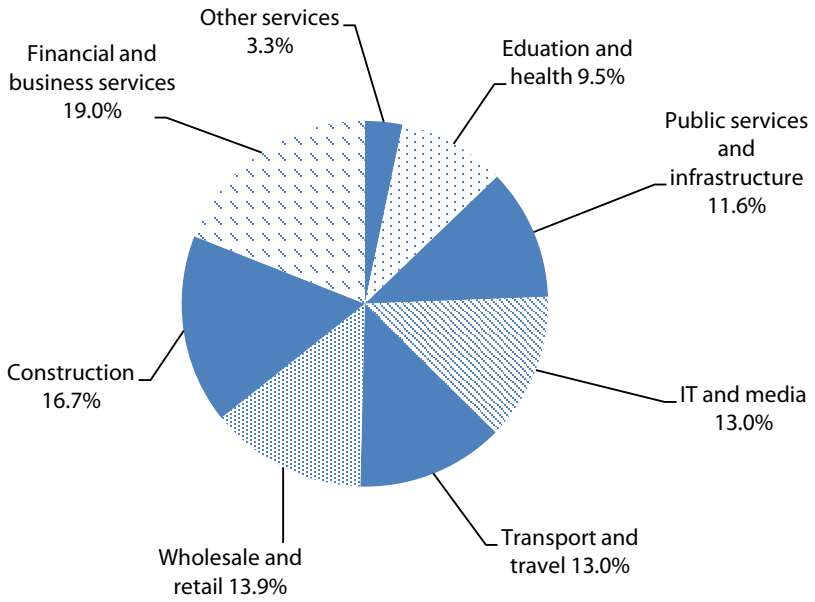
In the following, the focus of the analysis will be shifted to sectoral import and export effects. Figure 39 and Figure 40 show for both the pre- and post-FTA period the composition of EU services exports to Korea depicted by sector. Overall, only small changes have evolved over time. Financial and business services is still the largest export sector, increasing its share by 3 percentage points. IT and media, the biggest sector in 2010, lost importance and is now ranked fourth together with the transport and travel sector. Both the construction industry and the wholesale and retail businesses were able to slightly increase their shares and are now positioned as the EU's second and third most important services export sectors, respectively.

Figure 39: Composition of EU services exports to Korea, 2010



Source: Own compilation, based on WIOD (2017).

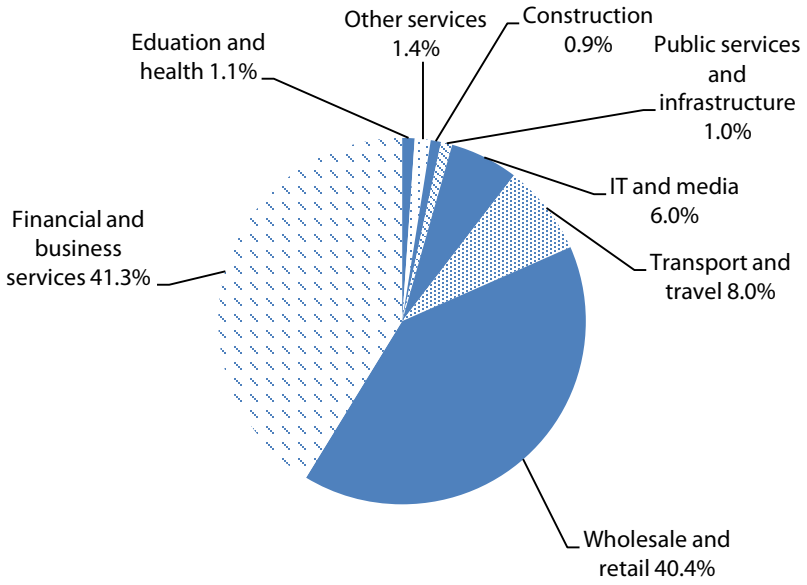
Figure 40: Composition of EU services exports to Korea, 2014



Source: Own compilation, based on WIOD (2017).

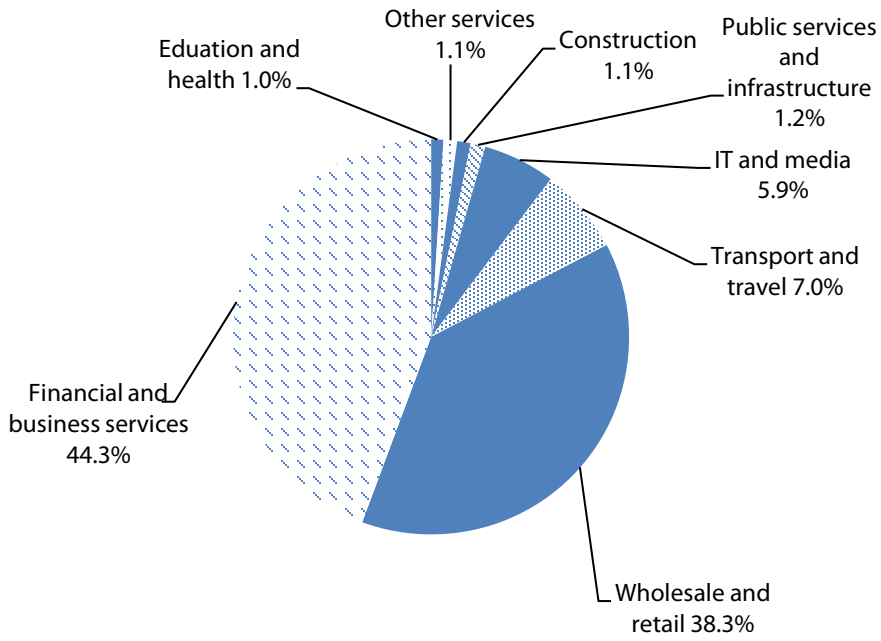
Figure 41 and Figure 42 illustrate the composition of EU service imports from Korea for 2010 and 2014. Here even more, changes are hardly noteworthy, because two major import sectors—financial and business services and wholesale and retail—account for 82 percent of all services imports from Korea at both points of time. The former slightly increased by 3 percentage points, mainly at the cost of the latter. Minor but still significant shares refer to IT and media and public services and infrastructure with shares of around 6 and 7 percent in 2014. Conclusively, the EU's service imports from Korea are far less diversified than its exports to Korea.

Figure 41: Composition of EU imports from Korea, 2010



Source: Own compilation, based on WIOD (2017).

Figure 42: Composition of EU imports from Korea, 2014

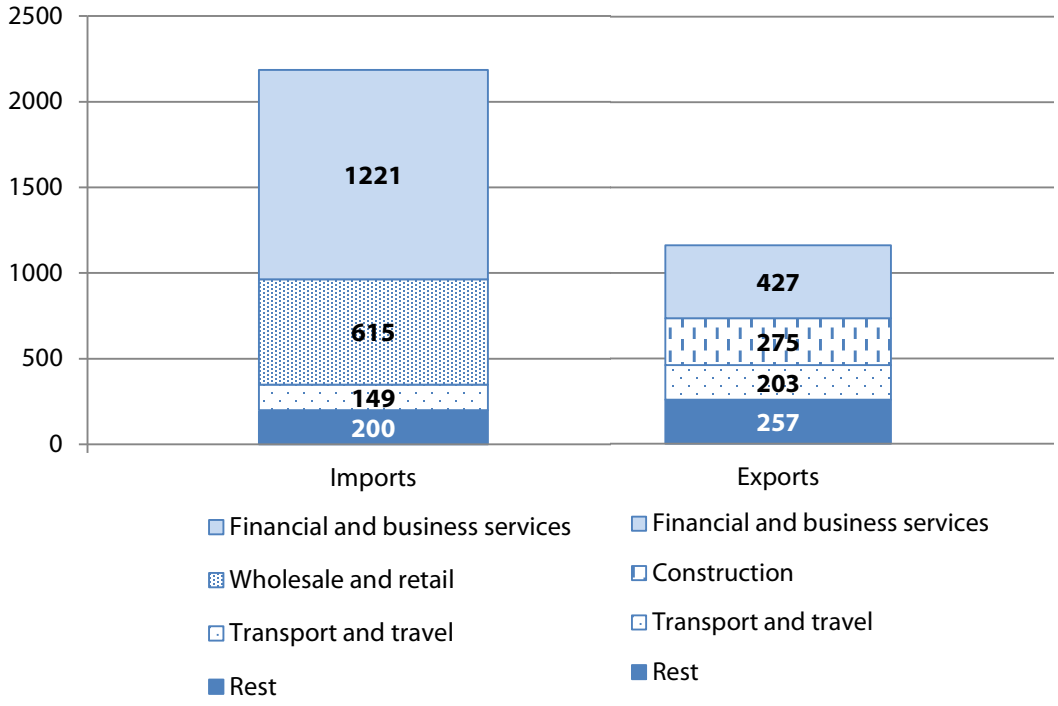


Source: Own compilation, based on WIOD (2017).

Considering only relative shares is, however, misleading to some extent, since this neglects absolute increases. Hence, the three sectors that experienced the highest absolute growth for the post-FTA period are shown in Figure 43.[44] In total, service imports increased by EUR 2.2 billion, whereas services exports increased by only EUR 1.2 billion at the same time. For both EU service imports and exports, financial and business services increased the most in absolute terms. Particularly for EU imports, this sector is quite dominant: it alone accounts for more than half of the total absolute increase. The second largest increase on the import side occurred for the wholesale and retail business, followed by transport and travel. Growth in absolute terms of the construction business was also the second highest, corresponding to the fact that it became the EU's second most important services export sector. Here again, transport and travel represents the number three sector in terms of absolute growth.

[44] All other sectors are included under Rest.

Figure 43: Fastest growing services sectors (in absolute terms) between 2011 and 2015, EUR million



Source: Own compilation, based on WIOD (2017).

Sectoral services exports and imports are presented in more detail in Annex II and include also Korean trade in services with selected countries (see Figure 162). A specific focus lies on the comparison between the EU-Korea FTA and KORUS: in 7 out of 8 service sectors, Korean imports from the EU grew faster than the corresponding US imports. Korean services exports to the EU, by contrast, outperformed exports to the US in only 3 out of 8 sectors.

Trade with Korea across EU Member States

The following subsection concentrates on the evolution of trade in services on the country level. Table 7 provides an overview of how growth in services exports is dispersed across Europe. For this purpose, absolute values of services exports and their share of total European exports to Korea are listed below. Moreover, the annual growth rate for the period 2010 to 2014 is calculated and presented together with the export growth to the rest of the world. This allows for a more meaningful interpretation of the evolution of trade in services. The UK and Germany, as the two countries exporting the most to Korea, account for 40 percent of total EU services exports to Korea. However, despite annualised growth rates of 3.8 and 3.7 percent, respectively, both countries lost export shares in the period of observation. This corresponds with the fact that the total EU growth rate, namely 7.1 percent, was higher than the mentioned growth rates for the two countries. Small economies, which before did not export significantly to Korea and have begun doing so after the FTA, have naturally high growth rates. Therefore, one should not over-interpret the growth rates of Slovenia (62 percent), Luxembourg (35 percent), or Estonia (30 percent). Among the big EU economies, the French growth rate of 13.4 percent annually is the most sizeable. Negative growth, although corresponding to only small absolute declines, was recorded for Austria, Bulgaria, Finland, Italy, Malta,

Poland, Romania and Sweden. For 20 out of 28 countries, the growth rate of services exports to Korea was higher than that of services exports to other countries.

Table 7: EU exports of services to Korea at country level

MS	2010		2014		Change 2010-2014, % p.a.	
	EUR million	Share (%)	EUR million	Share (%)	Korea	RoW
AT	114	1.6	95	1.1	-4.4	6.8
BE	129	1.8	192	2.2	10.5	10.8
BG	33	0.5	26	0.3	-5.9	4.1
CY	8	0.1	15	0.2	15.5	3
CZ	138	1.9	199	2.3	9.5	-0.1
DE	1 081	15.2	1 251	14.3	3.7	3.4
DK	83	1.2	168	1.9	19	6.6
ES	284	4	294	3.4	0.8	0.7
EE	5	0.1	14	0.2	29.9	8.2
FI	150	2.1	132	1.5	-3.1	3.4
FR	488	6.9	808	9.3	13.4	5.1
GB	1 792	25.2	2 079	23.8	3.8	1.2
GR	59	0.8	78	0.9	7.4	-4.6
HR	8	0.1	46	0.5	51.2	1.6
HU	117	1.7	189	2.2	12.6	2.4
IE	71	1	159	1.8	22.3	11.8
IT	616	8.7	586	6.7	-1.2	-2.3
LT	8	0.1	16	0.2	17.4	8.8
LU	21	0.3	72	0.8	35.1	17.3
LV	9	0.1	12	0.1	7.6	4
MT	74	1	43	0.5	-12.5	1.4
NL	480	6.8	777	8.9	12.8	5.7
PL	732	10.3	703	8.1	-1	1.2
PT	34	0.5	51	0.6	10.5	1.6
RO	150	2.1	142	1.6	-1.4	12.4
SK	197	2.8	313	3.6	12.2	-0.7
SI	14	0.2	100	1.1	61.8	2.6
SE	198	2.8	149	1.7	-6.8	6.6
EU28	*7 107*	*100*	*8 722*	*100*	*7.1*	*5.9*

Source: Own compilation, based on COMEXT (2017).

The evolution of EU service imports from Korea is shown numerically in the table below. Service imports grew on average by almost 19 percent yearly. For the reason of outliers for small economies, the evolution for the bigger economies is described in more detail. 60 percent of EU service imports are those of three countries: the UK (26.7 percent), Germany (20.9 percent), and France (12.3 percent). The growth rates for service imports from Korea for the same countries between 2010 and 2014 are 13.8, 12.5 and 9.2

percent, respectively. Negative growth rates were reported in Greece, Croatia, Hungary, Luxembourg, and Malta. All in all, 17 out of 28 Member States had higher increases in Korean imports than in imports from the rest of the world.

Table 8: EU imports of services from Korea at country level

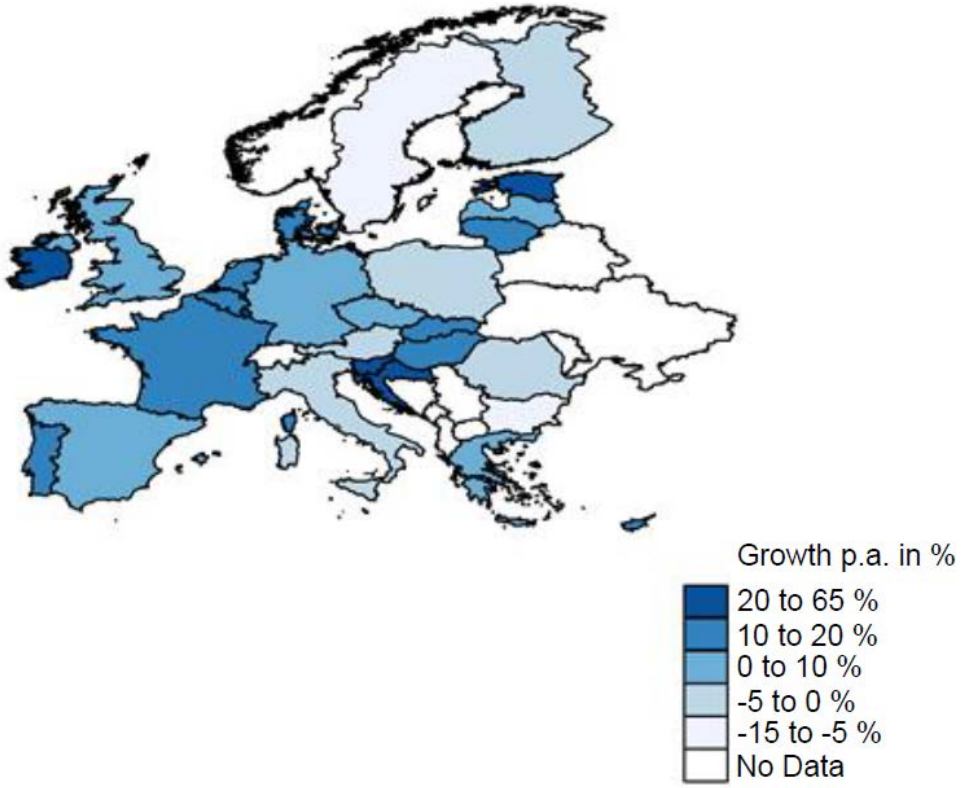
MS	2010		2014		Change 2010-2014, % p.a.	
	EUR million	Share (%)	EUR million	Share (%)	Korea	RoW
AT	79	2	88	1.3	2.7	10.1
BE	138	3.4	184	2.7	7.4	8.3
BG	3	0.1	12	0.2	36.4	5.9
CY	0	0	0	0	17.1	8.7
CZ	16	0.4	35	0.5	21.2	4.7
DE	892	21.9	1 427	20.9	12.5	6.4
DK	93	2.3	150	2.2	12.6	4.8
ES	115	2.8	164	2.4	9.3	9.9
EE	1	0	1	0	0.6	16.5
FI	25	0.6	35	0.5	9.1	-1.8
FR	588	14.4	837	12.3	9.2	6.9
GB	1 086	26.6	1 820	26.7	13.8	6.6
GR	28	0.7	17	0.3	-11.7	-2.9
HR	7	0.2	3	0	-18.7	9.7
HU	145	3.6	88	1.3	-11.8	7.8
IE	123	3	547	8	45.1	8.1
IT	161	4	244	3.6	11	7.2
LT	0	0	0	0	94.6	9.9
LU	6	0.2	5	0.1	-3.1	18.5
LV	0	0	1	0	3	6.2
MT	2	0.1	1	0	-7.4	10
NL	208	5.1	458	6.7	21.7	6.6
PL	208	5.1	328	4.8	12.1	6.5
PT	7	0.2	13	0.2	17.4	12.3
RO	6	0.2	10	0.2	12.3	15.4
SK	2	0.1	79	1.2	145.3	18.8
SI	4	0.1	23	0.3	54	4.9
SE	123	3	232	3.4	17.2	10.8
EU28	*4 078*	*100*	*6 815*	*100*	*18.7*	*10.1*

Source: COMEXT (2017).

The dispersion of both export and import growth rates in trade in services with Korea is also illustrated graphically by the two figures below. No clear geographical indication

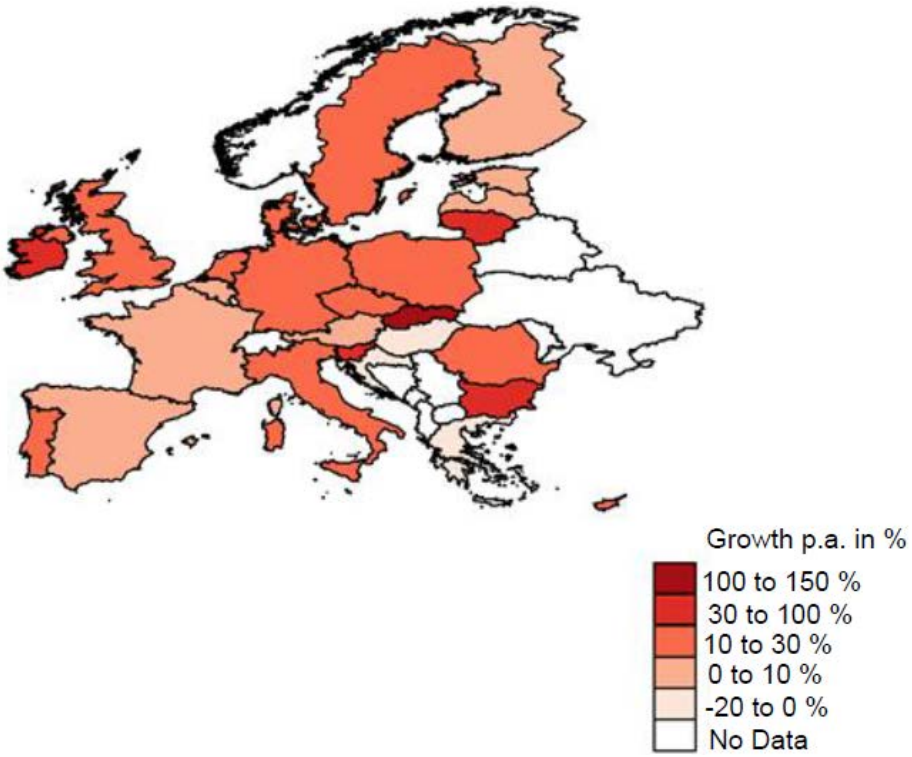
stands out in which European regions have experienced the highest growth rates in trade in services with Korea regarding exports (top figure) or imports (bottom figure).

Figure 44: Annual growth (%) of services exports between 2010 and 2015



Source: Own compilation, based on COMEXT (2017). The figure shows the annual growth rates in exports of services in percent. The darker the shaded area of a country is, the higher the growth rate. The legend – Growth p.a. in % - shows how the different shades are categorised.

Figure 45: Annual growth (%) of services imports between 2010 and 2015



Source: Own compilation, based on COMEXT (2017). The figure shows the annual growth rates in imports of services in percent. The darker the shaded area of a country is, the higher the growth rate. The legend – Growth p.a. in % - shows how the different shades are categorised.

5.3. Evolution of foreign direct investment between the EU and Korea

The key findings of the evaluation are that:

- **The stock of bilateral foreign direct investment (FDI) between the EU and Korea increased over time: the yearly growth rate of the stock of EU FDI in Korea went from 5 percent prior to the FTA to 8 percent thereafter; the growth rate of the stock of Korean FDI in the EU went from 7 percent to 19 percent.[45] This is a first indication that the FTA promoted FDI.**
- **Due to the volatile valuation of assets, there is no clear evidence that the FTA caused a substantial outperformance of bilateral FDI between the EU and Korea compared to other countries.**

Promoting foreign direct investment (FDI) is an objective which was spelled out explicitly in the agreement. FDI is a conduit for the transfer of state-of-the-art technologies and know-how and can therefore contribute significantly to the growth performance of economies.[46]

Data on foreign direct investment were accessed through the Eurostat "Balance of payments—International transactions (*bop*)" and the OECD databases. In *bop,* yearly

[45] Averages of the periods 2006-2011 (pre FTA) vs 2011-2015 (post FTA).

[46] Javorcik, Beata (2004), Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages, *The American Economic Review* 94(3): 605-627.

flows and stock data are available for the period 2004 to 2014 for the EU27 and 2008 to 2014 for the EU28. Because of confidentiality arrangements, the information base on sectoral FDI data is quite limited; therefore, we look mainly at aggregate data. This in turn permits us to overlook the changes in methodologies which were adopted for this category (from BPM5 to BPM6 in 2013 and from the classification of economic activities NACE 1.1 to NACE 2 in 2009). Similarly, not all EU Member States report the measures of interest, leaving a relatively high number of missing values, which is why we cannot carry out a Member State analysis. To look at the Korean perspective, direct investment data from the OECD was used. This covers a long time span as well, but does not include statistics for seven EU countries (Bulgaria, Croatia, Cyprus, Latvia, Lithuania, Malta, and Romania). The data are compiled using the BMD4 method (from 2009 onwards from the previous BMD3), which at the aggregate level is comparable with BPM6.

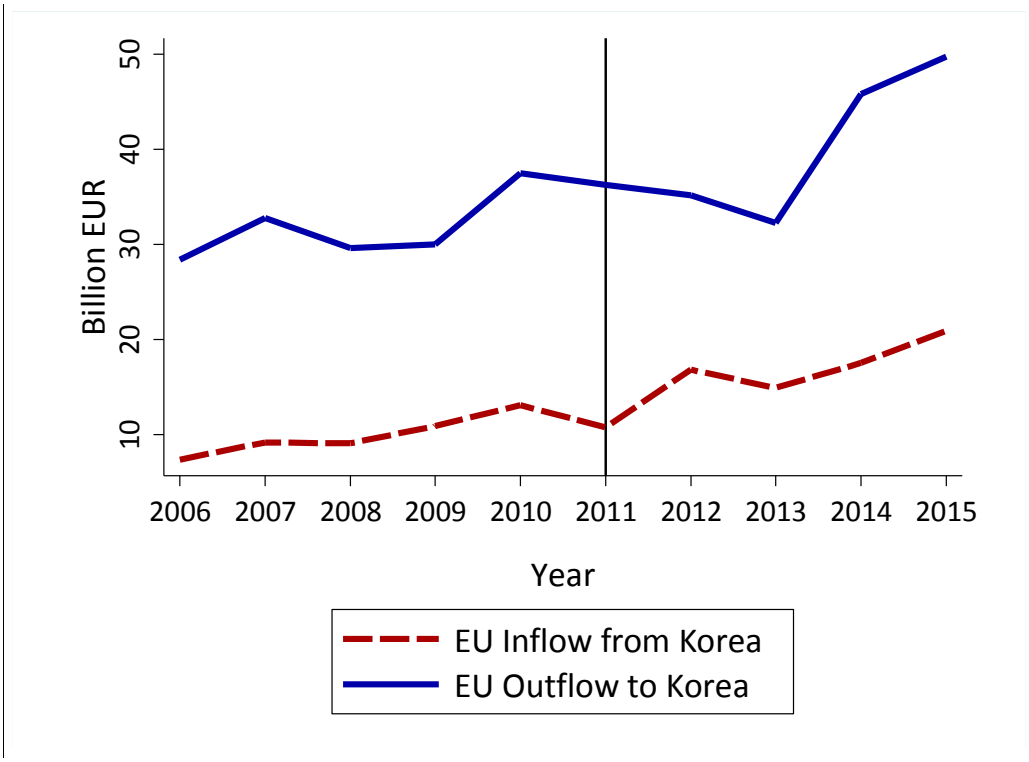
Assessing the impact of the EU-Korea FTA on foreign direct investments, we need to rule out that other measures, e.g. Bilateral Investment Treaties (BITs), with similar effects, drive the results; according to the United Nations Conference on Trade and Development (UNCTAD), Korea signed its last BIT with EU Member States in 2006; this refers to the Korea-Bulgaria BIT and the Korea-BLEU (Belgium-Luxembourg Economic Union) BIT.[47] Thus, we assume that any effects we observe for the post-2011 period are independent of the conclusion of BITs and can be attributed to the investment provisions of the EU-Korea FTA.

These provisions include but are not limited to market access regulations. In concrete terms, these prohibit each party from undertaking measures such as limitations on the number of establishments of foreign firms, limitations on minimum domestic share-holdings, and limitations on total number of operations or on the total quantity of output. Moreover, the national treatment clause in combination with the most favoured nation clause expresses the willingness of both parties to significantly encourage foreign direct investments.

To gain a better understanding of whether that goal has been reached, Figure 46 depicts the FDI stock of EU companies in Korea (outbound FDI) and the counterpart of Korean firms in the EU (inbound FDI). While the noticeable difference in absolute values among the two positions is due to Korea being a relatively small economy, a closer look at the respective growth rates is of greater interest. During the pre-FTA period, the annual growth rate of the stock of EU FDI in Korea was 5 percent and for inbound stocks the figure was around 7 percent. In the post-FTA years the recorded average growth rates are higher and reach 8 percent and 19 percent, respectively. All in all, despite the fluctuations (especially for the outflows during the financial crisis and euro crisis), a clear positive trend is observed in the FDI stocks owned by the partner country. The increase is stronger in the post-FTA period.

[47] Source: UNCTAD (2017), http://investmentpolicyhub.unctad.org/IIA/CountryBits/111#iiaInnerMenu, accessed on 08 May 2017.

Figure 46: Stock of bilateral foreign direct investments (annually, EUR billion)

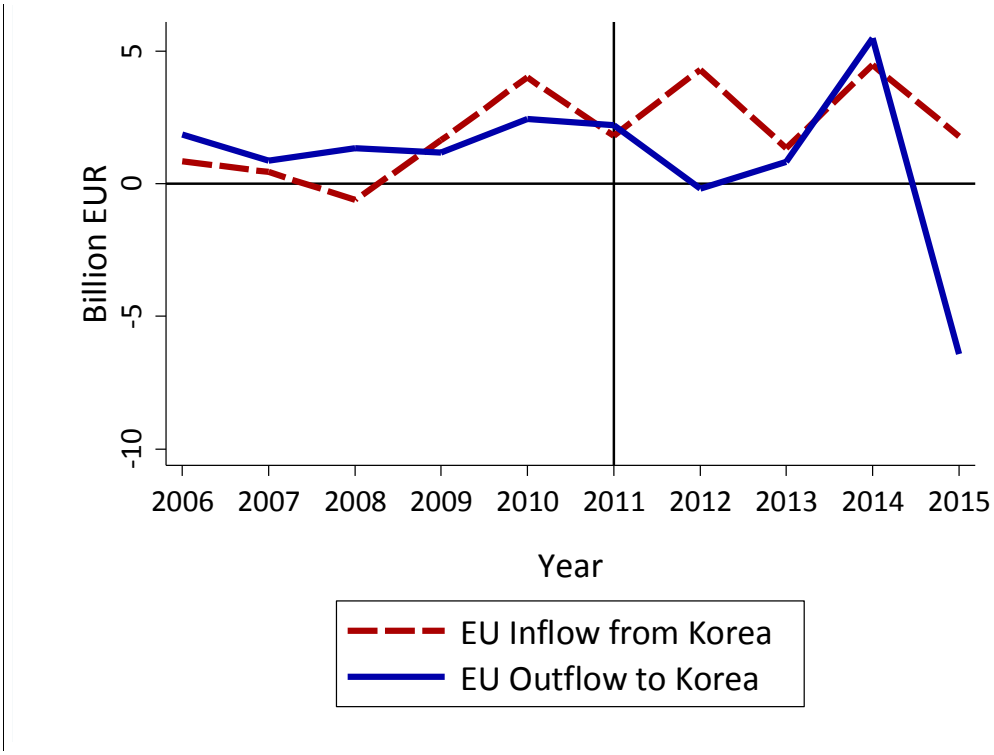


Source: Own compilation, based on Eurostat (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 47 below illustrates the flows of FDI, which are volatile by construction; single investments often account for a large share of all FDI flows, driving them up and down frequently. The most striking feature of the graph is the conspicuous disinvestment (negative flow) of EU companies from Korea in 2015. This observation seems counter-intuitive in the light of an increasing stock presented previously. Thus, we face the problem that the figures show contradicting dynamics. From an accounting perspective, an FDI stock equals the sum of previous FDI flows plus value adjustments such as depreciation. However, FDI stocks are also subject to value adjustments by stock market valuations and exchange rate effects. It is not straightforward and is out of the scope of this analysis to clearly disentangle these different effects, but one should not be surprised by FDI stock and flow movements that seem contradictory at first glance. However, there are no better data available than those shown here.

Interestingly, the flows seem rather counter-cyclical. In particular, in the years 2011-2013, in which Korean FDI in the EU grew, the flows in the other direction were reduced. Given the high volatility and the—for investment considerations—relatively short period since the start of the provisional application of the FTA, no clear conclusion can be drawn as to whether the FTA has significantly and causally increased FDI.

Figure 47: Flows of foreign direct investments (annually, EUR billion)

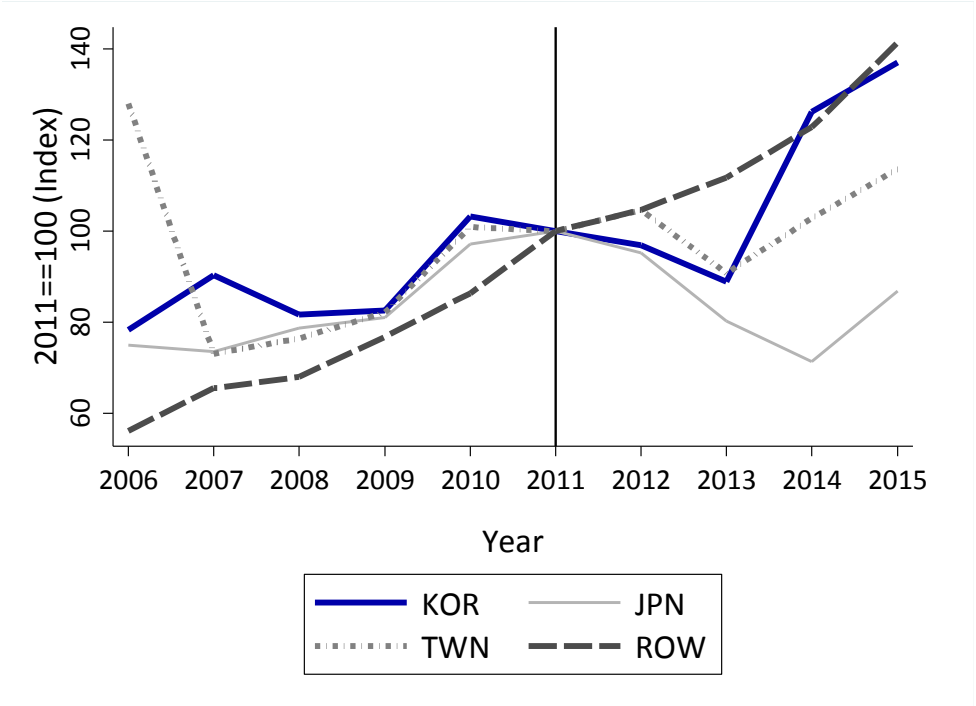


Source: Own compilation, based on Eurostat (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

The aforementioned high volatility of FDI flows leads us to abandon this measure to benchmark the Korean performance versus that of other partners. Even though FDI stocks are not the best measures to evaluate an FTA's effect either, we choose them to compare Korea to other countries as we did in previous sections. Thus, we once again follow a difference-in-differences approach as presented in section 5.2.[48] In Figure 48 and Figure 49, we normalise FDI stocks to their 2011 level. As shown by Figure 48, in the pre-FTA period, the growth of EU FDI to Korea was in line with that of Japan, higher than that of Taiwan and lower than other economies. In the second period, the negative years of 2011-2013 were followed by a remarkable recovery in 2014 and a moderate increase in 2015, putting FDI to Korea on the upper end of the country comparison group. From this analysis, we can identify an outperformance of EU FDI in Korea induced by the FTA only in comparison to Japan and Taiwan.

[48] Please recall that a difference-in-differences approach is only able to identify causation if the right assumptions are met. These are also presented in section 5.2. As the EU-Korea FTA is the only treatment that should have impact on FDI, the comparison with non-treated but similar countries (Japan and Taiwan), i.e. a difference-in-differences approach, is appropriate here.

Figure 48: Stock of FDI outflow from the EU to selected countries (annually, EUR billion)

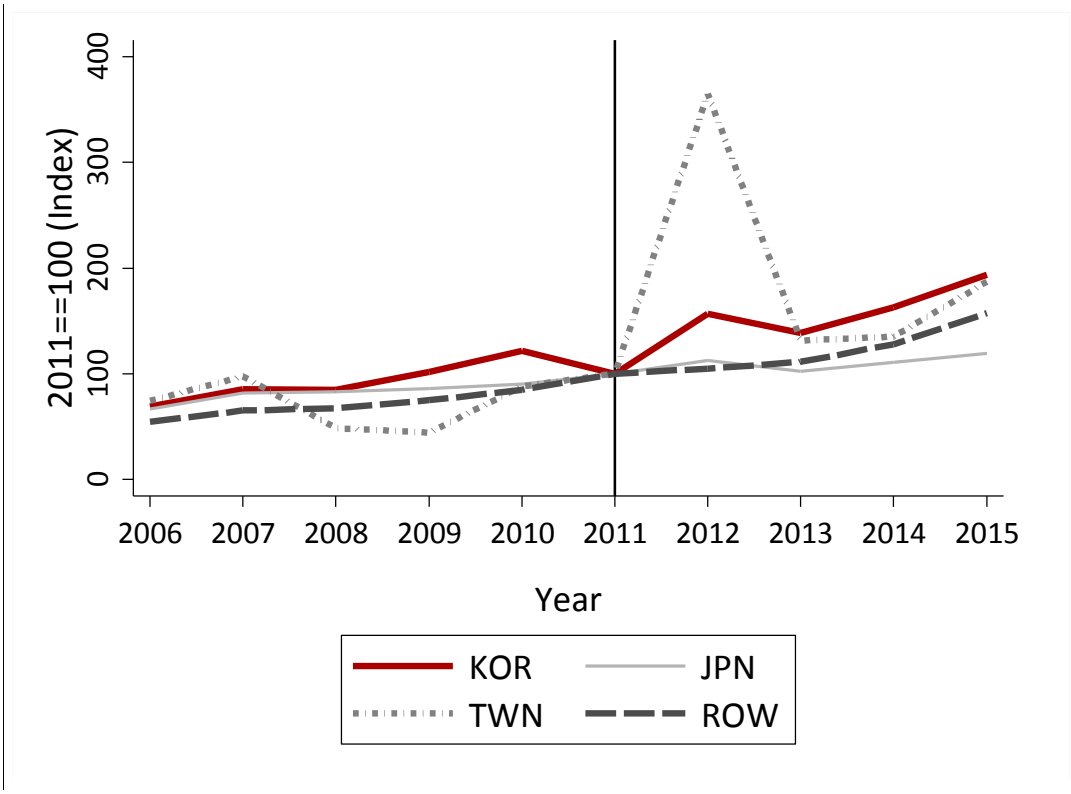


Source: Own compilation, based on Eurostat (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 49 below shows that in the first period, the growth rates of Korean-owned EU stocks were in line with those of the control group. In the post-FTA period, however, Korea clearly outperforms both Japan and RoW in terms of investment in the EU. It is noteworthy that the peak in the Taiwanese FDI position was probably caused by a large unique transaction or a measurement error,[49] and thus is not of particular interest. This one-time peak fell back to a higher level than 2011 and ends up registering a slightly worse performance than Korea in 2015. No unambiguous positive impact of the FTA on FDI inflows from Korea is supported by the data.

[49] Measurement errors and unique transactions bias are more relevant if the overall FDI volume is relatively low. Compared to the other countries chosen, Taiwanese FDI in the EU is relatively small.

Figure 49: Stock of FDI inflow in the EU from selected countries (annually, EUR billion)

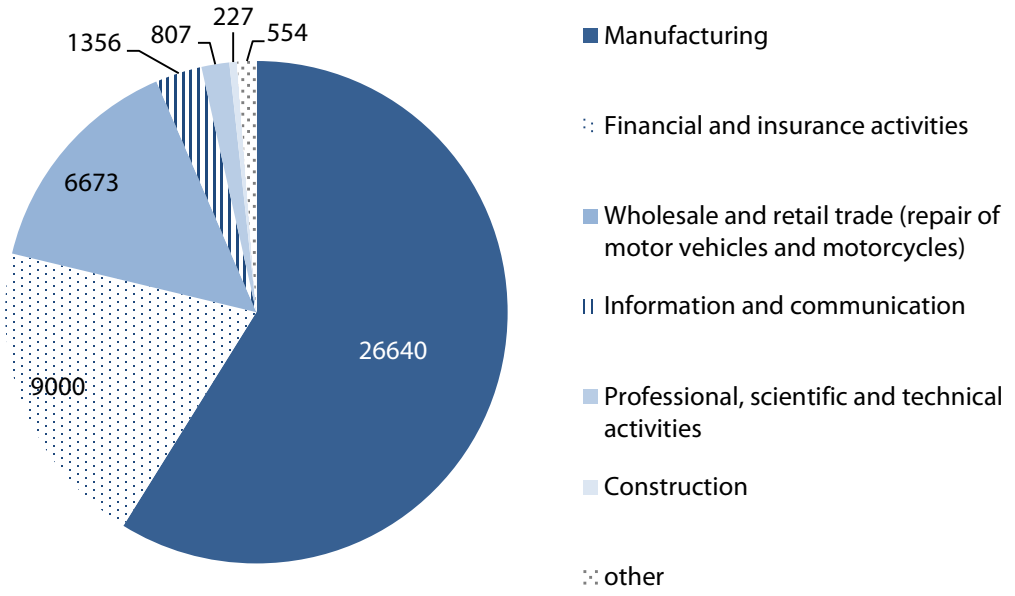


Source: Own compilation, based on Eurostat (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 50 shows the stock of European FDI in Korea at the sectoral level for 2014.[50] More than 55 percent (EUR 27 billion) of European direct investments in Korea are related to the manufacturing sector; direct investments in the financial sector account for EUR 9 billion, corresponding to 20 percent of total European FDI in Korea. The third largest share corresponds to investments in the wholesale and retail trade sector (repair of motor vehicles and motorcycles) and is thus directly related to the automotive sector. Hence, we conclude that the manufacturing sector and related service industries are of primary importance for European direct investments in Korea. Sectoral data on Korean FDI in Europe were not available.

[50] 2015 data were quite incomplete, therefore the 2014 sectoral data are taken to present an sector overview. However, typically sectoral composition of FDI have only little volatility.

Figure 50: European FDI in Korea at the sectoral level 2014, EUR million



Source: Own compilation, based on Eurostat (2017).

It can be concluded that a slight positive effect on FDI outflows to Korea is observable, while the corresponding inflows from Korea seem not to have changed drastically. FDI dynamics between the EU and Korea slightly outperform those observed for other countries in the control group in the post-FTA period. This evolution goes along with the deeper trade integration in both goods and service sectors as a result of the FTA. Hence, the data presented in this section indicate that the FTA seems to have positively influenced investment between Korea and EU countries. However, as FDI data are typically prone to error, this result needs to be taken cautiously.[51]

[51] Some interviewed stakeholders noted that factors such as the number of clients/overall volume of business in Korea and the overall political and economic environment are bigger determinants of companies' decisions to invest in Korea than the existence of the FTA. However, one business association commented that having the FTA in place could help facilitate more EU FDI in Korea in the future.

5.4. Causal Effects of the FTA on Trade (partial equilibrium analysis)

The key findings of the evaluation are that:

- **To differentiate the causal effects of the EU-Korea FTA from simple correlations, appropriate statistical methods have to be used. Econometric panel data methods, as have been used for the analysis presented in this section, are frequently employed for economic research on the effects of trade agreements. They allow for isolating the specific effects of the FTA from other determinants of trade by analysing (in the case of the EU-Korea FTA) sector-level trade flows between the EU and Korea for the period 2000-2014. The estimation is based on more than 1.5 million observations.**
- **The presence of explicit horizontal provisions in the EU-Korea FTA and of various economic spill-over factors imply that positive trade creation effects occur even in sectors where the FTA does not specify any sectoral commitments.**
- **The EU-Korea FTA has increased EU exports to Korea on average by 54 percent and Korean exports to the EU by 15 percent between 2011 and 2014 (the last year with complete data).**
- **In 49 out of 56 sectors, the effects of the EU-Korea FTA on EU exports to Korea are positive; 41 of these effects are statistically significant. Strong causal trade creation effects of more than 40 percent are observed, e.g., for the pharmaceutical, machinery, and car sectors, as well as for telecommunication services, IT services, and financial services.**

The previous sections described the dynamics of trade flows between the EU and Korea in comparison to other countries before and after the start of the provisional application of the EU-Korea FTA. This setup provides valuable insights, but it leaves the following question open: has the FTA caused the observed changes in trade flows (or in other variables) or are these changes just occurring at the same time as the FTA for other reasons? As correlation does not constitute causation, appropriate statistical methods have to be used for identifying causal effects of the EU-Korea FTA. In this section, we employ econometric panel data methods to estimate the effects of the EU-Korea FTA on goods and services trade. The analysis focuses on outcomes. In other words, we ask: how has the FTA affected trade flows? In this analysis, we abstract from specific provisions of the agreement. Indeed, one main result of the study is that the EU-Korea FTA has boosted trade even in sectors in which no specific sectoral provisions exist in the agreement. The reason for this lies in the fact that the FTA has causally affected trade through horizontal rules such as improved transparency, through a higher awareness of Korea and the EU as potential markets, and through its positive impact on private sector initiatives that promote trade.

We present the statistical methods used and many robustness checks in Annex II. Here, we only provide a brief summary description.

Bilateral trade is determined by a large number of factors; a large literature, recently surveyed by Head and Mayer (2015), studies these factors.[52] Broadly speaking, bilateral trade flows are driven by (i) characteristics of the exporter, (ii) the demand of the importer, and (iii) by bilateral factors:

(i) *Characteristics of the exporter:* This relates to the elements which impact the exporter's competitiveness such as factor costs (wages, the cost of energy, of land, or of capital) and the productivity at which these production factors are

[52] Head, Keith, and Thierry Mayer. "Gravity Equations: Workhorse, Toolkit, and Cookbook". *Handbook of International Economics, Vol 4.* Elhanan Helpman, Gita Gopinath and Kenneth Rogoff. 2015. 131-195.

used (driven by institutional quality and the availability of various public goods). How much a country wishes to supply to foreign partners depends also on the degree of local competitive pressure: the larger it is, the bigger the incentives to seek foreign markets;

(ii) *Demand of the importer:* This describes the demand capacity of the importer, i.e., mainly the expenditure on traded goods, which is determined by the level of income and by the degree of economic development (richer countries have different spending patterns than poorer ones). Importantly, demand for foreign goods is also shaped by the overall degree of competitive pressure in the market: if it is low, prices are generally high, and consumers or intermediate import users find it more worthwhile to buy foreign goods;

(iii) *Bilateral factors:* Trade between two countries is determined by the size of bilateral trade costs such as tariffs or non-tariff trade costs, transportation costs (often seen as a function of geographical distance), other transaction costs (information costs, communication costs, translation costs, costs related to dealing with bridging different legal or cultural environments), and so on. Anderson and van Wincoop (2004) argue that trade costs are very large, often exceeding 50 percent of the pure production costs of a good or service, and that tariffs are typically small relative to the total.[53] However, some bilateral variables are only seemingly bilateral. While the bilateral nominal exchange rate between some countries, say the EU and Korea, is an important determinant of bilateral trade between them, one can think of it as depending on exporter and importer characteristics separately. The reason is that the euro/won exchange rate can be thought of as the product of the euro/USD exchange rate and the USD/won exchange rate.[54] The exchange rates are relative to some third country, and can be considered as exporter or importer specific rather than truly bilateral.

Trade costs are affected by free trade agreements through their effects on non-tariff trade costs, tariffs, and on other, not directly policy-related, trade costs which are shaped by interactions on the market place (e.g., the depth of financial markets dealing with the currencies of the partner countries). In this section, we use simple statistical modelling to isolate the effects of the EU-Korea FTA on bilateral trade flows. Holding other determinants of trade (such as income levels, aggregate price levels, etc.) constant, we focus on the FTA's effects on bilateral trade costs. This serves as an important input into the subsequent general equilibrium (GE) analysis where we allow incomes, price levels, and so on, to adjust and to affect bilateral trade flows.

To this end, we model bilateral trade flows between 42 countries (including all EU countries) using a gravity equation[55] with a comprehensive set of so-called fixed effects.[56] This allows us to interpret the estimated effects as causal ones: other determinants of trade have been accounted for such that the effects reported indeed represent the additional trade due to the agreement. Note that these causal effects differ in magnitude from those reported in the purely descriptive analysis in section 5.2; the reason is that to a certain degree, bilateral trade between the EU and Korea would have

[53] Anderson, James E, and Eric van Wincoop. "Gravity With Gravitas: A Solution To The Border Puzzle". American Economic Review 93.1 (2003): 170-192.

[54] In fact, any third country exchange rate can be used. The US dollar (USD) is only an example.

[55] Gravity trade models predict trade flows between countries based on economic size (calculated e.g. on the basis of GDP) and geographical distance.

[56] Fixed effects are fixed parameters used in statistical modelling that aim to control for unobserved heterogeneity between the observational units.

increased even in the absence of a trade agreement. Hence, only a portion of this increase is causally induced by the FTA.

5.4.1. Aggregate estimates of the effects of the EU-Korea FTA

For the main estimation of aggregate effects of the EU-Korea FTA, the results of which are presented in the table below, we use the latest version of the WIOD trade data,[57] and equations similar to those applied in Aichele, Felbermayr, and Heiland (2016) for use in the Ifo Trade Model.[58] We incorporate the latest developments in the empirical gravity literature as summarized by Yotov, Piermartini, Monteiro, and Larch (2016).[59]

The main specification uses econometric panel data methods on bilateral sector-level trade flows for the period 2000-2014. The technique is well suited to isolate the causal effects of the trade agreement as opposed to other determinants of bilateral trade such as the evolution of GDP, price levels, other trade policy initiatives, or changes in the structure of comparative advantage.[60] The sample for the main estimation includes all 56 sectors in our sample (i.e., goods and services trade). The estimation is based on more than 1.5 million observations.

Baier, Yotov, and Zylkin (2016) demonstrate that the effects of FTAs can be asymmetric.[61] We therefore allow for the effects of the EU-Korea FTA to be different for EU exports to Korea ($EU \rightarrow KOR$) and for Korean exports to the European Union ($KOR \rightarrow EU$).

Finally, in addition to accounting for the specific effects of the EU-Korea FTA, which are of primary interest here, the main specification also controls for the presence of any other regional trade agreement that may have impacted trade between the countries in our sample during the period of investigation. Figure 51 presents trade creation effects of different trade liberalisation agreements, which are identified by regression analysis. It shows how different policies have increased trade compared to the level before these policies entered into force.[62] Technical details on the estimation and the econometric model for the main estimation are provided in Annex II.

Figure 51 shows the main results in terms of additional trade created by the EU-Korea FTA. From this figure, one can draw the following conclusions:

1. The EU-Korea FTA was effective in promoting trade between the European Union and Korea. This is supported by the positive and significant estimates of the coefficients on each of the two indicator variables that we use to capture the effects of the agreement. As indicated before, these are EU exports to Korea ($\mathrm{EU} \rightarrow \mathrm{KOR}$) and Korean exports to the European Union ($\mathrm{KOR} \rightarrow \mathrm{EU}$). The estimates imply that the agreement has increased EU exports to Korea on average by 54

[57] See section 5.2.2 for an introduction into the WIOD data set.

[58] Aichele, Rahel, Gabriel Felbermayr, and Inga Heiland. Going Deep: The Trade and Welfare Effects of TTIP Revised. 2016. Ifo Working Paper No. 219.

[59] Yotov, Yoto et al. An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model. Geneva: UNCTAD and WTO, 2016.

[60] Technically speaking, the estimation uses linear regression tools with country-pair, exporter-time, and importer-time fixed effects. This controls for all possible confounding factors that could drive bilateral trade flows other than the FTA. Importantly, this approach also filters out movements in the nominal exchange rates.

[61] Baier, Scott, Yoto Yotov, and Thomas Zylkin. *On The Widely Differing Effects Of Free Trade Agreements: Lessons From Twenty Years Of Trade Integration*. 2016. School Of Economics Working Paper Series, 2016-15.

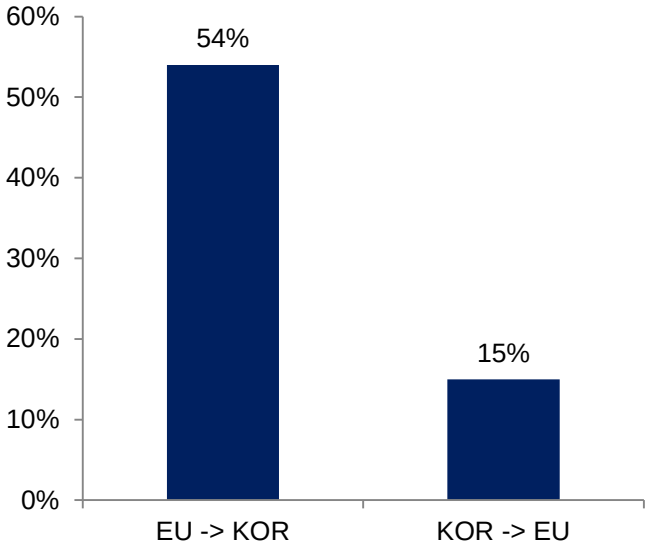
[62] The econometric identification only accounts for policy changes that have occurred during the period of observation; for example, it does not account for the effect of trade agreements which are effective prior to 2000.

percent and Korean exports to the EU by 15 percent.[63] Our estimates of the effects of the EU-Korea FTA, in each direction, are comparable to corresponding estimates from the literature.[64] Note that as of 2014, the last year in our sample, the agreement is not fully phased in and the economic effects have certainly not fully ramped up either. Hence, the estimated effects can be understood as lower bounds of the long-run effects.[65]

2. The impact of the EU-Korea FTA was, on average, significantly asymmetric across the Parties. Specifically, our estimates reveal that the effect of the EU-Korea FTA on EU exports to Korea was significantly larger compared to the corresponding effects on Korean exports to the European Union. This could be due to the fact that it took longer for the Korean side to fully take advantage of the large and sophisticated EU market. Note that the effect is not due to the strong depreciation of the euro vis-à-vis the won, because currency effects have been controlled for in the empirical analysis.

Figure 51 is based on statistical analysis which is potentially subject to specification error and other problems. However, our main results are surprisingly robust. In Annex II, we document this fact using a large series of sensitivity experiments which vary estimation methods and modelling details.

Figure 51: Causal trade creation effects of the EU-Korea FTA (2011 to 2014), aggregate trade (goods and services)



[63] These numbers are computed from the estimated effects by applying the formulas $100\% \times (\exp(0.42) - 1) = 52\%$ and $100\% \times (\exp(0.13) - 1) = 14\%$. All other point estimates presented in the table above and Table 89 can be interpreted similarly.

[64] Baier et al., 2016; Baier, Scott L., and Jeffrey H. Bergstrand. "Do Free Trade Agreements Actually Increase Members' International Trade?". *Journal of International Economics* 71.1 (2007): 72-95.; Egger et al., 2011; Head and Mayer, 2014; Anderson, James E., and Yoto V. Yotov. "Terms Of Trade And Global Efficiency Effects Of Free Trade Agreements, 1990–2002". *Journal of International Economics* 99 (2016): 279-298.

[65] Note that the estimates in column (1) are to be understood as partial equilibrium effects of the EU-Korea FTA. This means that a further stimulation of trade due to higher incomes in the EU and Korea is not captured by the analysis. The same is true for trade diversion effects through which some of the trade creation estimated in column (1) is trade redirected from other trade partners so that the total increase in trade may differ. As indicated before, this is accounted for in the subsequent general equilibrium (GE) analysis.

Source: Own estimates, based on WIOD data for 2000 to 2014 (1.5 million observations). All effects are statistically significant at the 1 percent level. See specification (3) in Table 90 of Annex II. The estimates represent partial equilibrium effects: they do not reflect feedback effects e.g. due to changes in countries' GDP that would also be causally related to the FTA.

5.4.2. Sectoral estimates of the effects of the EU-Korea FTA

This section reports sectoral estimates of the effects of the EU-Korea FTA. We start with estimates classified according to the WIOD sectoral classification. Then, we proceed with sectoral estimates classified according to the GTAP concordance. For presentational reasons, the results provided in this section only include estimates for the effects of the EU-Korea FTA and the corresponding p-values.[66] The underlying estimates for the results in each table of this section are reported in Annex II.

The estimates provided in the table below are obtained with the main econometric specification from column (1) of the first table in this section for each WIOD sector.

Table 9: Causal trade creation effects (%) of the EU-Korea FTA (2011 to 2014), sectoral trade

ID	Sector Description	EU→KOR (%)	p-value	KOR→EU (%)	p-value
1	Crop and animal production	28.0**	0.002	33.8**	0.001
2	Forestry and logging	88.5**	0.000	55.0**	0.009
3	Fishing and aquaculture	102.4**	0.000	-6.3	0.718
4	Mining and quarrying	76.3**	0.000	44.8**	0.001
5	Manufacture of food beverages, tobacco	29.3*	0.040	18.4+	0.088
6	Manufacture of textiles, apparel, leather	8.0	0.643	16.8	0.109
7	Manufacture of wood and cork;	40.9*	0.020	35.7*	0.022
8	Manufacture of paper and paper products	9.3	0.299	31.1**	0.007
9	Printing and reproduction of recorded media	23.0*	0.022	26.0*	0.028
10	Manufacture of coke and refined petroleum	547**	0.000	130**	0.000
11	Manufacture of chemicals and chemical products	21.2+	0.074	39.4**	0.000
12	Manufacture of basic pharmaceutical products	73.8**	0.000	0.3	0.975
13	Manufacture of rubber and plastic products	23.7*	0.022	37.4**	0.000
14	Manufacture of other non-metallic minerals	53.6**	0.003	30.6*	0.021
15	Manufacture of basic metals	19.2+	0.054	32.4+	0.053
16	Manufacture of fabricated metal products	31.0**	0.001	24.2*	0.014
17	Manufacture of computer, electronic and optical	81.1**	0.000	-1.5	0.922
18	Manufacture of electrical equipment	60.5**	0.000	15.4	0.170
19	Manufacture of machinery and equipment nec.	50.4**	0.000	0.8	0.942

[66] The p-value is a probability measure in statistical hypothesis testing. It provides the smallest level of significance at which the null hypothesis (i.e. the hypothesis that there is no effect) would be rejected. A smaller p-value indicates that there is greater evidence in favour of the hypothesis that there is an effect.

20	Manufacture of motor vehicles, trailers and semi-trailers	41.2**	0.000	47.0*	0.040
21	Manufacture of other transport equipment	79.3**	0.000	2.2	0.823
22	Manufacture of furniture; other manufacturing	10.3	0.265	-12.9	0.144
23	Repair and installation of machinery and equipment	-	-	-10.0	0.251
24	Electricity, gas, steam and air conditioning supply	238**	0.001	32.6*	0.035
25	Water collection, treatment and supply	385**	0.001	-54.5*	0.027
26	Sewerage; waste collection, disposal;	48.6**	0.000	3.0	0.882
27	Construction	39.4**	0.000	26.1**	0.002
28	Wholesale, repair of vehicles and motorcycles	72.5**	0.000	25.1	0.252
29	Wholesale trade, except of vehicles and motorcycles	59.5**	0.000	20.9+	0.092
30	Retail trade, except of motor vehicles and motorcycles	53.6**	0.001	26.7*	0.056
31	Land transport and transport via pipelines	73.0**	0.000	15.4	0.458
32	Water transport	22.5	0.261	28.0	0.112
33	Air transport	84.2*	0.033	32.6+	0.079
34	Warehousing and support activities for transportation	45.6**	0.001	1.9	0.862
35	Postal and courier activities	10.6	0.452	-5.2	0.835
36	Accommodation and food service activities	26.2*	0.013	17.9+	0.081
37	Publishing activities	31.4*	0.029	-9.3	0.646
38	Motion picture, video and television, sound	15.7	0.342	-17.6	0.295
39	Telecommunications	78.6**	0.000	-17.9	0.331
40	Computer programming, consultancy; information	74.9**	0.001	-5.2	0.841
41	Financial services, except insurance and pension	55.9+	0.082	10.4	0.537
42	Insurance, reinsurance and pension funding	106.3**	0.000	30.2+	0.083
43	Auxiliary to financial and insurance activities	13.2	0.744	-8.2	0.727
44	Real estate activities	-15.5	0.523	40.4*	0.032
45	Legal and accounting, management, consultancy	-27.7*	0.044	26.9*	0.022
46	Architectural, engineering, technical testing	53.3**	0.010	8.4	0.662
47	Scientific research and development	26.0*	0.029	5.2	0.594
48	Advertising and market research	-47.7+	0.061	-18.9	0.214
49	Other professional, scientific, veterinary activities	49.6**	0.024	9.2	0.271
50	Administrative and support service activities	30.9*	0.035	15.6	0.217
51	Public administration and defence	-0.2	0.988	-14.4+	0.054
52	Education	10.4	0.363	-3.3	0.772
53	Human health and social work activities	117**	0.000	6.0	0.658
54	Other service activities	42**	0.001	4.9	0.660
55	Undifferentiated goods- and services activities	-	-	-	0.000
56	Activities of extraterritorial organisations	-	-	-	-

Source: Own estimates, based on WIOD (2014) data. The coefficients are translated into percentage trade creation effects. The logarithmic coefficients can be found in Table 91 P-values below 0.10 denote statistical significance at least at the 10 percent level. Note: '.' means that no sectoral estimate could be provided due to the lack of sufficient transactions in this area. + $p < 0.10$, * $p < .05$, ** $p < .01$.

Based on the results of the sectoral analysis, the following conclusions can be drawn:

1. 92 percent (49 out of 53) of the estimates of the effects of the EU-Korea FTA on EU exports to Korea are positive; 84 percent of those (41 out of 49) are statistically significant.[67] This is a remarkable result in light of the wide heterogeneity across sectors and, even more importantly, in light of the short time span for which data are available.[68]

2. 73 percent (40 out of 55) of sectoral estimates of the EU-Korea FTA's effects on Korean exports to the EU are positive, and more than half of them are statistically significant.[69] In combination with the previous finding, and consistent with the aggregate estimates from the previous section, this result confirms that the EU-Korea FTA had significantly stronger effects on EU exports to Korea than in the other direction.

3. Finally, comparison of the effects of the EU-Korea FTA for goods and services reveals that the impact of the agreement has been stronger for goods than for services. We find this result to be in line with expectations given the highly localized consumption of services[70] and the fact that services were less liberalised than goods in the agreement.

Overall, the estimates from the table above confirm the findings at the aggregate level from the previous section that (i) the EU-Korea FTA has been successful in promoting bilateral trade between the member countries, and that (ii) the effects of the agreement have been stronger on EU exports to Korea. We also obtain significant variation of the effects of the agreement across sectors. Broadly, and as expected, we find that the agreement had stronger effects on the trade of goods.

In terms of their economic importance and the size of the trade effects reported in the table above, several sectors stand out. First, in the area of crop and animal production, the data suggest relatively symmetric trade-creating effects ranging between 28 percent (EU exports) and 34 percent (Korean exports).[71] In fishing and aquaculture, the trade creating effects amount to 102 percent for the EU, while we have no evidence for higher exports from Korea to the EU. In the area of processed food, beverages, and tobacco, the situation is relatively balanced with positive effects of 29 percent on EU exports and of 18 percent on Korean exports. Trade in textiles, apparel, and leather was stimulated as well, but the effects do not come out as statistically significant. This is different for the manufacture of wood and cork, where, albeit from low initial levels, exports went up by 41 percent and 36 percent, respectively.

One sector which has delivered a surprising result is the petroleum sector (ID 10). Here, the point estimates of 1.867 for EU exports would suggest that trade has multiplied by a

[67] It refers to the 10 percent significance level.

[68] Only two of the negative estimates are statistically significant. These estimates are for “Legal and accounting, management, consultancy” and “Advertising and market research”.

[69] Only three of the negative estimates are statistically significant. The negative and statistically significant estimates are for “Water collection, treatment and supply”, “Public administration and Defence”, and “Undifferentiated goods- and services activities”.

[70] Anderson, James E., Catherine A. Milot, and Yoto V. Yotov. "How Much Does Geography Deflect Services Trade". *International Economic Review* (2014): forthcoming; Anderson, James E. et al., “Modelling Services Trade, Trade Costs, Borders and Output,” Manuscript (2015).

[71] These numbers are computed from the estimated effects by applying the formulas $100\% \times (\exp(0.247) - 1) = 28\%$ and $100\% \times (\exp(0.291) - 1) = 34\%$. All other point estimates presented in the tables above can be interpreted similarly.

factor of 5. This result has been noticed already by Forizs and Nilsson (2017).[72] They note that the strong increase can be explained by a substantial jump in EU mineral product exports in 2012 that tapered off in the subsequent years. The major drivers of such developments were increased EU exports of oils, oil preparations and liquefied natural gas. In our case study on the use of tariff preferences (see section 10.7), we identified a possible reason for this development. Initially, after the start of the provisional application of the EU-Korea FTA, Korean crude oil importers were able to take advantage of a tax loophole that allowed them to claim a three percent rebate on exported refined oil, even though the FTA had eliminated the three percent tariff on crude imports. However, in 2013, the Korean government announced the intention to close this loophole, whereby tax rebates on refined product exports would be adjusted based on the proportion of crude imports on which tariffs were not paid (i.e. higher rebates would correspond to a lower proportion of duty-free imported oil). This could have acted as a disincentive for Korean refiners to import EU oil in subsequent years.

In the area of manufacturing, we report substantial trade creation effects that tend to be stronger for the EU than for Korea. One particularly important sector is the automotive sector (ID 20). Here, EU exports have increased by some 41 percent while Korean exports have grown by 47 percent. In contrast, the area of other transport equipment has seen a much more asymmetric development, with EU exports having expanded by almost 80 percent (driven mostly by aircraft), while Korean exports (mostly consisting of ships) have not grown.

In the area of services, the econometric analysis reveals strong heterogeneity across sectors. However, for many of them, we fail to find statistically significant effects. Some effects are very large numerically (e.g., in the electricity and water sectors), but the level of trade was almost zero to start with, and still is.[73]

We find substantial and rather symmetric trade creation effects for the construction industry (ID 27). Here, EU exports expanded by 39 percent while Korean exports grew by 26 percent. In retail trade, the econometric analysis yields positive effects of 54 percent and of 27 percent, respectively. Air transport services (though excluded from the scope of the FTA) expanded even more substantially, namely by 84 percent and 33 percent, respectively. In contrast, we find no statistically significant effects of the agreement on trade in postal services (ID 35) or in audiovisual media (ID 38). Publishing or telecommunication services exports from the EU to Korea, in contrast, have benefited from the agreement, while Korean exports have not.

In the area of financial services, we find strong trade creation effects on both sides, but again, the EU seems to benefit more than Korea from the agreement. For example, in the insurance sector (ID 42), EU exports have more than doubled due to the FTA while Korean exports have grown by 30 percent. The picture is more mixed in other professional services. No trade creation effects of the agreement are found for the advertising sector (ID 48) or in public administration and defence (as expected).

The health care sector (ID 53) has, in contrast, seen growing EU exports to Korea (+117 percent), while Korean exports to the EU have increased as well, but much less so (+6 percent).

[72] Forizs, Virág, and Lars Nilsson. "Trade Effects of the EU–Korea Free Trade Agreement: A Comparative Analysis of Expected and Observed Outcomes". The Estey Journal of International Law and Trade Policy 18.1 (2017): 14-30.

[73] A representative of the EU services sectors noted that for many services sectors, the best way to reach a foreign market is through establishment. This interviewee commented that trade figures alone can thus underestimate foreign provision of services in other markets. Trade in services therefore needs to be considered in conjunction with services FDI.

Note, again, that the estimates presented here are to be understood as partial equilibrium effects, and that additional trade effects from higher incomes as well as trade diversion effects are not accounted for. These will be dealt with in the subsequent GE analysis. However, the estimates presented in the previous table can be interpreted as causal effects of the EU-Korea FTA: other determinants of trade have been controlled for so that the effects reported indeed represent the additional trade due to the agreement.

In Annex II, we present robustness checks based on a different sectoral aggregation, namely the one provided by GTAP. This slightly less detailed classification yields very similar results. In line with the literature, we base the following general equilibrium analysis on this classification.

5.5. General equilibrium effects on trade and macroeconomic outcomes

The key findings of the evaluation are that:

- **Greater trade flows are not an objective per se. One important goal of the EU's trade policy strategy is to promote economic activity, as measured e.g. by aggregate income. To estimate the causal effects of the EU-Korea FTA on such variables, a general equilibrium model is needed. The model is constructed such that it generates lower bounds of the true economic effects of the FTA (i.e. it provides conservative estimates).**
- **The economic gains from the agreement are symmetrically distributed in absolute values between the EU and Korea. The EU has seen an increase in GDP by about EUR 4.4 billion due to the FTA, and Korea by EUR 4.9 billion (measured in 2015 prices).**
- **In relative terms, Korea experiences larger benefits due to the FTA (0.3 percent of GDP) than the EU (0.03 percent of GDP). This is not surprising, given the fact that the EU is about ten times as big of a market for Korean products than Korea is for EU products.**
- **In the EU, all Member States benefit from the agreement with some of the smaller countries benefiting the most. The FTA has led to some relatively minor trade diversion effects which are concentrated in the East Asian Region (China, Japan). However, there are also some countries whose exports to Europe and/or Korea went up due to the FTA.**
- **The overall sectoral value added effect of the EU-Korea FTA is positive for the EU, and also for every single Member State, with Germany, France, Italy and the UK as the main drivers and smaller economies as suppliers in relevant production networks.**
- **The European machinery and electronic equipment sectors are profiting the most from the FTA, followed by trade and transport sectors. Overall, 16 of the 21 sectors experience positive value added effects in the EU (5 negative), compared with 18 in Korea (3 negative).**
- **Sectoral value-added results must be interpreted with great caution, because sectoral definitions are becoming increasingly blurred. One example is the automotive industry: while sectoral value-added slightly decreases in the EU's automotive industry, it increases in the electronic equipment sector, as an increasingly large share of value-added in cars originates in that sector.**

This section identifies the causal effects of the EU-Korea FTA on all relevant macroeconomic variables (output, wages, prices, sectoral value added, sectoral trade) and includes also effects on third countries (trade diversion). As these variables respond simultaneously to each other, thereby creating so-called feedback effects, a general equilibrium approach is required to clearly disentangle what drives the results. Trade per se is no end in itself; international trade is rather a welfare-enhancing economic policy, and thus the overall objective is to create welfare gains. For this purpose, the following

section provides a measure for welfare gains at the country level. The results presented in the subsequent sections are those that best illustrate the economic effects of the FTA.

The modelling approach used in this study is as data-driven as possible. We use the causal trade effects estimated in the partial equilibrium analysis (section 5.4), translate them with the help of a standard trade model into the amount of trade cost reduction that must have occurred to generate the trade effects, and feed these into that same model to estimate general equilibrium effects. Further details on the usage of results from gravity estimation that feed into the CGE analysis are presented in Annex VIII.

5.5.1. CGE modelling approach and underlying assumptions

The Ifo Trade Model used in this analysis is a Computable General Equilibrium (CGE) model, which falls into the class of New Quantitative Trade Theory (NQTT) models. This means that the estimation of parameters (essentially trade elasticities and the trade cost effects of the agreement in question) is conducted on the same data that are used as the baseline for the simulation exercise. However, the theoretical basis of the model is standard and comparable to other CGE models. It is a stochastic, multi-sector, multi-country Ricardian model of the type developed by Eaton and Kortum (2002),[74] extended to incorporate rich value chain interactions by Caliendo and Parro (2015),[75] broadened to include non-tariff trade costs by Aichele et al. (2014), and described in general terms by Costinot and Rodriguez-Clare (2014).[76] The pioneering work by Eaton and Kortum (2002), in particular the characterisation of technology as a random variable, allows us to obtain analytical results which make sure that the estimation of model parameters can be carried out in a consistent way based on a specific equilibrium relationship obtained from the model itself (the gravity equation).

The model assumes perfect competition and full employment. This is a standard assumption in similar exercises; see Costinot and Rodriguez-Clare (2014) for a survey of recent modelling advances. The reason is that there are no universally accepted frameworks that allow for linking trade policy to labour market outcomes.[77] Besides this technical aspect, there are good economic reasons for keeping unemployment rates constant for the modelling exercise. Lower trade barriers typically lead to an expansion of both exports and imports. Jobs are created in export-oriented firms and industries, but destroyed in import-competing ones. If lower trade costs lead to an asymmetric expansion of imports and exports, so that the trade surplus of a country grows or falls, the net balance of job creation and destruction might be positive or negative. Trade surpluses are usually not seen to be a function of trade costs but of macroeconomic variables such as exchange rates, interest rates, or the stance of fiscal or monetary policy which are not negotiated in trade agreements. Moreover, permanent imbalances would lead to financing constraints and are therefore not generally sustainable.

Therefore, economists have been very sceptical as to any long-term effects of trade policy measures on (un)employment, which is in this perspective rather determined by

[74] Eaton, Jonathan et al. "Trade and the Global Recession". American Economic Review 106.11 (2016): 3401-3438.

[75] Caliendo, Lorenzo, and Fernando Parro. "Estimates of The Trade And Welfare Effects Of NAFTA". Review of Economic Studies 82.1 (2015): 1-44.

[76] Costinot, Arnaud, and Andrés Rodríguez-Clare. "Trade Theory with Numbers: Quantifying the Consequences Of Globalization". *Handbook of International Economics, Vol 4*. Elhanan Helpman, Gita Gopinath and Kenneth Rogoff. 2014. 197-262.

[77] This is not to say that there are no trade models which would allow for unemployment; see Felbermayr and Prat (2013) or Helpman et al. (2013) for recent surveys. Felbermayr (2015) analyses labour market effects of a potential EU-US trade agreement and surveys the pertinent literature.

macroeconomic conditions and labour market institutions.[78,79] Consequently, the focus of scientific ex-post evaluations of trade agreements lies not on potential effects on aggregate employment, but rather on the effects on the structure of sectoral employment or wages.

The empirical evidence does not point towards an adverse effect of trade on the level of unemployment. If anything can be identified at all, there is a small but very short-lived unemployment-increasing effect in the immediate aftermath of a liberalisation episode,[80] but in the long-run there seems to be a small positive effect.[81]

The assumption of constant overall employment has strong implications for sectoral effects: when one sector expands, at least one other sector must shrink. If the FTA draws more individuals into employment, such negative sectoral effects could be minimised. Because the model does not allow for this possibility, sectoral effects must be interpreted with care.

Moreover, it is important to note that the Ifo Trade Model uses a standard static Ricardian framework. This means that trade is motivated by differences between countries in patterns of sectoral comparative advantages. Trade is impeded by trade costs—tariff and non-tariff ones, as well as by trade barriers imposed by geography, culture, or history. The Ricardian framework is very well established in economics. As the division of labour between countries becomes finer, consumers gain access to cheaper goods and producers gain access to cheaper intermediate inputs.

However, there are alternative engines for growth that are not taken into account in the model. The mechanisms behind them are described in Annex II. Taking them together, we identify lower bounds to the real output and welfare gains of the EU-Korea FTA, i.e. the estimates provided below are conservative in nature.

The Ifo Trade Model requires detailed data on input-output relations between domestic and foreign sectors as inputs, and treats cost shares as constant (assuming Cobb-Douglas technologies). Emissions are treated as (undesired) outputs and their output-coefficients are taken from the data as well. As with all other available CGE models, the framework does not endogenise FDI; this has to be taken into account in the interpretation of results.

Similar to almost all other CGE models, we use data from the Global Trade Analysis Project (GTAP). The most recent available data set (GTAP 9.1) refers to the year of 2011, the year of the start of the provisional application of the EU-Korea FTA. The model is updated such that it reflects the trade policy landscape as observed in 2016. Starting in 2011, the effects of all free trade agreements as of 2016 are taken into account, which enables us to identify the pure causal effect of the EU-Korea FTA. In short, the results are based on world input-output structures that existed in 2011, which is the year of the

[78] This has led Irwin to state that "attempts to quantify the overall employment effect of trade are largely an exercise in futility". (See Irwin, Douglas. *Free Trade under Fire*. 4th ed. New Jersey: Princeton University Press, 2015.)

[79] Paul Krugman (1993) claimed that "The level of employment is a macroeconomic issue, depending in the short run on aggregate demand and depending in the long run on the natural rate of unemployment, with microeconomic policies like tariffs having little net effect. Trade policy should be debated in terms of its impact on efficiency, not in terms of phony numbers about jobs created or lost." (See Krugman, Paul. "What Do Undergrads Need To Know About Trade". *American Economic Review Papers and Proceedings* 83.2 (1993): 23-26.)

[80] Dutt, Pushan, Devashish Mitra, and Priya Ranjan. "International Trade and Unemployment: Theory and Cross-National Evidence". *Journal of International Economics* 78.1 (2009): 32-44.

[81] Felbermayr, Gabriel, Julien Prat, and Hans-Jörg Schmerer. "Trade and Unemployment: What do the Data Say?" *European Economic Review* 55.6 (2011): 741-758.

start of the FTA's provisional application, but model the global trade linkages as of 2016. To obtain general equilibrium-consistent estimates of the causal effects of the EU-Korea FTA, the analysis compares this observed status quo situation with a simulated counterfactual situation in which the EU-Korea FTA is assumed to be non-existent (counterfactual scenario). To do so, tariff cuts as observed in the data, as well as reductions in other trade costs as implied by the ex-post analysis of the agreement in the partial equilibrium analysis, are counterfactually undone in the simulation model. Annex VIII and the section on non-tariff trade costs provide more details on this. Table 10 shows the status quo scenario (EU-Korea FTA in place). The table is constructed using the sector-level bilateral trade effects documented in the table above and directly observed tariff rate reductions due to the agreement. More precisely, the estimated causal trade effects of the agreement are translated into trade cost reductions using the trade elasticities applied in the Ifo Trade Model (Aichele et al., 2016). These are decomposed into the directly observable tariff and the non-observable non-tariff components using the model structure. For more details on tariffs, refer to section 5.1; non-tariff trade costs in the context of the EU-Korea FTA are extensively discussed in section 6.1. As the partial equilibrium (gravity analysis) of the previous sections holds prices constant and leaves out income effects, the results from the CGE analysis better reflect the true effects of the EU-Korea FTA on economic activity.[82]

Table 10: Decomposition of tariff and NTTC reduction – status quo scenario

Sector Description	EU Imports		EU Exports	
	Tariff Reduction (%)	NTTC Reduction (%)	Tariff Reduction (%)	NTTC Reduction (%)
Agriculture	0.3	9.5	24.3	2.9
Automotive	4.7	5.6	7.4	2.6
Business services	0.0	5.5	0.0	0.0
Chemicals	1.0	5.5	5.4	1.2
Construction	0.0	3.2	0.0	5.4
Electronic equipment	1.4	0.0	0.9	25.3
Energy	0.0	6.4	4.1	14.6
Financial and Insurance services	0.0	1.8	0.0	7.8
Fishing	1.6	0.0	15.9	6.3
Machinery and equipment	0.1	1.6	4.9	9.3
Manufacturing	0.0	0.0	5.8	0.9
Metals	0.0	9.9	4.1	6.6
Other services	0.0	0.2	0.0	5.5
Processed food	5.65	5.2	30.8	5.1
Raw material	0.0	9.2	1.2	13.0
Telecoms	0.0	0.0	0.0	6.2
Textile	0.2	4.7	8.9	0.0
Trade	0.0	3.3	0.0	6.8

[82] The results of the CGE analysis are therefore the most appropriate results to quote when describing the economic effects of the EU-Korea FTA.

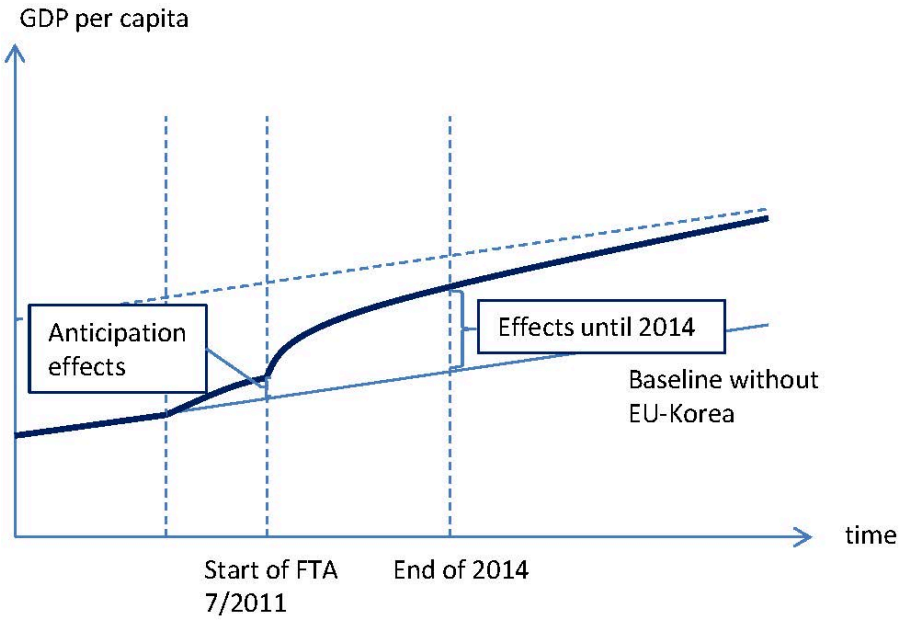
Sector Description	EU Imports		EU Exports	
	Tariff Reduction (%)	NTTC Reduction (%)	Tariff Reduction (%)	NTTC Reduction (%)
Transport	0.0	2.4	0.0	8.1
Utilities	0.0	4.1	0.0	19.1
Wood, paper and minerals	0.1	5.3	3.0	4.8

Source: Own compilation, based on GTAP, WITS, Ifo Trade Model. NTTC=non-tariff trade costs.

The resulting general equilibrium objects (trade values, sectoral value added, sectoral employment, wages, prices, GDP, tariff incomes, and greenhouse gas emissions) can be compared with their respective status quo counterparts. By construction, the difference is due to the agreement. It captures all general equilibrium feedback, e.g. those created through trade diversion effects or changes in aggregate income. In contrast, the gravity estimates presented in the previous section refer to partial equilibrium effects of the agreement, because incomes and aggregate prices are taken as given. The advantage of our approach is that no direct measures of observed reductions in non-tariff trade costs (NTTCs) are needed, and the simulation exercise is cleanly tied to the gravity estimation.

The Ifo Trade Model allows for drawing conclusions about the EU-Korea FTA on the structure of bilateral trade flows at the GTAP 9.1. level of aggregation, aggregate trade (volumes and openness measures), levels of value added, employment, emissions, and price levels (both at the sectoral and on the aggregate levels), wages, measures of real per capita GDP and of welfare[83] (compensating variation measures),[84] which are presented in the subsequent sections of this report.

Figure 52: Stylised effects of the EU-Korea FTA over time



Source: Ifo Institute.

[83] Welfare is defined as income per capita.

[84] While the real GDP per capita includes changes in tariff income, the latter one does not.

Figure 52 above illustrates in a stylised way how the CGE results presented in this report have to be interpreted. Without the agreement, the Parties to the agreement would be on a baseline path. However, the agreement shifts the level of GDP per capita upwards. The model does not assume that there is a permanent growth rate effect.

The start of the provisional application of the agreement began in July 2011, but before that date, anticipation effects are likely to have occurred. There is some empirical evidence for these in the EU-Korea trade data.[85] At the start of the provisional application of the agreement, a large number of tariffs were reduced to zero, and most provisions affecting non-tariff measures came into effect. However, the trade effects of both measures are not likely to be visible immediately in the data. Rather, empirical studies show that the effects of FTAs unfold only gradually.[86] Our empirical estimates presented in the section above cover trade data up to the year 2014. Hence, the trade creation effects—and the trade cost reductions that underpin them—have had only three to four years to unfold. Consequently, they represent a lower bound of what we are to expect. Figure 52 shows that more trade growth is expected after 2014. Accordingly, all economic effects of the FTA reported in our study are to be seen as lower bounds of the true impact.

5.5.2. Macroeconomic effects of the EU-Korea FTA

As previously mentioned, the CGE model is able to illustrate the real per capita income changes for the countries included in the GTAP data, and thus provides information about the purchasing power of an average person in Europe and Korea and how it varies under the policy change of the EU-Korea FTA. Not surprisingly, Korea and Europe are the two regions profiting the most from the FTA. Since the scope of the agreement is smaller than large FTAs such as TTIP, the rest of the world is not affected to a great extent. While US and Chinese real GDP will slightly increase by 0.001 percent, Japan is negatively affected by a real GDP loss of 0.005 percent. However, these effects have to be interpreted with caution, because they are statistically not distinguishable from zero. Canada would experience an insignificant increase in real GDP not distinguishable from zero either, while the ASEAN region would be confronted with an increase of 0.03 percent.

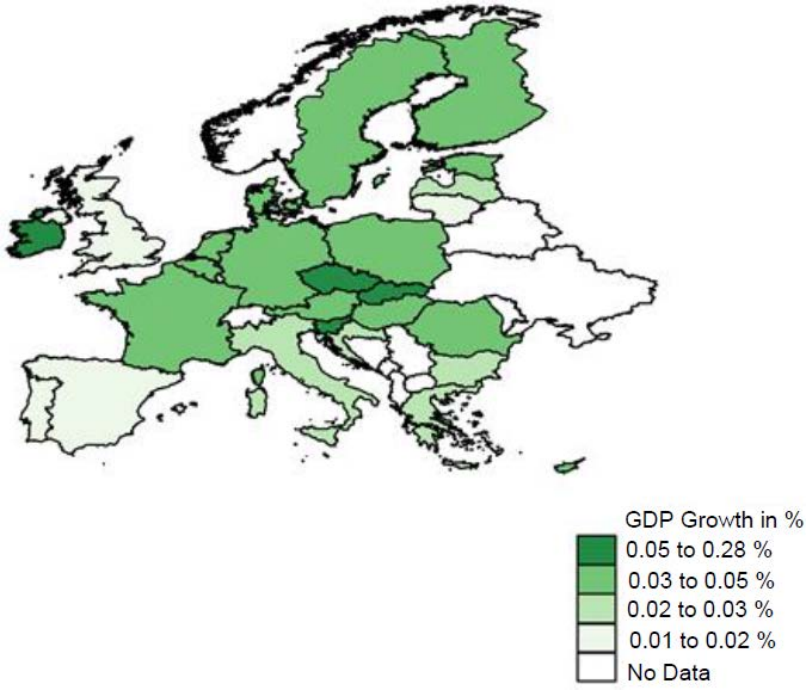
Figure 53 below illustrates the results for the real per capita income change for Europe. The largest increases in real GDP are generated in central and eastern Europe.[87]

[85] Lakatos, Csilla, and Lars Nilsson. "The EU-Korea FTA: Anticipation, Trade Policy Uncertainty and Impact". *Review of World Economics* 153.1 (2017): 179-198.

[86] Jung, Benjamin. "Gradualism and Dynamic Trade Adjustment: Revisiting the Pro-Trade Effects of Free Trade Agreements". *Economics Letters* 115 (2012): 63-66.

[87] The detailed results can be found in Annex II.

Figure 53: Change (%) in real GDP for EU Member States



Source: Ifo Trade Model. The figure shows changes in real GDP in percent. The darker the shaded area of a country is, the higher the growth rate. The legend – GDP Growth p.a. in % - shows how the different shades are categorised. The legend of the figure provides intervals for the variable of interest.

The following table provides income changes in numerical format corresponding to Figure 53. It shows the level of GDP in current EUR as measured for the year 2015 as well as the level of GDP per capita. The data for 2015 include the effects that are attributable to the EU-Korea FTA.

The table shows that, overall, the economic gains from the agreement are symmetrically distributed in absolute values between the EU and Korea. The EU has seen an increase in GDP by about EUR 4.4 billion due to the FTA, Korea by EUR 4.9 billion (measured in 2015 prices). However, in relative terms, Korea experiences larger benefits (0.3 percent of GDP) than the EU (0.03 percent of GDP). This is not surprising, given the fact that the EU is about ten times as big a market for Korean products than Korea is for EU products.

Table 11: Macroeconomic effects for EU Member States and Korea

Country	Observed for 2015		Contribution of EU-KOR FTA	
	GDP, EUR billion	GDP, per capita, EUR	Income Change (%)	Change in GDP, EUR million
AT	340	39 400	0.03	102
BE	410	36 600	0.04	164
BG	45	6 300	0.02	9
CY	18	20 800	0.03	5
CZ	167	15 800	0.06	100
DE	3 033	37 100	0.05	1 516
DK	272	47 800	0.03	82
ES	1076	23 200	0.01	108

EE	20	15 400	0.03	6
FI	210	38 200	0.04	84
FR	2 181	32 800	0.03	654
GB	2 580	39 600	0.01	258
GR	176	16 200	0.02	35
HR	44	10 400	0.02	9
HU	110	11 100	0.05	55
IE	256	55 100	0.09	230
IT	1 645	27 100	0.02	329
LT	37	12 900	0.01	4
LU	51	89 900	0.01	5
LV	24	12 300	0.02	5
MT	9	21 500	0.28	26
NL	677	40 000	0.04	271
PL	430	11 200	0.03	129
PT	180	17 300	0.01	18
RO	160	8 100	0.05	80
SK	79	14 500	0.14	110
SV	39	18 700	0.09	35
SE	447	45 600	0.03	134
EU28	*14 714*	*28 900*	*0.03*	*4 563*
KOR	*1 577*	*31 157*	*0.31*	*4 890*

Source: Own compilation, based on GTAP 9 for the year 2011, World Economic Outlook for the year 2015, and simulations based on the Ifo Trade Model. Note: The real income change of regions is a GDP-weighted average of the country-specific real income changes in that region.

The table also shows that according to the CGE analysis, all EU Member States have experienced positive income gains due to the agreement. This is not an automatic outcome in the type of model used.[88]

Generally, because of tariff income losses, gains in gross wages are larger than gains in total income (see Table 12). The gains are relatively small but positive in all EU Member States. The most significant increase of wages is experienced in Korea (by approximately 0.6 percent). The wage change for Korea is larger than for an average European country because its overall real GDP and welfare effects are higher; this unambiguously impacts a country's wage level as well. For a detailed analysis of the welfare effects, see the overall analysis chapter (section 5.5) and the chapter on the FTA's impact on consumers (section 7.1). The effects of the FTA on wages are explained in more detail in the social impact chapter (section 7) below.

[88] For example, a similar model to forecast the effects of a potential Transatlantic Trade and Investment Partnership reveals losses in one EU Member State (WTI, 2016).

Table 12: Effects on aggregate income, wage income in EU MS and Korea

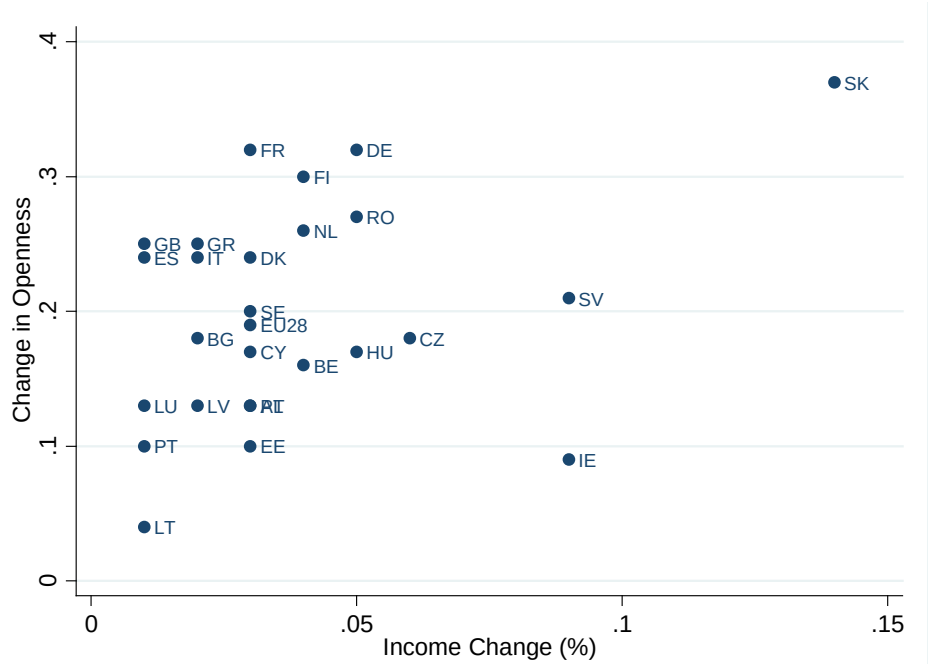
Country	GDP, EUR billion, observed in 2015	GDP per capita, EUR, observed in 2015	Real Income Change (%)	Real GDP Change (%)	Real Wage Change (%)
AT	340	39 400	0.03	0.04	0.04
BE	410	36 600	0.04	0.06	0.05
BG	45	6 300	0.02	0.03	0.03
CY	18	20 800	0.03	0.08	0.07
CZ	167	15 800	0.06	0.07	0.07
DE	3 033	37 100	0.05	0.05	0.05
DK	272	47 800	0.03	0.04	0.03
ES	1076	23 200	0.01	0.02	0.02
EE	20	15 400	0.03	0.04	0.04
FI	210	38 200	0.04	0.04	0.04
FR	2 181	32 800	0.03	0.03	0.03
GB	2 580	39 600	0.01	0.02	0.02
GR	176	16 200	0.02	0.03	0.02
HR	44	10 400	0.02	0.36	0.36
HU	110	11 100	0.05	0.06	0.07
IE	256	55 100	0.09	0.04	0.05
IT	1 645	27 100	0.02	0.03	0.03
LT	37	12 900	0.01	0.02	0.02
LU	51	89 900	0.01	0.02	0.02
LV	24	12 300	0.02	0.03	0.03
MT	9	21 500	0.28	0.44	0.44
NL	677	40 000	0.04	0.04	0.04
PL	430	11 200	0.03	0.04	0.04
PT	180	17 300	0.01	0.02	0.02
RO	160	8 100	0.05	0.06	0.06
SK	79	14 500	0.14	0.15	0.15
SV	39	18 700	0.09	0.13	0.13
SE	447	45 600	0.03	0.03	0.03
EU28	*14 714*	*28 900*	*0.03*	*0.04*	*0.04*
KOR	*1 577*	*31 157*	*0.31*	*0.58*	*0.59*

Source: Ifo Trade Model.

Figure 54 below shows the relationship between income gains and the change in overall openness. The two variables are expected to correlate positively, as a higher degree of openness reflects a stronger participation of a country in the international division of labour. Openness is defined as the ratio of total trade (exports plus imports) over GDP. Both openness and income increases for the EU28 Member States by an average of 0.30 percent and 0.03 percent, respectively.

The CGE results indicate that the FTA increases Korea's openness from 130 to 136 percent (not shown). This is quite a large increase, which results from the fact that the positive trade creation effect outweighs the negative trade diversion effect.

Figure 54: Change in openness and change in income due to the EU-Korea FTA



Source: Ifo Trade Model. Note: Openness is defined as (exports + imports)/GDP.

5.5.3. Microeconomic effects of the EU-Korea FTA

This subsection sheds light on the microeconomic effects as a result of the EU-Korea FTA. The main focus lies on changes in value added at the sectoral and country level. These effects determine the opportunities for domestic workers and firm owners. A lower sectoral value added implies higher pressure on wages and employment and a potential need for restructuring, whereas increasing value added causes the opposite, e.g. an expansion of the sector. The figure below shows the sectoral value added effects for Korean and EU28 industries.

To correctly interpret the findings, it is important to bear three things in mind. First, there is no straight-forward relationship between higher exports to Korea as estimated above and value added of a sector. The reason is that there may be trade diversion effects: exports to Korea go up, but sales in other markets (including the domestic one) may fall. Roughly speaking, Korean consumption of EU goods replaces consumption of EU goods somewhere else. Second, exports contain foreign value added.[89] It is possible that new exports to Korea contain a larger share of foreign value added than exports to other countries, which would weaken the link between higher export sales and higher domestic value added. The model is designed such that it takes input-output-linkages into account and therefore, sectoral exports and sectoral value added do not necessarily correspond one to one. And third, sectoral delineations are becoming increasingly blurred. In particular, the servitisation of manufacturing means that sales of goods embody a

[89] See the Trade in Value Added Database provided by the OECD and discussed on http://www.oecd.org/industry/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm.

growing share of services sourced from domestic (and foreign) service sectors.[90] A detailed analysis on the servitisation of EU manufacturing is provided by the National Bureau of Trade Sweden (2016).[91] Hence, higher car exports can very well trigger higher value added in upstream services sectors along as in more traditional supplying industries (such as steel or rubber). Thus, also servitisation affects direct translation from sectoral exports to value added.

The overall sectoral value added effect is positive for every single EU28 Member State, with Germany, France, Italy and the UK as the main drivers. The EU machinery and equipment sector is profiting the most from the FTA (EUR 2 188 million, or 0.39 percent). Agriculture and processed food sectors also gain substantially. The agricultural sector has an overall increase in sectoral value added which is equal to a 0.3 percent increase compared to the benchmark scenario; the value added in the processed food sector increases by 0.1 percent. These developments are not surprising given the fact that the EU Member States are the top agrifood exporter worldwide, and thus must have a strong competitiveness compared to other regions. The EU exported EUR 2.4 billion worth of agrifood products to Korea in 2015 (accounting for 1.9 percent of total extra-EU exports), making Korea its 14th most important agrifood export destination. As this report will depict in more detail in the agricultural case study below (see section 10.2), several stakeholders believed that the EU-Korea FTA helped to ensure that market share was not lost to other major competitors. For the dairy sector, the FTA supported to maintain the competitiveness of the EU relative to other key dairy exporters (the US, New Zealand, Australia, Argentina and Uruguay), particularly relative to New Zealand and Australia, which are geographically closer to Korea. The EU-Korea FTA was also viewed as having supported the preservation of competitiveness of EU pig meat exporters, particularly relative to the US, which also has an FTA with Korea and is the EU's main competitor in this area. Agrifood products exported to Korea led to an overall strong increase in EU exports of agrifood products to Korea. The EU-Korea FTA was viewed as a success story with respect to liberalising and facilitating trade in the agrifood sector between the Parties. According to stakeholders, substantial market access was granted to both Parties, and this was true across sectors. Stakeholders stated that their amount in exported goods increased, which coincides with the increasing sectoral value added.

Although slightly smaller, the metal and chemical sectors can generate positive sectoral value added effects, as can the trade and transport sectors. The fishing industry experiences small positive effects in sectoral value added due to the FTA. European service sectors seem to be confronted with increasing pressure (e.g. business services, financial services), although the overall sectoral value added is still positive.

The automotive sector loses, although this loss is relatively minor in terms of percentage changes (-0.19 percent). At a first glance, it seems puzzling that the sectoral value-added of the automotive industry decreases, although its exports towards Korea increase (see chapter 5.2.1.). Upon closer examination, a production shift away from pure manufacturing-based automotive products towards high-tech electronic production becomes evident as a general trend. This clear shift away from a manufacturing-driven automotive industry towards a computer science-based industry—the electronic equipment industry—might be an indicator of changing demand for higher quality products, such as cars with the highest technical standards. Stakeholders also confirmed the importance of premium vehicles as a driver of EU exports, attributing this to growing

[90] Lightfoot, Baines, and Smart, (2013) "The servitization of manufacturing: A systematic literature review of interdependent trends", International Journal of Operations & Production Management 33(11/12): 1408-1434.

[91] National Bureau of Trade Sweden, "The Servicification of EU Manufacturing: Building Competitiveness in the Internal Market", 2016.

Korean demand for such vehicles; moreover, the reduction in tariffs has had a larger effect on higher-value luxury cars.

The negative value added effects in the energy sector in the EU (-0.15 percent) are revealing. They foreshadow our results on CO_2 emissions. The main finding is that additional exports to Korea replace exports to other countries, but the former tend to be less energy intensive than the latter. The consequence is that demand for energy falls in the EU, and this reduces value added in the energy sector. There is only a small offsetting positive effect on energy demand in Korea, leading to a slight increase in value added there.

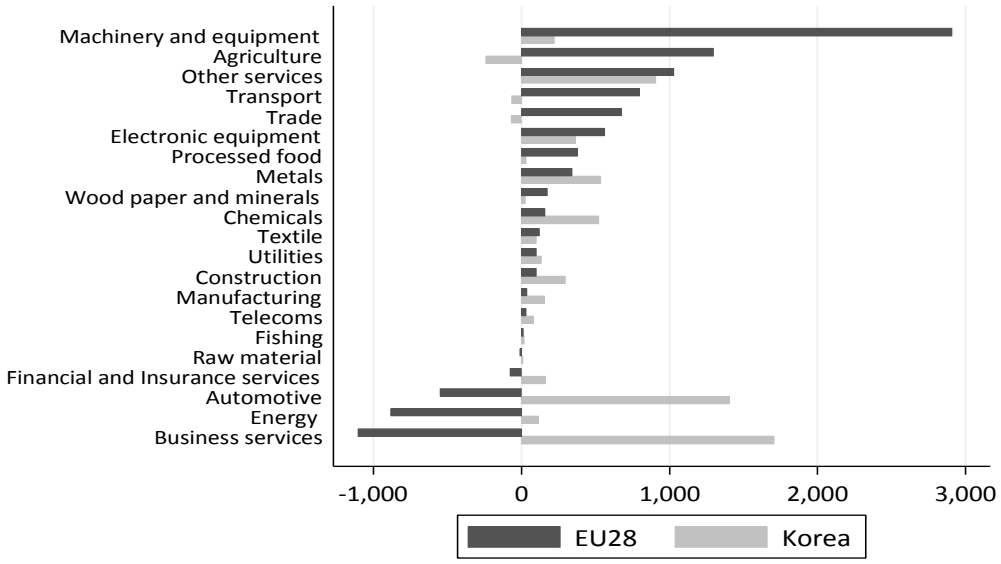
Another sector worth discussing is the business services sector. This sector is found to lose from the agreement, and the absolute size of the loss is the largest of all sectors (- EUR 831 million). However, in percentage terms, the loss is minor (-0.02 percent), as business services is one of the largest sectors in the EU. To some extent, the small contraction of this sector is likely related to the expansion of other service sectors (e.g., "Other services"), which provide essential inputs for exports of high quality goods to Korea (e.g., research and development).

Overall, Korea is able to generate positive value added effects in every sector but the agricultural, transport, machinery and equipment sectors, i.e. the sectors in which the EU generates the largest value added. The largest positive effects are generated in the service sectors. The business services sectors gain by 1.6 percent, i.e. EU 1 283 million. While the European automotive sector loses, the Korean automotive sector increases by 4.1 percent, which is the highest percentage increase in value added for Korea (EUR 1 060 million).[92]

The Korean metal and chemical sectors gain by 1 percent and 1.4 percent (EUR 403 million and EUR 392 million). The value added in the electronic equipment sector increases by 0.6 percent (EUR 275 million). Larger percentage increases can be found in the textile industry (2.3 percent). Small losses are evident in the processed food agricultural sectors. However, the impact on the value added of certain sectors (e.g. chemicals or raw materials) is statistically not distinguishable from zero.

[92] See previous footnote.

Figure 55: Sum of sectoral value added effects, in EUR million, EU28 and Korea



Source: Ifo Trade Model, based on GTAP 9 (2011). See section 5.5 for a detailed data overview. Note: All prices are in constant 2011 USD and converted in EUR. The underlying sector classifications and its values are based on the GTAP classifications and do not correspond to any official sectoral classifications as e.g. SITC. This is the reason why absolute value can differ from other official statistics.

For an even more detailed picture, the following table depicts the changes in both sectoral value added in absolute values and percent. Please note that the sum of sectoral value added effects differs from total real GDP effects because the former uses sector-specific price indices and excludes also tariff revenues.

Table 13: Sum of sectoral value added effects, EUR million, EU28 and Korea

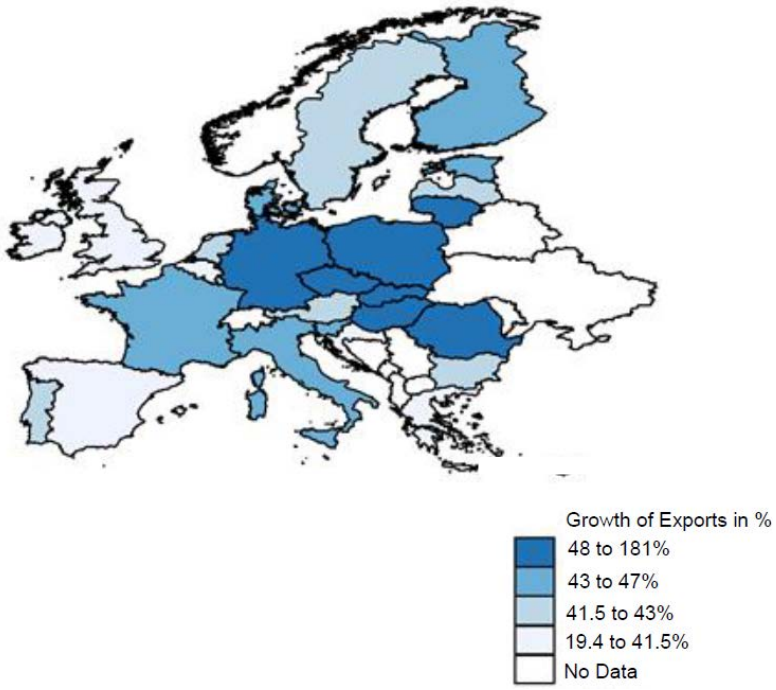
Sectors	EU28		Korea	
	Change in %	Change in abs. Values (EUR million)	Change in %	Change in abs. Values (EUR million)
Agriculture	0.29	974.20	-1.07	-182.12
Automotive	-0.19	-414.63	4.13	1060.04
Business services	-0.02	-831.20	1.60	1282.57
Chemicals	0.06	117.26	1.39	392.35
Construction	0.03	75.34	0.48	221.95
Electronic equipment	0.39	420.96	0.64	274.79
Energy	-0.15	-664.93	2.35	85.51
Financial and Insurance services	-0.02	-57.23	0.22	123.30
Fishing	0.11	8.14	0.44	12.56
Machinery and equipment	0.39	2 188.07	0.34	165.77
Manufacturing	0.05	25.74	0.77	115.35
Metals	0.10	256.21	1.11	402.70
Other services	0.04	773.83	0.30	681.79
Processed food	0.10	283.37	0.40	22.78
Raw material	0.00	-8.01	0.37	5.38
Telecoms	0.03	20.93	0.34	59.00
Textile	0.08	91.92	1.10	74.72
Trade	0.10	510.41	-0.05	-52.99
Transport	0.16	602.27	-0.24	-49.16
Utilities	0.05	76.36	0.76	100.33
Wood paper and minerals	0.06	130.14	0.12	20.56
Total	*0.03*	*4 579.15*	*0.31*	*4 817.18*

Source: Ifo Trade Model, based on GTAP 9 (2011). See section 5.5 for a detailed data overview. Note: All prices are in constant 2011 USD and converted in EUR. The underlying sector classifications and its values are based on the GTAP classifications and do not correspond to any official sectoral classifications as e.g. SITC. This is the reason why absolute value can differ from other official statistics.

5.5.4. Effects on trade structure

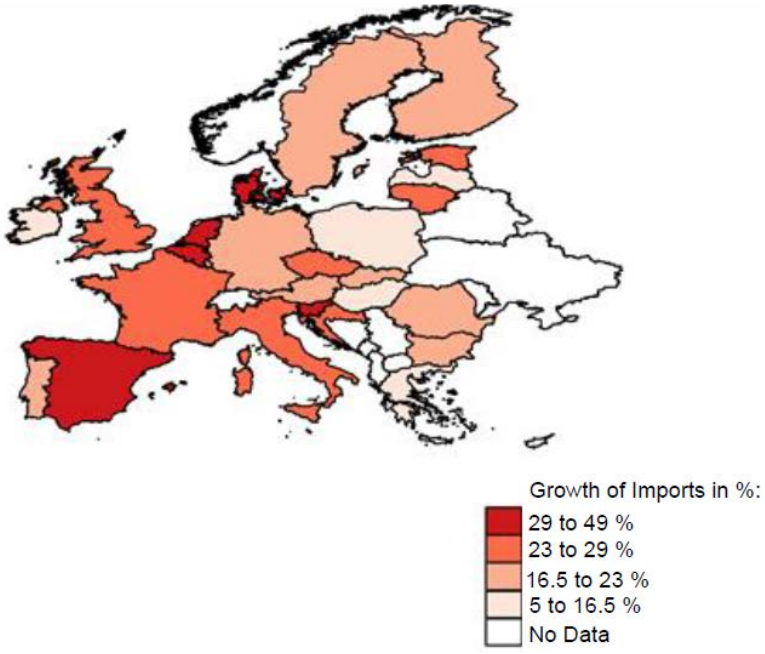
The subsequent section investigates the effects on the Korean and European trade structure. Overall, Korea increases its exports and imports towards and from the EU28 by 25 and 42 percent, respectively. Imports from Korea are high in countries such as the United Kingdom, France, Netherlands, Germany and Austria. The increase in Dutch imports might be ascribed to distorted trade statistics, if imported Korean goods are considered as Dutch imports when they arrive in the Dutch harbours, such as Rotterdam, but are actually imports from other European countries. Both changes in exports and imports to and from Korea are depicted by Figure 56 and Figure 57, respectively.

Figure 56: Change (%) of EU exports to Korea



Source: Ifo Trade Model. Note: The figure shows the change in exports in percent. The darker the shaded area of a country is, the higher the change in exports. The legend— Growth of Exports (in %)—shows how the different shades are categorised. The exact percentage changes can also be found in Table 14 below.

Figure 57: Change (%) of EU Member State imports from Korea



Source: Ifo Trade Model. Note: The figure shows the change in imports in percent. The darker the shaded area of a country is, the higher the change in imports. The legend— Growth of Imports (in %)—shows how the different shades are categorised. The exact percentage changes can also be found in Table 14 below.

The export and import changes at country level are shown as numerical values in Table 14. The table below shows the results of the CGE model with respect to bilateral trade between Korea and individual EU Member States. In the second and fourth column of the table, initial export values are provided. They can be interpreted as follows: if the EU and Korea had not concluded an FTA, Korean exports to Austria (for example) would account for EUR 839 million, and Korean imports from Austria would amount to EUR 1 329 million. These counterfactual levels (i.e. in a world without the FTA) serve as a benchmark scenario. However, as the EU-Korea FTA has been applied, the CGE model indicates the same trade figures for a world with the FTA and compares the two scenarios. All percentage changes in the table below (columns three and five) are changes relative to the benchmark scenario and indicate the additional trade that is causally induced by the FTA.

Table 14: EU Member States imports from and exports to Korea, in absolute values and % change

Countries	Value of initial EU28 imports, EUR million	Change in EU28 imports (%)	Value of initial EU28 exports, EUR million	Change in EU28 exports (%)
AT	839	26	1 329	42
BE	2 390	35	2 229	37
BG	254	25	129	37
CY	706	6	74	40
CZ	1606	30	439	53
DE	11 248	20	16 714	48
DK	790	32	1 031	45
ES	3 627	34	2 958	27
EE	89	27	38	45
FI	611	20	1 093	44
FR	6 456	32	6 930	46
GB	5 293	31	6 200	31
GR	1 301	15	1 190	19
HR	91	30	25	38
HU	1 225	17	503	52
IE	735	16	1 530	34
IT	3 850	30	4 165	45
LT	78	32	34	60
LU	276	18	159	41
LV	162	12	55	41
MT	1 809	7	90	53
NL	1 625	51	3 161	39
PL	3 189	14	587	60
PT	657	22	274	40
RO	396	24	282	138
SK	3 210	18	149	52

SV	432	43	103	45
SE	1 224	20	1 871	40
EU28	*54 169*	*25.8*	*53 340*	*42.9*

Source: Ifo Trade Model.

Table 15 below shows how the trade on a sectoral level between Korea and the EU28 changed due to the FTA. The largest increases in trade from the EU28 towards Korea are found in the machinery and equipment sector, which also generated the highest sectoral value added.

Although the sectoral value added in the automotive industry decreased for the EU, the share of exports actually increases from EUR 5 to 7 billion, which coincides with the descriptive analysis in section 5.2.1. This fact supports the previously made conclusion that there might have been a shift in production towards high-tech intermediate input products away from pure manufacturing-based automotive production. This increased the electronic equipment value added instead of the automotive value added. In the end, final automotive products are still exported to Korea at a higher rate.

The value of EU imports from Korea increased less than the EU exports to Korea. Korea is able to increase its exports in the automotive industry by the largest amount across all sectors. The remaining sectors' increase is relatively modest.

Table 15: Sectoral EU exports to and imports from Korea, EUR million

Sectors	Value of initial EU28 exports to Korea, EUR million	Value of EU28 exports to Korea after FTA, EUR million	Value of initial EU28 imports from Korea, EUR million	Value of EU28 imports from Korea after FTA, EUR million
Agriculture	735	2 165	59	81
Automotive	4 960	7 319	6 346	10 427
Business services	9 215	9 237	3 536	4 958
Chemicals	6 542	8 722	3 828	5 293
Construction	1 184	1 615	2 398	2 965
Electronic equipment	1 675	3 021	7 825	8 251
Energy	278	1 117	1 591	3 659
Financial and Insurance services	393	632	677	731
Fishing	2	4	3	4
Machinery and equipment	12 762	19 885	18 315	19 520
Manufacturing	465	558	211	212
Metals	3 968	5 018	3 095	4 026
Other services	229	320	573	629
Processed food	408	1 261	1 851	2 410
Raw material	57	103	6	9
Telecoms	98	143	161	162
Textile	1 617	2 178	1 312	1 560

Trade	2 884	4 317	762	937
Transport	4 716	6 713	1 246	1 606
Utilities	4	16	2	2
Wood paper and minerals	1 148	1 620	372	466

Source: Ifo Trade Model, based on GTAP 9 (2011). See section 5.5 for a detailed data overview. Note: All prices are in constant 2011 USD and converted in EUR. The underlying sector classifications and its values are based on the GTAP classifications and do not correspond to any official sectoral classifications as e.g. SITC. This is the reason why absolute value can differ from other official statistics.

The following table illustrates changes in EU exports and imports with selected trade partners. Even if other trade partners except Korea do not directly benefit from the FTA, they might indirectly gain by higher exports to the EU (EU import changes are all positive). The reason is that EU countries become richer because of the FTA and thus, generate higher demand for foreign goods. EU exports to other countries, by contrast, decline; this is due to already mentioned trade diversion effects that materialise when the international structure of relative trade costs changes.

Table 16: Change in EU28 exports to and imports from Korea and other selected countries / regions

Destination	Value of initial EU28 exports, EUR million	Change in EU28 exports (%)	Value of initial EU28 imports, EUR million	Change in EU28 imports (%)
Korea	53 340	42.9	54169	25.8
ASEAN	74872	-0.37	94649	0.30
Canada	63870	-0.32	47296	0.25
China	173196	-0.40	321368	0.27
Japan	82936	-0.54	93763	0.36
Turkey	74522	-0.22	62049	0.08
USA	394588	-0.36	364073	0.32
Least Developed Countries	12218	-0.17	10268	0.21
Other Developing Countries	235085	-0.22	263403	0.19
Rest of World	920609	-0.23	1032853	0.16

Source: Ifo Trade Model. Note: Taiwan cannot be listed because there is no information about this region in the GTAP data. Least developing and other developing countries are in line with the WDI categories of the World Bank.

While Korea increases its exports towards Europe by 25 percent, the exports to the rest of the world change only slightly (a 1.7 percent increase on average). Thus, both trade diversion and creation effects occur. Korean imports from Europe increase by 43 percent. Compared to the export structure, Korea imports less from other parts of the world, which might be due to trade diversion effects. Changes in Korean export and import structure to various destinations are provided in detail by Table 17.

Table 17: Change in Korean exports to and imports from the EU and other selected countries/regions

Destination	Value of initial Korean exports, EUR million	Change in Korean exports (%)	Value of initial Korean imports, EUR million	Change in Korean imports (%)
EU28	54 169	25.8	53 340	42.9
ASEAN	21 879	1.3	20 507	-0.6
Canada	9 419	1.8	9 798	-1.1
China	111 049	1.5	73 211	-1.7
Japan	44 871	1.2	56 675	-2.4
Turkey	5 914	2.1	1 977	-2.7
USA	105 918	1.6	126 200	-1.3
Least Developed Countries	656	1.7	432	-0.01
Other Developing Countries	51 763	1.4	32 003	-0.1
Rest of World	126 099	1.6	126 200	0.6

Source: Ifo Trade Model. Note: Taiwan cannot be listed because there is no information about this region in the GTAP data. Least developing and other developing countries are in line with the WDI categories of the World Bank.

The FTA has led to some relatively minor trade diversion effects which are concentrated in the East Asian Region (China, Japan). But there are also some countries whose exports to Europe and/or Korea and total exports went up due to the FTA. The following table shows the overall value of exports and imports in absolute values before the start of the provisional application of the FTA and the change that occurred due to the FTA in percent. It illustrates that trade diversion effects are quite small across the globe, except for Korea and the EU28.

Table 18: Trade diversion effects in Korea, EU and third countries

Destination	Value of total initial exports, EUR million	Change in total exports (%)
EU28	5 127	0.34
Korea	532	3.65
ASEAN	613	-0.07
Canada	382	-0.06
China	1 502	-0.05
Japan	691	-0.16
Turkey	130	-0.04
USA	1 504	-0.09
Least Developed Countries	33	-0.01
Other Developing Countries	985	-0.02
Rest of World	3 940	-0.02

Source: Ifo Trade Model.

5.6. Impact of the EU-Korea FTA on SMEs

The key findings of the evaluation are that:

- The analysis suggests that the EU-Korea FTA should have allowed firms from the middle of the size distribution to become first-time exporters. This is an explicit goal of EU trade policy.
- Due to data limitations, it is only possible to provide statistical evidence for Belgium and Spain. Also, it is not possible to trace out the supply chain effects of higher exports to smaller firms supplying components or services.
- For Belgium, the data indicate that the FTA has indeed benefited exporters from the lower parts of the initial sales distribution more than exporters from the higher parts. It follows that growth of exports has not been driven by the largest firms, but rather by medium and smaller ones.
- For Spain, the analysis suggests that the FTA has activated new firms into exporting to Korea. These firms are smaller than those that exported to Korea prior to the start of the provisional application of the FTA.

One important objective of EU trade policy is to enable small- and medium-sized enterprises (SMEs) to enter export markets and to realise growth opportunities there. Thus, if a trade agreement such as the EU-Korea FTA successfully helps medium-sized firms to grow, the size distribution of firms in the EU changes and, perhaps paradoxically, may become more concentrated, as successful SMEs would add additional staff and move up in the size distribution scale. This is especially the case if firms are limited in size because they sell their products in small niche markets. As the market size increases as a consequence of an FTA, these firms are likely to expand. Conversely, if firms are small because of low productivity and a lack of competitiveness, they could suffer from the application of an FTA; the reason lies in the pro-competitive nature of an FTA.

A large body of recent empirical literature shows that trade liberalisation does have important implications for the size distribution of firms. The reason is that different firms react very differently to falling trade costs.[93] What matters, however, is not size per se, but rather the degree of competitiveness of firms, i.e., their productivity, the quality of their products, and their innovative capacity.

Melitz (2003) provided an analytical framework to think about the mechanisms behind this stylised fact.[94] Most importantly, the literature provides strong evidence for the existence of significant fixed market access costs. These imply that only firms with sufficiently high expected sales in a foreign market can profitably export. Other firms would fail to achieve revenues large enough to finance the entry costs. When those fixed costs of market entry fall, firms with medium degrees of competitiveness are drawn into the export business.

In such a framework, trade liberalisation has two important effects on firms. First, lower import barriers increase domestic competition. This is most painful for firms with relatively low competitive strength (i.e., low labour productivity, low product quality, low innovative capacity). Stronger competition tends to accelerate their decline or may even push them out of business, but at the same time it is also an incentive to adapt and to increase their competitiveness, which in turn has a positive impact on the local economy

[93] For a survey of empirical literature:, see Melitz, Marc J, and Stephen J Redding. 2014. "Heterogeneous Firms and Trade." Handbook of International Economics, 4th ed, 4: 1-54.

[94] Melitz, Marc J. "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity". *Econometrica* 71.6 (2003): 1695-1725.

as a whole. Second, lower export barriers open up new opportunities for domestic firms. This provides firms with new growth dynamics, but the prerequisite is that firms have marketable products at competitive prices such that they can overcome the fixed costs of market entry mentioned above (which, even after the reduction of non-tariff trade costs, are still significant due to language barriers, geographical and cultural distance, etc.). Thus, the least competitive firms are unlikely to benefit from an FTA such as the EU-Korea agreement. However, the most productive firms are unlikely to benefit much either, because they already have a commercial presence in the foreign market. As a consequence, the modern trade literature strongly supports the view that firms from the middle of the competitiveness distribution benefit most strongly from trade liberalisation.

This literature studies direct effects only. However, in reality, SMEs are often strongly tied to larger exporters; through the latter they become indirect exporters themselves in the production chain. These effects are, unfortunately, invisible to the researcher in official trade data. However, there is some evidence in the literature that such effects exist. In particular, the servitisation of manufacturing has had a positive effect of SMEs, since services are typically provided by smaller firms.[95] Because our sector-level analysis shows that service sectors are positively affected on average by the agreement, the existing research implies that SMEs have likely benefited from the agreement.

It is not easy to provide causal evidence on these mechanisms in the context of the EU-Korea FTA, even if one restricts attention to the direct channel. For this purpose, one would have to examine firm-level trade data, which is only available for a handful of European countries (for example, Europe's largest exporter—Germany—does not provide firm-level trade data for research purposes). However, we can still cite some items of indirect evidence. First, as shown earlier, the number of products exported from the EU to Korea has gone up considerably after the start of the provisional application of the agreement. This could indicate that (i) new firms have been drawn into exporting their specific products,[96] or that (ii) existing large exporters have added new products to their portfolios. While it is not possible to tell these two possibilities apart, if the number of products had fallen due to the agreement, it would be hard to maintain the hypothesis that new firms had entered the Korean market.

Second, as shown in section 5.5, the EU-Korea FTA has reduced non-tariff trade costs (NTTCs) quite substantially. Otherwise, it would not be possible to explain the increase in trade flows that the agreement has brought about. Survey evidence shows that, in contrast to tariffs, NTTCs often take the form of fixed costs, either to be incurred before entering a foreign market (sunk or one-off market entry costs such as market research, customisation of products, etc.), or to be paid regularly to maintain a foreign market presence (so-called flow fixed costs, caused by labelling requirements, inspections, etc.).[97] It should be noted that these fixed costs are independent from the volume of sales. The stronger the reduction of these fixed costs, the more likely it is that medium-sized firms can begin exporting to the Korean market. In other words, the fact that the EU-Korea FTA has lowered fixed market access costs makes it likely that SMEs have benefited from the agreement. In contrast, lower tariffs alone could not bring about such an outcome, as they would mostly benefit those firms that already have large export sales to the foreign market.

[95] See Lightfoot, Baines, and Smart (2013), cited above. Also see Kyvik Nordas (2015), "Services SMEs in International Trade: Opportunities and Constraints", E15 Expert Group on Services, International Center for Trade and Sustainable Development, http://www.ictsd.org/sites/default/files/research/E15-Services-Nordas%20FINAL.pdf.

[96] This conclusion is supported by the results of the interviews, in which stakeholders from EU MS whose economies are driven by SMEs (e.g. Austria and Latvia) noted that the EU-Korea FTA has clearly benefited smaller companies.

[97] Felbermayr et al., 2013.

Third, for a few European countries, there is some information on the size distribution of bilateral trade flows by export destinations available. The Exporter Dynamics Database (EDD) generated and published by the World Bank provides measures of exporter characteristics and dynamics across 68 countries, primarily for the period between 2002 and 2014, across all geographic regions and income levels.[98] It is based on firm-level customs data and includes the universe of exports for the respective exporting country. Due to confidentiality obligations, it is not possible to access the firm-level data, but instead the Exporter Dynamics Database gives the number of exporting firms to a certain destination, the average value of exports, and the 1st, 2nd (the median), and 3rd quartiles of the value of the exports.[99,100]

From this data set, we can use information for Belgium and Spain; these are the only two countries for which at least some post-FTA observations are available (for the years 2012 and 2013). [101] The following table presents the data for Belgium and provides information on Belgian exporters to Korea and to the rest of the world.

[98] See: http://microdata.worldbank.org/index.php/catalog/2545.

[99] Fernandes, Ana Margarida et al, "Exporter behaviour, country size and stage of development: Evidence from the exporter dynamics database." *Journal of Development Economics*, 119(C) (2016): 121-137 and Cebeci, Tolga et al., "Exporter dynamics Database." The World Bank Policy Research Working Paper Series, 2012 provide detailed descriptions of the data.

[100] For a detailed description of the data, see Fernandes et al. (2016) and Cebeci et al. (2012).

[101] The other EU Member States that are included in the EBB Data base (Croatia, Denmark, Estonia Germany, Portugal and Sweden) just report until 2012.

Table 19: Characteristics of firm-level exports of Belgium to Korea

Belgium					
		2006	2010	2013	Change (%, 2013 vs. 2010)
KOR	Number	1 146	1 339	1 318	-2
	Mean	919 600	992 633	1 107 240	12
	1st Quartile	7 823	4 038	8 217	103
	Median	38 205	28 300	44 336	57
	3rd Quartile	249 539	195 598	302 996	55
Average RoW	Number	668	757	681	-10
	Mean	557 223	612 110	678 354	11
	1st Quartile	10 647	10 235	11 097	8
	Median	47 418	49 210	49 469	1
	3rd Quartile	208 217	213 829	229 057	7

Source: Own compilation, based on World Bank Exporter Dynamics Database. Note: In the row "Average RoW", we calculate the average of the various indicators for all export destinations of Belgian exporters other than Korea. The table shows distribution characteristics of Belgian firm-level sales over time. It compares firms exporting to Korea (treatment group) with firms exporting to the rest of the world (control group). A comparison of the growth between 2010 and 2013 and between the two groups is equivalent to the difference-in-difference approach as discussed in section 5.2. The chosen characteristics of the sales distribution allow for drawing conclusions on the effect of the FTA on firms that differ in size. The first row shows the number of exporting firms, the second shows the simple average of firm-level sales. As the high average value is driven by large sales from only a few firms, it is less meaningful. Thus, it is also of interest to analyse other firms. The 1st quartile row shows the evolution of sales of the firm that is located at the 25th percent quantile on the sales distribution (meaning that 25 percent of firms are smaller and 75 percent are larger than this firm). The median (2nd Quartile) and the 3rd Quartile read accordingly.

The data presented in the table above show that, in 2010, Belgium exports to Korea were dominated by a few large firms. The average sales were EUR 992 633, while median sales were only EUR 28 300. Even the third quartile of the sales distribution stood only at EUR 195 598, about a quarter of the average value. Hence, the sales distribution initially was strongly skewed towards very large exporters.[102]

The last column indicates the change (i.e. growth rates) of the number and sales of exporting firms. As we can compare exporting firms to Korea with exporting firms to the rest of the world, this analysis implicitly yields a difference-in-difference result (see section 5.2). Compared to the performance of Belgium in other destination countries, Korea was a more successful market in terms of market entry. While on average in other countries the number of exporters fell by 10 percent from 2010 to 2013, it only fell by 2 percent in Korea. Comparing the situation of 2013 with that of 2010, the average value of firm-level exports has gone up by 12 percent to EUR 1.1 million, but median sales have increased by much more. It follows that growth of exports has not been driven by the largest firms, but rather by medium and smaller ones. Indeed, growth rates were largest at the first quartile (103 percent), followed by the median (57 percent), and the third quartile (55 percent).

[102] This is a common finding in firm-level analyses of export behaviour; see Bernard, Andrew et al., "The Empirics of Firm Heterogeneity and International Trade", *Annual Review of Economics 4* (2012): 283–313.

Hence, from the Belgian data, the conclusion is that the FTA has benefited existing exporters from the lower parts of the initial sales distribution more than exporters from higher parts of the distribution. Taking the potential drawbacks of difference-in-difference approaches when applied to time series into account, this result can be interpreted as a causal effect of the EU-Korea FTA.

The picture is different when looking at Spain, the other country for which we have decent data coverage.

Table 20: Characteristics of firm-level exports of Spain to Korea

Spain					
		2006	2010	2013	Change (%, 2013 vs. 2010)
KOR	Number	2 509	2 516	2 924	16
	Mean	252 948	359 704	364 820	1
	1st Quartile	2 539	2 413	2 072	-14
	Median	17 587	17 004	15 949	-6
	3rd Quartile	81 046	98 096	101 235	3
Average RoW	Number	1 593	1 804	1 923	7
	Mean	370 627	234 122	254 319	9
	1st Quartile	3 791	4 065	3 751	-8
	Median	17 732	19 567	19 316	-1
	3rd Quartile	74 596	85 319	86 516	1

Source: Own compilation, based on World Bank Exporter Dynamics Database. Note: In the row "Average RoW", we calculate the average of the various indicators for all export destinations of Spanish exporters other than Korea. The table shows distribution characteristics of Belgian firm-level sales over time. It compares firms exporting to Korea (treatment group) with firms exporting to the rest of the world (control group). A comparison of the growth between 2010 and 2013 and between the two groups is equivalent to the difference-in-difference approach as discussed in section 5.2. The chosen characteristics of the sales distribution allow for drawing conclusions on the effect of the FTA on firms that differ in size. The first row shows the number of exporting firms, the second shows the simple average of firm-level sales. As the high average value is driven by large sales from only a few firms, it is less meaningful. Thus, it is also of interest to analyse other firms. The 1st quartile row shows the evolution of sales of the firm that is located at the 25th percent quantile on the sales distribution (meaning that 25 percent of firms are smaller and 75 percent are larger than this firm). The median (2nd Quartile) and the 3rd Quartile read accordingly.

As in Belgium, prior to the agreement, average export sales to Korea were more than 20 times higher than the sales of the median firm; so, the sales distribution was quite skewed. The number of Spanish firms exporting to Korea went up by 16 percent from 2010 to 2013, while it barely changed from 2006 to 2010. This is more than double the average observed for other Spanish trade partners. So, it seems the agreement was successful in activating new firms into exporting. The average export sales per firm have not changed much. The dominance of the extensive margin, i.e., the fact that new exporting relationships have sprung into existence, implies the composition of exporting firms must have changed and that the new exporters are smaller than the firms already exporting to Korea before the start of the provisional application of the FTA. The entry of smaller firms has drawn down the size of the median exporter. In other words, the central firm (for which it is true that 50 percent of firms are larger and 50 percent are smaller) is now a smaller firm than before. It is important to understand this composition effect. The fact that sales of the median firm in 2010 are higher than sales of the median firm in 2013 does not mean that a specific firm has lost sales, but rather that the median

position in the distribution is now occupied by a different, probably smaller, firm, which makes smaller sales.

From the Spanish data, we conclude that the agreement has encouraged new firms to export to Korea, and that these firms are smaller than those firms that exported to Korea prior to the agreement. However, it should be emphasised that size alone is not a good predictor for whether or not a firm is able to benefit from lower fixed trade costs. The necessary condition rather is that a firm has competitive products.

One further concern refers to the integration of SMEs in regional production chains. Even if SMEs do not directly export, their contribution in terms of value added to exports of larger firms can be a direct consequence of the FTA. However, measuring these indirect effects for the performance of SMEs is not possible with the available data. Note, however, that there is ample evidence for regional effects of positive (and negative) trade shocks. Even when only some large firms expand their foreign sales, there are positive effects on suppliers of intermediate inputs, and, through general equilibrium forces, additional incomes to workers employed at such establishments boost sales of local services or products, mostly provided by small or medium-sized companies.

Regarding Korea, the current OECD Economic Survey of its Member States provides some information on the industry structure. The Korea Report of 2014 explicitly states that Korean SMEs' R&D expenditures are comparably low (24 percent of total R&D expenditures in Korea compared to an OECD average of 33 percent), which in turn contributes to their relatively weak competitiveness.[103] Average output per worker of SMEs, which employ 87 percent of the total labour force, accounts only for 30.5 percent of the output per worker of large companies in 2014.[104] According to the OECD 2014 report, for one-third of SMEs, the interest-coverage ratio is below 100 percent, meaning that the earnings (EBIT) do not cover interest expenses. In this regard, small firms perform even worse than medium-sized ones. The OECD holds both government policies and financial institutions accountable for this undesirable development; they provide subsidies or similar supportive measures and renew expiring loans, thereby hindering unproductive firms from exiting the market. The analysis provides no hint that international trade in general or the EU-Korea agreement in particular could be causally responsible for the poor performance of Korean SMEs.

Given the relatively weak position of Korean SMEs, it is possible that they have not been in a good position to benefit from the opening up of the European market. The OECD's finding that Korean SMEs suffer in particular from poor financing conditions raises the question of whether small firms with competitive products would find the means to fund the entry into the EU market. In Article 11.11, the EU-Korea FTA states that subsidies for small and medium-sized enterprises are excluded from a general prohibition of subsidies. Thus, the Korean government could, if it wanted, enact targeted policies to promote R&D spending of SMEs, relax their general financing constraints, or improve the training of their workforces.

Nonetheless, the relatively weak competitiveness of Korean SMEs on average should not obscure the fact that there are highly productive and thus competitive SMEs in Korea which benefited from the reduction in NTTCs, began exporting, and thereby contributed to the remarkable increase in the extensive margin of Korean exports shown above.

[103] https://www.oecd.org/eco/surveys/Overview_Korea_2014.pdf, 02 March 2017.

[104] https://www.oecd.org/eco/surveys/Korea-2016-OECD-economic-survey-overview.pdf, 02 March 2017.

5.7. Impact of the EU-Korea FTA on the EU budget

The key findings of the evaluation are that:

- **The EU-Korea FTA has led to a substantial reduction of tariffs. Before the start of the provisional application of the agreement, tariff revenue on imports from Korea stood at about EUR 1.2 billion. As of 2014, tariff revenue was reduced to EUR 200 million.**
- **The increase in economic activity has led to some minor increases in tax revenue which cannot compensate the losses due to lower tariffs.**
- **Replacing tariffs, which are known in economic literature to be relatively harmful for economic efficiency due to substitution effects, with more efficient taxes such as VAT is likely to result in overall efficiency gains for the EU economy.**

As one of its exclusive competences, the EU manages the European Customs Union and thereby collects customs duties on imports. Due to the fact that the actual collection is performed by national authorities of the Member States, the collecting country retains 25 percent of the customs duties as collection costs, while the remaining 75 percent contributes to the EU's budget.[105] Overall, duties account for about EUR 20 billion of EU resources, or about 15 percent of the total.[106] Over the last decades, duty income has fallen more or less continuously. As a sovereign state, Korea of course levies tariffs on its own and generates budget-relevant revenues.

Tariffs are known to be a relatively inefficient form of raising income, because they lead to a wide array of substitution effects.[107] Other sources of EU income, such as those based on VAT income, are less harmful for economic efficiency.

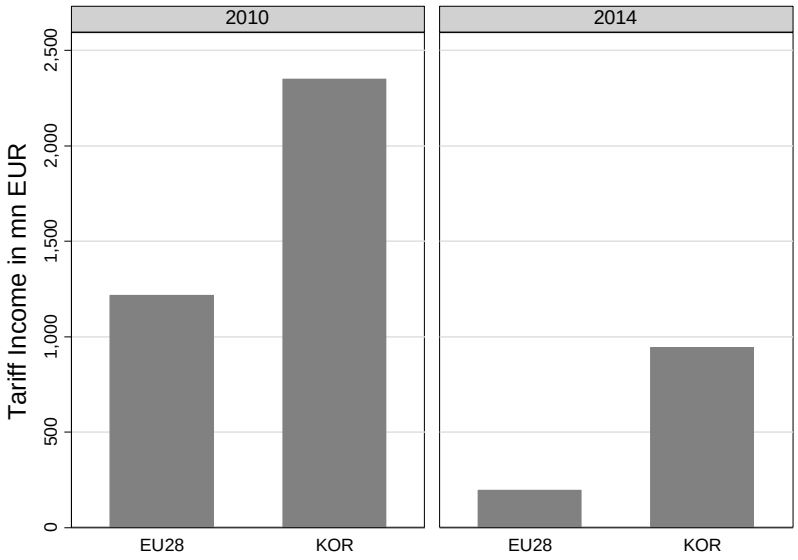
Figure 58 shows the total amount of tariff revenues for the EU and Korea before and after the start of the provisional application of the FTA. The numbers only present tariff revenues from bilateral trade, thus the EU28 bars read as tariffs imposed on EU imports from Korea while the Korea bars represent tariffs imposed on Korean imports from the EU. It should be noted that official data on tariff revenues from bilateral trade do not exist. Hence, these numbers are calculated according to the above mentioned WITS database and trade figures. Moreover, they are converted from USD to EUR using the official annual exchange rate.

[105] European Union Public Finance (p. 191), http://bookshop.europa.eu/en/european-union-public-finance-pbKV0213825/, 03 March 2017. Note that according to ORD 2014 (Council Decision (EU, Euratom) No2014/335 of 26 May 2014 on the system of own resources of the European Union) the collection costs to be retained will be reduced to 20 percent.

[106] Source: http://ec.europa.eu/budget/library/biblio/documents/2017/statement-of-estimates-of-the-european-commission.pdf.

[107] For the classical text on this, see Mirrlees, James; Peter Diamond (1971). "Optimal Taxation and Public Production II: Tax Rules". American Economic Review. **61**: 261–278.

Figure 58: Tariff income from bilateral trade in the EU and Korea



Source: Own compilation, based on WITS (2017); exchange rate data are from the Deutsche Bundesbank (2016).

Overall, two observations stand out. First, total revenues have fallen drastically in both the EU and Korea. EU tariff revenues decreased from roughly EUR 1.2 billion to EUR 200 million, thus by more than 80 percent. The Korean revenues declined from initially EUR 2.4 billion to slightly below EUR 1 billion, corresponding to a total reduction of 60 percent. Second, Korea collects significantly higher tariff revenues than the EU. In 2010, customs duties imposed by Korea were twice as large as European duties; in 2014, Korean tariff revenues exceed the European revenues by a factor of four. These results are in line with previous findings that Korean tariffs are significantly higher than those of the EU. Over time, tariff income is bound to fall to almost zero in both the EU and Korea. Note that in this analysis, we have not incorporated the effects of trade diversion on tariff income, which would, if they led to lower imports from countries with which the EU has no preferential agreement, lead to further reductions in tariff income. However, the effects are very small because of the relatively modest trade diversion effects (see section 5.5).

Recall that the effect of Korean tariffs on actual EU revenues is 25 percent below the total tariff income loss because of the deduction of collection costs by Member States. Thus, the effect on the EU budget as of 2014 was EUR 0.75 billion. This amounts to 0.52 percent of the final adopted EU budget of EUR 143 billion.

The reduction of tariff income directly benefits consumers in Europe to the extent that firms fully pass on the tariff reductions. If the passing-on is only partial, such that wholesalers increase operating margins on sales, a part of this increased margin could be expected to contribute to higher tax revenues for EU governments, and/or higher wages for workers,[108] and/or higher investment into R&D or into the introduction of new product varieties.

[108] There is ample empirical evidence supporting the hypothesis that more profitable firms pay higher wages and offer better working conditions; see, e.g., Gürtzgen, Nicole, "Rent-sharing and collective wage contracts: evidence from German establishment-level data", *Applied Economics* 42.22 (2006): 2835-2854.

Finally, it is important to note that an assessment of the effect of the EU-Korea FTA on the EU budget needs to account for the fact that an increase in economic activity also increases tax revenue. Our macroeconomic simulation suggests that the EU-Korea agreement has increased total EU GDP by about 0.03 percent, or roughly EUR 5 billion, in 2014. This, in turn, implies that compared to a counterfactual situation without the agreement, the EU budget had additional resources amounting to about EUR 50 million if we assume the EU budget accounts for 1 percent of EU GDP.

5.8. Impact of the EU-Korea FTA on the informal economy

The key findings of the evaluation are that:

- **Increased import penetration and international competition can lead to shrinkage of formal employment, leading to more precarious employment. Higher export participation, in contrast, can lead to exactly the opposite results. The literature argues that these effects are most relevant in developing countries.**
- **Overall, we find no evidence that would suggest that the EU-Korea FTA had any discernible effect—positive or negative—on the structure and size of the informal economy in Korea. The effects of the EU-Korea FTA are too small and both the EU and Korea are too advanced in terms of development for the agreement to have any discernible and statistically significant effect on these variables.**

Academic research indicates that lower trade barriers can induce additional informal employment or lead to less secure employment (see also Donado and Wälde, 2015).[109] However, exactly the opposite can also happen if higher labour protection and a process of formalisation are a direct consequence of trade integration. Barry and Reddy (2008) discuss the linkage between international trade and labour standards extensively.[110]

There exist different definitions of the informal economy. The International Labour Organization (ILO), e.g., defines the term informal economy in quite a broad way:[111]

Informal economy

"The informal economy comprises half to three-quarters of all non-agricultural employment in developing countries. Although it is hard to generalise concerning the quality of informal employment, it most often means poor employment conditions and is associated with increasing poverty. Some of the characteristic features of informal employment are lack of protection in the event of non-payment of wages, compulsory overtime or extra shifts, lay-offs without notice or compensation, unsafe working conditions and the absence of social benefits such as pensions, sick pay and health insurance. Women, migrants and other vulnerable groups of workers who are excluded from other opportunities have little choice but to take informal low-quality jobs."

The ILO definition of the informal economy does not expressly clarify whether it refers to only illegal actions (non-payment of wages) or also includes poor working conditions that may be legal (unsafe working conditions). If the second is true, then these poor working conditions are rather a consequence of poor regulation than a problem relating to informal economic activities. With respect to labour market outcomes in general, the

[109] For example, Heid et al. (2013) have found that market liberalisation in Mexico in the 1990s has led to an informality increase by 0.9 percent.

[110] Barry, Christian, and Sanjay Reddy. International Trade and Labor Standards: a Proposal for Linkage. Columbia University Press, 2008.

[111] http://www.ilo.int/global/topics/employment-promotion/informal-economy/lang--en/index.htm.

subsequent section on social impacts (section 7.2) deals with other measures shedding light on employment and wage distribution and may serve as indicators of informal employment as well.

Other, narrower definitions refer to economic activity which is deliberately concealed from public authorities and hence excluded from official statistics. The OECD, for instance, sees as a founding element of informal employment that "one or more legal requirements associated with employment are not complied with".[112] Thus, in contrast to the ILO definition, the OECD emphasises the unlawfulness of employment conditions and not poor employment conditions per se. Several reasons might lead to the decision of informal work instead of legal one: (1) to avoid payment of taxes, e.g. income taxes or value added taxes, (2) to avoid payment of social security contributions, (3) to circumvent certain legal labour market standards, such as minimum wages, maximum working hours, safety standards et cetera, and (4) to avoid complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms.

Quantifying this illegal part of informal employment and its development is, of course, not directly possible because of its very nature. It is not included in official statistics, nor is it registered in social security records. Thus, only indirect approaches to measure its significance are feasible. It is especially complex to quantify the impact of the EU-Korea FTA on the informal economy because of sectoral, regional and cultural differences. Moreover, any time variation of variables that act as proxies for the evolution of the informal sector cannot be directly linked to the EU-Korea FTA. As in previous sections, in the following we therefore present the result of a descriptive analysis of trends before and after the start of the provisional application of the FTA.

As part of its 2008 Employment Outlook, the OECD conducted a study on informal employment in seven OECD countries, among them Korea.[113] It is striking that more than 25 percent of Korean employees were not registered for mandatory social security. This corresponds to other OECD estimates that up to 30 percent of social security liabilities in Korea are unpaid. However, the OECD did not update this report in subsequent years. Even though these figures are nearly a decade old, they emphasise the necessity to further investigate Korea's informal economy for more recent periods.

The ILO provides data on the informal economy for several countries, but not for Korea. Nonetheless, some indicators from alternative sources shed some light on the evolving situation in Korea.

First, we consider data from the OECD which reports the self-employment rate for women and men in Korea from 2000 to 2016. These statistics captures some features of informal employment and allow for drawing conclusions regarding the strength of the regular labour market.

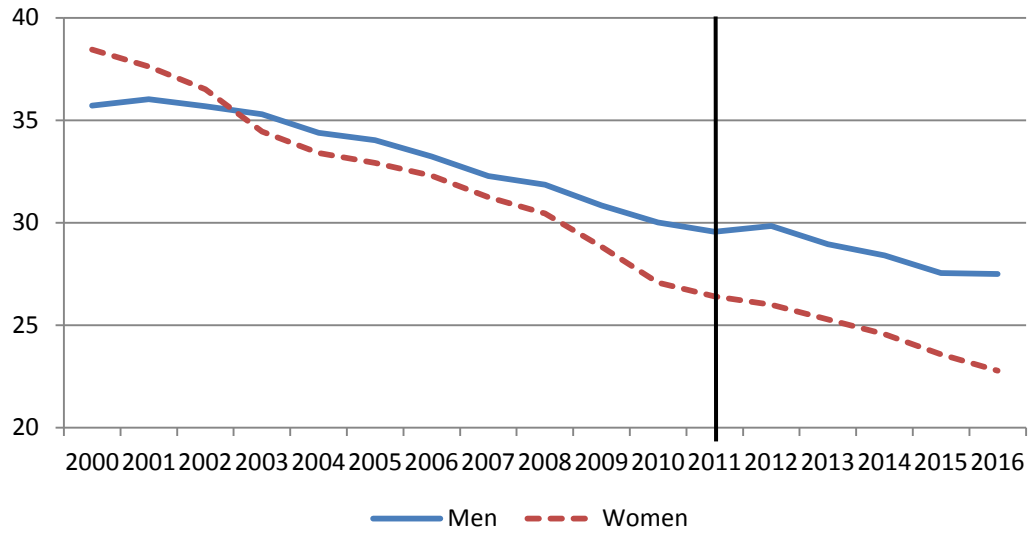
The OECD defines self-employment as the employment of employers, workers who work for themselves, members of producers' cooperatives, and unpaid family workers. The latter are unpaid in the sense that they lack a formal contract to receive a fixed amount of income at regular intervals, but they share in the income generated by the enterprise. Unpaid family workers are particularly important in farming and retail trade. All persons who work in corporate enterprises, including company directors, are considered to be employees. Self-employment may be seen either as a survival strategy for those who cannot find any other means of earning an income or as evidence of entrepreneurial

[112] http://www.oecd.org/employment/emp/43244453.pdf

[113] http://www.oecd.org/employment/emp/43244453.pdf and http://www.oecd.org/employment/emp/40843646.pdf

spirit and a desire to be one's own employer. Employed people are defined as those aged 15 or older who report that they have worked in gainful employment for at least one hour in the previous week or who had a job but were absent from work during the reference week. This indicator is measured as the percentage of total employment.

Figure 59: Share of self-employed workers in total employment: Korea, 2000-2016, men and women



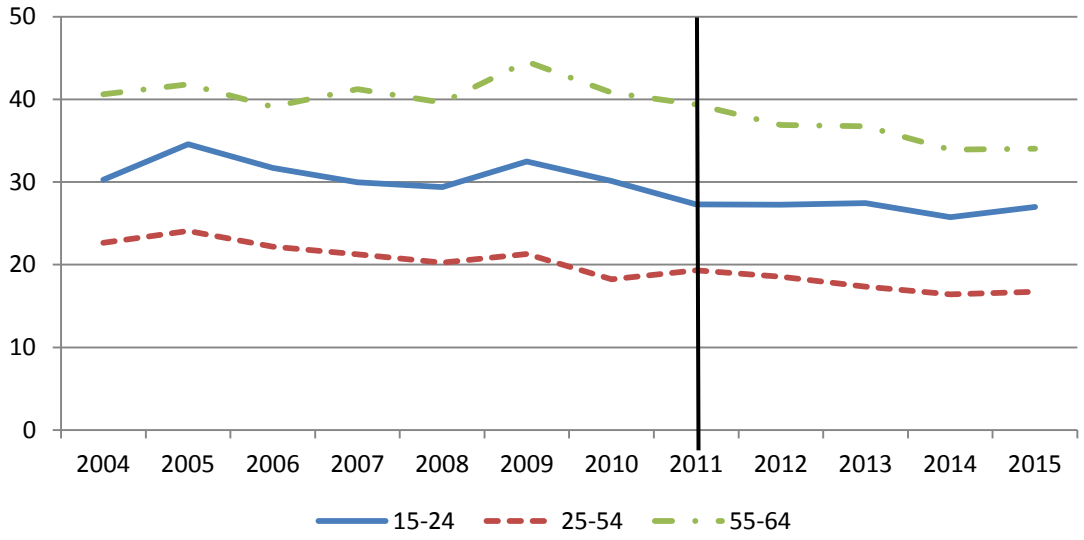
Source: Own compilation, based on OECD (2017), Self-employment rate (indicator). Note: The vertical bar indicates the start of the provisional application of the EU-Korea FTA.

Figure 59 shows that the self-employment rates of women and men in Korea have gone down substantially from above 35 percent in 2000 to between 23 and 27 percent in 2016. They are still relatively high compared to other OECD countries: the average rate is 6.4 percent in the US in 2016 (average across men and women); in the EU28 the average figure stood at 16.1 percent in 2015; and in Japan, it stood at 11.1 percent in 2015. However, the trends are impressive. Even more striking is the fact that the self-employment rate of Korean women has fallen below the one for men; historically, the female rate used to be substantially higher than the male one (e.g., more than 10 percentage points higher in the 1960s).

As the figure indicates, the start of the provisional application of the EU-Korea FTA has not stopped this trend towards a more formalised labour market in Korea. The blip in 2012 for men is statistically insignificant. The gap between men and women widened to the advantage of women from 3 percentage points in 2010 to almost 5 percentage points in 2016. Based on the trends depicted above, there is no indication that the FTA has negatively affected the trend towards more regular employment in Korea, neither for men nor for women.

A second piece of evidence on the strength of the formal labour market is provided by Figure 60 below. The graph shows the share of wage and salary workers whose job has a pre-determined termination date. This indicator of temporary employment is broken down by age group and it is measured as a percentage of dependent employees (i.e. wage and salary workers).

Figure 60: Share of workers with temporary contracts in total dependent employment: Korea, 2000-2015, different age groups



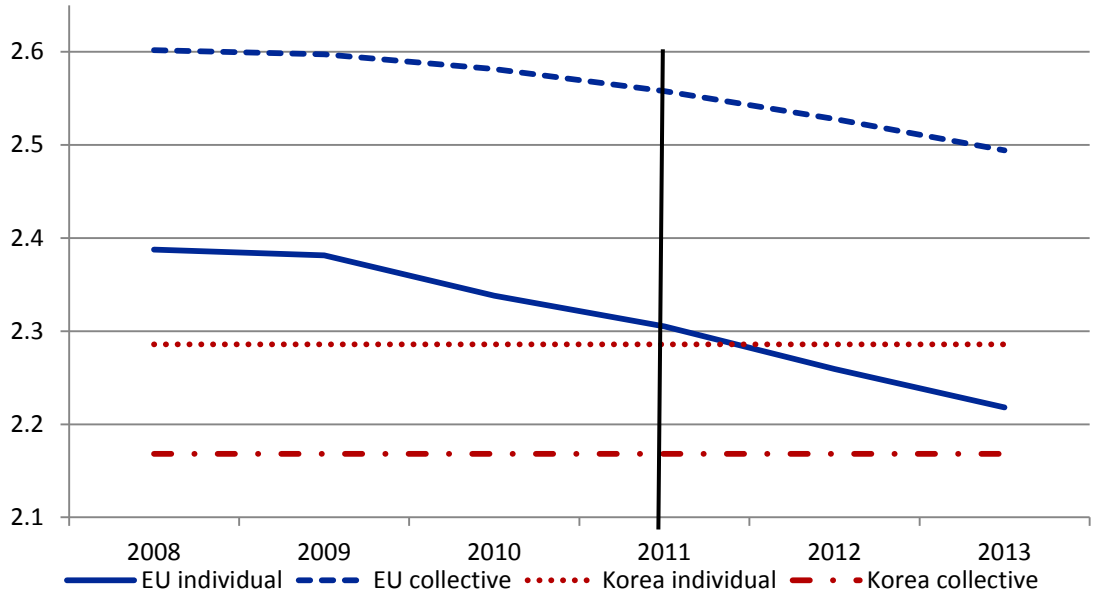
Source: Own compilation, based on OECD (2017), Temporary employment (indicator). Note: The vertical bar indicates the start of the provisional application of the EU-Korea FTA.

Again, the data show that Korea has followed a favourable trend since before the start of the provisional application of the EU-Korea FTA and that this trend has, broadly, continued thereafter. The share of workers with temporary contracts declined from 2011 to 2015 by more than 5 percentage points, from 39 to 34 percent for workers aged 55 to 64; it declined from 19 to 17 percent for the middle age segment of 25 to 54, and it remained roughly constant for workers aged 15 to 24. Across all age groups, the 2015 share of temporarily employed workers stood at 22.3 percent while in the EU28 it was 14.2 percent. Out of 42 countries surveyed in 2015, only four countries had higher average rates of temporary employment than Korea, namely Spain, Poland, Chile, and Colombia. (For further details on the situation of temporary workers in Korea, see the human rights analysis in section 8.)

The OECD also provides indicators for employment protection. These are synthetic indicators of the strictness of regulation on dismissals and the use of temporary contracts. These indicators consider 21 regulatory aspects, such as notification procedures, definition of unfair dismissal, compensations of dismissed, regulation of temporary work agencies, etc. The indicator for collective dismissal measures additional costs and procedures involved in dismissing more than one worker compared with the cost of individual dismissal. Thus, it cannot be interpreted in isolation.[114] The indicator increases in the level of protection. However, one must mention that the optimal level of protection is ex-ante unclear. On the one hand, dismissals legislation can be overregulated leading to negative effects on employment. On the other hand, insufficient regulation may have severe negative consequences on employees.

[114] http://www.oecd.org/employment/emp/oecdindicatorsofemploymentprotection-methodology.htm

Figure 61: Employment protection, strictness of regulation of individual and collective dismissals over time



Source: Own compilation, based on OECD (2017), Strictness of employment protection – individual dismissals (regular contracts) and collective dismissals (additional restrictions). Note: The vertical bar indicates the start of the provisional application of the EU-Korea FTA.

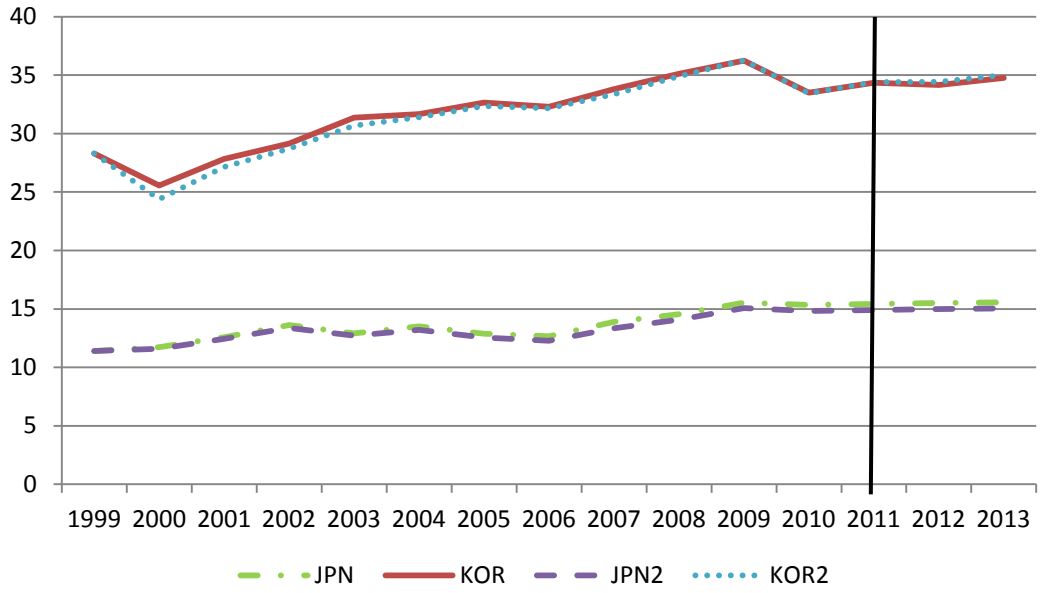
Figure 61 depicts the evolution of the employment protection indicators for Korea and the EU from 2008 to 2013.[115] The strictness of regulation of individual dismissals is illustrated by the solid lines, whereas the additional costs on collective dismissals are given by the dashed line. Interestingly, for both individual and collective dismissals in Korea, there are no changes identified over the whole period of observation. Thus, the FTA does not seem to have had any influence on dismissal regulation. It is striking that additional costs related to collective dismissals are relatively lower in Korea compared to the EU. For the EU, employment protection with respect to individual dismissals declined over time beginning in 2009, possibly as a response to the financial crisis and rising unemployment. This downward trend continued until 2013. The same pattern is observed for the indicator on the regulation of collective dismissals; however, its level is higher than those of individual dismissals in the EU. Overall, it is unlikely that the EU-Korea FTA had any effect on employment protection legislation. The OECD also summarises all details about the underlying legislation of the indicators on the country level.[116]

A broader measure of the size of the informal economy is provided by Hassan and Schneider (2013). They estimate the size of the informal economy for a large panel of countries. This measurement exercise is fraught with numerous problems, but it does reveal two insights relative to Korea. First, as shown by Figure 62, the size of the shadow economy is relatively large in Korea (e.g., as compared to Japan, but also to other OECD countries) and second, that it has followed an increasing trend since the early 2000s.

[115] Note that the EU average does not include Bulgaria, Cyprus, Malta, and Romania for the reason that the OECD does not provide data on these countries.

[116] http://www.oecd.org/employment/emp/oecdindicatorsofemploymentprotection.htm

Figure 62: Estimated share of the informal economy in total economic activity (in % of value added)



Source: Mai, Hassan and Friedrich Schneider (2013), "Size and Development of the Shadow Economies of 157 Worldwide Countries: Updated and New Measures from 1999 to 2013", Journal of Global Economics 4(3): 1-14. Notes: The figure shows two measures for each country (KOR and KOR2; JPN and JPN2) based on different underlying statistical models; the vertical bar indicates the start of the provisional application of the EU-Korea FTA.

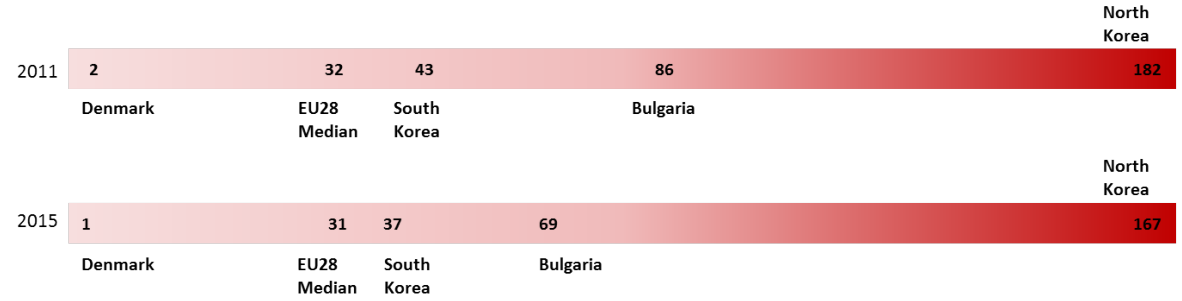
However, the data in Figure 62 does not provide any indications that the start of the provisional application of the EU-Korea FTA has had any impact on the size of the informal economy in Korea.

To further scrutinise the scope of the informal economy, it is also possible to analyse the level of corruption. The reason is that any illegal action regarding informal employment is only possible if government authorities do not enforce relevant laws, which can be caused by insufficient enforcement due to weak institutions, lack of political will or corruption. Ceteris paribus, we would expect that a higher level of corruption is also associated with more infringements concerning labour legislation. One of the few available data sources in this respect is the corruption perception index (CPI) provided by Transparency International. In previous research it has been shown to be an important predictor of the size of informal activity in a country.[117]

A profound econometric analysis on the basis of these data is difficult because of a methodological change in 2012. Until 2015, the CPI tended to decrease. European countries are predominantly located in the first quarter of the CPI ranking, varying only slightly since the start of the provisional application of the EU-Korea FTA. Figure 63 shows the CPI ranks for 2011 and 2015. For the sake of clarity, only the highest, the lowest and the median rank of EU countries are reported. South Korea improved compared to 2011 but is still below the EU median. In the same period, the EU's median improved only slightly, although the EU's worst performing country in terms of CPI (Bulgaria) improved its rank considerably.

[117] See. E.g., Friedman, E, Johnson, J, Kaufmann, D and Zoido-Lobaton, P (2000), Dodging the grabbing hand: the determinants of unofficial activity in 69 countries, *Journal of Public Economics* 76, 459–493.

Figure 63: Corruption Perception Index 2011 and 2015



Source: Own compilation, based on ILO (2017). Note: The figure ranks selected countries according to their corruption perception index. Rank one denotes the lowest level of perceived corruption.

Overall, we find no evidence that would suggest that the EU-Korea FTA had any discernible effect—positive or negative—on the structure and size of the informal economy in Korea. This may not be surprising, given the fact that the economic effects of the agreement are simply not large enough to have any measurable effect on these variables.

5.9. Impact of the EU-Korea FTA on developing countries and least-developed countries

The key findings of the evaluation are that:

- The general equilibrium analysis shows that developing countries are able to increase their exports to the EU, but not to Korea, compared to a counterfactual scenario without the EU-Korea FTA. Overall, the analysis provides no evidence that least developed countries and other developing countries are negatively affected as consequence of the EU-Korea trade integration.
- Based on the CGE results, the FTA has minor, average positive effects on welfare and real GDP for least developed countries and other developing countries, as well as on wages. These effects occur because of trade creation effects, i.e. increased demand from the EU for goods from least developed countries and other developing countries. The FTA has also led to some relatively minor trade diversion effects.

The CGE modelling conducted for this study allows for the calculation of the effects of the EU-Korea FTA on real GDP not only for the EU and Korea, but also for other countries. Insignificant changes in income for developing and least developed countries are plausible, because the scope of the agreement is limited (for example, compared to the effects an agreement such as TTIP would be expected to have), and thus has a comparatively smaller influence on third countries.

Table 21 below highlights GDP effects by income level according to the World Bank classification. As shown in the table, the FTA has average positive effects on welfare (income change) and on real GDP for both income groups. Unsurprisingly, the average wage change coincides with the average growth in GDP as well.

Table 21: Impact on developing countries, macroeconomic perspective

Income Group	Real GDP Change (%)	Income Change (%)	Wage Change (%)
Least developed countries	0.003	0.003	0.003
Other developing countries	0.005	0.005	0.003

Source: Ifo Trade Model.

Exports from Korea to least developed countries and other developing countries increased, while imports from the respective regions decreased (see Table 22 below).

Table 22: Impact on developing countries' trade with Korea

	Value of initial Korean exports, EUR million	Change in Korean exports (%)	Value of initial Korean imports, EUR million	Change in Korean imports (%)
Least developed countries	656	1.7	432	-0.01
Other developing countries	51 763	1.4	32 003	-0.1

Source: Ifo Trade Model.

As depicted by Table 23 below, EU trade with least developed countries and other developing countries has opposite effects. While EU imports increase, the exports of the EU decrease. The increased demand for cheap intermediate products from developing regions, which are needed for the increased production in the EU, might illustrate one reason why the demand for developing goods increased; for third countries (outsiders of a free trade zone), two potential effects can occur: either additional demand for their products is generated as they are complementary (trade creation effect); or, demand is shifted to other products that became relatively cheaper and serve as substitutes (trade diversion effect). Theoretically, both effects can outweigh each other. In the case of the EU-Korea FTA, the results of the general equilibrium analysis presented in Table 21 to Table 23 show that least developed countries and other developing countries are not negatively affected due to EU-Korea trade integration, as the minor reduction in Korean imports from these countries is more than compensated by the increase in EU imports.

Table 23: Impact on developing countries' trade with EU28

	Value of initial EU28 exports, EUR million	Change in EU28 exports (%)	Value of initial EU28 imports, EUR million	Change in EU28 imports (%)
Least developed countries	12 197	-0.17	10 268	0.21
Other developing countries	234 556	-0.22	267 067	0.19

Source: Ifo Trade Model.

6. Analysis of non-tariff trade costs and FTA implementation

This section examines the effects of the EU-Korea FTA on the reduction of non-tariff trade costs (section 6.1), as well as the regulatory changes undertaken to implement the FTA and their impacts on trade costs (section 6.2). In addition, this section analyses the implementation of the customs-related provisions of the FTA (section 6.3) along with the implementation of other areas of the FTA, including the provisions on competition, government procurement, intellectual property rights and geographical indications, the institutional set-up, e-commerce, and dispute settlement in section 6.4. Finally, issues which may affect exploiting the full potential of the FTA are discussed in section 6.5.

6.1. Effects of the FTA on the reduction of non-tariff trade costs

The key findings of the evaluation are that:

- **The EU-Korea FTA not only eliminated tariffs, but also succeeded in the reduction of non-tariff trade costs (NTTCs), such as differences in technical standards, labelling requirements, etc. In contrast to tariffs, which generate tariff income, non-tariff trade costs may involve a substantial waste of resources.**
- **The econometric analysis allows us to quantify the magnitude of the non-tariff trade cost reduction. Because NTTCs are unitless (unlike tariffs, that are typically reported as ad-valorem rates), we are not able to report absolute levels of NTTCs, but rather percentage changes. The results are mostly in line with expectations from previous assessments and specific measures that are implemented by the FTA.**
- **The NTTC reduction for Korean and European exporters differed across sectors. Even in sectors without explicit measures towards elimination of NTTCs mandated by the FTA a reduction of NTTCs can be observed.**

A key objective of the EU-Korea FTA is to liberalise and facilitate trade between the Parties, including through specific provisions on non-tariff measures. The focus of the agreement is not only the reduction of general non-tariff trade costs (NTTCs) resulting from measures such as technical regulation but also the reduction of trade barriers at the sectoral level. For example, in order to reduce general non-tariff trade costs, both Parties agreed to simplifying conformity assessment procedures, improving foreign access to information and strengthening the protection of the supplier's product and intellectual property. Chapter 2 of the agreement contains a section on non-tariff measures, which is complemented by provisions on sectoral non-tariff measures in the annexes of the agreement. For example, Annex 2-B on electronics provides for the progressive and simultaneous elimination of tariffs and non-tariff obstacles to bilateral trade,[118] and Annex 2-C on motor vehicles and parts list as a key objective ensuring full reciprocal market access by elimination of tariffs and non-tariff obstacles to bilateral trade.[119] Regulatory changes undertaken by the Parties with the objective to foster trade are further discussed in the subsequent sections.

In contrast to tariff barriers, which are well-defined and easily observable, the notion of NTTCs poses conceptual and measurement-related difficulties. According to a broad definition of NTTCs (for which the acronym NTB, non-tariff barriers, is used similarly), all trade impediments other than tariffs are to be considered in this context (thereby also including geographical, cultural, or linguistic barriers). For example, the OECD defines

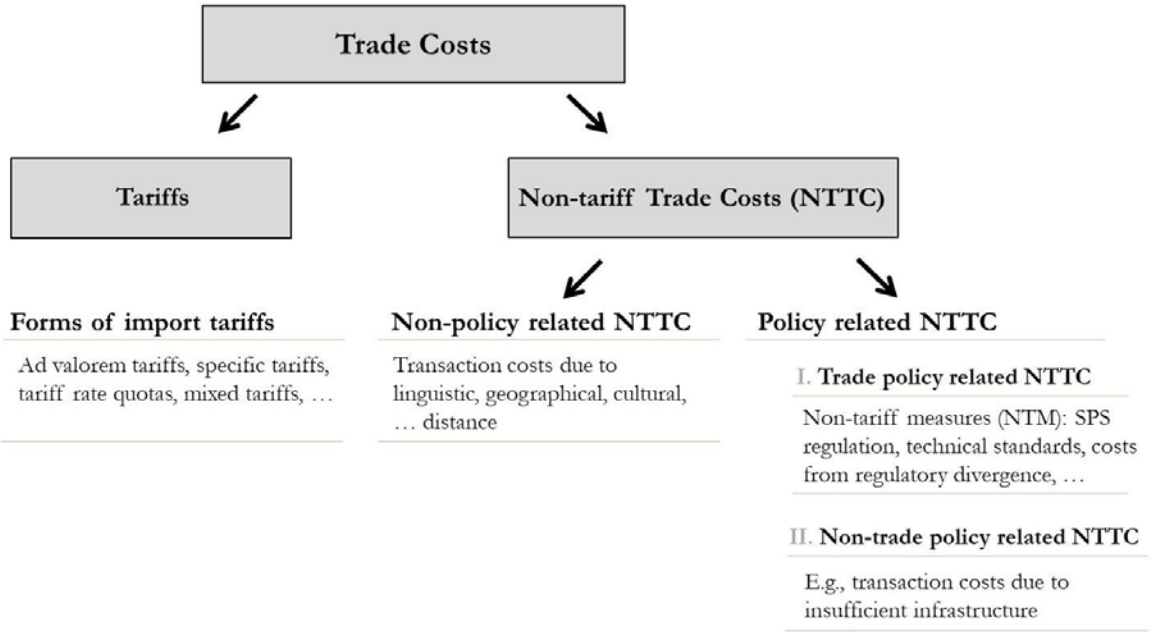
[118] EU-Korea FTA, Annex 2-B, Article 1.1(a).

[119] EU-Korea FTA, Annex 2-C, Article 1.1(a).

non-tariff measures as follows: "Non-tariff measures are measures other than normal tariffs which have the effect of restricting trade between nations".[120]

For the purpose of this study, we use the notion of non-tariff trade costs (NTTCs). NTTCs encompass all costs except tariffs that drive up the costs of international transactions relative to domestic ones. NTTCs can be further separated into non-policy induced NTTCs and policy induced NTTCs; the former include, among other things, costs related to cultural, geographical, or linguistic differences between countries. These costs can change over time: if more people in Korea study a European language or Europeans start learning Korean, cultural and linguistic trade costs might decrease. If this occurs as a consequence of the FTA (e.g., because Korean firms demand more workers with EU expertise), the EU-Korea FTA has causally reduced non-policy induced NTTCs. It is possible to distinguish two sub-categories of policy induced NTTCs: trade related policy induced NTTCs and non-trade related policy induced NTTCs. Trade related policy induced NTTCs are partner country specific non-tariff measures (NTMs) such as sanitary and phytosanitary regulations, technical standards, et cetera; hence, if Korean authorities allow EU product standards in Korea, we should observe a reduction in NTMs resulting in a reduction of NTTCs for European exports. In contrast, an example of a non-trade related policy induced NTTC is infrastructure: if economic activity is expected to increase due to the FTA and e.g. EU MS governments increase investment in infrastructure, trade costs for Korean exporters are expected to decrease. The structure of trade costs is visualized by the following figure.

Figure 64: Structure of Trade Costs



Source: Own illustration.

The economic impacts of tariffs and of non-tariff trade costs are potentially very different: tariffs raise tax income while non-tariff trade costs may involve a substantial waste of resources. Moreover, tariffs are often low compared to the costs of NTTCs.

[120] http://www.oecd.org/tad/ntm/

Therefore, the reduction of NTTCs is crucial for the agreement's effects on value added and GDP.

We estimate the effects of the agreement on NTTCs using the results of the econometric analysis. This means that we can identify on the basis of the results in which sectors NTTCs have been reduced and to what extent (i.e. we measure sectoral net effects), but that we do not know in detail how this happened. Indeed, non-tariff trade costs derive from many sources; these include but are not limited to sanitary and phytosanitary trade barriers, technical standards, double certifications, or labelling requirements. From a business perspective, costs related to non-tariff measures are often fixed costs that influence a firm's decision to enter a certain market or to stay out. SMEs are particularly affected by NTTCs. As these fixed costs decline due to the FTA, the price difference per-unit of export good between large and small firms is reduced, which helps SMEs to compete despite their lower sales volumes. For further details, refer to section 5.6 on the impact of the EU-Korea FTA on SMEs.

The reduction of tariffs in the consequence of the EU-Korea FTA is extensively discussed in section 5.1; in addition to the results presented there, this section sheds light on the NTTC reduction that is causally induced by the EU-Korea FTA. The econometric analysis in sections 5.4 and 5.5 investigates the FTA's effects on bilateral EU-Korea trade and disentangles asymmetric FTA effects on the two economies. By estimating the total trade creation effects of the FTA sector-by-sector, knowing the tariff cuts that have actually happened, and using the trade elasticities in our CGE model (see Annex VIII for further details), we can compute the reduction in NTTCs, which are by construction the residual part in explaining the observed trade creation effects. However, the data do not allow for calculating any interpretable absolute level of non-tariff trade costs, but rather changes in NTTCs.

Estimated decreases in the costs of NTTC reductions are highlighted as changes in ad valorem tariff equivalents in the table below. Subsequently, the observed NTTC reductions are discussed in light of the provisions in the agreement. Note that these NTTC reductions are observed until 2014, the last year for which data were available.

We observe a reduction in non-tariff trade costs in many sectors that could only be affected by the general efforts to reduce non-tariff trade costs, i.e. there are no provisions in the FTA that would reduce non-tariff trade costs specifically in these sectors. These results are also shown in the table below. Many of these general efforts overlap with sector-specific efforts to reduce non-tariff trade costs. The following discusses the relative magnitude of sector-specific non-tariff barrier reductions in some of the largest trade sectors.

Table 24: Sectoral NTTC reduction for EU and Korean exports

Sector	NTTC reduction for Korean exports (%)	NTTC reduction for EU exports (%)
Agriculture	7.8	2.9
Automotive	5.6	2.6
Business services	5.5	0.0
Chemicals	5.5	1.2
Construction	3.2	5.4
Electronic equipment	0.0	25.3
Energy	9.2	14.6
Financial and Insurance services	1.9	7.8
Fishing	0.0	6.3
Machinery and equipment	1.5	9.3
Manufacturing	0.0	0.9
Metals	12.5	6.6
Other services	0.2	5.5
Processed food	3.1	5.1
Raw material	9.5	13.0
Telecoms	0.0	6.2
Textile	4.7	0.0
Trade	3.3	6.8
Transport	2.2	8.1
Utilities	4.0	19.1
Wood, paper and minerals	5.4	4.8

Source: GTAP, WITS, Ifo Trade Model.

For the following, we link the observed sectoral NTTC reductions to concrete provisions of the agreement. This interpretation of results is rather an attempt to provide some potential mechanisms that work behind these numbers and no ultimate explanation.

Within the automotive sector, the agreement focuses on the convergence of technical regulation, particularly domestic standards, to reduce non-tariff trade costs. We observe a slightly asymmetric reduction in non-tariff trade costs, i.e. a 5.6 percent reduction for Korean exports compared to a 2.6 percent reduction for EU exports. According to a study undertaken by Copenhagen Economics in 2007, the "ex-ante European trade barriers were higher than their Korean counterparts" in the automotive sector. Some evidence also suggests that non-tariff trade costs could likely be "more important than tariffs"[121] which could explain the large drop in European non-tariff trade costs. On the other hand, the automotive industry emphasises the lack of regulatory convergence on Korea's part, pointing to the insufficient harmonisation of Korean regulations

[121] Copenhagen Economics, Economic Impact of a Potential Free Trade Agreement (FTA) Between the European Union and South Korea, 2007.

(while also acknowledging slow progress in certain areas), and related certification and testing requirements. This could explain the relatively small reduction in non-tariff trade costs for European exports. Further information on the automotive sector can found in the corresponding case study in section 10.1.

The chemicals sector in the table above comprises both chemicals and pharmaceutical products. With respect to the latter, both Parties aim to reduce non-tariff trade costs in order to provide better access to pharmaceutical products and to promote efficient development. The main objective is the provision of intellectual property protection and appropriate government support for innovation while upholding high standards of "safety, efficacy and quality".

With respect to chemicals, the focus is on ensuring transparency regarding laws and regulations concerning chemicals and cooperating in the area of Good Laboratory Practices and Test Guidelines, in order to seek a more harmonised approach to chemical assessment and management. For the chemicals sector as a whole in the table above, we observe a slightly asymmetric reduction in non-tariff trade costs, namely a 5.5 percent reduction for Korean exports compared to a 1.2 percent reduction for EU exports.

Within the electronics sector, the main objective is the removal of non-tariff trade costs to trade to improve market access and the competitive condition of the market. As part of this effort, both Parties agreed to align domestic regulation with international standards. Specifically, both Parties agreed to direct their efforts to simplifying assessment procedures and "implementing appropriate regulatory and legal enforcement mechanisms related to product liability and market surveillance". We observe a highly asymmetric reduction in non-tariff trade costs in this sector, namely a 25 percent reduction for EU exports compared to no change for Korean exports. Further information on the electronics sector can be found in the corresponding case study in section 10.3.

Specifically for the telecommunications sector and the financial and insurance services sector, we expect not only general efforts of the agreement to reduce non-tariff trade costs in both sectors, but also some reduction occurring from the revised legal infrastructure in both sectors. We observe a highly asymmetric reduction in NTTCs, i.e. a zero percent reduction for Korean exports compared to a 6.2 percent reduction for EU exports in the telecommunications sector and a 1.9 percent reduction for Korean exports compared to a 7.8 percent reduction for EU exports in the financial and insurance services sector.

Within the transportation sector, the agreement aims to improve the service-related infrastructure in order to enhance international maritime transportation services as defined by the agreement. Again, we observe an asymmetric reduction in non-tariff trade costs in this sector, namely a 2.2 percent reduction for EU exports compared to an 8.1 percent reduction for Korean exports.

For Korean exports, severe reductions in trade costs occurred also in the agricultural industries (7.8 percent); these are disentangled to its sub-sectors and discussed in the case study on the agricultural sector in section 10.2.

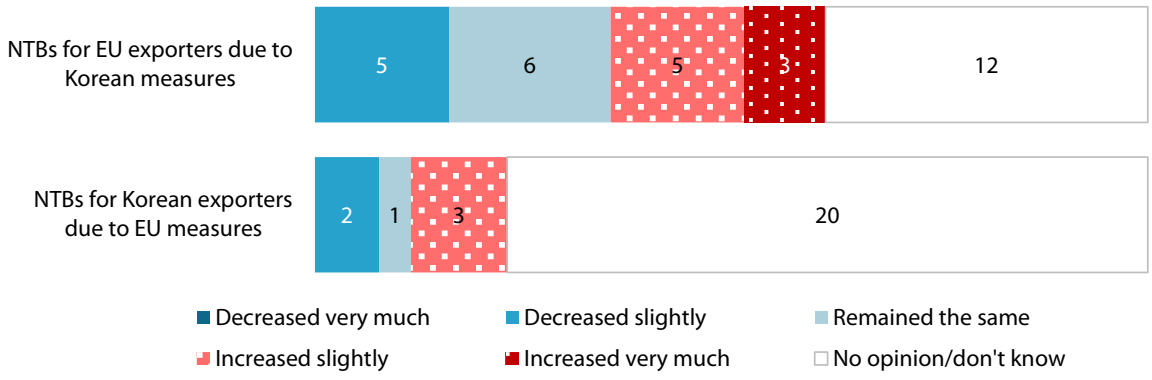
The aforementioned results do not address the extent to which there are still actionable non-tariff trade costs in place that affected EU-Korea trade at the date for which data were available (2014). Given the fact that the effects of trade agreements need time to fully unfold, this is expected to have been the case to some degree. Thus the estimates presented above are relatively conservative measures of the actual magnitude of NTTC elimination, which would become visible once data for a longer post-FTA time window are available. Sectors lagging behind in the elimination of NTTC despite explicit efforts according to the FTA can then be identified more accurately. In addition, once NTTC reduction effects of other deep EU-FTAs (e.g. CETA) will have materialised, an

assessment of the success of the EU-Korea FTA with respect to NTTC elimination compared to other FTAs could also be made. Heretofore, we conclude that the FTA is already far-reaching and effective in its attempts to reduce NTTCs.

Survey evidence collected by the International Trade Center (2016) from 8 100 EU companies in 26 sectors of economic activity between 2015 and 2016 suggests that the share of transactions for which there is a burdensome regulation was 51 percent for Korea as a destination.[122] In this analysis, 186 different products were studied. The study does not give any time series evidence, so it is not possible to analyse progress made since the start of the provisional application of the FTA. However, among all EU trade partners, the share of products burdened by NTTC regulations was 48 percent. Hence, Korea looks very much like an average EU trade partner in this respect. To benchmark expectations, it is possible to compare Korea with other countries with which the EU has comprehensive FTAs, e.g., with Switzerland or Norway. In those export markets, the share of products affected by NTTCs lies at 42 percent and 29 percent, respectively. A recent report of the European Commission to the European Parliament and the Council substantiates that the reduction of non-tariff trade costs as a result of free trade agreements is heterogeneous across and within countries. In 2016, the cooperation between Korea and the EU was considered to be the most successful in eliminating existing barriers.[123]

This assessment of NTTCs on the basis of the results of the econometric analysis and company survey results can be complemented with more specific information on non-tariff barriers experienced by stakeholders and reported in the open public consultation, the case studies, and literature. In the open public consultation, respondents were asked if non-tariff barriers when exporting goods had decreased since the start of the provisional application of the EU-Korea FTA. The figure below presents the breakdown of responses.

Figure 65: Non-tariff barriers under the EU-Korea FTA



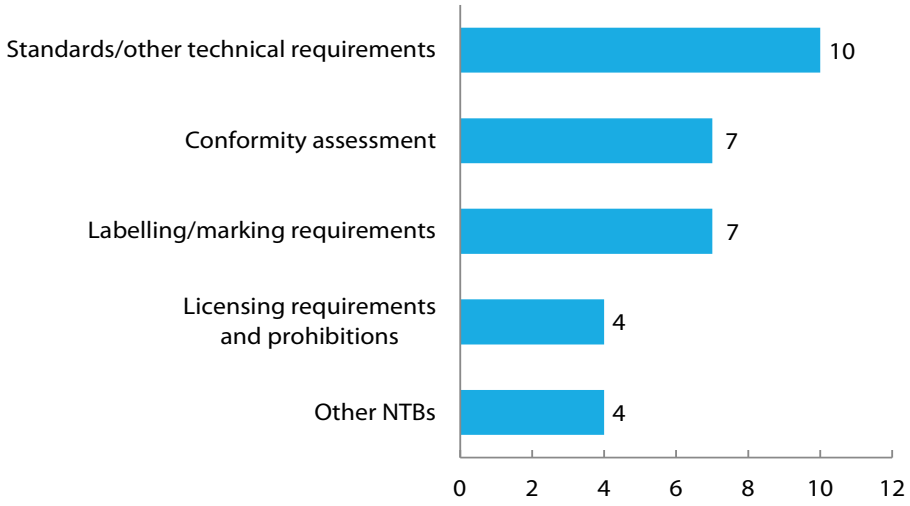
[122] A transaction is a pair of exported product (at HS6 level) and partner country for a company. See International Trade Center (2016), „Navigating non-tariff measures: Insights from a business survey in the European Union“, Geneva, Switzerland.

[123] Report of the European Commission on Trade and Investment Barriers, 1 January 2016 - 31 December 2016, COM(2017) 338 final. The report states that "A particularly positive trend can be observed in South Korea, where only one new barrier was registered in 2016 while five barriers were eliminated. This underscores that the FTA implementation structure provides an effective vehicle to address trade barriers." On the other hand the report also indicates that Korea ranked fifth with 17 trade and investment barriers registered in the Market Access Database.

Source: Own compilation, based on the public consultation on the EU-Korea FTA. Question: Have non-tariff barriers when exporting goods decreased since the application of the EU-Korea FTA in 2011?

As shown in the figure above, respondents have diverging views on whether non-tariff barriers for exporters due to measures applied by Korea decreased slightly since the start of the provisional application of the EU-Korea FTA, remained the same, or increased. A sizable group of respondents had no opinion or did not know (especially regarding NTBs for Korean exporters). No firm conclusions can be drawn on this basis, also considering the limited number of respondents. However, some additional information can be derived from the answers of respondents when asked about the specific non-tariff barriers they observed in Korea affecting EU-Korea trade. These barriers are presented in the figure below.

Figure 66: Specific non-tariff barriers affecting EU-Korea trade – NTBs in Korea



Source: Own compilation, based on the public consultation on the EU-Korea FTA. Question: Have you observed any of the following non-tariff barriers affecting EU-Korea trade when exporting goods? Note: Multiple answers were permitted.

While again the low number of respondents does not allow for a ranking of the significance of the different barriers, it appears that barriers related to standardisation, conformity assessment and labelling were considered to be among the most relevant NTBs in Korea affecting EU-Korea trade.[124]

This conclusion is largely in line with the results of the case studies on the automotive sector, the agricultural sector, the electronic goods sector, the environmental goods/services sector, and the postal services sector (see sections 10.1-10.5). The causes of NTTCs affecting these sectors as identified in our case study research are summarised in the following table.

[124] The number of respondents regarding barriers experienced by Korean exporters in the EU was very small (4) (due to the large number of EU respondents to the consultation). The results are presented in stakeholder consultation report and are not repeated here.

Figure 67: Causes of NTTCs affecting EU-Korea trade in case study sectors

Sector	Sources of non-tariff trade costs
Automotive	Insufficient harmonisation of Korean regulations with UNECE regulations
	Exclusion of petrol cars from Annex 2-C (the automotive annex to the EU-Korea FTA)
	Specific Korean requirements for vehicles and equipment, e.g. ground clearance requirements and vehicle width standards; compliance with the Korean radio act, etc.
	Specific Korean certification and testing requirements, e.g. certification of car parts, battery drop test, etc.
Agriculture	EU regionalisation system not recognised by Korea with respect to animal disease outbreaks
	Korean ban on imports of EU beef (motivated by a safeguard against BSE) still in effect; EU applications to export beef to Korea still pending since start of provisional application of FTA
	Korean sanitary requirements are not transparent for animals/animal products
	Burdensome procedure for registering production establishments for animal products
	EU not considered a single entity, which poses problems with respect to veterinary certificates for animals/animal products
	Imports of EU soft raw milk cheeses banned by Korea
	Burdensome pest risk assessment required to export EU fruits and vegetables to Korea
Electronic goods	Test reports prepared by EU laboratories must be prepared in line with Korean standards, which EU laboratories are not always familiar with
	Korean Occupational Safety and Health Agency regulations requiring third-party certification for imported electronic, electrical and mechanical products
Environmental goods and services	Insufficient harmonisation of Korean regulations with relevant international standards (e.g. IEC standards)
Postal services	Requirement for express service providers to use a Common Express Terminal at the Incheon International Airport for x-ray and inspection, which slows clearance times

Source: Case studies on the respective sectors, based on stakeholder consultation, interviews and complementary research. (See section 10.)

As the table illustrates, in all goods sectors other than agriculture, most NTTCs related to the aforementioned technical barriers.

The relevance of technical barriers is also confirmed by WTO data. Member countries can raise specific trade concerns (STCs) at the Committee on Technical Barriers to Trade (TBT) regarding measures under consideration or taken by other members. As the WTO emphasises, Korean measures are frequently subject to TBT STCs. Overall, from 1995 to 2015, 30 new STCs have been raised against Korean measures before the TBT Committee. This makes Korea the WTO member with the fourth-most measures discussed in the Committee, only behind the EU, China and the United States. However, in 2015, Korea was not among even the top 8 members in terms of measures subject to STCs. In the period since 2012, STCs raised by members concerned measures under consideration or taken by Korea regarding e.g. chemical material; thin-film solar panels; PCV flooring material, wallpaper and paper linoleum, and toys; wood products; automobile standards; tyres for motor vehicles; cell phone electromagnetic values/exposure; cosmetics; radio-frequency identification tags for imported whiskeys;

and energy efficiency of windows.[125] This list concerns the measures brought by all members and is therefore not specific to EU-Korea trade.

6.2. Regulatory changes undertaken and impacts on trade costs

The key findings of the evaluation are that:

- Already before the start of the provisional application of the EU-Korea FTA, the Korean government proceeded with the transposition of FTA commitments into domestic legislation and administrative rules.
- In addition, trade-related legislation has been amended since 2012 in areas such as customs procedures, general import and export procedures, standards and technical requirements, sanitary and phytosanitary requirements, as well as other areas. However, the observed regulatory changes cannot be mono-causally ascribed to specific commitments such as those of the EU-Korea FTA.
- A majority of stakeholders that have an opinion consider that regulatory changes in Korea were fully or at least partly made, or were not needed in the area relevant to the respondent. However, a relevant sub-group of respondents indicated that required regulatory changes have not been made. "Technical barriers to trade", "market access for goods", and "sector-specific annexes on non-tariff barriers" were considered to be common provisions for which regulatory changes have not been made or have only been partially made in Korea.
- A direct translation of regulatory changes into trade cost reductions is not possible; hence, we interpret observed data that work as proxies for trade costs (number of documents required, time to export/import). Document requirements and times connected to trade relations as well as trade costs have been broadly stable and the identified changes are likely to be caused by outliers in the data and exchange rate fluctuations. We can neither identify a systematic change after 2011, nor any general time trend.

This section addresses regulatory changes undertaken in order to implement the provisions of the FTA (e.g. harmonisation of standards).

6.2.1. Transposition of FTA commitments into Korean legislation

Even before the start of the provisional application of the EU-Korea FTA, the Korean government had proceeded with transposition of FTA commitments into domestic legislation and administrative rules. This process was monitored by the EU Delegation to the Republic of Korea in Seoul with the help of a Korean law firm, and it was concluded that more than 40 pieces of domestic legislation were amended/enacted for FTA implementation in Korea. No changes to EU legislation were required. An overview of amendments to Korean legislation and administrative rules for the implementation of FTA commitments is provided on the following pages.

[125] WTO, Trade Policy Review WT/TPR/S/346 (16-4723), 2016.

Table 25: Amendments to Korean legislation and administrative rules for the implementation of Korea's FTA commitments

FTA commitment	FTA Chapter	Law/administrative rules	Purpose/content of the amendment	Date [a)]
Liberalisation of trade in goods				
Implementation of tariff liberalisation schedules and rules of origin	Annex 2-A	Enforcement Decree of the Act on Special Cases of Customs Act for the Implementation of Free Trade Agreements	Modify legislation as appropriate for the implementation of Korea's tariff concession schedules	30 June 2011
		Enforcement Regulations of the Act on Special Cases of Customs Act for the Implementation of Free Trade Agreements	Modify legislation as appropriate for the implementation of Korea's commitments on rules of origin	30 June 2011
Adoption of detailed rules for managing agricultural Tariff Rate Quotas (TRQs)	Annex 2-A-1	Guidelines on TRQ allocation and management of imports of agricultural and livestock products in accordance with the EU-Korea FTA	Establish detailed rules for an auction system and a licensing system (Appendix 2-A-1) the terms of which must be agreed by EU.	29 June 2011
		Detailed Operational Guidelines on TRQ allocation in accordance with the EU-Korea FTA	Provide detailed operational guidelines on TRQ allocation the terms of which shall be approved by MiFAFF and agreed with the EU Party	25 July 2011
Implementation of agricultural automatic safeguard mechanisms	Annex 3	Act on Special Cases of Customs Act for the Implementation of Free Trade Agreements	Introduce the bilateral agricultural safeguard mechanism (enactment of Article 7.3)	30 June 2011
		Enforcement Decree of the Act on the Investigation of Unfair International Trade Practices and Remedy against Injury to Industry	Introduce the bilateral safeguard mechanism	27 June 2011
Implementation of non-tariff commitments for goods				
Commitments on electromagnetic compatibility (EMC) certification	Annex 2-B	Radio Waves Act	Provide a legal basis for an MRA on conformity assessment for communications equipment (Article 58.8 to 58.9)	23 July 2010
		Enforcement Decree of Radio Waves Act	Provide a legal basis for an MRA on conformity assessment for communications equipment (Article 77.12)	31 December 2010
		RRA Notification on the Conformity Assessment for Telecommunications Equipment	Implement Korea's commitments to SDoC for EMC applicable to some products	21 January 2011
Commitments on electric	Annex 2-B	Electrical Appliances Safety Control Act	Implement Korea's commitments to ease electric	30 March

FTA commitment	FTA Chapter	Law/administrative rules	Purpose/content of the amendment	Date [a)]
safety certification			safety certification according to Annex 2-B	2011
		Enforcement Decree of Electrical Appliances Safety Control Act	Implement Korea's commitments to ease electric safety certification according to Annex 2-B	05 April 2011
		Enforcement Regulations of Electrical Appliances Safety Control Act	Implement Korea's commitments to ease electric safety certification according to Annex 2B	31 December 2009
Commitments for mutual recognition of standards and certificates for motor vehicles and parts	Annex 2-C	Automobile Management Act	Establish general policy scheme mainly for: i) establishing the 5-year basic policy scheme for automobile sector (to be re-established every 5 years) entailing automobile safety standards development, automobile safety enhancement and regulatory harmonisation with international standards; ii) introducing automobile safety standards in line with international standards in the long term and in a more systematic manner; and, iii) to provide provisions as to how to treat automobiles with new technologies	24 May 2011
		Notification on the Safety Standard Act for Consumer Products Subject to Safety Assurance	Harmonises the safety standards for vehicle tires with those under UNECE R30 and UNECE R54	29 August 2017
		Enforcement Regulations on Automobile Safety Standards	Provide general provisions for gradual and systematic harmonisation of Korean Automobile Safety Standards with international standards (Special treatment for FTA standards: Safety standards recognised in the FTAs will be deemed as complying with domestic safety standards)	28 June 2011
			Mandatory installation requirement conforming to ESC; installation standards for adaptive head lamps and daylight head lamps	10 November 2010
		Notification on Safety Standards for Industrial products Subject to Safety Certification (Issued by Korean Agency for Technology and Standard	Conform safety requirements for automobile tyres with ECE	28 June 2011

FTA commitment	FTA Chapter	Law/administrative rules	Purpose/content of the amendment	Date [a)]
		for Automobile Tyres)		
		Enforcement Regulations of the Clean Air Conservation Act	To adjust the current level of emission allowance based on the volume of annual vehicle sales	31 December 2010
		MoE Notification on the Motor Vehicles Approval Methods and Procedures	OBD standards of Korea-EU FTA	31 December 2009
		Quality Management Safety and Control of Industrial Products Act	To recognise relevant international standards on tyres (in Table 1 of Appendix 2-C-3) as equivalent to Korean standards	30 June 2011
Liberalisation of trade in services				
Commitments for legal services	Chapter 7	Foreign Legal Consultant Act	To stipulate registration requirements for foreign legal consultants and law firms; to allow the set-up of foreign law firms in Korea.	25 March 2009
			Open gradually to foreign law firms (Foreign legal consultants and law firms are allowed to have cooperative agreements with Korean law firms in order to be able to jointly deal with cases.)	5 April 2011
			Open gradually to foreign law firms (Joint ventures between Korean/EU law firms permitted. Such joint ventures may, subject to certain requirements, employ Korean-licensed lawyers as partners or associates)	1 July 2016
		Enforcement Decree of Foreign Legal Consultant Act	To stipulate registration requirements for foreign legal consultants and law firms. To allow the set-up of foreign law firms in Korea.	26 September 2009
Commitments for accounting, auditing and book-keeping services		Certified Public Accountant Act	To stipulate registration and management requirements for foreign public accountants and foreign accounting firms	30 June 2011
		Enforcement Decree of Certified Public Accountant Act	Same as above	30 June 2011
		Enforcement Regulations of Certified Public Accountant Act	Same as above	30 June 2011

FTA commitment	FTA Chapter	Law/administrative rules	Purpose/content of the amendment	Date [a)]
Commitments for taxation services		Certified Tax Accountant Act	To stipulate registration requirements for foreign tax accountants and tax accounting firms	30 June 2011
		Enforcement Decree of Certified Tax Account Act	Same as above	30 June 2011
		Enforcement Regulations of Certified Tax Account Act	Same as above	30 June 2011
Commitments for postal and courier services		Postal service Act	To streamline the related laws in accordance with market opening	15 March 2012
		Enforcement Decree of Postal Service Act	Added international document express delivery services to exceptions to public monopoly	2 December 2011
Commitments for telecommunication services		Telecommunications Business Act	To lift direct foreign ownership caps on facilities-based carriers. To relive the limitations on the indirect investment by foreign investors regarding key telecommunications service providers. Exemption of the approval process when making an agreement on the cross-border supply of key telecommunications services.	13 August 2013
Commitments for wholesale trade services		Pharmaceutical Affairs Act	Licensing of persons who intend to become herb druggist or drug wholesaler; rules regarding facilities of herb druggists and drug wholesalers	31 March 2012
Commitments for distribution services		Act for Development of Distribution Industry	Expanded radius of Traditional Market Zone from 500m to 1km; extended temporary application period from 3 to 5 years	30 June 2011
		National Agricultural Cooperative Federation Act	Separate financial cooperative business; establish separate life/nonlife insurance corps; apply Insurance Business Act	31 March 2011
		Insurance Business Act	Revised Article 89, which imposed domestic presence as a requirement for registration for insurance brokers	23 July 2010

FTA commitment	FTA Chapter	Law/administrative rules	Purpose/content of the amendment	Date [a)]
Implementation of common rules				
Commitments in the area of government procurement	Chapter 9	Government Procurement Act	To make it possible to cooperate with private sector for vitalisation of stockpiling; to give support policies for entering the public procurement markets	29 December 2009
		Special Rules relating to Enforcement Decree of the Act on Contract to which the State is a Party for the Specific Procurement	To provide exception to EU companies in contracts to which the State is a party	30 June 2011
Commitments in the area of intellectual property	Chapter 10	Copyright Act	To conform copyright protection to FTA provisions (broadcast and public performance rights, temporary storage, term extension, statutory damages); to establish provisions to establish, expand and reinforce rights of producers, performers and broadcasting operators	30 June 2011
		Enforcement Decree of Copyright Act	Exceptions to protection of technological measures, and other issues delegated from the Act	30 June 2011
		Trademark Act	To refuse the registration of a trademark which is similar to the other's geographical indication. To forfeit the ingredients used to produce any trademark infringing products. To state the term of trademark related to the additionally registered class of good.	1 January 2012
		Enforcement Decree of Patent Act	Invention Subject to Application for Registration of Extension of Term of Patent Right by Permit, etc.	1 January 2012
		Design Protection Act	To establish legal provisions to strengthen IPR protection for registered designs	30 June 2011
		Customs Act	To expand the scope of border measures for the protection of IPR for: trademarks; copyrights; patents; designs; GIs; plant varieties (Article 235)	30 December 2010
		Enforcement Decree of the Customs Act	To expand the scope of border measures for the protection of IPR for: trademarks; copyrights; patents; designs; GIs; plant varieties	1 April 2011

FTA commitment	FTA Chapter	Law/administrative rules	Purpose/content of the amendment	Date [a)]
		Enforcement Decree of the Customs Act	Ban acts that infringe upon EU's geographical indications	30 June 2011
		Korea Customs Service Notification on the management of affairs related to customs clearance of exports and imports for the protection of intellectual property rights	To provide a new template for the submission of the relevant documents for customs clearance	1 July 2011
		Unfair Competition Prevention and Trade Secret Protection Act	Introduce confidentiality protection in infringement suits. To prevent any illegal use of geographical indication protected by Korea-EU FTA and to prepare for the remedy procedures for GI infringement. Investigation of unfair competition behaviour will be jointly carried out by central government agency and local government agency	1 October 2011
		Act on Designation and Management of Free Trade Zones	To establish legal provisions to reinforce IPR protection at customs (i.e. to prohibit any IP infringing activities in bonded areas/free economic zones, as far as they concern: copyright; trademark; registered design; GIs; patents; and plant varieties).	30 June 2011

Source: Own compilation, based on information provided by EU Delegation to Seoul and complementary research. Note: a) Depending on the type and subject, date refers to the date to which the change was promulgated/ amended/notified.

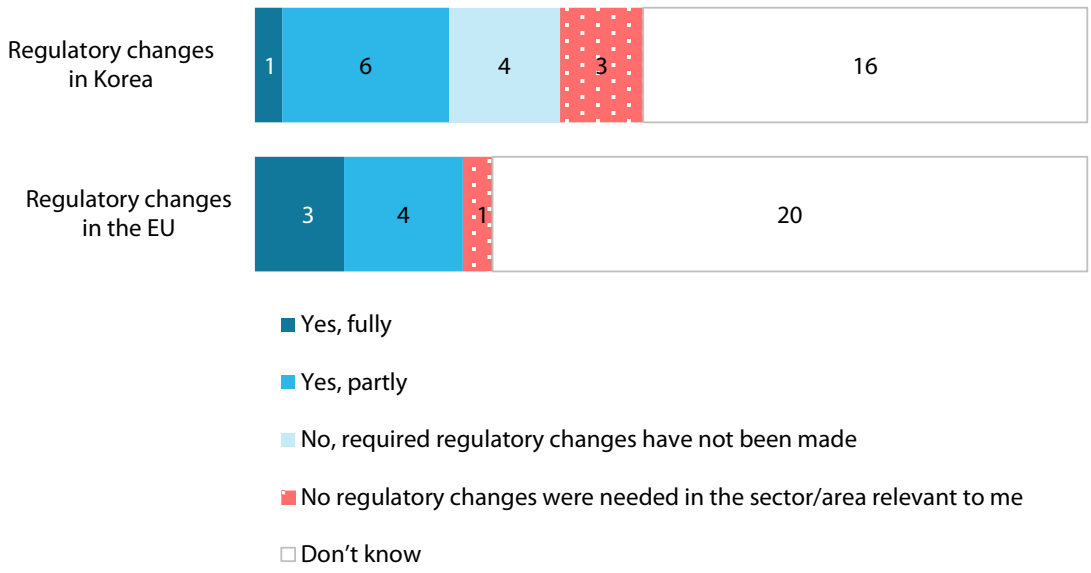
Since the implementation of these regulatory changes that were introduced as a direct consequence of implementing FTA commitments, the regulatory framework in Korea affecting trade has continued to evolve. Regulatory changes that can affect trade occur on a regular basis in most countries, and may be due to policy changes at the national level or commitments from multilateral or bilateral trade agreements. For instance, the KORUS agreement (the FTA with the US which became effective in March 2012) is likely to have affected regulatory changes in Korea as well. Due to this multiplicity of reasons for regulatory changes, they often cannot be mono-causally ascribed to specific commitments such as those of the EU-Korea FTA.

In Korea, the main legislation on international trade remains the Foreign Trade Act, and the Customs Act. The recent trade policy review by the WTO on Korea provides a detailed list of trade-related legislation that has been amended since the previous review in 2012, which we have complemented with additional information. Relevant amendments are presented in a table in Annex III, indicating their subject, the legislative act, the purpose/content of the amendment (where such information was available), and the year.

6.2.2. Stakeholder experiences with regulatory changes to implement the EU-Korea FTA

To gain further insights into the relevance of these regulatory changes for EU-Korea trade, respondents to the public consultation were asked if the EU and Korea have made, in the sectors/areas relevant to them, regulatory changes to implement FTA commitments. The figure below shows the breakdown of responses.

Figure 68: Regulatory changes made to implement the EU-Korea FTA



Source: Own compilation, based on the public consultation on the EU-Korea FTA. Question: In your view, have the EU and Korea made regulatory changes in the sector/area relevant to you to implement commitments from the EU-Korea FTA?

The number of respondents to this question is quite limited, so that results have to be interpreted with care. It is notable that a majority of respondents with an opinion considers that regulatory changes in Korea were fully or at least partly made, or were not needed in the relevant area. However, a relevant sub-group of respondents indicated that required regulatory changes have not been made.

In the follow up question, respondents were asked to specify the FTA provisions for which regulatory changes have not or only partly been made. ”Technical barriers to trade”, “market access for goods”, and “sector-specific annexes on non-tariff barriers” were considered to be common provisions for which regulatory changes have not been made or have only been partially made in Korea. The respondents (Cefic, Fecc, and one EU company) who indicated insufficient regulatory changes with respect to the sector-specific annexes on non-tariff barriers referred specifically to the Korea REACH legislation in connection to the sector-specific annex on chemicals. ACEA, the European Automobile Manufacturers' Association, also commented on a proposed Extended Producers Responsibilities bill in Korea that would become a significant burden for EU automotive manufacturers, as well as the overall concern that Korea has not harmonised its national requirements to international standards.

Regarding the EU, technical barriers to trade was cited by the most respondents as FTA provisions for which regulatory changes have not been made, with sector–specific annexes on NTBs also considered relevant by several respondents.

In combination with the evidence presented in the previous sub-section, these answers appear to confirm the continued importance of technical barriers to trade, compared to other potential barriers affecting EU-Korea trade.

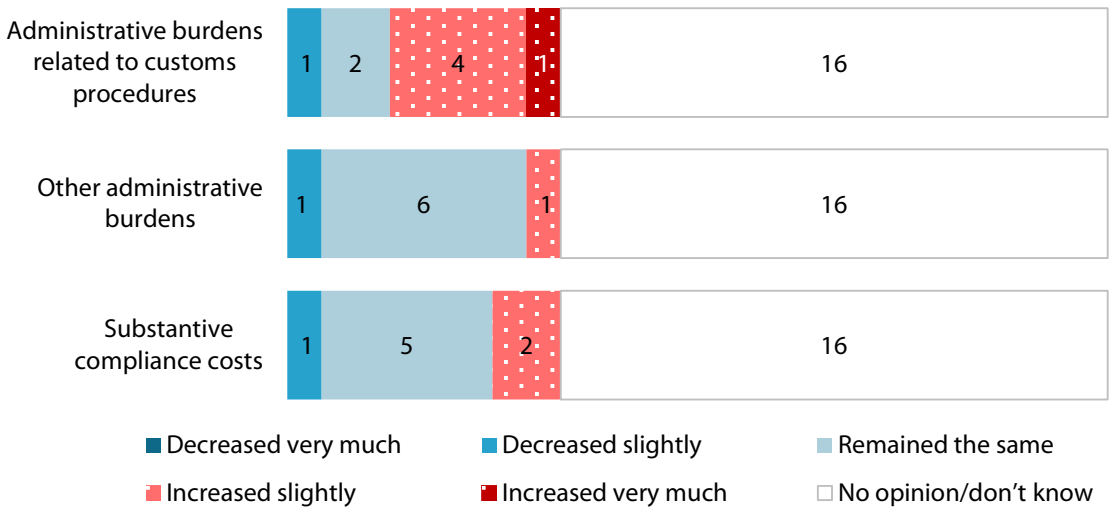
6.2.3. Effects of regulatory changes on trade costs

A key question in the context of this evaluation is whether legislative amendments have reduced or increased bilateral trade-costs, or whether these costs have remained the same, e.g. because regulatory changes to reduce barriers were not made. Respondents to the public consultation were therefore asked about how costs associated with EU-Korea trade have been affected since the start of the provisional application of the EU-Korea FTA. We differentiated between three types of costs, all of which relate to regulatory requirements:

- *Administrative burdens related to customs procedures* (e.g. for providing required documentation to customs authorities)
- *Other administrative burdens* (e.g. for providing required documentation to non-customs authorities)
- *Substantive compliance costs* (e.g. for adhering to domestic standards in the destination country)

The figure below shows the breakdown of responses.

Figure 69: Administrative burdens/compliance costs associated with EU-Korea trade



Source: Public consultation on the EU-Korea FTA. Question: How have the administrative burdens/compliance costs associated with EU-Korea trade been affected since the application of the EU-Korea FTA in 2011?

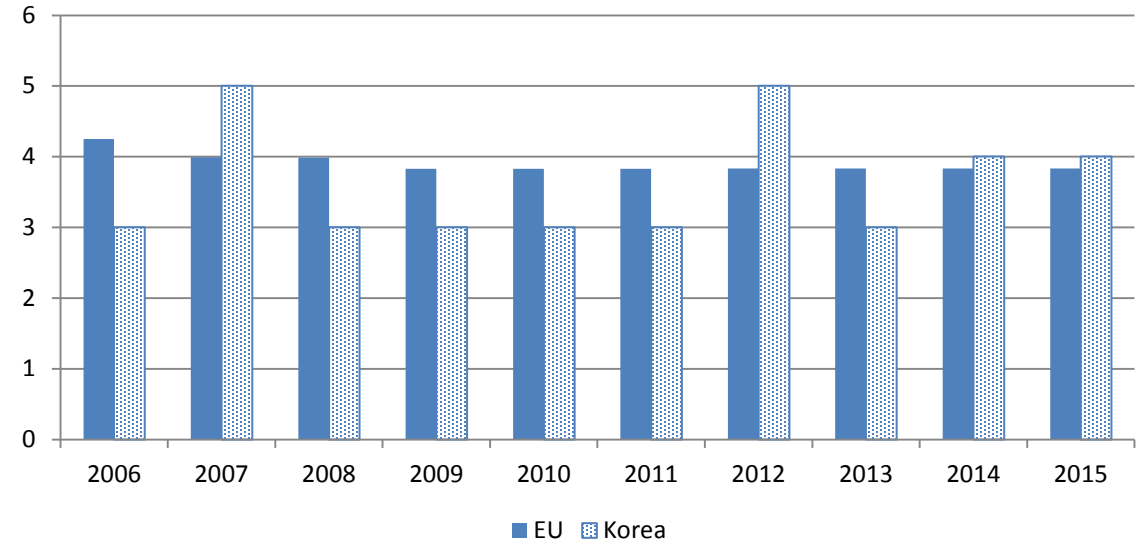
As shown in the figure above, only eight respondents provided an assessment, mostly ranging from a slight increase to a slight decrease in costs. This possibly reflects sectoral differences, which were also noted in the analysis of NTTCs. As shown in the previous sub-section, NTTC reductions haven taken place in most sectors. However, in some sectors no such reduction can be noted, implying that legislative amendments or other changes to reduce barriers have not taken place since the start of the provisional application of the FTA.

Another approach to assess changes in trade costs due to regulatory requirements is by scrutinising proxy variables that may serve as approximations or indications of how trade costs have evolved over time. In the following, we consider the evolution of requirements and times connected to trade relations in the EU and Korea before and after the start of the provisional application of the EU-Korea FTA as an objective measure of how these trade relations have been affected by regulatory (and related institutional) changes, based on World Bank data.

Figure 70 below illustrates the number of documents needed by an exporter in order to fulfil all legal requirements for an export activity from the respective country. The number of documents needed to export in the EU remained constant at around four documents. The number of documents to export in Korea was lower (three documents) for most of the time. However, we observe outliers of five documents in 2007 and 2012.[126] In 2014, the number in Korea rose to four and thus converged to the EU requirements. For both Korea and countries in the EU, there seems to be no systematic difference concerning the number of documents needed before and after the start of the provisional application of the EU-Korea FTA.

[126] We are not able to explain these outliers qualitatively; the data stem from the World Bank and are not transformed.

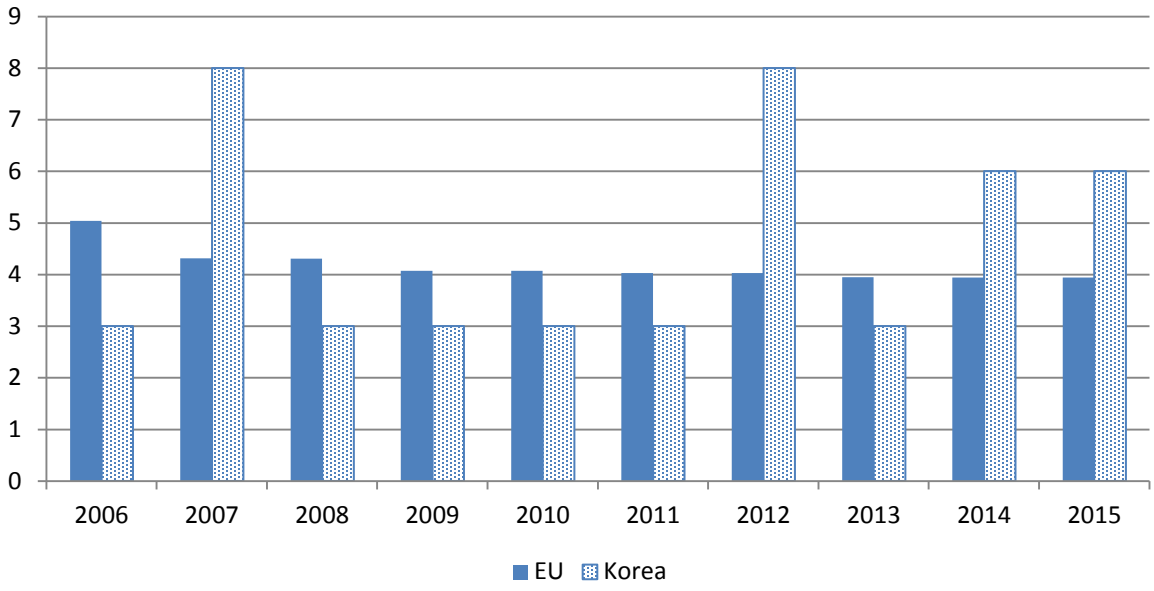
Figure 70: Documents to export (number)



Source: Own compilation, based on World Bank Group - Doing Business Indicator (2017). Note: The value for the EU is weighted by the trade volume between each EU28 country and Korea, and thus the number of documents does not yield an integer.

As depicted by Figure 71 below, the number of documents required to import to the European Union was relatively stable at four over the whole period from 2006 to 2015. The Korean values are lower (three documents) between 2006 and 2013. Again, we observe two outliers in 2007 and 2012. Similarly to the number of export documents, the number of documents needed for imports increased in 2014 and now even exceeds the documentation requirements of the EU.

Figure 71: Documents to import (number)

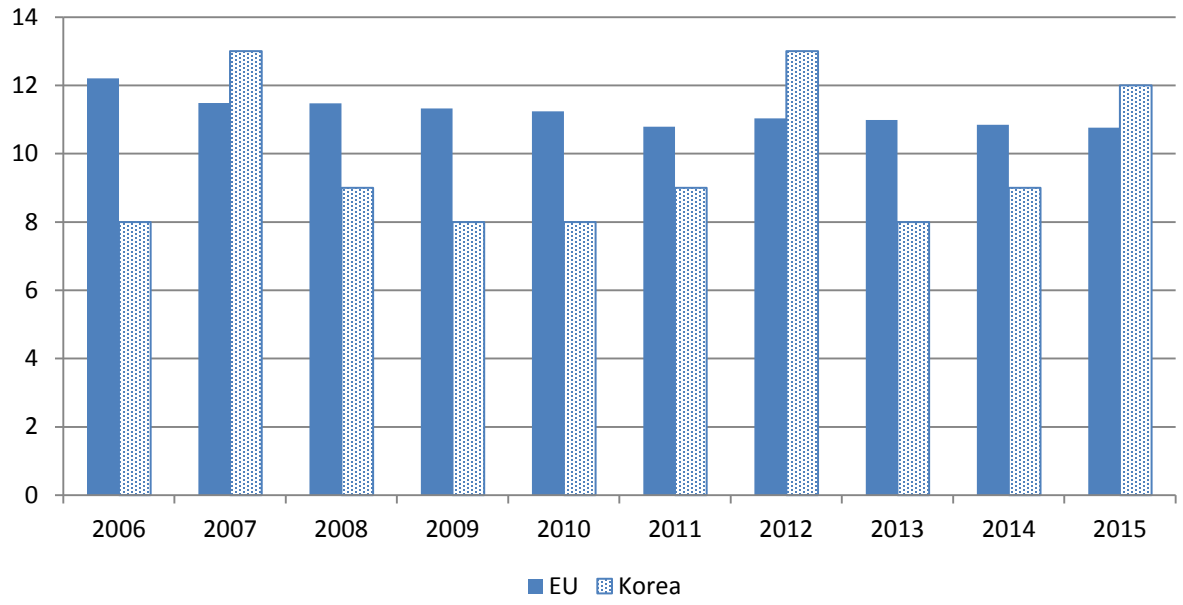


Source: Own compilation, based on World Bank Group - Doing Business Indicator (2017). Note: The value for the EU is weighted by the trade volume between each EU28 country and Korea, and thus the number of documents does not yield an integer.

The required time matters significantly for cross-border business activities. Hence, the Doing Business indicators also provide data regarding the time needed to obtain, prepare, process, present and submit documents for the purpose of exporting and importing.

Figure 72 below depicts the evolution of the number of days that are needed to export from the EU and Korea, respectively. This number includes the time needed for domestic transport, border compliance, and documentary compliance. The number of days needed in the EU is relatively stable and declined moderately over time from initially 12 days to less than 11 days. The values for Korea are again more volatile, and 2007 and 2012 can be ignored as outliers that are persistent across all Doing Business Indicators for these years. Overall, Korean exporters had to spend between eight and nine days prior to 2015 and 12 days in 2015. Whether an upward trend can be observed starting in 2013, or 2015 is yet another outlier, cannot be determined up until now.

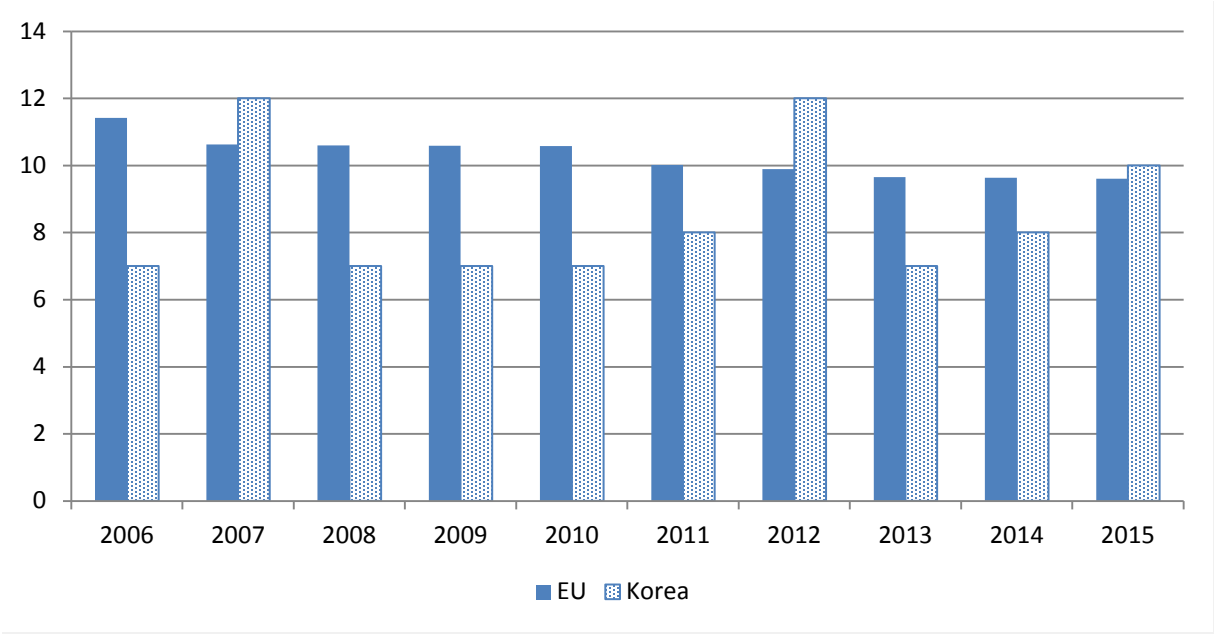
Figure 72: Time to export (days)



Source: Own compilation, based on World Bank Group - Doing Business Indicator (2017). Note: The value for the EU is weighted by the trade volume between each EU28 country and Korea, and thus the number of documents does not yield an integer.

Figure 73 shows the same evolution but for days needed to fulfil all import requirements in the respective countries. EU importers on average need slightly less than 12 days in 2006, and the time requirement decreased steadily over time to below 10 days. Korean importers face increasing bureaucratic requirements with a convergence towards the European level for the most recent observation. Again, the data points of 2007 and 2012 lack a meaningful interpretation.

Figure 73: Time to import (days)



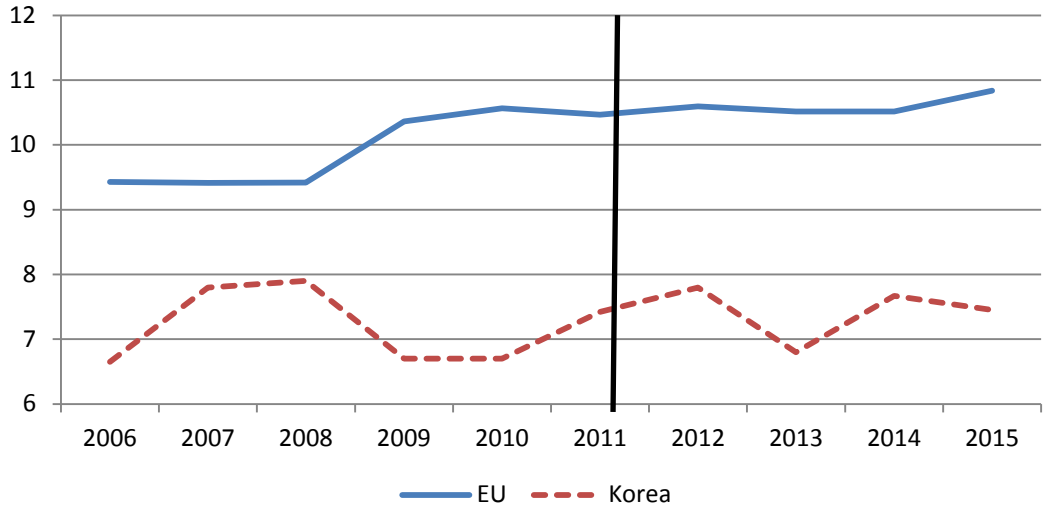
Source: Own compilation, based on World Bank Group - Doing Business Indicator (2017). Note: The value for the EU is weighted by the trade volume between each EU28 country and Korea, and thus the number of documents does not yield an integer.

Finally, we consider the evolution of costs to export. This is a measure based on surveys among private sector experts and includes trade-related expenses such as insurance but excludes tariffs and international transportation.

The evolution over time is shown in Figure 74 and Figure 75 for export and import costs, respectively. Figure 74 depicts costs that arise for an exporter from the respective country. Overall, exporting from the EU is related to 50 percent higher costs compared to exporting from Korea. Costs for EU exporters went up in 2009 and remained roughly at the same level for the remaining years. Korean exporters, by contrast, face higher volatility of their export costs. However, over the whole period costs did not increase more than 100 USD per container. We can neither identify a systematic change after 2011, nor any general time trend.[127]

[127] Note that these costs are reported in USD. Therefore, exchange rate fluctuations of local currencies compared to the USD may also explain some of the observed changes.

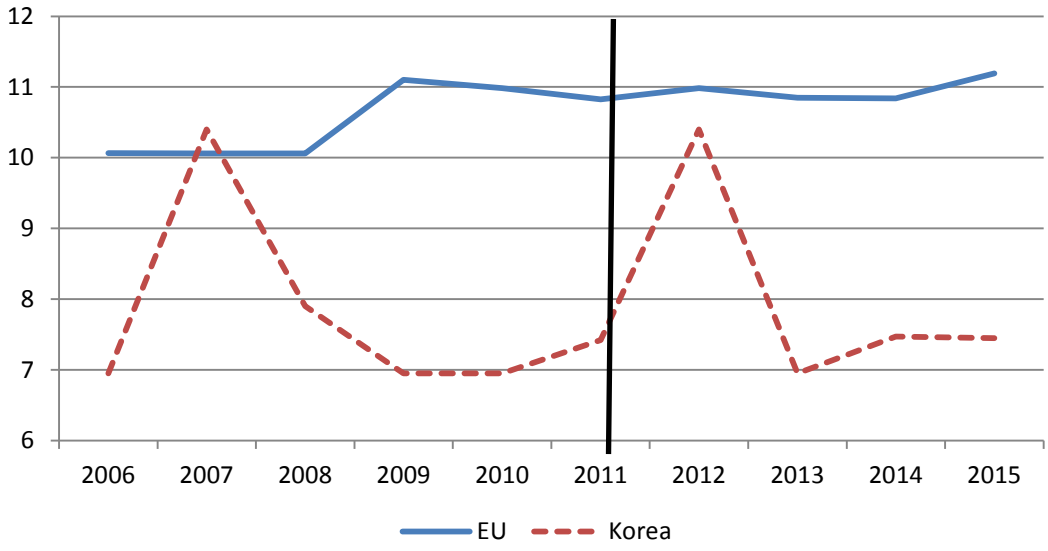
Figure 74: Costs to export (in 100 USD per container)



Source: Own compilation, based on World Bank Group - Doing Business Indicator (2017). Note: The value for the EU is weighted by the trade volume between each EU28 country and Korea. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 75 below illustrates the costs that arise for an importer in the respective countries. Costs to import refer to expenses for documentary compliance and border compliance. These indicators are especially relevant for discussing the efficiency of customs procedures, but of course, are also affected by the underlying legislative basis. Again, costs to import to the EU exceed those of Korea in all periods except 2007. It stands out that the dynamics of import costs are symmetric to exports costs for both the EU and Korea. The peaks in 2007 and 2012 for imports to Korea are potentially related to exchange rate effects but could be regarded as outliers. Overall, costs to import increased over the whole period by roughly 10 percent in the EU and Korea. No systematic change after 2011 is observable.

Figure 75: Cost to import (in 100 USD per container)



Source: Own compilation, based on World Bank Group - Doing Business Indicator (2017). Note: The value for the EU is weighted by the trade volume between each EU28 country and Korea. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Taking all available data presented above into account, we can draw the conclusion that document requirements and times connected to trade relations as well as trade costs have been broadly stable and the identified changes are likely to be caused by outliers in the data and exchange rate fluctuations. We can identify neither a systematic change after 2011, nor any general time trend. However, recall that bilateral trade cost data were not available. Moreover, regulatory convergence causally induced by the FTA can hardly be measured due to continuous legal adjustments (see Table 28 above) and other events (e.g. the KORUS agreement) that had an impact on Korean legislation.

6.3. Implementation of the customs-related provisions

The key findings of the evaluation are that:

- **The EU-Korea FTA is the first EU FTA where only self-certification (the origin declaration) is relied on for exporting goods. In order for exporters to be able to issue an origin declaration under the EU-Korea FTA and to then benefit from the tariff preferences of the FTA, they have to apply for approved exporter status, unless they export consignments of products whose total value does not exceed EUR 6 000. To a large extent, this system has worked satisfactorily, according to stakeholders.**
- **The overall EU preference utilisation rate (PUR) on the Korean market increased significantly from 2012 to 2013 (from 50 percent to 66 percent), remaining stable from 2013-2015 before increasing to 71 percent in 2016. The overall Korean PUR on the EU market increased steadily over the course of 2012-2016 (from 68 percent to 87 percent). The Korean PUR has been markedly higher than the EU PUR in each year since the start of the provisional application of the EU-Korea FTA.**
- **Reasons for the non-utilisation of preferences under the EU-Korea FTA include: low most favoured nation (MFN) tariffs; insufficient government promotion and support for businesses; rules of origin leading reportedly to costs for the purchase of third-party software for performing origin calculations in some sectors; lack of fulfilment of origin criteria; and, administrative burdens related to applying for approved exporter status in some Member States.**
- **Duty drawback is permitted under the EU-Korea FTA and its use is regularly monitored by the European Commission. Thus far, no problems concerning duty drawback were identified.**

Customs-related provisions of the EU-Korea FTA include among others rules of origin (including definition of originating products, origin declarations, approved exporter status and the direct transport provision), use of preferences, duty drawback, and administrative cooperation. These issues are separately discussed in the following sub-sections. For more detailed information, refer to the case studies on rules of origin and the use of tariff preferences in sections 10.6 and 10.7.

6.3.1. Definition of originating products

The EU-Korea FTA's protocol concerning the definition of originating products and methods of administrative cooperation (Protocol on RoO) defines originating products as those that are either wholly obtained in a Party (e.g. live animals that were born and raised in the EU or Korea, or vegetable products grown and harvested in the EU or Korea), or products that have undergone sufficient working or processing in either Party. The criteria for determining 'sufficient processing' are described for each product in product-specific rules:

- *Change of tariff heading*. E.g. a screw originates in the EU if it is made from imported materials of any other heading.

- *Value added.* E.g. a car originates in the EU if no more than 45 percent of the value of the inputs has been imported from outside Korea or the EU to manufacture it.

- *Specific operations.* E.g. apparel originates in the EU if the spinning of the fibres and the knitting of the yarns have taken place there.

- *Combination of these different rules.* The different rules have to be fulfilled alternatively or in combination. E.g. machine tools originate in the EU if there is a change of tariff heading or if the machine tool does not include more than 45 percent of non-originating products.

Operations such as washing, cleaning, simple painting and polishing operations, and change of packaging do not constitute sufficient working and processing.

The EC annual reports on the implementation of the EU-Korea FTA do not indicate that the definition of originating products was subject to discussion in the Committees or Working Groups, and in the open public consultation, a majority of respondents that had an opinion were satisfied in this respect.[128] This was confirmed by the interviewed business stakeholders, some of whom, however, also pointed out that the definitions of originating products in the EU-Korea FTA are not fully harmonised with those of other EU FTAs (e.g. concerning the maximum percentage of non-originating products that are allowed in an originating product), leading to some administrative burdens as EU exporters have to perform different origin calculations, depending on the export destination. This was noted as a particular problem for SMEs, who often lack the resources to handle such administrative burdens (see the case study on rules of origin).

6.3.2. Origin declarations and approved exporter status

The EU-Korea FTA is the first EU FTA where only self-certification (the origin declaration) is relied on for exporting goods. Origin declarations are to bear the original signature of the exporter in manuscript, though approved exporters are not required to sign these declarations, provided they give the customs authority of the exporting Party a written undertaking that they accept full responsibility for any origin declaration which identifies them as if it had been signed in manuscript by them. The exporter issuing an origin declaration must also be prepared to submit at any time all appropriate documents proving the originating status of products upon the request of the customs authority of the exporting Party.

In order for exporters to be able to issue an origin declaration under the EU-Korea FTA and to then benefit from the tariff preferences of the FTA, they have to apply for approved exporter status, unless they export consignments of products whose total value does not exceed EUR 6 000. National customs authorities are responsible for granting exporters this status, provided they have offered to the satisfaction of the customs authorities all guarantees necessary to verify the originating status of their products, as well as fulfil the other requirements of the Protocol on RoO.

The annual reports on the implementation of the EU-Korea FTA and our interviews with businesses and other relevant stakeholders did not, for the most part, indicate the existence of major problems with origin declarations and approved exporter status, though some issues regarding the acceptance of approved exporter status/origin declarations on the part of the Korea Customs Service, as well as problems experienced with respect to the verification of origin were reported (including at the stakeholder workshop in July 2017). In the open public consultation, a large majority of those that had an opinion were satisfied with the functioning of the provisions concerning approved

[128] See stakeholder consultation report.

exporter status and rules of origin (17 out of 23 respondents, and 16 out of 25 respondents, respectively). However, the administrative burdens with respect to the application process for the approved exporter status seem to have an influence on the preference utilisation rate in Member States, as is described in the following sub-section.

6.3.3. Preference utilisation rates

The table below presents the EU preference utilisation rate (PUR) on the Korean market and the Korean PUR on the EU market from 2012 to 2016.

Table 26: EU and Korean PURs under the EU-Korea FTA, 2012-2016

Year	EU PUR (%)	Korean PUR (%)
2012	50	68
2013	66	77
2014	66	81
2015	65	84
2016	71	87

Sources: Own compilation, based on the EU-Korea FTA annual reports, 2013-2016.

As shown in the table above, the overall EU PUR on the Korean market increased significantly from 2012 to 2013 (from 50 percent to 66 percent), remaining stable from 2013-2015 before increasing to 71 percent in 2016. In contrast, the overall Korean PUR on the EU market increased steadily over the course of 2012-2016 (from 68 percent to 87 percent). Moreover, the Korean PUR has been markedly higher than the EU PUR in each year since the start of the provisional application of the EU-Korea FTA.

With a view to better understanding the overall EU and Korean PURs presented above, the table below displays the PURs of EU goods on the Korean market and of Korean goods on the EU market by sector, as well as the corresponding shares of total exports for each sector from July 2014 to June 2015.

The three EU sectors with the highest PURs on the Korean market were transport equipment (93 percent), live animals and animal products (93 percent), and animal or vegetable fats and oils (88 percent). Transport equipment was the sector that made up the second largest share of EU exports to Korea (21 percent), while live animals and animal products and animal or vegetable fats and oils represented 2 percent and 0.2 percent of total EU exports to Korea, respectively.

For Korea, the three sectors with the highest PURs on the EU market were mineral products (96 percent), transport equipment (94 percent) and plastics, rubber and articles thereof (92 percent). These sectors represented 4 percent, 26 percent, and 8 percent of total Korean exports to the EU, respectively.

Table 27: EU and Korean PURs by sector, July 2014 to June 2015

Sector	EU PUR (%)	Share of exports to Korea (%)	Korean PUR (%)	Share of exports to EU (%)
Transport equipment	93	21	94	26
Animals and animal products	93	2	83	0.2
Animal or vegetable fats and oils	88	0.2	72	0.01
Vegetable products	82	1	67	0.1
Articles of stone, glass, ceramics	82	1	76	0.5
Plastics, rubber and articles thereof	81	3	92	8
Wood and wood products	81	2	9	0.4
Foodstuffs, beverages, tobacco	79	2	67	0.3
Products of the chemical or allied industries	69	12	83	5
Miscellaneous manufactured articles	69	1	58	1
Footwear, hats and other headgear	67	0.5	73	0.1
Textiles and textile articles	65	2	86	3
Arms and ammunition	59	0.01	78	0.01
Optical and photographic instruments	57	6	55	6
Raw hides, skins and saddlery	53	2	52	0.1
Machinery and appliances	48	30	72	35
Base metals, articles thereof	47	6	82	8
Pearls, precious metals, articles thereof	45	1	34	0.5
Mineral products	39	7	96	4
Other	-	2	-	1
Total	*65*	*100*	*84*	*100*

Sources: Korea Customs Service; European Commission (DG TRADE). Note: Data for Korean PURs correspond to January-December 2014.

At the EU Member State level, the use of preferences differs widely. The table below presents the PURs on the Korean market for each EU Member State from July 2014-June 2015, as well as each Member State's exports to Korea as a share of total EU exports to Korea.

Table 28: PURs by EU Member State, July 2014-June 2015

MS	Share of EU exports to Korea (%)	PUR (%)
LV	0.1	91
AT	2	81
SK	0.5	80
LT	0.1	79
SI	0.1	77
DE	40	76
IE	1	74
HU	1	73
PT	0.4	73
RO	1	73
EL	0.1	72
CY	0.01	70
CZ	1	65
SE	3	63
BE	3	62
ES	5	61
NL	4	60
BG	0.2	58
FR	10	56
DK	2	54
IT	11	54
UK	11	54
PL	1	50
FI	2	45
EE	0.1	41
HR	0.03	40
LU	0.4	16
MT	0.1	6
Total	*100*	*65*

Source: European Commission (DG TRADE).

As shown in the table above, the three EU Member States with the highest PURs on the Korean market in the period July 2014 to June 2015 were Latvia (91 percent), Austria (81 percent), and Slovakia (80 percent). The table also shows that the highest PURs do not correspond to the Member States with the highest shares of total EU exports to Korea. The combined exports of the three top-ranked countries (Latvia, Austria, and Slovakia) represent less than 3 percent of total EU exports to Korea.

Several reasons for the (non-)utilisation of preferences under the EU-Korea FTA were identified in the case study on the use of tariff preferences. These are:

- *Low MFN tariffs:* Low MFN tariffs can be a reason for not utilising FTAs, as there is a lower opportunity cost of not utilising preferential tariffs in sectors where MFN tariffs are low to begin with;
- *Government promotion and support for businesses:* Governments have a role to play in disseminating information and assisting companies. The Korean government devotes substantial resources to educating companies and assisting them in using the EU-Korea FTA, contributing to the comparatively higher PURs;
- *Regulatory changes:* A tax loophole in Korea that incentivised imports of EU oil was closed in 2012.
- *Costs vs. benefits of utilising preferences:* RoO may lead companies in certain sectors to not taking advantage of tariff preferences, due to the need to purchase third-party software for performing origin calculations; the costs of calculating origin for companies that frequently change suppliers may also exceed the benefits of using preferences;
- *Lack of fulfilment of origin criteria:* Exporters whose products do not fulfil the origin criteria of the EU-Korea FTA are not eligible to use preferences, which can be a problem e.g. in the machinery and appliances sector, or other sectors (e.g. diamonds exported from the EU to Korea are not mined in the EU); and,
- *Requirements for approved exporter status:* Applying for approved exporter status may be resource- and time-intensive. Information and documentation that exporters are required to submit when applying for approved exporter status, as well as the processing time for applications, varies widely across EU Member States (see the case study on PUR in section 10.7 for more details).

6.3.4. Direct transport

The Protocol on RoO also states that products must be transported directly between the EU to Korea and vice versa in order to benefit from the tariff preferences of the FTA. An exception to this provision refers to products constituting one single consignment, which can be transported via other territories or temporarily warehoused in other territories as long as goods are not released for free circulation and do not undergo operations other than unloading, reloading, and any other procedure necessary to preserve them in good condition. By December 2011 (about half a year after the start of the provisional application of the FTA), the EU-Korea FTA Customs Committee had met in Seoul and discussed the issue of "redrafting of the provision on direct transport",[129] though the agreement has not been amended in this respect thus far. The interviews conducted in the framework of the case study on rules of origin confirmed the widely held view that the current direct transport provision is problematic for certain sectors. This provision particularly affects EU exporters who make use of logistical hubs (mostly Singapore) for operations such as repackaging and labelling prior to distributing their products to various Asian markets (relevant e.g. for exporters in the spirits and chemical industries). In order to benefit from the preferential tariffs of the FTA, some companies have chosen to ship goods directly from the EU to Korea. However, in these cases, companies cannot react swiftly to demand fluctuations, as shipping from the EU to Korea can take well over a month. A "non-alteration" rule, which would allow for operations such as labelling to take place in logistical hubs, was noted as a better alternative to the direct transport provision by some stakeholders.

[129] *Annual Report on the Implementation of the EU-Korea FTA.* European Commission, 2013.

6.3.5. Duty drawback

Duty drawback is permitted under the EU-Korea FTA, though the EU and Korea must exchange available information on a yearly basis regarding the operation of their duty drawback and inward processing schemes. During the negotiations of the EU-Korea FTA, duty drawback was an issue of concern for the EU automotive sector. As described in detail in the case study on the automotive sector (see section 10.1), the European Commission has regularly monitored the use of duty drawback. Specifically, it has examined the foreign content in Korean exports of electronics, textiles, cars, and car parts to the EU. Thus far, the Commission has concluded that the allowance of duty drawback for the aforementioned products has not had any significant impact on Korean use of inputs imported from its neighbouring countries. Furthermore, no problems concerning duty drawback were raised in the interviews with businesses and other relevant stakeholders or the open public consultation.

6.3.6. Administrative cooperation

Instead of the EU's standard provisions on anti-fraud (such as the possibility of temporarily withdrawing tariff preferences in the event of a major breach of customs legislation by one of the parties), the EU-Korea FTA contains special provisions on administrative cooperation, which state that where a Party has made a finding on the basis of objective information of a failure to provide administrative cooperation and/or irregularities or fraud, on the request of that Party, the Customs Committee shall meet within 20 days of such a request to resolve the situation. These provisions are acknowledged as exceptional in a statement on special provisions on administrative cooperation in the FTA. In the interviews with business stakeholders and EC officials, fraud was generally not regarded as a relevant issue affecting EU-Korea trade. The European Anti-Fraud Office (OLAF) considers that the lack of standard anti-fraud provisions in the FTA with Korea renders the functioning of the mutual administrative assistance in customs matters ineffective as there is no consequence for not providing it.

6.4. Implementation of other areas of EU-Korea FTA

The key findings of the evaluation are that:

- **Chapter 11 of the EU-Korea FTA commits the Parties to applying their competition laws in a transparent, timely and non-discriminatory manner and maintaining appropriately equipped competition authorities. Only a few stakeholders provided comments in the open public consultation, citing problems concerning competition in Korea.**
- **Despite the efforts undertaken in the WTO Agreement on Government Procurement (GPA) and in regional trade agreements such as the EU-Korea FTA, Korea's integration into the global government procurement market is very limited. Detailed data on the success of foreign firms in government procurement markets are rarely available; however, respondents from the stakeholder consultation mentioned, among other things, local content requirements as problems.**
- **Considering the results of the CGE model, it becomes obvious that the service sectors that also include e-commerce activities benefit especially from the EU-Korea FTA. While it is not possible to state a causal effect of the FTA, it is still likely that the provisions on e-commerce had an impact.**
- **The EU-Korea FTA also includes commitments relating to the protection of intellectual property rights, including geographical indications (GIs). (A total of 165 EU GIs (e.g. Pecorino Romano, Scotch Whisky) and 63 Korean GIs (e.g. Jeju Pork, Korean Red Ginseng) fall within the scope of protection of the FTA.) No major issues concerning the initial list of geographical indications protected through the agreement were indicated by interviewees or in the open public consultation. Remaining issues with respect to implementation of the provisions of the EU-Korea FTA on protection of intellectual property include the extension of the initial list of GIs and the protection of the public performance rights of authors, producers and performers in Korea.**

In this section, we consider the implementation of other areas of the EU-Korea FTA, focusing on the provisions on competition, government procurement and protection of intellectual property rights (IPR), including geographical indications of the EU-Korea FTA. We also review the functioning of the institutional set-up, and discuss effects of the arrangement on organic equivalency, which is outside the scope of the FTA. Our analysis is based on desk research, the results of the open public consultation, the interviews and the results of the econometric analysis.

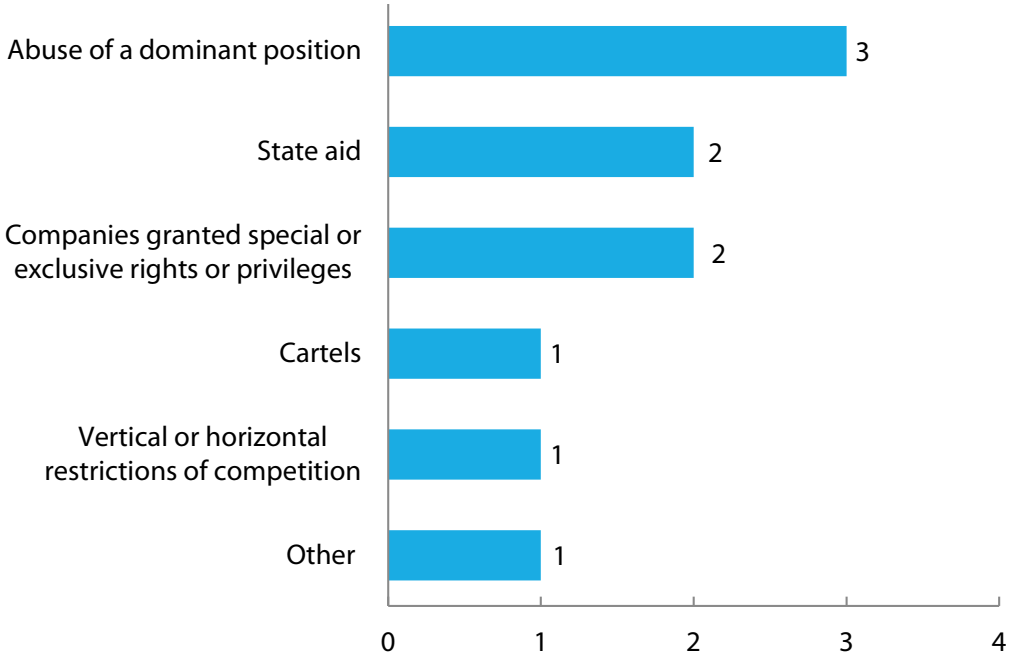
6.4.1. Competition

Chapter 11 concerns competition in the economies of the Parties. Under this chapter, the Parties recognise the importance of applying their respective competition laws in a transparent, timely and non-discriminatory manner and are to maintain appropriately equipped authorities responsible for the implementation of competition laws. It also stipulates that each Party shall adjust state monopolies of a commercial character so as to ensure that no discriminatory measure regarding the conditions under which goods are procured and marketed exists between natural or legal persons of the Parties. Additionally, it commits the Parties to using their best endeavours to remedy or remove, through the application of their competition laws or otherwise, distortions of competition caused by subsidies in so far as they affect international trade. It also requires the Parties to report annually on the amount, types and the sectoral distribution of subsidies which are specific and may affect international trade.

In addition to the provisions on competition included the FTA, the EU and Korea concluded a bilateral Agreement concerning Cooperation on Anti-Competitive Activities in 2009, in which the EU and Korea committed to cooperate in the application of competition law. The agreement contains provisions on notification, assistance and

coordination; it requires the respective competition authorities to meet at least once a year, allows for the Parties to request that enforcement activities be undertaken by the other's competition authority, and contains a requirement that each Party "give careful consideration to the important interests of the other party throughout all phases of its enforcement activities."[130] The 2009 Agreement remains in force independently of the FTA, and the 2009 Agreement and the FTA together form the institutional framework for EU-Korea cooperation on competition (see section 4.4 above). Notably, the competition provisions in Section A of Chapter 11 of the FTA are not subject to the dispute settlement chapter of the FTA, but are instead settled through the cooperation mechanisms set up under the FTA and the 2009 Agreement.[131] In the public consultation, stakeholders were asked about problems they observed concerning competition in the EU and Korea. These problems are presented in the figure below for Korea.

Figure 76: Problems concerning competition in Korea



Source: Own compilation, based on the public consultation on the EU-Korea FTA. *Question: Have you observed any problems in the following areas?* Note: Multiple answers were permitted.

The figure above indicates that "abuse of a dominant position", "state aid" and "companies granted special or exclusive rights or privileges" were cited most often by respondents as areas in which problems concerning competition were observed in Korea. Due to the low number of responses, however, a ranking of problems is not possible on this basis. When asked to provide further details, one respondent referenced the Korean shipbuilding industry, which has benefited from state aid for several years in spite of overcapacity on the global market (see the box below). No respondent provided an assessment of problems concerning competition experienced in the EU.

Reflecting the concerns identified in the public consultation, one of the interviewed stakeholders drew attention to the industrial structure of the Korean economy, which is heavily based around *chaebols*. Chaebols are large business conglomerates, generally family-run, which have historically benefited from state support and comprise a large

[130] Agreement between the Government of the Republic of Korea and the European Community concerning Cooperation on Anti-Competitive Practices (Competition Agreement), 2009. Article 5(1).

[131] Harrison, James (Ed.). *The European Union and South Korea: The Legal Framework for Strengthening Trade, Economic and Political Relations*, Edinburgh University Press, 2014. p. 93-94.

portion of Korean industrial output.[132] The four largest chaebol groups—Samsung, Hyundai, LG and SK—account for about half the value of the Korean stock market.[133] Samsung, the largest chaebol, accounts for about one-fifth of Korean GDP.[134] Additionally, about half of SMEs in Korea supply chaebol-affiliated firms.[135] This situation is not directly affected by trade agreements, such as the EU-Korea FTA, limiting potential improvements for ensuring free and undistorted competition in the Korean economy.

Subsidies are another important issue in the context of EU-Korea cooperation on competition. Unlike many other FTAs, the EU-Korea FTA includes provisions on subsidies in the competition chapter.[136,137] Prior to the start of the provisional application of the FTA, subsidies were the cause of a number of trade disputes between the EU and Korea at the WTO, in particular related to Korea's commercial vessel industry and computer memory chips.[138] As the following box illustrates, especially Korean state aid to the shipbuilding industry remains a matter of concern in spite of the relevant FTA provisions.

Korean state aid to the shipbuilding industry

The global shipbuilding industry was severely affected by the 2008 financial crisis. The industry has not recovered in the years since—vessel prices have weakened, and shipyards have seen very low levels of new orders. According to a 2017 OECD report, the imbalance between the global supply of vessels and weak demand may encourage governments to support local industry though subsidies and other measures, which allows shipyards with low utilisation rates to remain in the market, thereby creating further distortions and placing more pressure on the industry globally. The aforementioned OECD report characterised this situation as unsustainable.

Shipbuilding is one of Korea's most important industries. Due to the reasons mentioned above, the Korean government came forward with financial schemes and other support policies intended to rescue individual companies from bankruptcy and stimulate local shipyards, which has enabled Korean shipbuilders to construct vessels at low prices. For example, in early 2017, Daewoo Shipbuilding & Marine Engineering was granted a KRW 2.9 trillion (EUR 2.2 billion) bailout plan from state-owned enterprise creditors. This situation has in turn put additional pressure on the EU shipbuilding and maritime equipment sector, as emphasised by their representatives during interviews conducted for this evaluation.

Under Article 11.11 of the EU-Korea FTA, "subsidies (such as loans and guarantees, cash grants, capital injections, provision of assets below market prices or tax exemptions) to insolvent or ailing enterprises, without a credible restructuring plan based on realistic assumptions with a view to ensuring the return of the insolvent or ailing enterprise within a reasonable period of time to long-term viability and without the enterprise significantly contributing itself to the costs of restructuring" are prohibited in so far as they adversely affect international trade of the Parties. In the opinion of the interviewed EU industry stakeholders, the Korean government's abovementioned support to the shipbuilding industry should be viewed as prohibited under the FTA.

Additionally, stakeholders have reported a lack of transparency with respect to state aid, stating that official reporting has not been made available by the Korean government following several requests, in spite of Article 11.12 of the FTA, which states that each Party shall report annually to the other Party on the total amount, types and the sectoral distribution of subsidies which are specific and may affect international trade.

Sources: Stakeholder interviews; http://www.oecd.org/industry/ind/Imbalances_Shipbuilding_Industry.pdf.

The issue of subsidies is further analysed in Annex III, focusing on whether regulatory changes have been made by Korea related to provisions of the EU-Korea FTA on

[132] Le, Phuoc Cuu Long, Jong Ik Kum and Kunbae Kim, "The Growth of Korean Companies and Their Contributions to the Miracle of the Han River." *International Journal of Multimedia and Ubiquitous Engineering* 11(5): 253-266, 2016.

[133] Jin, Hyunjoo, Se Young Lee and Nichola Saminather. "Chaebol reform at forefront of South Korea presidential campaign – again." *Reuters*, 2017.

[134] Harlan, Chico. "In S. Korea, the Republic of Samsung." *The Washington Post*, 2012.

[135] OECD. *OECD Economic Survey for Korea 2014*.

[136] Harrison (2014), p. 95.

[137] However, these provisions extend only to goods sectors—the FTA does not address the issue of subsidies on services.

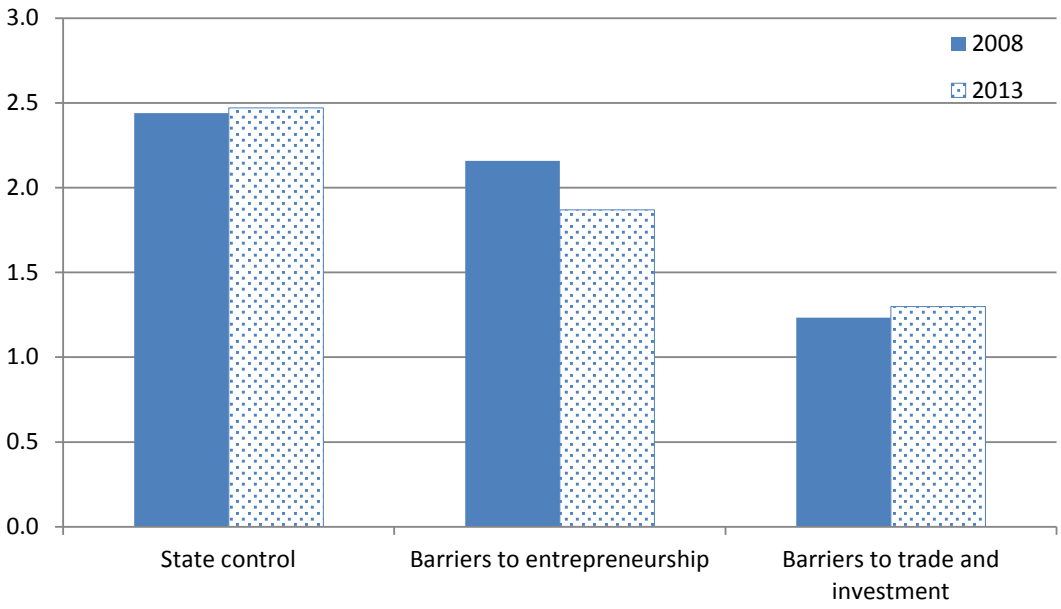
[138] Harrison (2014), p. 88.

subsidies, to remove distortions of competition in the context of competition law. The analysis concludes that no such changes were made.

To supplement the information gained from the public consultation regarding competition in Korea, we examine some of the OECD's Product Market Regulation (PMR) indicators, which measure the degree to which policies promote or inhibit competition in areas of the product market where competition is viable. Namely, we look at the following composite indicators: *state control; barriers to entrepreneurship;* and *barriers to trade and investment.* To compare the competitive situation before and after the start of the provisional application of the EU-Korea FTA, we examine data for 2008 and 2013 (data for years in between was unavailable).[139] Scores can range from 0-6, with lower scores denoting more competition-friendly areas.

The figure below presents Korea's scores in the aforementioned indicators in 2008 and 2013. As shown in the figure, the score for *state control* only marginally increased, from 2.44 to 2.47. *Barriers to entrepreneurship* decreased slightly, from 2.16 to 1.87. Finally, *barriers to trade and investment* increased slightly from 1.23 to 1.30. While one cannot draw a definitive conclusion on the impact of the implementation of the EU-Korea FTA on this basis alone, it can be said that given the data, Korea's competitive situation does not appear to have changed significantly following the start of the provisional application of the FTA.

Figure 77: PMR indicators for Korea, 2008 and 2013



Source: Own compilation, based on OECD (2017).

Desk research, stakeholder interviews and case studies conducted for the evaluation did not indicate additional issues with respect to implementation of the provisions of the EU-Korea FTA regarding competition.

[139] Koske, I. et al. (2015), "The 2013 update of the OECD's database on product market regulation: Policy insights for OECD and non-OECD countries", OECD Economics Department Working Papers, No. 1200, OECD Publishing, Paris. http://dx.doi.org/10.1787/5js3f5d3n2vl-en

6.4.2. Government procurement

Government procurement encompasses the purchase of goods and services by the government for public purposes and can be a barrier to trade when it is governed by discrimination against foreign suppliers. However, due to enhanced competition, benefits may arise from a liberalisation of government procurement markets. That is the reason for the WTO to promote transparency, integrity, competition and non-discrimination with respect to government procurement. Depending on the estimates, public procurement varies between 10 and 20 percent of a country's GDP.[140] Besides existing multilateral agreements, FTAs address the issue of government procurement. Chapter 9 of the EU-Korea FTA explicitly emphasises the importance of liberalisation of public procurement markets: "The Parties reaffirm their rights and obligations under the Agreement on Government Procurement contained in Annex 4 to the WTO Agreement (…) and their interest in further expanding bilateral trading opportunities in each Party's government procurement market." The chapter also expands the commitments of both parties to areas that are not covered by the WTO Agreement on Government Procurement (GPA), namely public works concessions and Build-Operate-Transfer (BOT) contracts (e.g. highway construction).[141]

Korea applies the same definition of a BOT contract that it uses under the GPA and the KORUS FTA with the United States. According to the EU-Korea FTA, "public works concession means a contract of the same type as a public works contract except for the fact that the consideration for the works to be carried out consists either solely in the right to exploit the work or in this right together with payment."[142] Rules applicable to BOT and working concessions refer to procurement projects above a threshold of 15 million Special Drawing Rights (approximately EUR 18 million).

Both Korea and the EU ratified the GPA nearly 20 years ago (in 1997 and 1996, respectively) and therefore entered a common open public procurement market. The revised version of the agreement entered into force in the EU and Korea in 2014 and 2016.[143] Government procurement in EU Member States was already regulated and liberalised in the wake of the European Single Market. In 2014, a series of new directives were agreed which have reformed the legal framework and their provisions are being transposed into national laws in the Member States. The package is intended to improve transparency and enforcement, and simplify procedures. Among other changes, the package reinforces rules on aggregation of below threshold procurement contracts, introduces the concept of life-cycle costing that includes environmental externalities, and applies specific rules to concessions contracts.[144]

Despite the efforts undertaken in the GPA and in regional trade agreements such as the EU-Korea FTA,[145] Korea's integration into the global government procurement market is very limited. While Korean government procurement of foreign sourced goods by the Office of Supply averaged 9.9 percent of the agency's purchases in the period 1991-95 (i.e. immediately prior to Korea's accession to the GPA), this figure decreased substantially over time. At the time of the start of the provisional application of the EU-Korea FTA (2011), the share of foreign supplies in the total procurement operations of the central procurement agency (the Public Procurement Service, PPS) was at 1.4 percent, and fell further to 0.9 percent as of 2015. Thus, rather than experiencing an

[140] https://www.wto.org/english/tratop_e/gproc_e/gproc_e.htm, and http://ec.europa.eu/growth/single-market/public-procurement_en

[141] EU-Korea FTA, art. 9.2.

[142] EU-Korea FTA, Annex 9.

[143] https://www.wto.org/english/tratop_e/gproc_e/memobs_e.htm

[144] WTO Trade Policy Review WT/TPR/S/317 (15-2598), 2015

[145] It should also be noted that the commitments made by Korea to the EU in the FTA have in principle been overtaken by Korea's commitments in the context of the revised GPA.

increase in the foreign share in Korean government procurement following the multilateral government procurement agreement of the WTO and the EU-Korea FTA, the government's import share even decreased. The recent Trade Policy Review of the WTO emphasises that this development occurred despite Korea's efforts to promote foreign supplied government procurement contracts through collective purchasing of foreign goods, the elimination of reserve deposit requirements for foreign procurement contracts, and the reduction of the documentation burden. Rather, the WTO hypothesises that foreign suppliers continue to lose ground due to the highly sophisticated and increasingly competitive domestic suppliers of manufacturing and construction services. Foreign supply of public procurement is mainly prevalent in the areas of research, transport, computer, communications and measuring equipment.[146]

Changes in the procurement system that have increased the transparency of public procurement such as the introduction of KONEPS (Korea Online E-Procurement System), set-up in 2009, have not reversed this trend towards domestic supply. KONEPS helps digitalise the procurement procedure and through a more efficient bidding process aims at reducing the burden to the national budget.[147] According to a 2015 OECD assessment, KONEPS contributes substantially to the efficiency, effectiveness and integrity of public procurement in Korea, and facilitates competition by lowering barriers to entry for suppliers and other public procurement stakeholders.[148]

Foreign public procurement in Korea amounts to around EUR 400 million per annum.[149] These total foreign procurement values are graphically illustrated by the red dashed line in Figure 78. The different shades of grey reflect the shares of origin and sum up to 100 percent; note that these shares represent geographical units and thus, the EU itself is not listed. However, the values for Europe may serve as a good proxy for Korean procurement from the EU. It is striking that foreign procurement did not increase over time but rather stagnated at a level slightly below EUR 400 million. A possible reason could be that foreign firms operate with local subsidiaries or cooperate with Korean firms as sub-contractors. This, of course, is an obstacle for any statistics on foreign procurement. While the American share increased from 30 percent in 2010 to roughly 50 percent in 2014, the European share ranges between 20 and 35 percent. Hence, these stylised facts do not support any evidence for an increase in Korean procurement from Europe due to the FTA.

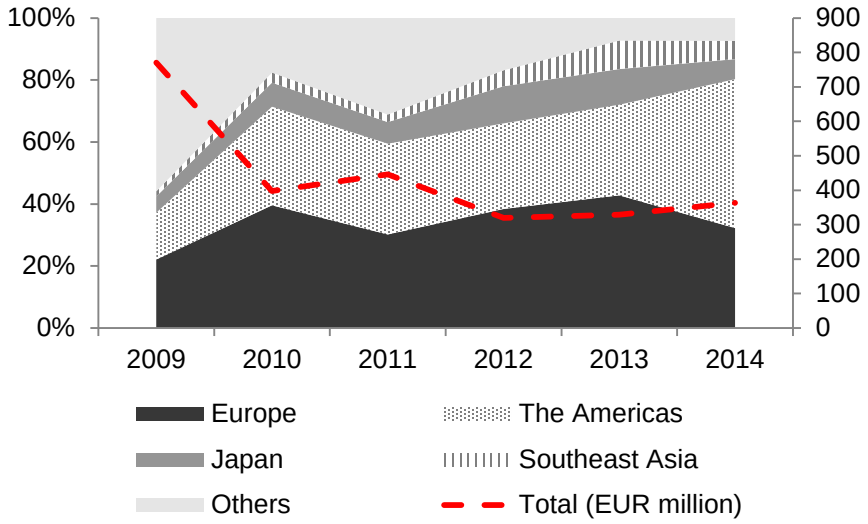
[146] WTO, Trade Policy Review WT/TPR/S/346 (16-4723), 2016. Note that the PPS handles about 30 percent of Korea's public procurement, as Korean public procurement remains largely decentralised in general.

[147] Korean Public Procurement Service (PPS), https://pps.go.kr/eng/jsp/koneps/background.eng,

[148] WTO, Trade Policy Review WT/TPR/S/346 (16-4723), 2016.

[149] The high value in 2009 is driven by a special procurement of fire-fighter helicopters.

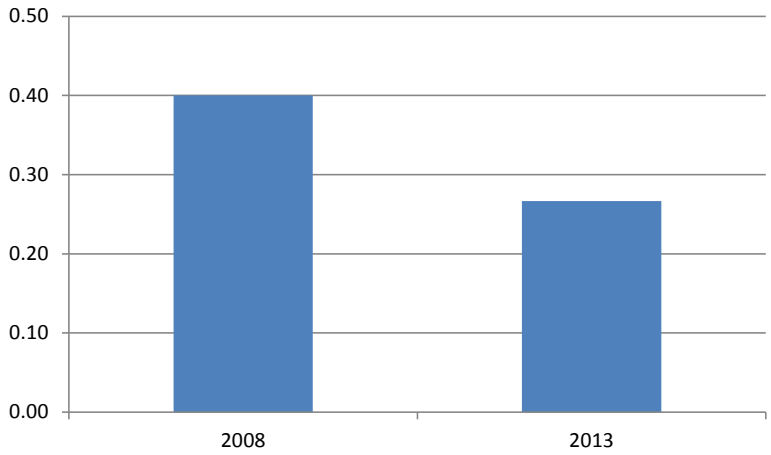
Figure 78: Foreign procurement in Korea by origin, % and EUR million



Source: Own compilation, based on Public Procurement Service, Annual Report 2014. Note: The different shades of grey reflect the shares by origin region and refer to the left hand axis; the red dashed line (total foreign procurement in Korea) refers to the right hand axis (in EUR million).

To supplement the above-presented evidence on the share of foreign procurement in Korea, we again draw on the OECD's PMR indicators. Specifically, we examine the indicator of *differential treatment of foreign suppliers*, which covers "discrimination of foreign firms with respect to taxes and subsidies, public procurement, entry regulation and appeal and procedures".[150] This indicator is presented for Korea in 2008 and 2013 below. As shown in the figure, the score for this indicator decreased during this period, from 0.40 to 0.27 (denoting a slight improvement). Once again, one cannot draw a definitive conclusion regarding the procurement situation in Korea on this basis alone, particularly as this indicator covers a wide range of discrimination issues regarding foreign firms. However, the development of this indicator hints at a possible small positive development for procurement for foreign suppliers in Korea following the start of the provisional application of the EU-Korea FTA.

Figure 79: Differential treatment of foreign suppliers in Korea, 2008 and 2013

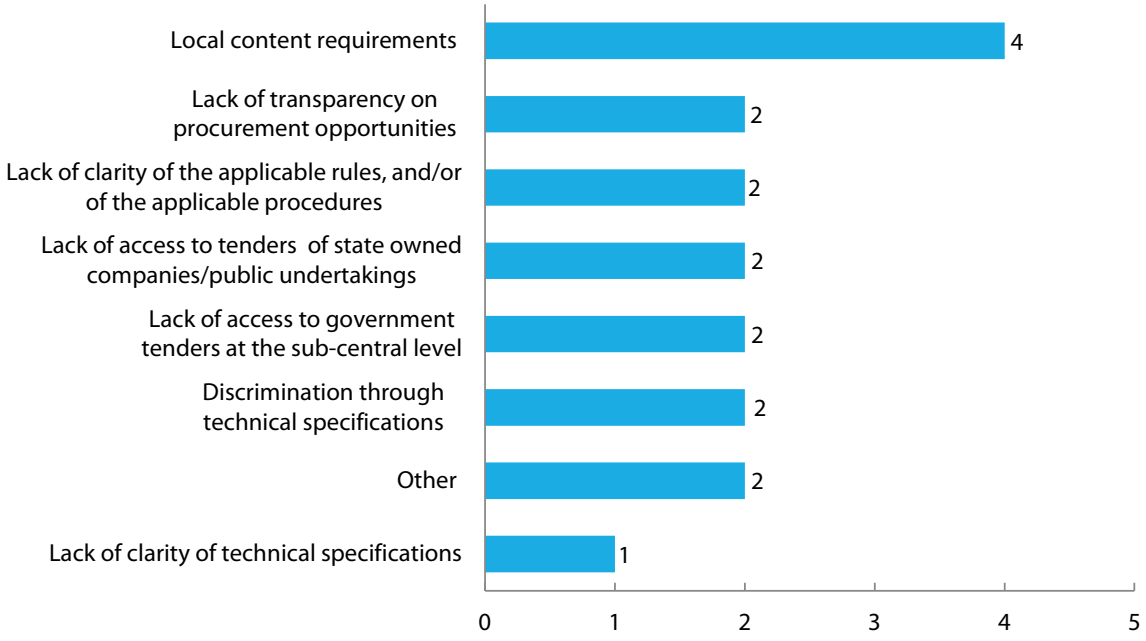


Source: Own compilation, based on OECD (2017).

[150] Koske et al., 2015.

In the open public consultation conducted for this evaluation, only a small number of respondents indicated problems they observed concerning public procurement in the EU and Korea. These problems are presented in the figure below for Korea.

Figure 80: Problems concerning public procurement in Korea



Source: Own compilation, based on the public consultation on the EU-Korea FTA. Question: Have you observed any of the following problems concerning public procurement in Korea/in the EU? Note: Multiple answers were permitted.

As shown in the figure above, "local content requirements" were cited most frequently as an area in which problems concerning public procurement were observed in Korea.[151] Due to the low number of responses, a ranking of problems is, however, again not possible on this basis. No respondent provided an assessment of problems concerning public procurement in the EU.

A few other issues were also reported by interviewed stakeholders regarding public procurement. With respect to transparency/accessibility of information, one EU business association commented that tenders are often only published in the Korean language, and that there is currently no requirement for Korea to create a unified website with information on all public tenders for EU companies (such a requirement exists for Canada in the Comprehensive Economic and Trade Agreement (CETA)). Another EU business association noted that foreign companies are required to have a representative based in Korea in order to participate in government tenders, which effectively excludes EU companies without Korean representation from the procurement market. With respect to public procurement in the EU, the Korean Ministry of Trade, Industry and Energy (MoTIE) noted in a written statement that Korean companies have experienced difficulties in accessing information such as bidding announcements in the EU, and commented that both the EU and Korea need to make more efforts with respect to discrimination in public procurement.

[151] One respondent to the public consultation noted that public procurement problems have long existed in the Korean rail supply industry and have not improved since the start of the provisional application of the FTA. This respondent specifically commented that there are strong requirements related to local partnerships and local content, that there are technical specifications geared toward local industry, and that local industry receives state subsidies. It was also stated that the Korean manufacturer Hyundai-Rotem has an almost exclusive monopoly on rolling stock in Korea, while at the same time winning contracts in Europe.

6.4.3. Intellectual property rights and geographical indications

Intellectual property rights

Chapter 10 of the FTA covers intellectual property and states that the Parties are to ensure an adequate and effective implementation of the international treaties dealing with intellectual property to which they are party, as well as provide protection in areas specifically mentioned in the chapter, e.g. for broadcast and public performance rights and geographical indications (GIs) (listed in Annexes 10-A and 10-B). (For the purposes of the agreement, IPR embody copyright, the rights related to patents, trademarks, service marks, designs, layout-designs (topographies) of integrated circuits, geographical indications, plant varieties, and protection of undisclosed information.) This chapter also specifies enforcement measures for cases of infringement of IPR, including provisions regarding civil measures, procedures and remedies, and criminal enforcement and administrative and criminal procedures.

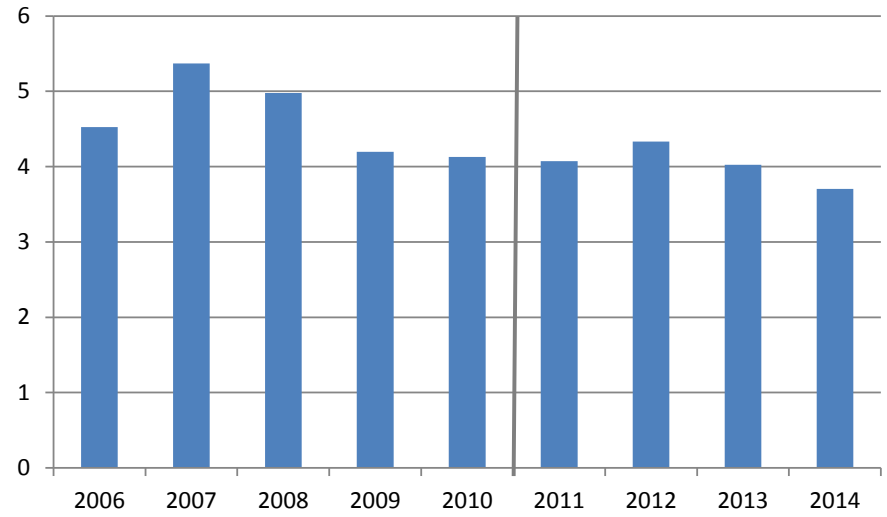
Similar to the EU, Korea has advanced intellectual property rights legislation in general, which was further improved through international agreements in recent years. Since 2013, Korea formulated the goal of a "creative economy" as a policy objective. To achieve this goal, IPR play a major role. Korea extended its IPR legislation and facilitated patent regulations and access (Patent Act, Utility Model Act, Trademark Act, Design Protection Act, Unfair Competition Prevention, Trade Secret Protection Act, Act on Intellectual Property), and established an institution, the Presidential Council on Intellectual Property, to implement the legislation and monitor progress. As an example of the strengthening of IPR, Korea expanded copyright protection to the duration of the author's life plus 70 years and 70 years for the rights of producers and performers of sound recordings.[152] Furthermore, Korea committed to international IPR within several treaties, for example those of the World Intellectual Property Organization (WIPO), the Hague Agreement, the Marrakesh VIP Treaty and others.

One example of data regarding the strength of IPR in Korea before and after the start of the provisional application of the EU-Korea FTA is provided in the World Economic Forum's (WEF) annual Executive Opinion Survey, which gathers the opinions of business leaders around the world on various topics, including intellectual property protection. Specifically, respondents to the survey are asked the following question: *"In your country, how strong is the protection of intellectual property, including anti-counterfeiting measures?"* and are asked to provide an answer on a scale of one (extremely weak) to seven (extremely strong).[153] The average score for Korea in this respect from 2006-2014 is presented in the figure below.

[152] WTO, "Trade Policy Review" WT/TPR/S/346 (16-4723), 2016.

[153] Klaus, Schwab. The Global Competitiveness Report 2014-2015. World Economic Forum.

Figure 81: Protection of IPR in Korea, 2006-2014



Source: Own compilation, based on the WEF Executive Opinion Survey, 2006/2007-2014/2015.

As shown in the figure above, apart from a peak in 2007-2008, Korea's average score for the strength of intellectual property protection has stayed mostly around 4. This lends support to the conclusion that IPR have been largely protected in Korea both before and after the start of the provisional application of the EU-Korea FTA.

However, some specific problems concerning intellectual property rights in Korea were reported during the stakeholder interviews and the open public consultation.[154] For example, with respect to software solutions, an interviewee noted that it is a common market practice for Korean buyers (mostly large corporations) to demand the source code of the software, which EU providers are reluctant to provide. Another key issue brought up concerns public performance rights in Korea. This issue is described in detail in the box below.

[154] In the open public consultation, a small number of respondents observed problems concerning IPR in Korea. "Designs" (indicated by 3 respondents) and "other" problems (2) were the most frequently selected problem types. One of the respondents that indicated "other" problem (a business in the beverages sector) stated that they had to submit complete recipes and manufacturing processes to the Korean authorities before they could obtain a license for their products, even though these constitute business secrets. The second respondent indicated that Korean producers duplicate existing European mobile games, leading local consumers to believe that the duplicates are original applications. No problems were indicated with respect to the EU. For more details, see stakeholder consultation report.

Public performance rights in Korea

Public performance rights enable producers and performers to license the commercial use of their recordings to professional users (e.g. bars, restaurants and shops). This right is recognised in the law of all EU Member States and many other countries, and is also recognised by international copyright conventions, such as the WIPO Performances and Phonograms Treaty 1996. Before the start of the provisional application of the EU-Korea FTA, public performance rights were not recognised in Korea (despite the latter being a WIPO member state). Obtaining these rights in Korea was a key objective of the music industry during FTA negotiations, particularly in light of the fact that European music has become increasingly popular around the world.

Commitments on public performance rights were ultimately included in the Chapter on Intellectual Property of the FTA (see Articles 10.5 and 10.9). As a result, Korea has recognised this right, but has, among other things, exempted retail venues smaller than 3 000 m^2 from paying royalties for public performance.[a)] The vast majority of Korean businesses qualify for this exemption.

In 2012, the International Federation of the Phonographic Industry (IFPI) requested the Commission to raise the issue at the EU-Korea IPR Dialogue and to work with the Korean authorities to resolve this problem. Public performance rights have since been a key issue of discussion at the IPR Dialogue and are also considered to be an issue by e.g. the EP's Committee on International Trade Draft report on the implementation of the Free Trade Agreement between the European Union and the Republic of Korea (2015/2059(INI), Committee on International Trade). In 2013, the Korean government tabled a legislative proposal to remove the above-described exception to the obligation to pay royalties, but when the amendment of the Copyright Act passed in parliament in 2016, its final version did not resolve the issue.

Source: Stakeholder interviews; document review. Note: a) While the EU-Korea FTA—which references international copyright conventions—does not rule out the possibility for the Parties to provide exceptions to the relevant rights, any exceptions are always subject to the "three-step test", which limits the scope of any exceptions to ensure that they do not deprive right-holders of the essence of protection foreseen by the right in question.

Geographical indications

Sub-section C of Chapter Ten of the EU-Korea FTA underlines the importance of geographical indications (GIs) for agrifood products and defines rules on mutual recognition of such indications. Annexes 10-A and 10-B to Chapter 10 list a total of 165 EU GIs (e.g. Pecorino Romano, Scotch Whisky) and 63 Korean GIs (e.g. Jeju Pork, Korean Red Ginseng) as within the scope of protection of the FTA. The FTA also permits the addition of new GIs to the FTA via a decision of the Working Group on Geographical Indications.

The Korean Trademark Act denies application for registration of geographical indications that are the same or similar to GIs protected under multilateral or bilateral agreements. This also includes GIs covered by the EU-Korea FTA. Material used in infringement of GIs and trademarks is confiscated in addition to the equipment and infringing products. Under the Unfair Competition Prevention and Trade Secrets Protection Act, unauthorised use of geographical indications is penalised.

Foreign GIs can be registered according to the same procedures and criteria as for domestic goods and are protected under various laws, including the Trademarks Act, and the Unfair Competition Prevention and Trade Secrets Protection Act; they receive the same protection as domestically-registered GIs. The Trademark Act bans registration of labels that violate GIs and also prevents deceptive labelling and advertising, including any vague or false labelling or advertising that may mislead consumers as to the product's origin. The trademark legislation prevents registration of trademarks consisting of a "conspicuous geographical name"; it allows them to be registered as geographical collective marks. The owner of a GI collective mark has the right to use it exclusively and prevent others from using identical or similar signs for identical goods, where it might result in confusion. Imports or exports with false origin indications or infringing GIs are prohibited (Foreign Trade Act).[155]

[155] WTO, "Trade Policy Review" WT/TPR/S/346 (16-4723), 2016.

No major issues concerning the initial list of geographical indications protected through the EU-Korea FTA were indicated by interviewees or in the open public consultation. An interviewed Commission official reported that thus far, the Korean government has been proactive concerning the enforcement of GI protection in Korea and has responded when the EU has raised issues of non-compliance. According to the interviewee, the EU side has also been proactive when Korea raised enforcement issues. Discussions regarding expanding the list of protected GIs under the FTA are currently still ongoing.

6.4.4. Institutional set-up

In addition to the Trade Committee, the institutional set-up of the EU-Korea FTA consists of the following specialised committees:

- Committee on Trade in Goods
- Committee on Sanitary and Phytosanitary Measures
- Customs Committee
- Committee on Trade in Services, Establishment and E- Commerce
- Committee on Trade and Sustainable Development
- Committee on OPZ on the Korean Peninsula
- Committee on Cultural Cooperation

These Committees are complemented by the following dedicated working groups:

- Working Group on Motor Vehicles and Parts
- Working Group on Pharmaceutical Products and Medical Devices
- Working Group on Chemicals
- Working Group on Trade Remedy Cooperation
- Working Group on Mutual Recognition Agreements on Services
- Working Group on Government Procurement
- Working Group on Geographical Indications

As shown in the table below, the large majority of committees and working groups established under the FTA have met on an annual basis since 2012.

Table 29: Meetings of institutions established under the EU-Korea FTA

Institution	Meeting				
	2012	2013	2014	2015	2016
Committee on Trade in Goods	✓	✓	✓	✓	✓
Committee on Sanitary and Phytosanitary Measures	✓	✓	✓	✓	✓
Customs Committee	✓	✓	✓	✓	✓
Committee on Trade in Services, Establishment and E- Commerce	✓	✓	✓	✓	
Committee on Trade and Sustainable Development	✓	✓	✓	✓	✓
Committee on OPZ on the Korean Peninsula	✓	✓	✓	✓	
Committee on Cultural Cooperation		✓	✓		✓
Working Group on Motor Vehicles and Parts	✓	✓	✓	✓	✓
Working Group on Pharmaceutical Products and Medical Devices	✓	✓	✓	✓	✓
Working Group on Chemicals	✓	✓	✓	✓	✓[a)]
Working Group on Trade Remedy Cooperation	✓	✓	✓		✓
Working Group on Mutual Recognition Agreements on Services	✓	✓	✓	✓	
Working Group on Government Procurement			✓		✓
Working Group on Geographical Indications		✓	✓	✓	✓

Sources: Annual reports on the EU-Korea FTA, 2012-2015; European Commission. Note: a) The Working Group on Chemicals met in June 2017, rather than 2016.

Based on the information that is publicly available,[156] and supported by the interviews conducted for this evaluation, the institutional set-up consisting of the Trade Committee, specialised committees and working groups functions as intended (helping, e.g. to facilitate bilateral dialogue on regulatory issues and potential NTTCs, such as in the case of the chemicals sector) and the evaluation team has not identified any other implementation issues in this respect.[157]

For conclusions regarding the institutional mechanisms under Chapter 13 (TSD chapter), see the related case study in section 10.8.

6.4.5. E-commerce[158]

Korea is one of the largest e-commerce markets in the world. Online shopping has enjoyed double-digit growth, with online travel arrangement, electronics, fashion stores

[156] Meeting notes and other documents of the committees and working groups are not available, except for the summaries provided in the annual report of the Commission on the implementation of the FTA. More information is available for the institutional mechanisms under Chapter 13 (see the case study on the implementation of the institutional mechanism of the TSD chapter in section 10.8).

[157] While no major problems were identified in this respect in the open public consultation, two business respondents criticised however that there is a “lack of transparency in the regulatory cooperation mechanisms”, and that "regulatory cooperation mechanisms are only consultative and have no real enforcement mechanisms".

[158] As our main databases (COMEXT, WIOD, Eurostat), do not provide information on products that are traded via e-commerce businesses, quantitative effects of the EU-Korea FTA are difficult to measure. Therefore, this subsection provides a review of the available data concerning Korea-EU e-commerce at a qualitative level.

and reservation services being the most popular categories. With a rate of 90 percent of the population that uses a smartphone, the Korean e-commerce market is considered to have a huge potential.

The EU-Korea FTA also includes provisions on electronic commerce, the main aim of which are to provide legal certainty for economic transactions. In section A, article 7.1, both Parties, "[…] reaffirming their respective rights and obligations under the WTO Agreement, hereby lay down the necessary arrangements for progressive reciprocal liberalisation of trade in services and establishment and for cooperation on electronic commerce". By including a chapter on electronic commerce, both Parties try to take its increasing importance and its promising business opportunities for economic growth into account.

The EU-Korea FTA also provides a transparent framework for investing in e-commerce businesses. Considering the results of the CGE model, it becomes obvious that especially the services sectors that also include e-commerce activities benefit from the EU-Korea FTA. While it is not possible to state a causal effect of the FTA on these investing activities, it is still likely that these parts of the FTA had an impact. In 2014, the Korean government introduced a simplified export declaration process for e-commerce to further enhance online markets, which provides Europe—one of Korea's largest export partners—with further opportunities. This reform tries to take into account that e-commerce trade is by nature rather small in volume and high in diversity. Although this change in regulations cannot be traced back to the EU-Korea FTA, it indicates that standards in e-commerce activities seem to converge with those from Europe.[159]

In 2015, the EU and Korea met to discuss and exchange information about the implementation of previously aspired goals, such as a transparent market for e-commerce activities, concomitant with an investment legal framework, transfer and processing of financial information, and data protection systems. The increased rate of bilateral meetings since the start of the provisional application of the FTA indicates an enhanced dialogue and a willingness to cooperate on certain economic matters, such as electronic commerce.

6.4.6. Dispute settlement

Chapter 14 of the EU-Korea FTA introduces provisions on dispute settlement. Specifically, this chapter details the dispute settlement procedure, which entails consultations, an arbitration procedure, and the delivery of an arbitration panel ruling that is binding upon the Parties. This chapter also outlines procedures to be invoked in the case of non-compliance with such a ruling. Annex A to this chapter concerns the mediation mechanism for non-tariff measures, Annex B outlines the rules of procedure for arbitration, and Annex C provides the code of conduct for members of arbitration panels and mediators.

The EU-Korea FTA also links the dispute settlement procedure to WTO obligations and clarifies that any disputed settlement can only be initiated either under Chapter 14 of the FTA or WTO agreements.[160] To date, the aforementioned mechanisms have not been used, thus no conclusions regarding their functioning can be made.

[159] UNCTAD 2015, http://unctad.org/en/PublicationsLibrary/ier2015_en.pdf

[160] EU-Korea FTA, Chapter 14.

6.4.7. EU-Korea Organic Equivalence Arrangement

The EU and Korea signed an Organic Equivalence Arrangement which took effect in February 2015. The agreement provides mutual recognition for processed organic food products (e.g. processed cereal, dairy and meat products, olive oil, chocolates and wines and spirits, etc.), thereby making separate certification procedures redundant. Thus, processed organic food products certified in the EU or Korea can be sold as organic to either region.[161] Provisions on organic equivalency were not included into the EU-Korea FTA, but given a combined market size of EUR 23 billion, trade costs for double certification could have been severe. This is especially true for small- and medium-sized enterprises.

Quantitatively, the effect of the Organic Equivalence Arrangement cannot be measured with the available data, as trade data does not explicitly list organic food products. One of our case studies focuses on the agricultural sector, and provides detailed sectoral data (see section 10.2). It indicates that trade volumes in this sector increased rapidly since 2011, and that EU exports to Korea exceed the respective imports by nearly tenfold. The European agrifood industry therefore seems to enjoy a considerable competitive advantage (also in light of the fact that Korea is a net food importer), which is expected to also benefit organic farmers and food producers within the EU.

An interviewed industry stakeholder expressed a positive view of the Organic Equivalence Arrangement, but noted that exporters in other agrifood industries not covered by the agreement (e.g. organic salmon) still cannot label their products as organic in Korea, which is reported to have resulted in lost opportunities.

6.5. Issues which may affect exploiting the full potential/benefits of the EU-Korea FTA

The key findings of the evaluation are that:

- **Even though regulatory changes that have translated into the observed non-tariff barrier reductions had a positive impact on EU-Korea trade, there are still obstacles that could be further reduced. The OECD Trade Facilitation Indicators provide a basis for comparison between the EU and Korea trade facilitation performance with the respective best practices.**
- **The evolution of the OECD Trade Facilitation Indicators during the evaluation period shows that, overall, both the EU and Korea perform well compared to other countries, with scores in the four areas analysed always at least two-thirds of the maximum possible score (for the year 2015). The indicators also show notable improvements over the evaluation period for one or both of the Parties in all covered areas.**
- **Specific issues which may affect exploiting the full potential of the EU-Korea FTA have been identified in the course of this evaluation. These are the continued existence of non-tariff trade costs; administrative burdens related to the approved exporter status; issues related to the direct transport rule; issues related to the use of tariff preferences; issues regarding the protection of EU intellectual property rights in Korea and issues related to the scope of the FTA.**

To identify issues that may affect exploiting the full potential of the EU-Korea FTA, we first consider data concerning OECD trade facilitation indicators, as low indicator values may indicate relevant problem areas. We then consider preliminary evaluation results to identify more specific issues which may affect exploiting the full potential of the EU-Korea FTA.

[161] https://ec.europa.eu/agriculture/newsroom/188_en

The OECD has developed a set of eleven trade facilitation indicators (TFIs) that identify areas for action to help governments improve their border procedures, reduce trade costs, boost trade flows and reap greater benefits from international trade. TFIs "cover the full spectrum of border procedures from advance rulings to transit guarantees".[162] An important feature of the OECD TFIs lies in their relative nature: the indicators range between 0 (lowest observed performance) and 2 (highest observed performance). A country that is assigned one index point lies exactly between the two extremes. Thus, the OECD TFIs are well suited to identify potential improvements in relevant areas.

For the purpose of this overview of trends in the development of TFIs for the EU and Korea, three thematically related indicators are put together in one figure. Thus, the overall score within each topic is 6 indicator points. EU averages are calculated on a trade-weighted basis in order to correctly present trade facilitation measures for bilateral EU-Korea trade.[163]

Figure 82 below illustrates indicators on governance and impartiality, information availability and involvement of the trade community. The *governance* indicator refers, e.g. to customs structures and functions, effective sanctions against misconduct and ethics policy. *Information availability* includes among others measures regarding the publication of trade information, customs online feedback and establishment of enquiry points. *Involvement of the trade community* refers to consultations with targeted stakeholders, publication of drafts and the communication of policy objectives.[164]

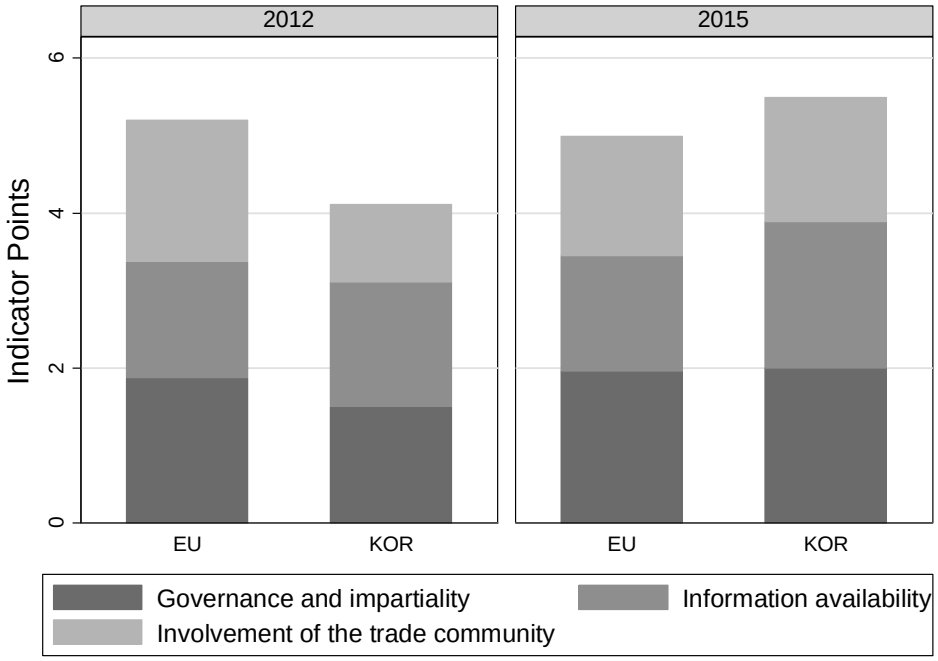
Korea improved in all three fields and scored even higher than the EU in 2015, which fell back slightly compared to 2012. However, this development does not necessarily imply a step back but an underperforming evolution relative to other countries. Both countries score almost 2 in "governance and impartiality". However, their performance in *involvement of the trade community* could still be improved. While the Korean value improved over time, the respective EU indicator decreased. Moreover, Korea scores with respect to *information availability* close to the maximum. Overall, the improvement of Korea is quite significant given a time window of only three years.

[162] http://www.oecd.org/tad/facilitation/indicators.htm

[163] EU averages are calculated by taking trade-weighted averages of the TOP5 EU trade partners of Korea in 2015. They represent together two-thirds of total EU-Korean trade. To the single countries are assigned the following weights: Germany 41.6 percent, the United Kingdom 20.2 percent, the Netherlands 13.0 percent, Italy 13.0 percent and France 12.1 percent.

[164] OECD Trade Policy Working Papers No. 118. p. 29.

Figure 82: OECD FTI governance and information

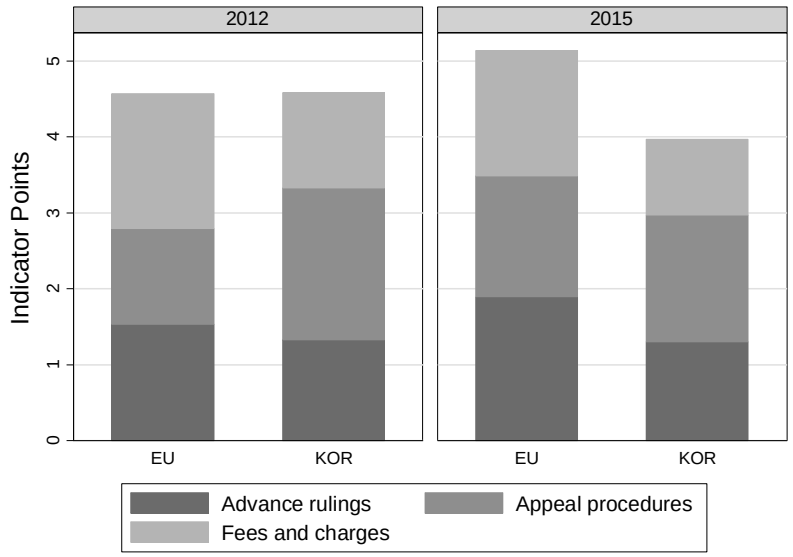


Source: Own compilation, based on OECD Trade Facilitation Indicators (2017).

Subsequently, the focus turns to the indicators of *advance rulings, appeal procedures,* and *fees and charges*. The indicator *advance rulings* refers to prior statements by the administration to requesting traders concerning the classification, origin, valuation method, etc., applied to specific goods at the time of importation, and the rules and process applied to such statements. *Appeal procedures* refers to the possibility and modalities to appeal administrative decisions by border agencies. As a third indicator, *fees and charges* provides information on transparency of fees, evaluation and publication of fees and charges imposed on imports and exports.

As illustrated by Figure 83 below, both the Korean level and the evolution over time are not fully satisfying; it decreased between 2012 and 2015 in all three measures. *Fees and charges* and *advance rulings* in particular occupy only mediocre places with values close to 1. In contrast, the EU has good and increasing scores in *advance rulings*, stable scores in *fees and charges* and, starting from a low level, improving scores in *appeal procedures*. The latter one, however, lags behind the respective Korean indicator.

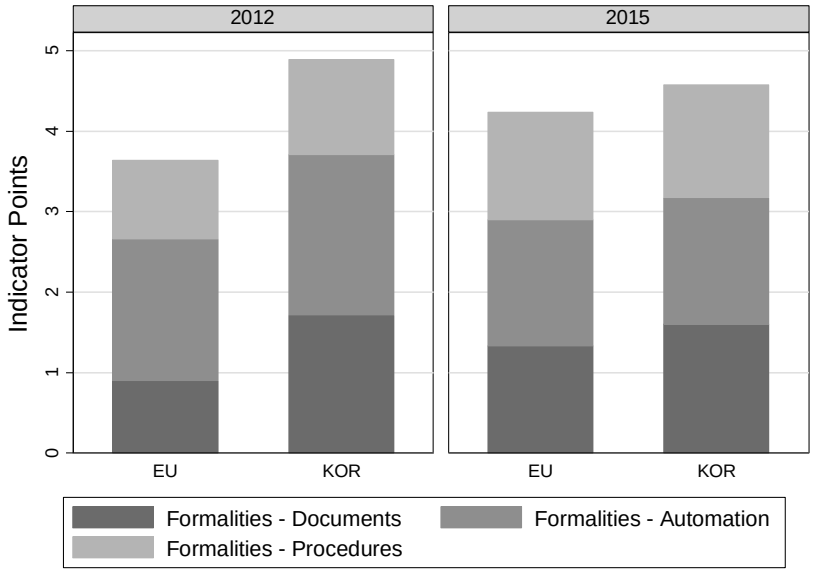
Figure 83: OECD TFI rulings, procedures and fees



Source: Own compilation, based on OECD Trade Facilitation Indicators (2017).

Next, we present the results for three indicators related to formality requirements for export and import businesses. The indicators cover *documents* (acceptance of copies, simplification of trade documents and harmonisation in accordance with international standards); *automation* (electronic exchange of data, use of risk management, automated border procedures) and *procedures* (streamlining of border controls, single submission points for all required documentation, post-clearance audits, authorised economic operators). Figure 84 below displays the evolution over time with respect to formalities. Two aspects are striking in this respect: first, Korea performs better than the EU in both periods; second, the EU improved relatively while Korea worsened slightly. The changes over time can mostly be attributed to changes in the indicator *documents.* In conclusion, we observe a convergence with respect to formality requirements for export and import businesses during the evaluation period, but both the EU and Korea still have potential for improvement across all indicators.

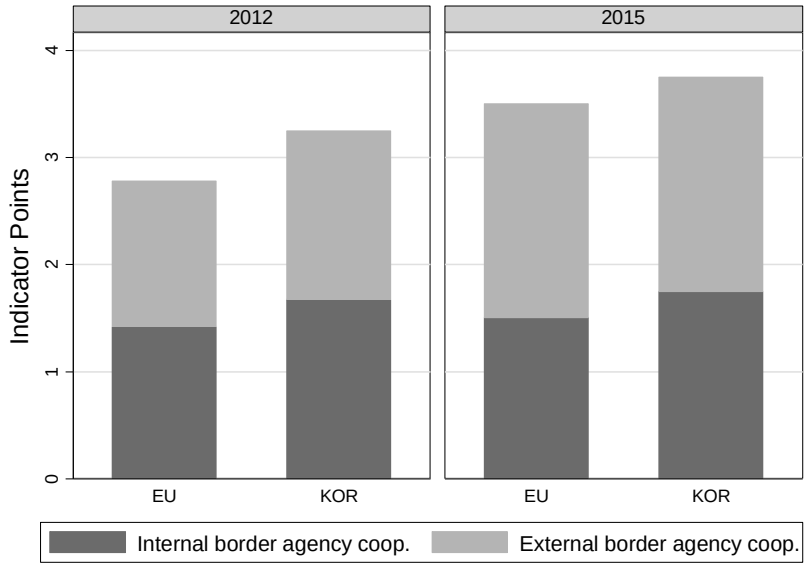
Figure 84: OECD TFI formalities



Source: Own compilation, based on OECD Trade Facilitation Indicators (2017).

The last TFI area relates to border agency cooperation and includes only two indicators. Thus, the maximum total score is 4. While the indicator *internal border agency cooperation* considers control delegation to customs authorities and cooperation between various border agencies at the national level, *external border agency cooperation* refers to cooperation with neighbouring and third countries. In both respects, the evolution over time is quite positive as shown by Figure 85 below. The EU as well as Korea improved over time and *external border agency cooperation* reached the maximum score in 2015. When it comes to "internal border agency cooperation", the EU can still improve and the same is true—to a lesser extent—for Korea.

Figure 85: OECD TFI border agency cooperation



Source: Own compilation, based on OECD Trade Facilitation Indicators (2017).

The evolution of the OECD Trade Facilitation Indicators during the evaluation period shows that, overall, both the EU and Korea perform well compared to other countries, with scores in the four areas analysed being always at least two-thirds of the maximum possible score (for the year 2015). The indicators also show notable improvements over the evaluation period for one or both of the Parties in all four areas. The notable exception are the indicators concerning advance rulings, appeal procedures, and fees and charges, where Korean performance relative to other countries worsened. Another area where both Korea and the EU reached lower scores than in most other TFI areas are formality requirements for export and import businesses. When interpreting these results, it is important to note that the TFIs concern overall performance of a country and are therefore not specifically related to EU-Korea trade relations.

More specific issues which may affect exploiting the full potential of the EU-Korea FTA have been identified in the course of this evaluation through the open public consultation, the stakeholder interviews, the literature review and the case studies. They have been discussed in other sections in more detail (e.g. the case studies in section 10, the discussion of NTTCs in section 6.1, stakeholder consultation report), and are summarised below:

- *Continued existence of non-tariff trade costs*: As described before, it appears that technical barriers related to standardisation, conformity assessment and labelling are considered to be among the most relevant NTTCs in Korea affecting EU-Korea trade, as are certain non-tariff measures related to sanitary and phytosanitary measures that affect trade in agrifood products;

- *Administrative burdens related to the approved exporter status:* As indicated in the related case study, the application process for this status and the required documentation varies across Member States and can reportedly be time and resource consuming. There are also reportedly instances of problems with the recognition of the approved exporter status by the Korean customs authorities.

- *Issues related to the direct transport rule*: This provision particularly affects EU exporters who make use of logistical hubs (mostly Singapore) for operations such as repackaging and labelling prior to distributing their products to various Asian markets (relevant e.g. for exporters in the spirits and chemical industries). In order to benefit from the preferential tariffs of the FTA, some companies have chosen to ship goods directly from the EU to Korea. However, in these cases, companies cannot react swiftly to demand fluctuations, as shipping from the EU to Korea can take well over a month.

- *Issues related to the use of tariff preferences:* In spite of recent increases, EU preference utilisation rates (PURs) continue to be lower than Korean PURs. Possible reasons include the mentioned administrative burdens and other factors, including costs of obtaining origin certificates, trade-offs with respect to the gains of export transactions (in particular for non-regular exporters or SMEs with low sales volumes) and insufficient promotion and education efforts targeted at EU SMEs;

- *Issues regarding the protection of EU intellectual property rights in Korea*, notably the protection of the public performance rights of authors, producers and performers in Korea and the extension of the initial list of GIs;

- *Issues related to the scope of the FTA:* Examples were provided by business stakeholders, and include, for example, the lack of inclusion of truck-tractors in the scope of the agreement, which is a major concern for the automotive industry, and provisions concerning repaired goods, which have had unintended effects on the aeronautical industry.

While these issues may affect exploiting the full potential of the EU-Korea FTA, they have to be considered in light of the results of the economic analysis presented before. Our analysis concluded that the EU-Korea FTA has succeeded in liberalising and facilitating trade in goods between the Parties to the agreement, with exports of goods from the EU to Korea having increased by about 60 percent from the period before the start of the provisional application of the FTA to the period after. Due to the FTA, exports to Korea have strongly outperformed exports to other regional trade partners of the EU. Korean exports to the EU needed slightly more time to pick up but have outperformed exports to other regions since 2011. Also EU services exports to Korea grew considerably, as did service imports from Korea. In addition to the substantial trade creation effects the agreement has generated, it has boosted bilateral foreign direct investments. Addressing the issues identified above (see also recommendations in section 11.2) could therefore further improve the EU-Korea trade relationship, building on the considerable results achieved so far.

7. Social analysis

This section analyses the impact of the FTA on consumers (section 7.1) and on employment, wages, and income inequality (section 7.2).

7.1. Impact of the EU-Korea FTA on consumers

The key findings of the evaluation are that:

- **The number of products traded has increased regarding both EU and Korean exports, increasing choice (product variety). According to the economic literature, this increase in product variety generates gains from trade for consumers.**
- **From the available data regarding EU imports from Korea, no trends in product safety or food safety notifications through the relevant EU alert systems (RAPEX and RASFF) have been identified that would indicate any increases in unsafe products entering the EU market since the start of the provisional application of the EU-Korea FTA.**
- **Trade theory attributes international trade positive welfare effects; it lowers prices of tradable goods because only the most productive and thus, the cheapest suppliers produce. As low income consumers typically spend a larger income share on tradable goods (food, manufacturing goods), they tend to benefit more from trade liberalisation (in relative terms). Higher income consumers, by contrast, spend a larger income share on non-tradable services (e.g. restaurants, vacations), the prices of which will be not affected by trade liberalisation. Thus, from a welfare perspective, it is important to evaluate price changes.**
- **Price changes induced by the FTA occur as trade costs decrease, and by efficiency gains. Further, because of general equilibrium effects, the trade cost reduction translates to an overall change in price composition. According to the CGE model, prices in Korea and EU28 have decreased slightly due to the EU-Korea FTA.**
- **Price changes induced by the FTA for the EU are much smaller in size compared to Korea, because of the economic asymmetries between the EU and Korea. While for Korea price changes in all sectors are negative, we observe a larger share of sectors in the EU, for which no price changes were identified due to the FTA.**
- **Taking into account the effects of the EU-Korea FTA on income assessed before, it can be concluded that the FTA improves welfare by slightly reducing prices and slightly increasing income in both the EU and Korea, with this effect being most pronounced for Korea.**

The effects of free trade on consumers are multidimensional: in this section we consider the impacts on choice (product variety), product quality and price. We further depict the income and welfare effects for the respective households in the EU Member States and Korea, which is based on the computable general equilibrium analysis.

The first dimension (choice) relates to the number of differentiated goods available in an economy; since firms produce slightly different products, in particular in modern manufacturing sectors, the number of firms that are active in a certain market determines the product variety for consumers.[165] Generally, free trade encourages more firms to sell internationally, which has positive effects on the product variety of the

[165] Increased product variety resulting from the FTA was also reflected in the results of the public consultation: seven respondents to questions on specific consumer impacts indicated a very positive or slightly positive impact of the agreement on choice/availability of goods or services in Korea, and six indicated a positive impact on choice/availability of goods or services in the EU.

trading partners. Increased choice is in turn associated with consumer welfare gains.[166] This pattern is already shown by the evolution of the extensive margin of trade in the descriptive analysis section, i.e. the number of products traded has increased regarding both EU and Korean exports.[167]

The second dimension consists of the product quality that is offered to consumers; limited information is available in this respect.[168] However, a key aspect of quality in a consumer perspective is safety. From the available data regarding EU imports from Korea, no trends in product safety or food safety notifications through the relevant EU alert systems (RAPEX and RASFF) have been identified that would indicate any increases in unsafe products entering the EU market since the start of the provisional application of the EU-Korea FTA.

Between 2003 (when the RAPEX system was set up) and 2010, the total number of notifications through RAPEX steadily increased.[169] Since 2012, the total number of notifications has stabilised at a level of just over 2 000 notifications per year.[170] The figure below presents the evolution of the number of RAPEX notifications specifically with Korea as the country of origin from 2006-2016 against comparative data from Japan and the EU28.

[166] For instance, a 2010 study by Civic Consulting for the Executive Agency for Health and Consumers found that total welfare gains for EU consumers resulting from lower online prices and increased online choice under a hypothetical situation of a 15% share of Internet retailing (then 3.5%) and a Single EU consumer Market in the e-commerce of goods amounted to 204.5 billion Euro per year (equivalent to 1.7% of EU GDP). Two-thirds of consumer welfare gains were due to increased online choice, which is considerably larger across borders. (See http://ec.europa.eu/consumers/consumer_research/market_studies/docs/study_ecommerce_goods_en.pdf)

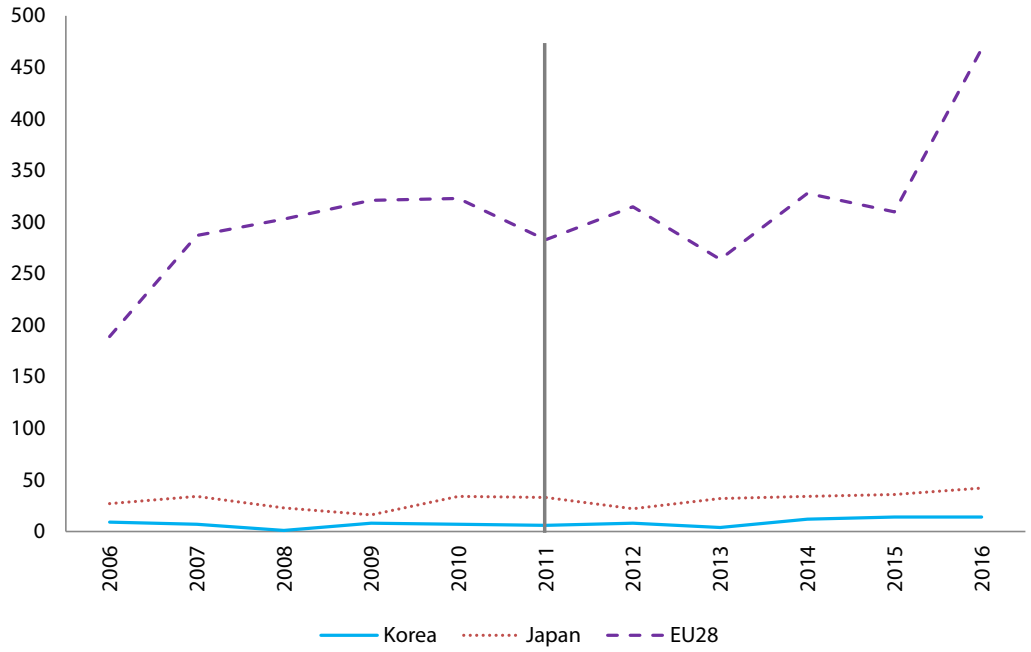
[167] As described in detail in section 5.2, the number of goods (at the 8-digit level) imported from Korea was approximately 5 800 in 2008 and fell then until 2011 to 5 600. Coinciding with the introduction of the FTA, the number of products increased again continuously and has almost offset the previous decline. In contrast, the number of exported goods from the EU to Korea remained at a range between 7 200 and 7 400 products for the period before the start of the provisional application of the FTA, and increased afterwards to close to 7 600.

[168] In the public consultation, six respondents to questions on specific consumer impacts indicated a very positive or slightly positive impact of the agreement on quality of goods or services in Korea, whereas 2 indicated a neutral impact and 4 had no opinion/did not know. With respect to the quality of goods or services in the EU, four respondents indicated a positive impact, two indicated a slightly negative or very negative impact, and five had no opinion/did not know.

[169] The EU Rapid Alert System for dangerous non-food products enables quick circulation of the information sent by national authorities about dangerous non-food products posing a risk to health and safety of consumers between 31 European countries and the European Commission.

[170] RAPEX annual report, 2016.

Figure 86: Evolution of RAPEX notifications by country of origin, Korea, Japan and EU28, 2006-2016



Source: Civic Consulting based on RAPEX data (downloaded in March 2016 from the dedicated website https://ec.europa.eu/consumers/consumers_safety/safety_products/rapex/alerts/?event=main.search). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

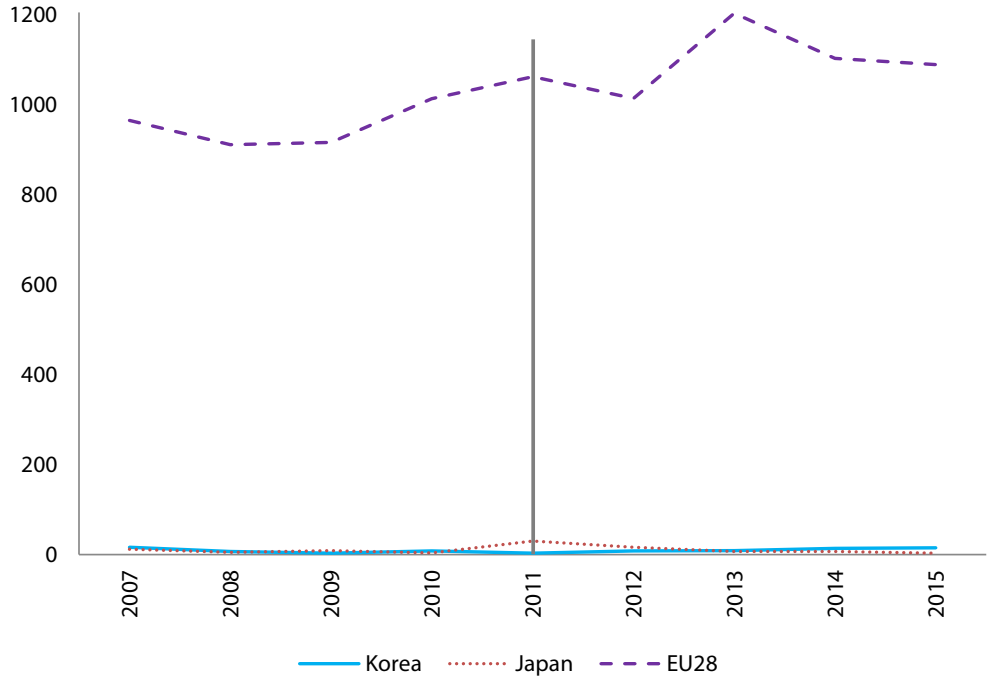
As indicated in the figure above, the number of notifications related to non-food products originating in Korea has been mostly stable over the last 10 years, with a low average of about eight notifications per year. It slightly increased in the last years and appears to have stabilised at a level of 14 notifications per year. In comparison, the number of notifications related to Japanese products, which has also been rather stable over the last 10 years, is on average more than three times higher than for Korean products.

More than two-thirds of the RAPEX notifications regarding Korean products related to motor vehicles, which is by far the most relevant sector with 68 percent of the notifications from 2006-2016 concerning products in this sector (in absolute terms on average 6 notifications per year), followed by electrical appliances and equipment (9 percent of the notifications, i.e. slightly more than one notification per year on average).[171] Motor vehicles is also the most relevant sector for RAPEX notifications regarding products from Japan (89 percent of the notifications from 2006-2016) and from the EU (40 percent). In the majority of notifications related to Korean motor vehicles, products were recalled from end users mostly as a result of measures taken by economic operators, and otherwise voluntary corrective actions were taken by economic operators. While there seems to be a slight increase in the number of notifications relating to products in the motor vehicles category coming from Korea in recent years (on a very low level in absolute terms), this is in line with vehicles being the fastest growing import sector in the post-FTA regime as illustrated in section 5.2.1.

[171] Notifications concerning safety issues with other types of products, such as for example the widely reported defect found in the Samsung Galaxy Note 7 batteries in 2016 in the sector for communication and media equipment, are the exception.

With regard to food and feed safety, data from the RASFF Portal[172] indicate that the number of notifications related to products originating in Korea has remained stable in the past years, at a fairly low level. The figure below presents the evolution of the number of RASFF notifications with Korea as the country of origin from 2007-2015 against comparative data from Japan and the EU.

Figure 87: Evolution of RASFF notifications by country of origin, Korea, Japan and EU28, 2007-2015



Source: Civic Consulting based on RASFF annual reports. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

As shown in the figure above, while an increasing trend can be observed for EU Member States, it is not the case for Korea and Japan. The number of notifications related to food and feed products with Korea as the country of origin has been stable at an average of nine per year since 2007, with a slight increase in 2014-2015 (14 and 15 notifications respectively). However, it decreased back to a level of nine notifications in 2016. The low amount of notifications related to products originating in Korea does not allow for particular trends to be observed. Data show nonetheless that over the last 10 years (from 2006 to 2017), nearly all RASFF notifications regarding products originating in Korea were related to food products, as only one was related to feed products and one to food contact materials. The three top categories were fruits and vegetables (33 percent of all notifications), fish and fish products (24 percent), and bivalve molluscs and products thereof (12 percent).[173]

[172] The Rapid Alert System for Food and Feed (RASFF) provides a system for the swift exchange of information between its members in cases of direct or indirect risks to human health deriving from food and feed, to enable as much as possible a coordinated response of its members to food safety threats in coordination with third countries, where relevant.

[173] Data downloaded from the RASFF Portal in March 2017 (https://webgate.ec.europa.eu/rasff-window/portal/)

No data was available regarding product quality issues affecting Korean consumers due to products imported from the EU after the start of the provisional application of the FTA.[174]

The final aspect considered in this section refers to price changes that go along with the FTA, thereby constituting the third relevant dimension of the FTA for consumers. For this purpose, we use the results based on the CGE model and narrow down the focus on sectoral price changes. Price changes induced by the FTA occur in the first place as trade costs decrease, which makes imported goods comparably cheaper. However, because of general equilibrium effects (while also taking trade diversion effects fully into account), the trade cost reduction translates to an overall change in price composition. Since the CGE model assumes perfect competition, price changes are completely passed through to consumers and there is no price setting behaviour of any kind. The resulting price changes are on that account decisive for consumers. Even if the assumption of perfect competition is quite strong, there is a general consensus among trade economists that free trade increases competition and thus has a pro-competitive effect. Hence, even in the absence of perfect competition, we can expect a decrease in consumer prices and lower mark-ups for firms as a consequence of trade liberalisation.

The sectoral price changes presented in the following table are based on the initial sectoral trade shares, thus the trade shares before the start of the provisional application of the FTA. Based on actual trade flows, the expenditure share in country *n* on goods from country *i* in sector *j* can be calculated. Holding this expenditure share constant and observing new prices after the start of the provisional application of the FTA, sectoral prices can be aggregated to obtain a new price vector. From a technical point of few, this price change measure corresponds to a Laspeyres index. The chosen method underestimates the true price effects since it abstracts from changes in demand. Thus, the following price changes are conservatively measured. Note that EU price changes are simple averages over EU countries and that most of the very small price changes calculated lack statistical significance.

[174] A very grave consumer safety incident involving a European company (Reckitt Benckiser, RB) in Korea occurred before the start of the provisional application of the EU-Korea FTA and related to the sale of a disinfectant for humidifiers that was determined to be toxic. According to RB, the company Oxy launched a humidifier sanitiser product in Korea in 1996. In 2001 RB acquired Oxy to become Oxy RB. In 2011 the Korean Centre for Disease Control (KCDC) suggested a link between the HS product and lung injury at which point the product was withdrawn from the market. About 100 deaths in Korea have been linked to the toxic disinfectant, and hundreds of other victims suffered permanent lung damage as a result. In 2017, the head of Reckitt Benkiser's Oxy subsidiary from 1991 to 2005 was found guilty of accidental homicide and falsely advertising the product as being safe and sentenced to seven years in prison. Reckitt Benckiser set up a victim compensation fund worth KRW 5 billion (approximately EUR 4.2 million) in 2016. See https://www.rb.com/media/news/2016/may/oxy-rb-and-humidifier-sterilizers-in-korea/ and media reports, including: http://www.straitstimes.com/asia/east-asia/british-firms-unit-in-south-korea-apologises-over-disinfectant-blamed-for-more-than

Table 30: Sectoral price changes in the EU and Korea

Sector	Price change in the EU (%)	Price change in Korea (%)
Agriculture	-0.03	-0.21
Automotive	-0.17	-0.69
Business services	0.00	0.00
Chemicals	-0.03	-0.28
Construction	-0.01	-0.05
Electronic equipment	-0.02	-0.37
Energy	-0.01	-0.01
Financial and Insurance services	0.01	-0.02
Fishing	-0.10	-0.02
Machinery and equipment	-0.05	-1.29
Manufacturing	0.00	-0.09
Metals	-0.07	-0.19
Other services	0.00	-0.01
Processed food	-0.03	-0.70
Raw material	0.00	-0.04
Telecoms	0.00	-0.01
Textile	-0.01	-0.39
Trade	0.00	-0.10
Transport	-0.02	-0.89
Utilities	0.00	-0.06
Wood paper and minerals	0.00	-0.26

Source: GTAP, WITS, Ifo Trade Model.

In Table 30, two aspects are particularly striking. First, the price changes induced by the FTA for the EU are much smaller in size compared to Korea; this result meets our expectations due to differences in the size of the two economies. Second, while for Korea price changes in all sectors are negative (with the exception of one sector, in which no price changes were identified), we observe a larger share of sectors in the EU for which no price reductions due to the FTA were identified.[175]

There is large body of literature that substantiates the need for an analysis of the effect of trade on the distribution of earnings across workers (e.g., Stolper and Samuelson 1941). Recently, Fajgelbaum and Khandelwal (2016) pointed out the importance of distributional impact of international trade. It is common sense that the consumption of baskets of high- and low-income consumers is very heterogeneous (e.g., Deaton and Muellbauer 1980). Whenever international trade affects the relative price of goods by rich and poor consumers asymmetrically, it has a distributional impact. Fajgelbaum and Khandelwal (2016) showed that the gains from trade are larger for poorer consumers than for richer ones, since the former spend a larger share of income on tradeable goods relative to the latter. Taking the previously shown price changes (on tradable goods and

[175] The majority of respondents to the public consultation indicated positive views with respect to prices. Nine respondents to questions on specific consumer impacts indicated a very positive or slightly positive impact of the agreement on prices in Korea and the EU.

services) into account, one can see that consumers with differing incomes are most likely asymmetrically affected by the free trade agreement. On that account, low income consumers might benefit more than higher income consumers.

As previously mentioned, the CGE model is able to illustrate the welfare changes, depicted as income effects for the countries' households, and thus provides information on the change in purchasing power of an average person in the EU and Korea. Table 11 in section 5.5 already presented income gains due to the agreement, which are positive for all Member States and Korea. The FTA therefore improves welfare by slightly reducing prices and slightly increasing income, with this effect being most pronounced for Korea.[176]

7.2. Impact of the EU-Korea FTA on employment, wages and household income

The key findings of the evaluation are that:

- As previous chapters have shown, free trade increases competition and thus strengthens economic efficiency. These efficiency gains translate into welfare increases for the participating countries. However, in the short run, they also come with adjustment costs. These adjustment costs refer, for example, to employees who have to change their industries. As a direct consequence of efficiency gains, wages increase.
- These wage effects of the FTA can be estimated with the CGE model. The effects of the FTA on wages are minor, but positive for all EU Member States and Korea. It is striking that the effects for Korea are the highest, with a wage increase of approximately 0.6 percent attributable to the EU-Korea FTA according to the results of the CGE analysis. The wage change for Korea is larger than for an average European country, because the FTA's overall income and welfare effects are higher as well.
- According to classical trade theory, free trade generates higher incomes for all participating countries, but not for everyone within these countries; it rather is likely that some sectors might benefit more than others, which translates to wage changes and employment effects. Hence, redistribution from winners to losers within a society is a crucial task to ensure public acceptance of free trade policies. The descriptive analysis does not indicate any negative effect of the EU-Korea FTA on employment or income distribution.

This section analyses two of the four strategic pillars of the Decent Work Agenda. The pillar of *employment creation* is examined in the subsection below concerning the effects of the FTA on employment. The subsections on the effects of the FTA on employment, wages, income inequality and healthcare expenditures relate to the pillar of *social protection* (which is defined as involving access to health care and income security).[177] The pillars of *international labour standards and fundamental principles and rights at work* and *social dialogue* are considered in section 7 concerning the impact of the FTA on human rights.

7.2.1. The effects of the EU-Korea FTA on employment

This section investigates the evolution of unemployment rates as well as labour force participation rates before and after the start of the provisional application of the EU-Korea FTA. We again include a control group in our analysis, namely Japan as a control

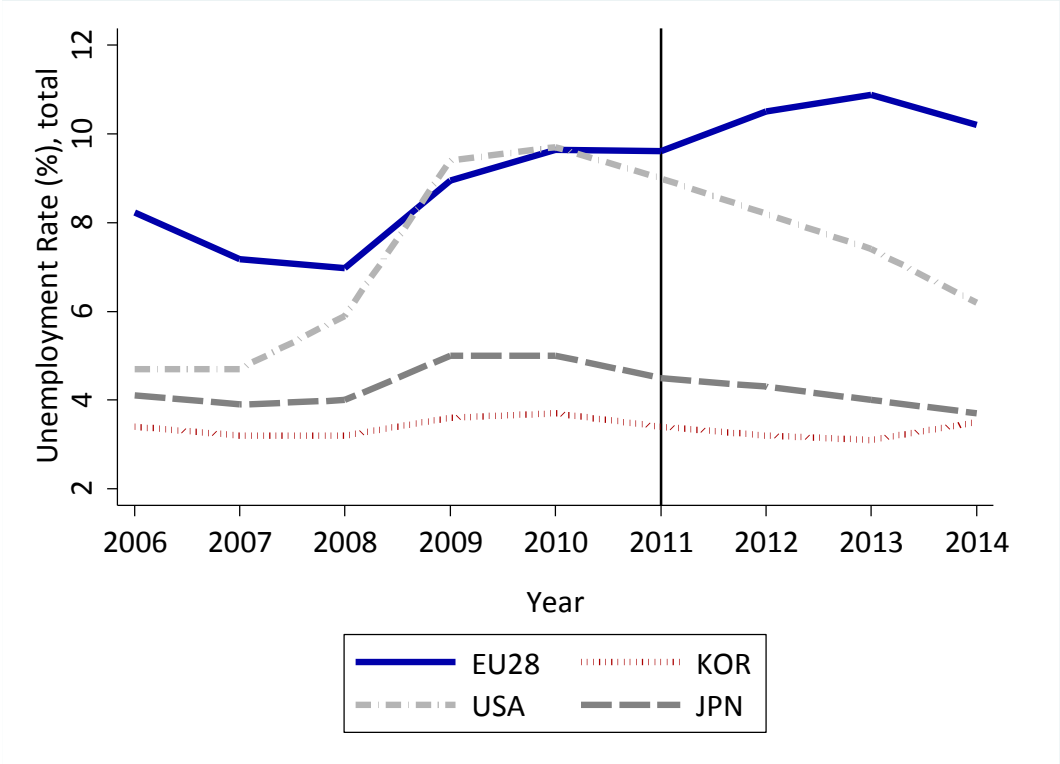
[176] Note that the welfare changes illustrated by the CGE model do not account for changes in product variety (i.e. changes in choice, which are associated with consumer welfare gains, see above), as the model holds the trade balance constant. In other words, the estimate of welfare changes is conservative in nature.

[177] http://ilo.org/global/topics/social-security/lang--en/index.htm

for Korea and the US as a control for the EU. Since data are accessed through the World Bank, Taiwan as second control for Korea is missing. The data originate from the International Labour Organisation (ILO) and the OECD and follow their standard classifications. Note that this descriptive, comparative analysis in the figures below (see section 5.2 above for further details) mainly serves to illustrate trends over time in the respective countries, rather than providing indications on causality in terms of the impacts of the FTA, as unemployment is not a country-pair specific variable (in contrast to trade statistics). Moreover, there are other covariates that influence labour market outcomes and coincide with the start of the provisional application of the FTA in 2011. This includes but is not limited to the deepening of the euro crisis in 2011 that resulted in higher unemployment rates in many European countries.

Figure 88 shows the evolution of unemployment rates in the selected countries over time. The unemployment rate in the EU was at around 8 percent in 2006 and declined to 7 percent in 2008. As a consequence of the financial crisis, the unemployment rate soared to slightly below 10 percent and even further increased in 2012 and 2013 to almost 11 percent. For the last observation, a marginal reduction is recorded. In contrast, the US initially had a far lower unemployment rate, but was hit by the financial crisis more seriously than all other economies. From 2010 on, by contrast, unemployment rates in the US decreased steadily. The picture looks differently for Korea and Japan, which both have lower levels of unemployment that are considerably less volatile and converged in 2014 to slightly below 4 percent.

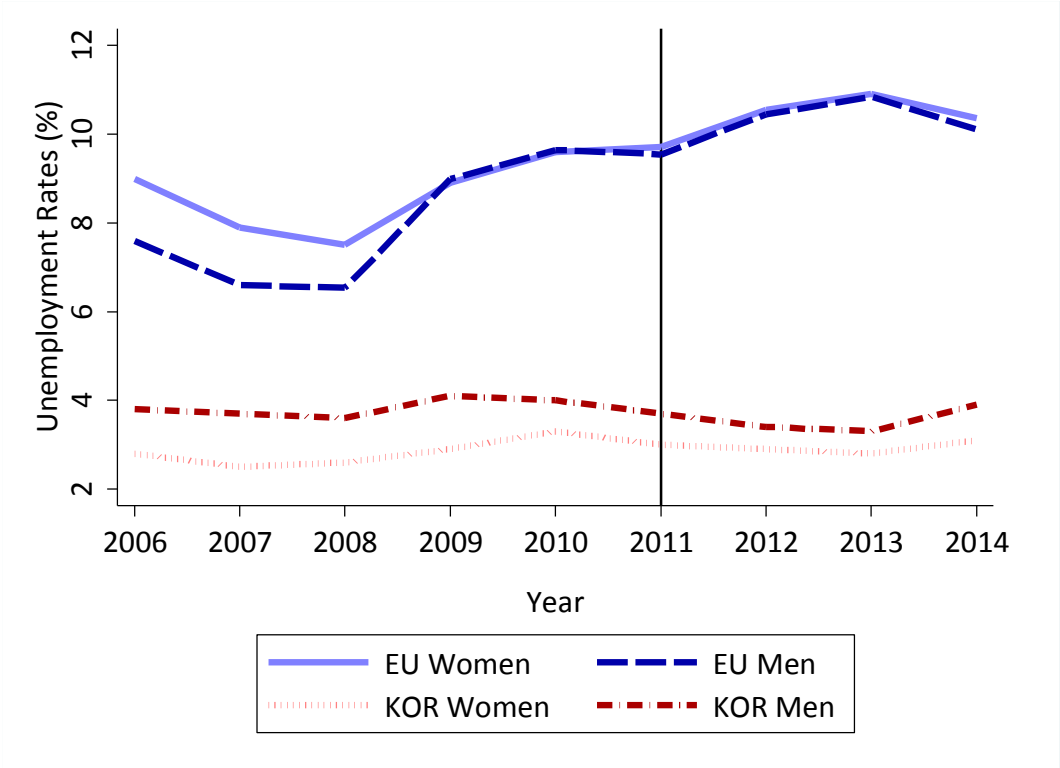
Figure 88: Unemployment rate in selected countries



Source: Own compilation, based on ILO (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 89 shows unemployment rates by sex for the EU and Korea. For the whole period of observation, it stands out that female unemployment is significantly lower than male unemployment in Korea. For the EU, we observe the opposite until 2009 and afterwards a full convergence of women's and men's unemployment. The FTA does not seem to have differently influenced unemployment rates by sex.

Figure 89: Unemployment rates by sex in the EU and Korea

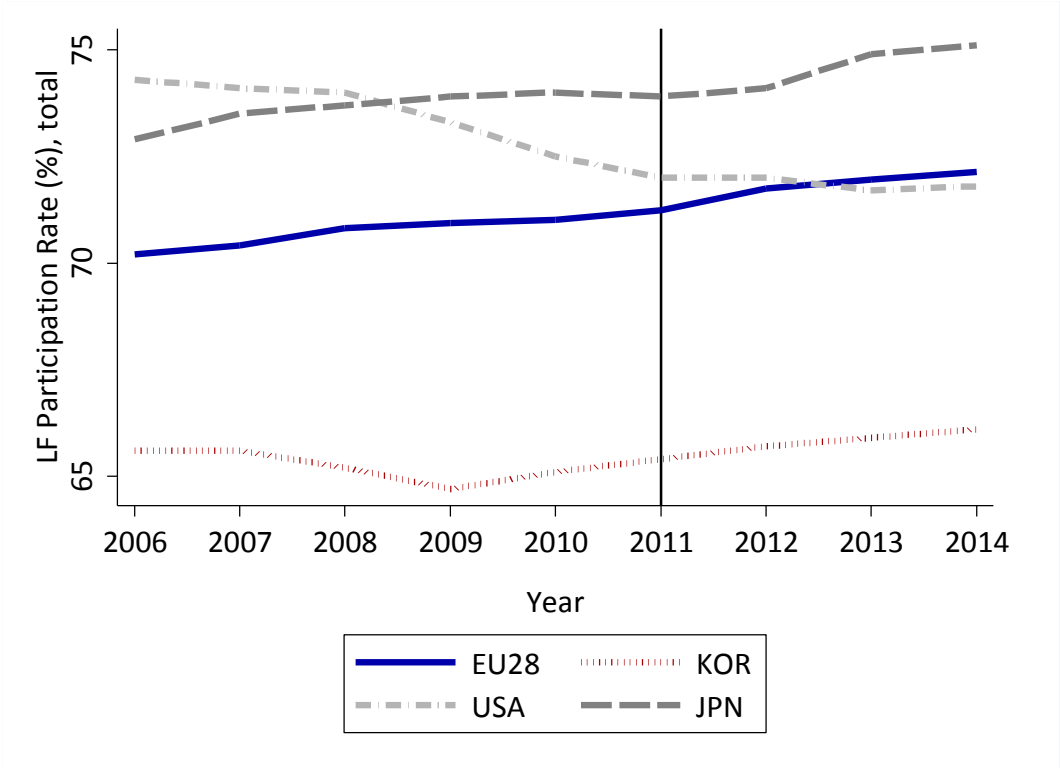


Source: Own compilation, based on ILO (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Unemployment rates are calculated as a ratio of unemployed persons over the total labour force. The latter is defined as the sum of employed and unemployed persons in a given economy. It is important to hold this reference measure constant in order to obtain a correct understanding of employment mechanisms.

It is important to consider that the unemployment rate does not provide the full picture if the labour force changes over time, e.g. if the unemployed do not further search for a new job but instead exit the labour market. Instead of reporting absolute values for the labour force, a good way of thinking about the labour force is therefore the labour force participation rate, which sets the labour force relative to the working age population. The advantage of this approach is that population growth, migration and demographic changes are taken into account. Together with the illustration of the labour force participation rate and the above description of unemployment, a thorough picture on national labour markets can be shown. Figure 90 highlights the labour force participation rate in the selected countries over time. The labour force participation rate is an indicator that is derived out of the sum of employed and unemployed inhabitants relative to the working age population. Without any structural break, the labour force participation rate steadily increased in the EU and (control country) Japan. In contrast, in the US, the participation rate declined each year, resulting in a 4 percentage point lower rate in 2014 compared to 2006. The labour force participation rate also decreased in Korea until 2009, but recovered again afterwards and is now 66 percent. This upward trend did not change systematically after the start of the provisional application of the FTA. It is worth mentioning that Korea has a remarkably lower participation rate than all other countries of comparison, which might be one reason for the low level of its unemployment rate.

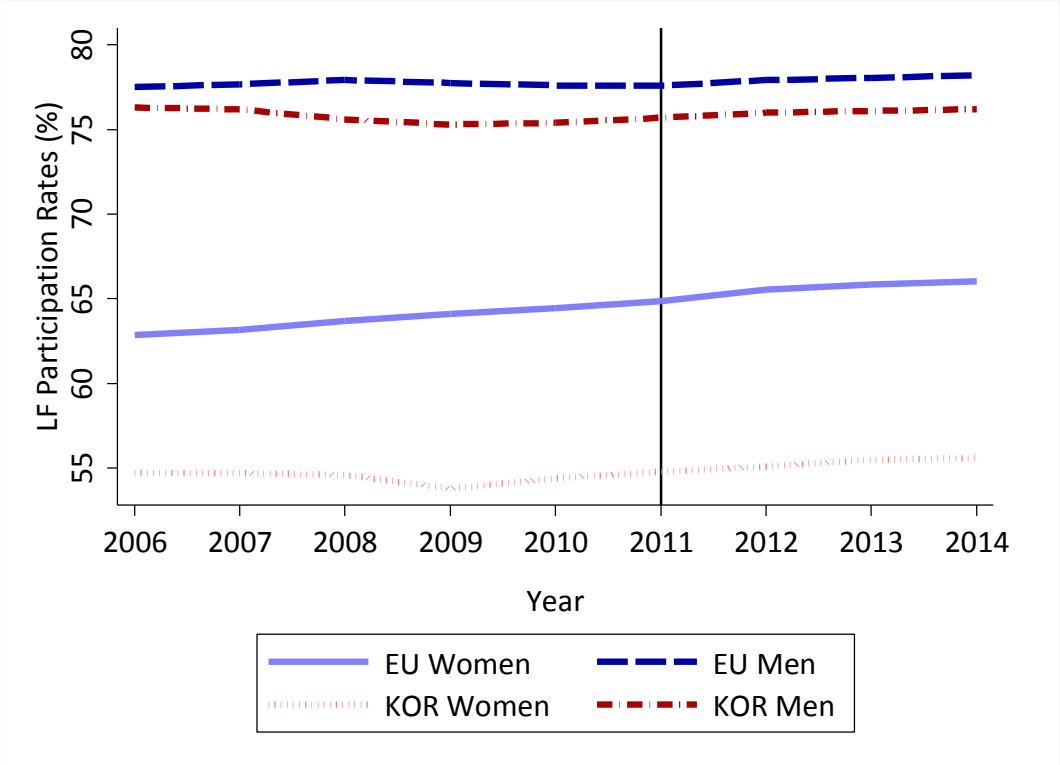
Figure 90: Labour force participation rate in selected countries



Source: Own compilation, based on ILO (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

To explore the FTA's impact on labour market outcomes for both sexes, a closer look at labour force participation rates by sex is necessary as well. Figure 91 below shows female and male participation rates in the EU and Korea over time. Generally, in both economies, the male rates are substantially higher and remain at levels between 75 and 78 percent. These lines are roughly flat. The labour force participation rate for women in the EU, however, follows an upward trend and rose from 63 to 66 percent. In contrast, the Korean female participation rate began rising in 2010 and ends at a level of 56 percent, which is still 10 percentage points lower than in the EU.

Figure 91: Labour force participation rate in the EU and Korea by sex



Source: Own compilation, based on ILO (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

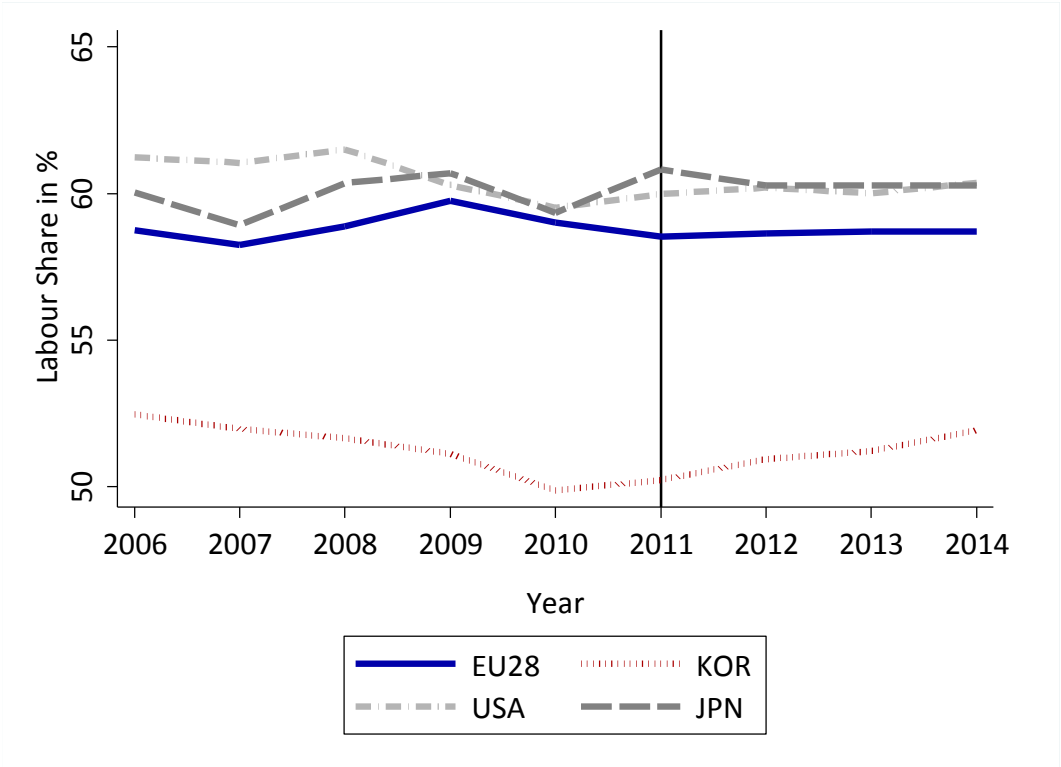
As shown above, we observe significant differences for men and women when dealing with labour market variables. Another important indicator is the wage differential between men and women (i.e., the gender pay gap). The development of this indicator is described in detail in the analysis of the human rights impacts of the FTA (see section 8) in the context of our analysis of indicators for discrimination, and is not repeated here.

7.2.2. The effects of the EU-Korea FTA on labour compensation and employment

Besides employment statistics, a further labour market outcome is the remuneration of the production factor labour through wages and salaries. It is also of major interest, as wages are the natural counterpart of employment in the labour market. Nonetheless, when dealing with nominal wages, one has to take level effects such as price level differentials and exchange rate effects into account. Furthermore, real wages typically follow an upward trend over time in a growing economy, thereby measuring productivity increases. Hence, the simple evolution of nominal and real wages over time is partly inconclusive for interpretation purposes. A more comprehensive measure is the labour share of an economy, which is defined as the share of GDP that is paid to employees through wages and salaries. It is therefore independent of GDP growth, price and exchange rate effects and labour migration. In addition with the capital share, which is paid to capital owners as interest, dividends, rents, etc., the labour share sums up to 100 percent. From a macroeconomic perspective, another useful feature of the labour share is that it allows for drawing conclusions on how labour-intensive the economy produces its goods and services.

Figure 92 below visualises the evolution of labour shares in the selected countries over time. Overall, we observe only minor changes resulting from the fact that the economy-wide reallocation of labour and capital input needs some time for adjustments.

Figure 92: Labour share over time in selected countries (share of GDP that is payed to employees through wages and salaries in percent)



Source: Own compilation, based on Penn World Table 9.0 (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

It stands out in the figure above that Korea's labour share ranges between 50 and 53 percent, which is comparably low relative to the EU (58 to 60 percent), Japan (59 to 61 percent) and the US (60 to 62 percent). While in the EU, for instance, the labour share rose before 2009,[178] it fell in Korea until 2010, relatively rapidly increased from 2011 on continuously and reached its initial level again in 2014. This trend reversal in 2010-2011 indicates that the Korean economy reallocates its input factors towards less capital- and higher labour-intensive production. While this increase in labour share coincides with the start of the provisional application of the FTA, a causal interpretation for the observed rise is not possible due to the above mentioned limitations of the descriptive analysis.

In contrast, the results of the CGE analysis do allow for the identification of causal effects of the EU-Korea FTA, as empirically observed effects of the start of the provisional application of the agreement can be compared to a counterfactual scenario without such an agreement. The CGE model also estimates wage effects due to the FTA. As Table 31 shows, the effects of the FTA on wages are minor, but positive for all EU Member States and Korea. It is striking that the effects for Korea are the highest, with a wage increase of approximately 0.6 percent attributable to the EU-Korea FTA according to the results of the CGE analysis. The wage change for Korea is larger than for an average European country, because the FTA's overall income and welfare effects are higher as well. Note that the CGE model predicts a wage level for each country and does not allow for variation within countries. Hence, no wage-based argument on income distribution can be made. Moreover, the model is unable to include all wage determinants present in a complex world. This is by construction. For instance, policy changes, market power (e.g. of unions or firms), frictions, etc. are highly interdependent and influence wages to a

[178] This might be due to the fact that GDP decreased more than labour incomes and because of shrinking capital returns.

certain extent; nevertheless, the CGE model allows us to isolate the pure wage effect induced by the FTA.

Due to data limitations, e.g. the lack of sectoral employment and wage data for EU MS and Korea following a unified methodology and the presence of the aforementioned correlation-causation issues, the subsequent analysis is mostly based on the results provided by the CGE model.

The FTA would lead to some convergence between the EU and Korea, which might be a direct consequence of the displacement effects in both regions. In general, one can see a positive correlation between the wage and the real GDP increase. The CGE analysis of this report finds small increases in GDP, which is therefore in line with the wage change. Further, the CGE model is able to depict welfare effects that occur for the consumers. A detailed analysis of the welfare effects is shown in the analysis of trade effects with feedback effects (see section 5.4) and is also depicted in the chapter about the FTA's impact on consumers (see section 7.1).

Table 31: The effects on average wages based on CGE results

Country	Wage Change (%)	Country	Wage Change (%)
AT	0.04	IE	0.05
BE	0.05	IT	0.03
BG	0.03	LT	0.02
CY	0.07	LU	0.02
CZ	0.07	LV	0.03
DE	0.05	MT	0.44
DK	0.03	NL	0.04
ES	0.02	PL	0.04
EE	0.04	PT	0.02
FI	0.04	RO	0.06
FR	0.03	SK	0.15
GB	0.02	SV	0.13
GR	0.02	SE	0.03
HR	0.36	KOR	0.59
HU	0.07	-	

Source: Ifo Trade Model

Although the Ifo Trade Model holds employment constant and does mirror a world without unemployment, it is still able to illustrate employment effects. From a model theoretical point of view, the EU-Korea FTA would not create or destroy jobs; it rather indicates how labour is reallocated within the economy across sectors. Economically, the reallocation of production factors towards sectors in which an economy enjoys comparative advantages generates the gains from trade; however, in the short run, these necessary reallocation effects are related to adjustment costs.

For instance, if the business services sector loses jobs while the machinery and equipment sector expands, employees have to switch from one sector to another. Since accountants cannot work as engineers from one day to the next, short run unemployment cannot be ruled out. The reported labour market reallocation effects are long-run effects, and in the long-run the new allocation is more efficient than the

previous one and the labour market adjusts; for example, instead of becoming an accountant, more people would study engineering.

However, short-run costs, e.g. retraining, can occur. The table below reports the initial number of employees in the respective sector, the changes occurring because of the FTA, and the number of employees working in the sectors after the start of the provisional application of the EU-Korea FTA. Coinciding with the sectoral value added effects, the number of jobs in the EU increases in the agricultural sectors (12 000 employees) and processed food sectors (3 000 additional workers). Korean availability of job opportunities in the agricultural sectors decrease (a total of 10 000 positions drop out). While the largest demand for new jobs in Europe is provided in the machinery and equipment industry (40 000 new employees), the Korean automotive sector demands 29 000 new jobs. The largest losses are evident in the European business services sectors (36 000 jobs less).

Table 32 also depicts the so-called displacement index for Korea and an average of EU Member States, which basically measures the fraction of workers that had to change sectors due to the start of the provisional application of the FTA (e.g. from business services to machinery and equipment). The index for the EU stands at 0.11, which is a normal rate for developed economies. The Korean displacement rate of 0.28 is higher than that of the average developed economy, but is not surprising because of the extent of sectoral reallocation compared to the initial level, which is proportional to the FTA-induced welfare gains. One can state that the gains would be smaller if this restructuring of the economy would be restricted to the resource-saving effects of lower non-tariff trade costs.

Table 32: Employment effects per sector for EU MS and Korea

Sectors	EU28			Korea		
	Change in sectoral employ-ment	# of employees per sector, after the FTA	Initial # of employ-ees per sector	Change in Sectoral employ-ment	# of employ-ees per sector, after the FTA	Initial # of employ-ees per sector
	(1 000 employees)					
Agriculture	12	6 049	6 037	-9	609	618
Automotive	-9	4217	4 227	29	858	829
Business services	-29	35 866	35 895	26	2 619	2 593
Chemicals	-1	8 855	8 855	7	916	908
Construction	-5	15 405	15 410	-1	1 485	1 486
Electronic equipment	8	2 083	2 076	1	1 378	1 377
Energy	-14	4 977	4 991	2	119	117
Financial and insurance services	-5	10 723	10 727	-6	1 733	1 739
Fishing	0	248	248	0	91	91
Machinery and equipment	40	11 873	11 833	-4	1 565	1 569
Manufacturing	0	1 951	1 951	1	482	481
Metals	3	6 805	6 802	6	1 257	1 251
Other services	-12	74 089	74 101	-21	7 323	7 344
Processed food	3	5 798	5 794	-1	375	377
Raw material	-1	1 098	1 098	0	65	66
Telecoms	-2	5 630	5 632	-1	554	556
Textile	1	3 333	3 332	1	252	251
Trade	3	16 630	16 628	-20	3 152	3 172
Transport	8	9 295	9 287	-7	878	885
Utilities	0	5 219	5 220	1	439	438
Wood paper and minerals	0	7 660	7 660	-2	511	514
Displacement Index (%)	*EU28 = 0.11*			*Korea = 0.28*		

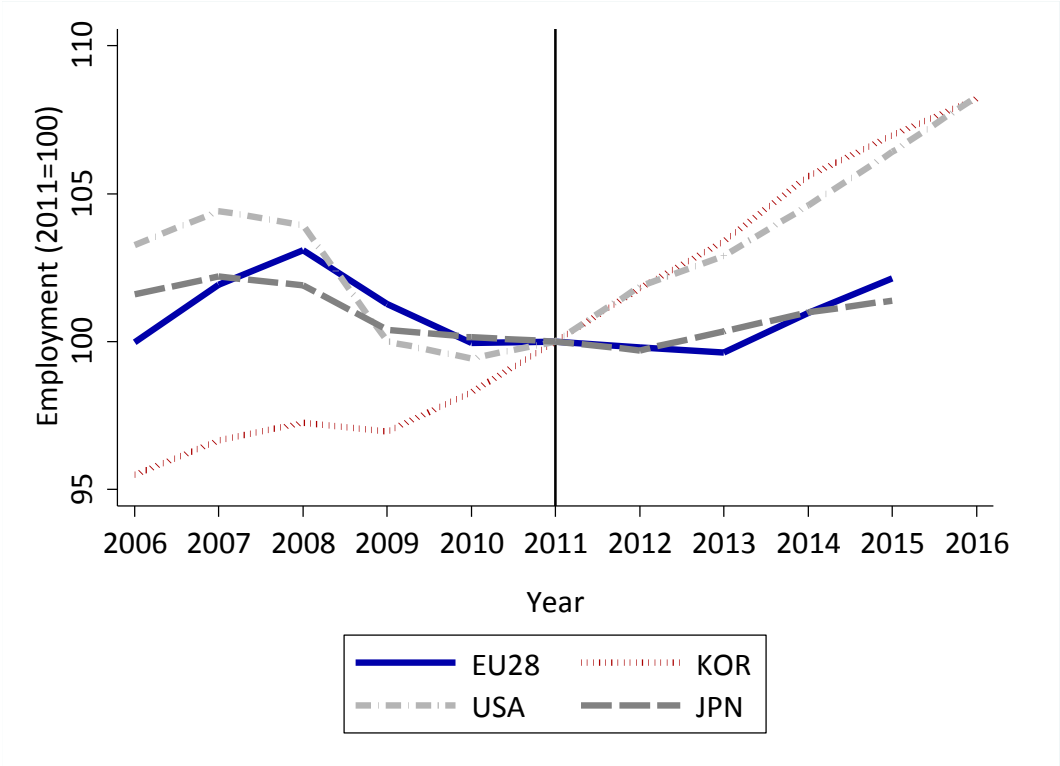
Source: Ifo Trade Model

Figure 93 depicts the evolution of total civilian employment in the selected countries. For the sake of comparability, the data are normalised to an index taking the value of 100 for the year 2011. Not surprisingly, EU employment (as well as Japanese and US employment) decreased in the aftermath of the financial crisis. Thereafter, it stagnated and increased slightly post 2013. In contrast, Korean employment stagnated only during the crisis and increases again since 2010. In 2016, it is 8.2 percent higher compared to 2011; European employment has not yet reached its pre-crisis level. For the whole period of observation, Korea has experienced a large increase of its employment;

thereby, it clearly outperformed Japan. The US, which had similar evolution to the EU before the crisis, followed the same upwards trend as Korea post 2011.

The FTA seems not to have had an observable impact on aggregate employment; this result is fully in line with the CGE model assumptions that total labour force remains unchanged, but wages can adjust and thereby lead to a reallocation of labour across sectors; the aggregate picture does not reveal sectoral difference that might have played an important role. (Refer to section 10 (case studies) for sectoral employment effects.)

Figure 93: Total civilian employment in selected countries, 2011=100



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year. Data for the EU and Japan were only available up to 2014.

7.2.3. The effects of the EU-Korea FTA on income inequality

It is possible that trade liberalisation increases inequality of market incomes[179] due to enhanced competition. For example, wages of low skilled workers could be negatively affected because of business relocation and offshoring to low-wage countries that exerts pressure on their wages. However, countervailing effects are also possible, because increased demand for products of a given country due to an FTA can also increase demand for workers and therefore have positive effects on wages. As described in the previous section, this has been indeed the effect (to a minor extent) of the EU-Korea FTA. Thus, ex ante it is unclear whether trade liberalisation affects income inequality. Moreover, if it affects market income inequality, it is worth analysing to which extent these effects are in turn mitigated by the social welfare system.

[179] Economically, market incomes refer to private incomes that are earned before taxes and social benefits; net incomes, by contrast, include these two redistributive measures.

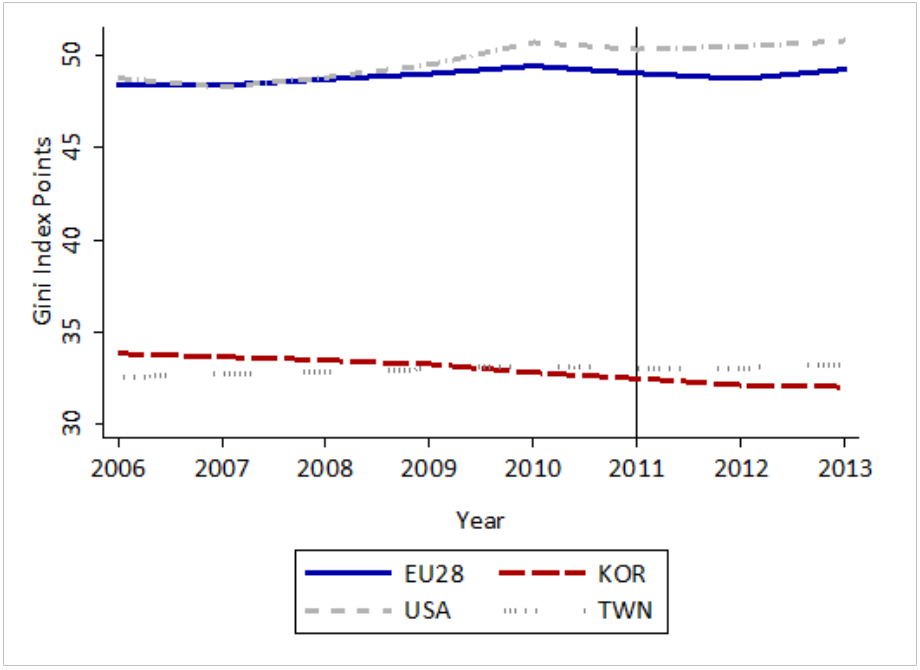
An indicator for the effect of an FTA on the whole labour force is the income distribution within a country, because this reflects whether any specific income group benefits or suffers from a policy change.

The Gini Coefficient

The Gini Coefficient is a statistical measure to quantify the inequality of any given distribution. For the purpose of this analysis, it shows the inequality of incomes which graphically corresponds to 100 minus the integral over the Lorenz Curve (income distribution). The Gini Coefficient is defined between 0 and 100; its extremes imply total equality (Gini=0) or total inequality (Gini=100).[180] One can imagine total equality such that every single individual in a society is paid exactly the same wage. Total inequality, by contrast, refers to a hypothetical situation in which one individual earns 100 percent of the sum of all incomes, whereas all other individuals earn nothing at all.

Figure 94 below visualises the income inequality in selected countries and the EU.[181] Specifically, it deals with market incomes which are the gross incomes before taxes and before transfers. It stands out that market incomes are more than 12 index points more unequal in the EU and the US compared to Korea and Taiwan. This is due to very different cultural traditions which have resulted in different societal models. Overall, we do not observe drastic changes; however, Korean inequality fell slightly but steadily both before and after the start of the provisional application of the EU-Korea FTA. This trend thus seems unaffected by the FTA. Note that more recent data for Korea and the EU were not available, which of course limits the scope for this assessment.

Figure 94: Market income inequality in selected countries



Source: Own compilation, based on SWIID (2017), Penn World Table 8.1 (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

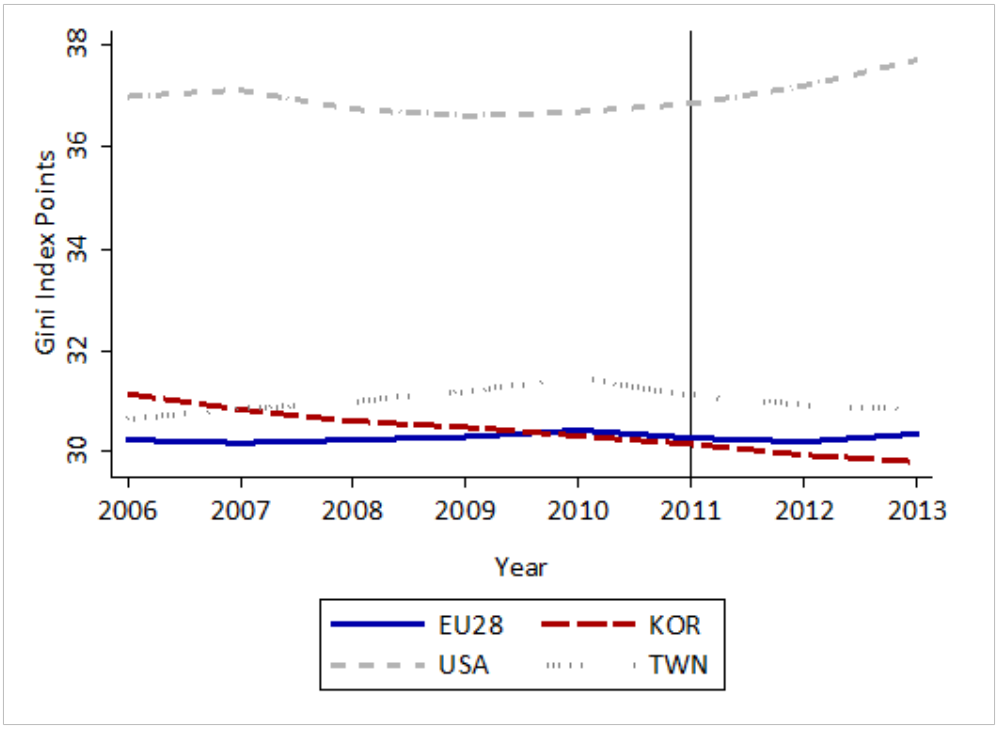
[180] The Gini coefficient can also be expressed as a range from 0 (complete equality) to 1 (complete inequality).

[181] The Gini Coefficient for the EU is provided here as a population weighted average of EU28 countries. In contrast to other figures, Japan is not taken as control country since data for Japan are only available until 2011, the year of the FTA.

Since all advanced economies have elaborated redistributive welfare systems (to different extents), more important than the inequality of market incomes is the inequality of disposable income. Disposable or net income is defined as market or gross income minus taxes plus transfers, i.e. pensions, unemployment benefits, etc. In any redistributing society, net income inequality is by construction lower than gross income inequality due to progressive tax schemes and social insurance. The evolution of the net income Gini Coefficient over time is depicted by Figure 95 below. As expected, income inequality falls once redistributive effects are taken into account. Again, we observe a falling trend of inequality in Korea over the whole period of observation, even though this reduction in inequality is very small. Net income inequality in the EU did not change significantly at all, whereas Taiwanese inequality increases until 2010 and moved back to its initial level thereafter. Inequality in the US remained roughly at the same level until 2011 and increased in 2012 and 2013.

We do not observe trend shifts or substantial deviations of the treated countries compared to their respective control countries. Hence, any direct effect of the FTA on income inequality is highly unlikely.

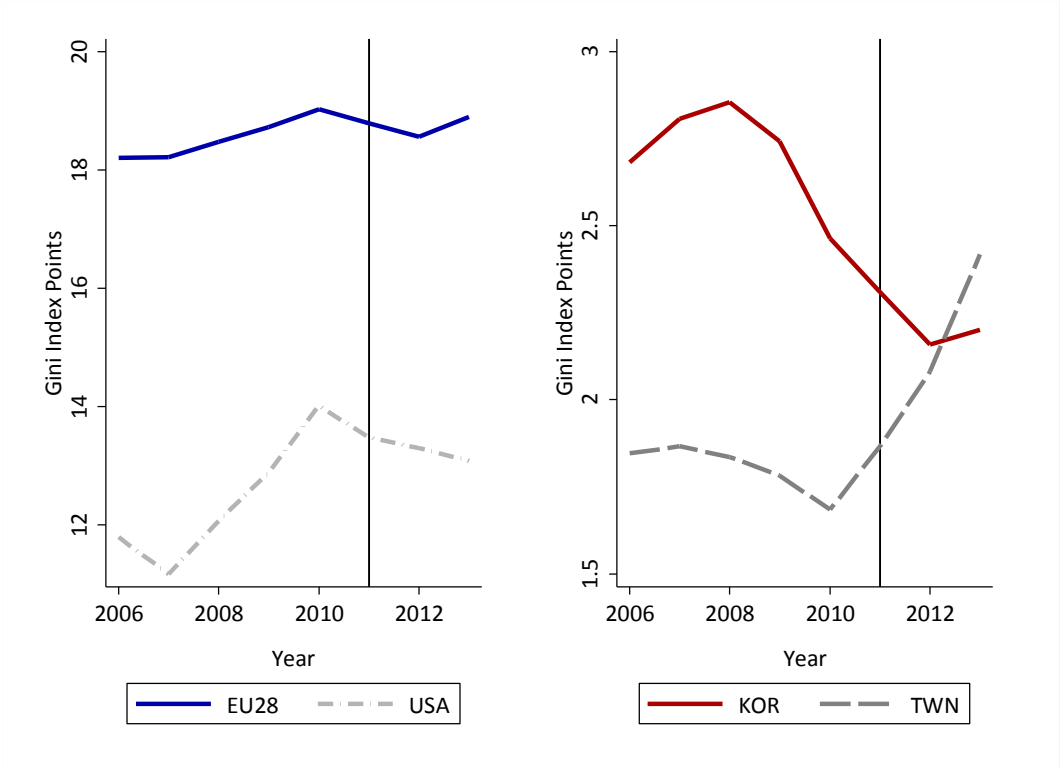
Figure 95: Disposable income inequality in selected countries



Source: Own compilation, based on SWIID (2017), Penn World Table 8.1 (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

In the following, the focus will be turned onto the redistributive function of the government in the selected countries. The question may be raised as to whether the degree of redistribution has changed over time. To answer this question, the absolute inequality reduction is calculated by differencing market income inequality and disposable income inequality. Results are shown in Figure 96 below. The highest reduction in inequality is made by those countries with the highest market income inequality, namely the EU and the US, whereby the EU redistributes substantially more, as seen earlier. The reduction in index points in the EU is very stable over time and seems unaffected by the FTA. For Korea, a slight decline from 2008 on is evident. This trend continued after the start of the provisional application of the FTA, while Taiwanese redistribution increased at the same time and overtook Korea in 2013. However, these slight changes are irrelevant given the already more equal distribution of market income in these two economies.

Figure 96: Absolute tax-induced inequality reduction in selected countries

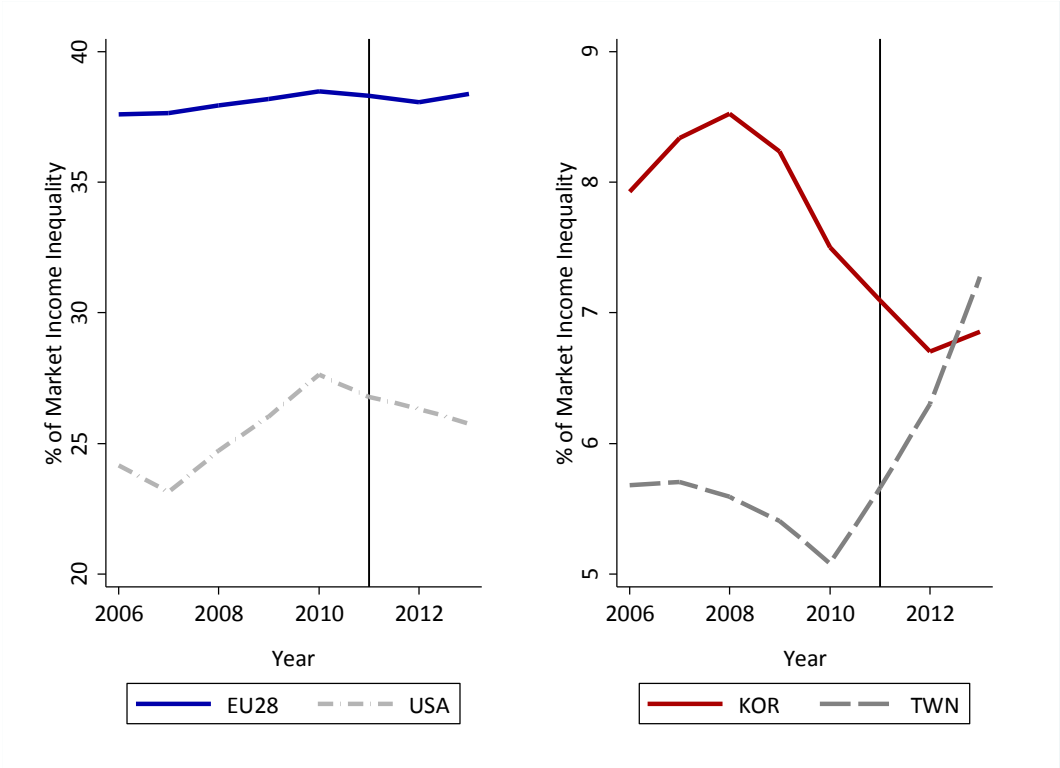


Source: Own compilation, based on SWIID (2017), Penn World Table 8.1 (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 97 below displays the absolute inequality reduction relative to the initial degree of market income inequality. Its interpretation is somewhat more intuitive than the notation in index points. For instance, 37 percent of market income inequality diminishes due to redistributive policies in the EU. Thus, EU governments redistribute by far more than any selected countries. The US presents a slightly more erratic redistribution share that ranges between 24 and 27 percent. As already mentioned and for obvious reasons, redistributive efforts are lower in Korea and Taiwan, which converged in 2012 and 2013. Even though inequality reduction in Korea declined, these changes are (1) negligibly small and (2), offset by an even larger decline in market income inequality, thus leading to a shrinking net income inequality.[182]

[182] Note that the comparison of pre- and post-tax wage incomes shown above indicates only the fact that redistribution occurs. Since redistribution is typically not an end in itself, it is also necessary to assess the intended purpose of redistribution. Therefore, we have reviewed the usage of redistributed resources for the example of health expenditures. This can be found in Annex IV.

Figure 97: Relative tax-induced inequality reduction in selected countries



Source: Own compilation, based on SWIID (2017), Penn World Table 8.1 (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

It can therefore be concluded that the EU-Korea FTA did not have any observable impact on income inequality, according to the data presented. Note, however, the above-mentioned limitations of the descriptive analysis and the relatively short post-FTA time span for which data were available.

8. Human and labour rights analysis

This section examines potential impacts of the EU-Korea FTA on human and labour rights developments in Korea, based on a screening process to identify the most relevant human rights for the subsequent detailed discussion.

The key findings of the evaluation are that:

- This analysis mainly focuses on human and labour rights in Korea, as the EU-Korea FTA has had a significantly larger economic impact on Korea relative to the EU, which implies more significant effects on human and labour rights, for example via changes in wages, consumption and employment. Moreover, the literature review and stakeholder interviews indicated concerns regarding fundamental labour rights violations in Korea.
- Based on a screening process, the following rights were selected for in-depth analysis: freedom from discrimination; right to peaceful assembly and association; right to join trade unions; right to just and favourable conditions of work; right to rest and leisure; and right to food.
- The EU-Korea FTA is assessed to have not changed the status quo of human and labour rights in Korea as they were when the FTA came into effect, in the sense that little change (positive or negative) over the 2011 situation and/or longer term trends can be observed regarding these rights. The only right for which a minor impact of the FTA can be determined is the right to food. According to the evidence from the economic analysis, food prices have decreased to a minor extent as a direct result of the FTA.

8.1. Background, approach and scope of the analysis

Human and labour rights in EU trade policy and EU-Korea relations

Human and labour rights considerations are an important component of EU trade policy.[183] The Commission's 2015 *Trade for all* communication states that "trade policy can be a powerful tool to further the advancement of human rights in third countries in conjunction with other EU policies, in particular foreign policy and development cooperation".

This perspective is reflected in the opening text of the EU-Korea FTA, in which the Parties to the agreement reaffirm "their commitment to the Charter of the United Nations signed in San Francisco on 26 June 1945 and the Universal Declaration of Human Rights adopted by the General Assembly of the United Nations on 10 December 1948". Fundamental labour rights also figure prominently in Chapter 13 of the EU-Korea FTA on Trade and Sustainable Development, for instance in Article 13.4: "The Parties, in accordance with the obligations deriving from membership of the ILO and the ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up, adopted by the International Labour Conference at its 86th Session in 1998, commit to respecting, promoting and realising, in their laws and practices, the principles concerning the fundamental rights".

Together with the above obligations of the EU-Korea FTA, the EU-Korea Framework Agreement forms the basis of the Parties' engagement on human and labour rights. Specifically, the Framework Agreement states, in a standard "essential elements" clause,[184] that "[t]he Parties confirm their attachment to democratic principles, human

[183] In this analysis we define "human rights" as also including the fundamental rights enshrined in the Charter of Fundamental Rights of the EU, in line with guidance published by DG TRADE. See: European Commission - Directorate-General for Trade. Guidelines on the Analysis of Human Rights Impacts in Impact Assessments for Trade-Related Policy Initiatives. Brussels, 2015.

[184] Lorand Bartels, *Human Rights Conditionality in the EU's International Agreements* (Oxford: OUP, 2005).

rights and fundamental freedoms, and the rule of law. Respect for democratic principles and human rights and fundamental freedoms as laid down in the Universal Declaration of Human Rights and other relevant international human rights instruments, which reflect the principle of the rule of law, underpins the internal and international policies of both Parties and constitutes an essential element of this Agreement."[185]

Scope of and approach for the analysis

This analysis mainly focuses on human and labour rights in Korea.[186] The results of the quantitative economic analysis show that the EU-Korea FTA has had a significantly larger economic impact on Korea relative to the EU, with an increase in real GDP for Korea by 0.3 percent. In contrast, the FTA increased real GDP for the EU28 only marginally (by 0.03 percent), due to the much larger size of the EU economy.[187] A larger economic impact implies more significant effects on human and labour rights, for example via changes in wages, consumption and employment.[188] Moreover, the literature review and stakeholder interviews indicated concerns regarding fundamental labour rights violations in Korea, which provided an additional rationale for considering related aspects in-depth.

The analysis is based on a review of the commitments of the EU and Korea in the EU-Korea FTA with respect to human and labour rights; a document review, including concerning the conclusions of the Civil Society Forum meetings conducted under the FTA and related documents; a review of relevant reports and data of international organisations (such as ILO, OECD etc.); a review of academic literature and news reports; the results of the economic analyses conducted for this study; the results of the open public consultation; and the results of interviews conducted with representatives of relevant organisations, including in the area of human and labour rights, and other stakeholders. In particular, the following interviewed stakeholders provided specific input on the human and labour rights situation in Korea:

- International Labour Organisation (ILO)
- Korea Human Rights Foundation
- Migrant Forum in Asia
- Reporters Without Borders
- Korean Confederation of Trade Unions (KCTU)
- International Trade Union Confederation (ITUC)
- European Commission (DG TRADE)
- Ludwig Boltzmann Institute of Human Rights
- Queen Mary University of London
- University of Warwick

[185] Framework Agreement between the European Union and its Member States, on the One Part, and the Republic of Korea, on the Other Part, EU-Korea, 28 October 1996, art. 1(1). This is enforceable by means of "appropriate measures" adopted under Art. 45 of the same agreement, which permit the suspension of obligations under the Framework Agreement. In addition, "appropriate measures" almost certainly permit the suspension of the EU-Korea FTA. This follows from Art. 15.14(2) of the FTA, which states, relevantly, that "[t]he present Agreement shall be an integral part of the overall bilateral relations as governed by the Framework Agreement. It constitutes a specific Agreement giving effect to the trade provisions within the meaning of the Framework Agreement." This relationship between the Framework Agreement and the FTA is mirrored in EU agreements with other countries.

[186] Korea was admitted to the UN in 1991 and has ratified the following international human rights treaties: the International Convention on the Elimination of All Forms of Racial Discrimination; the International Covenant on Civil and Political Rights; the Convention on the Elimination of All Forms of Discrimination against Women; the Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment; the Convention on the Rights of the Child; the Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict; the Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography; and, the Convention on the Rights of Persons with Disabilities.

[187] See section 5.5.

[188] Walker, Simon. *The Future of Human Rights Impact Assessments of Trade Agreements.* 1st ed. Antwerp: Intersentia, 2009. 60.

In line with DG TRADE's Guidelines on the Analysis of Human Rights Impacts In Impact Assessments For Trade-Related Policy Initiatives, the analysis begins with a screening process to discern which human rights were likely to have been affected by the EU-Korea FTA. The screening process was conducted on the basis of the following two criteria:

- *Direct versus indirect:* whether human rights are likely to have been directly and/or indirectly affected by the FTA, as identified through relevant FTA provisions, consultation/interview results and the literature review;
- *Major versus minor:* whether the FTA is likely to have had a major or minor effect on a specific human right, considering the relevance of the human rights issue in the assessed country (e.g. in terms of prevalence of potential problems) and the potential size of the impact of the FTA.

On the basis of this screening process, we then select a number of human and labour rights for an in-depth discussion of any impacts that may have emerged since the start of the provisional application of the FTA. For this purpose, we establish a baseline for each right, taking into account the human and labour rights situation in Korea prior to the start of the provisional application of the EU-Korea FTA. Next, we examine more recent evidence and describe developments in key indicators of these rights (e.g. the gender wage gap for the right to freedom from discrimination) following the provisional application of the FTA in 2011. Finally, we compare the pre- and post-FTA periods and consider the extent to which changes could be attributed to it (see paragraph below on limitations).

Key indicators considered in the in-depth discussion of potential impacts of the FTA are provided in the following table, which also includes the source of the data and the last year for which data was available at the time of writing this report.

Table 33: Indicators of rights selected for detailed assessment

Human right	Indicator	Source	Latest data
Freedom from Discrimination	Gender wage gap	OECD	2014
	Gender employment gap	OECD	2014
	Non-regular employees by gender	ILO	2015
Right to Peaceful Assembly and Association, and to Join Trade Unions	Trade union density	ILO	2012
	Collective bargaining coverage	ILO	2012
Right to Just and Favourable Conditions of Work, and to Rest and Leisure	Non-regular employees	ILO	2015
	Fixed-term workers employed in manufacturing (proxy for exports)	Statistics Korea	2013
	Working hours	ILO/OECD	2015
Right to Adequate Living Standard (Right to Food)	Food prices/quantities exported	Econometric analysis	2016
	Food price inflation	UN FAO	2015

Source: Own compilation, based on sources listed above.

It is important to note that the human and labour rights situation in Korea, as elsewhere, is complex and influenced by many interrelated factors including—but not at all limited to—trade. The domestic political, economic and social situations in a country typically play a dominant role. It is therefore challenging to disentangle the specific impact of the FTA on the development of human and labour rights, and particularly to determine the causal effects of implementing the FTA, especially when dealing with broad indicators such as the gender wage gap. As in the econometric analysis, for determining a causal relationship the counterfactual situation would need to be known, i.e. the trajectory that the indicator of a particular human right would have taken in the absence of the FTA. As this counterfactual is unobservable, we have used the same approach taken before and

considered the trajectory of the relevant indicators in the years before and after the start of the provisional application of the FTA and also included a set of control countries where possible to contextualise the trends seen in Korea. We have complemented this analysis of human and labour rights indicators with the results of the economic analyses and with qualitative evidence from the review of academic literature, reports of international organisations, the open public consultation and from stakeholder interviews in order to provide a more nuanced assessment of the human and labour rights impact of the FTA.

8.2. Identification of key human and labour rights for assessment

As described before, the purpose of this screening is to identify human and labour rights for in-depth discussion of potential impacts. The table below presents potentially affected human rights drawn from the Universal Declaration of Human Rights (UDHR) and supplemented with references to other key international human and labour rights instruments, notably the International Covenant on Civil and Political Rights (ICCPR), the International Covenant on Economic, Social and Civil Rights (ICESCR) and the fundamental ILO conventions. Evidence regarding the two key screening criteria of direct versus indirect and major versus minor effects is also presented and assessed.

Table 34: Screening of human rights that are potentially affected by the EU-Korea FTA

Human right	References in international law	Intended direct effects (references in FTA)	Potential indirect effects	Potential scale of impacts		Selected for in-depth analysis
				Evidence	Assessment	
Freedom from Discrimination	▪ ILO Conventions 100 & 111; UDHR, Art. 2 ▪ ICCPR, Art. 26	▪ The Parties' commitments under Articles 13.3 and 13.4 of the FTA to 1) Recognise full and productive employment and decent work for all, and 2) respect, promote and realise the principles concerning fundamental labour rights (namely: a) freedom of association and the effective recognition of the right to collective bargaining; b) the elimination of all forms of forced or compulsory labour; c) the effective abolition of child labour; and d) the elimination of discrimination in respect of employment and occupation) could improve the overall labour rights situation.	Increased competitive pressure could lead to companies further exploiting the gender wage gap/relying more on women on non-regular contracts in order to cut costs. [a)]	▪ Korea has the highest gender wage gap out of all OECD countries (36.7 percent as of 2014).[b)] ▪ "According to 2009 government-provided statistics, the average monthly wage of female permanent workers was 33.5 percent lower than men's [...]Female non-regular workers earn 70.7 percent of male non-regular workers and 48.6 percent of male regular workers." [c)]	Major	Yes
Freedom from Slavery and forced labour	▪ ILO Conventions 29 & 105; UDHR Art. 4 ▪ ICCPR Art. 8	▪ As above	Increased competitive pressure could lead to companies exploiting vulnerable workers in order to cut costs. [a), l)]	▪ Since 2002, "the Government of the Republic of Korea fully meets the minimum standards for the elimination of trafficking." [d)] ▪ "The [Korean] Constitution provides that no person shall be subjected to involuntary labour. The Labour Standards Act prohibits employers from forcing	Minor	No

Human right	References in international law	Intended direct effects (references in FTA)	Potential indirect effects	Potential scale of impacts		Selected for in-depth analysis
				Evidence	Assessment	
				their employees to work against their will through the use of violence, intimidation, confinement, or by other means. Employers found to abuse workers are subject to criminal charges." [c)]		
Right of Peaceful Assembly and Association, Right to Join Trade Unions	▪ ILO Conventions 87 & 98; UDHR Art. 20 & 23 ▪ ICCPR Art. 21 & 22	▪ As above	Increased competitive pressure could lead to companies cracking down on unions in order to cut costs. [a)]	▪ "[Korean] law provides workers with the right to organise. However there are many restrictions and limitations to that right." [c)] ▪ Restrictions on freedom of association and collective bargaining were also reported by several interviewees.	Major	Yes
Right to Just and Favourable Conditions of Work	▪ UDHR Art. 23 ▪ ICESCR Art. 7	▪ As above	Increased competitive pressure could lead to companies using more non-regular workers. On the other hand, trade liberalisation access could boost the number of jobs. [a)]	▪ "Contract workers and other non-regular workers account for more than 50 percent of the workforce. Non-regular workers in this category face particularly great obstacles to union membership." [c)] ▪ "Precarious work in South Korea has dramatically increased in the past decade, including both	Major	Yes

Human right	References in international law	Intended direct effects (references in FTA)	Potential indirect effects	Potential scale of impacts		Selected for in-depth analysis
				Evidence	Assessment	
				non-regular workers and precarious self-employment in the formal sector." [e)]		
Right to Rest and Leisure	▪ UDHR Art. 24 ▪ ICESCR Art. 7	-	Increased competitive pressure could lead to an increase in (potentially uncompensated) over-hours as employers require employees to work more. [a)]	▪ Korea has the highest average annual hours worked per worker out of all OECD countries (2113 hours per year as of 2015). [b)]	Major	Yes
Right to Adequate Living Standard *(right to food)*	▪ UDHR Art. 25 ▪ ICESCR Art. 11	▪ The Parties' commitments under Chapter 5 of the FTA on SPS measures (particularly Article 5.8 on measures linked to animal and plant health) could improve food safety.	Trade liberalisation could increase availability (in terms of quantity, choice, and price) of food. [a)] Increased competitive pressure could however lead domestic producers to increase their prices, or to shift production towards export.	▪ Results of the econometric analysis show significant increases in EU-Korea trade in crop/animal production and food/beverages associated with the FTA ▪ Korea depends heavily on food imports to support consumer demand for variety, low prices, and convenience (arable land is scarce and crop production focuses mostly on rice.)[g)]	Major	Yes
Right to Adequate Living Standard *(right to health)*	▪ UDHR Art. 25 ▪ ICESCR Art. 12	▪ Commitments in Annex 2-D on pharmaceutical products and medical devices (especially on pricing/reimbursement) could facilitate higher EU exports of pharmaceuticals/medical devices to Korea, which could improve access,	-	▪ Results of the econometric analysis show no statistically significant effects of the FTA on EU exports of basic pharmaceutical products to Korea.	Minor	No

Human right	References in international law	Intended direct effects (references in FTA)	Potential indirect effects	Potential scale of impacts		Selected for in-depth analysis
				Evidence	Assessment	
		but could also affect pricing of pharmaceuticals.		▪ "The average price of drugs launched in South Korea since 2007 is 44 percent of the OECD average, and prices for most drugs in the country are the lowest in the developed world, according to a recent study by Seoul's Sungkyunkwan University." [h)]		
Right to Education	▪ UDHR Art. 26 ▪ ICESCR Art. 13	▪ Chapter 7 of the FTA on trade in services opens the Korean market to EU services providers, including providers of education	-	▪ Results of the econometric analysis show no statistically significant effects of the FTA on EU exports of education to Korea.	Minor	No

Sources: a) Walker, 2009. b) OECD Stat. c) ITUC, Internationally Recognised Core Labour Standards in the Republic Of Korea - Report for the WTO General Council Review of the Trade Policies of the Republic of Korea. Geneva, 2012. d) U.S. Department of State. Trafficking In Persons Report 2016. e) Shin, Kwang-Yeong. "Economic Crisis, Neoliberal Reforms, and the Rise of Precarious Work in South Korea". American Behavioral Scientist 57.3 (2012): 335-353. f) European Economic and Social Committee. g) United States Department of Agriculture. h) Mundy, Simon. "Drugmakers Warn On South Korea Pricing Policy". Financial Times 2014. i) Personal Information Protection Act of 2011. j) World Intellectual Property Organization. Geographical Indications - An Introduction. Geneva, 2013. k) WTO. l) One particular group of vulnerable workers are migrants. However, in the subsequent detailed analysis their situation is considered in the context of the Right to Just and Favourable Conditions of Work. Note: The table does not include rights where desk research and interviews did not indicate that they were likely to have been affected by the EU-Korea FTA.

Based on the results of the screening presented in the previous table, we focus the in-depth discussion on the following human and labour rights, some of which (e.g. the right to peaceful assembly and association) also constitute sensitive issues in Korea:[189]

- Freedom from Discrimination
- Right to Peaceful Assembly and Association, and the Right to Join Trade Unions[190]
- Right to Just and Favourable Conditions of Work and the Right to Rest and Leisure[191]
- Right to Adequate Living Standard (Right to Food)

8.3. Detailed assessment

8.3.1. Impact of the EU-Korea FTA on the right to freedom from discrimination

References to the right to freedom from discrimination in international law and the EU-Korea FTA

Chapter 13 of the EU-Korea FTA contains commitments regarding multilateral labour standards and agreements. Specifically, Article 13.4.3 commits both Parties to respecting, promoting, and realising the principles concerning fundamental labour rights, including "the elimination of discrimination in respect of employment and occupation". Article 13.4.3 also provides that "The Parties reaffirm the commitment to effectively implementing the ILO Conventions that Korea and the Member States of the European Union have ratified respectively".

Two of the eight fundamental ILO Conventions focus on the right to freedom from discrimination: the Equal Remuneration Convention, 1951 (No. 100) and the Discrimination (Employment and Occupation) Convention, 1958 (No. 111). Korea ratified the former in 1997 and the latter in 1998. As such, Article 13.4.3 commits Korea to ensuring the effective application of these Conventions, and Korea regularly reports to the ILO on their implementation.

Furthermore, Article 2 of the UDHR states that "Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status. Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty." Freedom from discrimination is also referenced in Article 23, paragraph 2 of the UDHR, which states that "Everyone, without any discrimination, has the right to equal pay for equal work". The right to freedom from discrimination is also enshrined in Article 26 of the International Covenant on Civil and Political Rights

[189] According to the above quoted DG TRADE guidance, more attention should be paid to high profile or politically sensitive human rights issues in the country in question.

[190] Following the grouping of rights in the CFR, ECHR, International Covenant on Civil and Political Rights (ICCR) and the Fundamental ILO Conventions, the right to join trade unions will be considered along with the right to freedom of peaceful assembly and association for the detailed assessment.

[191] As many key human rights instruments include the right to rest and leisure with the right to desirable work, these rights have been grouped together for the detailed assessment. We also consider under this heading the issue of the rights of migrant workers, which have been indicated by interviewees as an issue of concern.

(ICCPR).[192] Korea has also ratified the UN Convention on All Forms of Discrimination against Women (CEDAW), with some reservations.[193]

Freedom from discrimination in Korea prior to the EU-Korea FTA

Freedom from discrimination is enshrined in the Constitution of the Republic of Korea. Article 11(1) lists the forms of discrimination which are specifically prohibited under the constitution, which include any discrimination "in political, economic, social or cultural life on account of sex, religion or social status". Freedom from discrimination in the context of the labour market in particular is addressed in Article 32, which states that "standards of working conditions shall be determined by Act in such a way as to guarantee human dignity" and that special protection shall be accorded to working women, who "shall not be subjected to unjust discrimination in terms of employment, wages and working conditions".[194] Additional references to freedom from discrimination can be found in Articles 10, 15, and 34-36 of the Korean constitution.

Korea passed the Act on Equal Employment and Support for Work-Family Reconciliation in 1987, which prohibits discrimination against women in hiring, promotion, wages, assignment, retirement and dismissal, and stipulates fines for companies that engage in such discrimination. "Discrimination" under this Act refers to situations in which "an employer applies different hiring and working conditions to workers, or takes any other disadvantageous measures against them without any justifiable reasons on account of sex, marriage, status within family, pregnancy, or child-birth, etc."[195] The burden of proof in settling disputes related to this Act is placed on the employer;[196] the Act also provides that employers found guilty of discriminating on grounds of gender in retirement or dismissal will be punished by imprisonment of maximum five years or fined a maximum of KRW 30 million (approximately EUR 24 000).[197]

However, this Act has a key shortcoming, namely that the principle of non-discrimination is applied at the enterprise level (Article 8 of the Act states that "An employer shall provide equal pay for work of equal value in the same business"). In contrast, ILO Convention 100 applies to discrimination at the industry/occupational level. In this light, as emphasised by the ILO's reports on the application of Convention 100, the law as it stands is inadequately equipped to address gender segregation at a horizontal

[192] Article 26 of the ICCPR reads: "*All persons are equal before the law and are entitled without any discrimination to the equal protection of the law. In this respect, the law shall prohibit any discrimination and guarantee to all persons equal and effective protection against discrimination on any ground such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.*"

[193] Specifically, the Government of Korea does not consider itself bound by the following three provisions:

Article 2(f)*: "States Parties condemn discrimination against women in all its forms, agree to pursue by all appropriate means and without delay a policy of eliminating discrimination against women and, to this end, undertake: … (f) To take all appropriate measures, including legislation, to modify or abolish existing laws, regulations, customs and practices which constitute discrimination against women."*

Article 9, Paragraph 2: *"States Parties shall grant women equal rights with men with respect to the nationality of their children."*

Article 29, Paragraph 1: *"Any dispute between two or more States Parties concerning the interpretation or application of the present Convention which is not settled by negotiation shall, at the request of one of them, be submitted to arbitration. If within six months from the date of the request for arbitration the parties are unable to agree on the organization of the arbitration, any one of those parties may refer the dispute to the International Court of Justice by request in conformity with the Statute of the Court."*

[194] Article 32(3) and 32(4), respectively. The full text of the Constitution of the Republic of Korea can be accessed in English at http://korea.assembly.go.kr/res/low_01_read.jsp?boardid=1000000035.

[195] Act on Equal Employment and Support for Work-Family Reconciliation (Act No. 3989, 1987) ("Equal Employment Act"), art. 2 (R.O. Korea).

[196] Equal Employment Act, art. 30.

[197] Equal Employment Act, art. 37.

level.[198,199] Moreover, as described in the next section, Korea has for many years had the highest gender wage gap and one of the highest gender employment gaps among OECD countries.

Korea has also introduced legislation prior to the FTA dealing with forms of discrimination other than gender. Notable legislation in this regard includes:

- The Act on Prohibition of Age Discrimination in Employment and the Promotion of Employment of the Elderly (1991), which aimed to prevent unjustified discrimination in hiring practices on the basis of age;
- The Act on Protection (etc.) of Fixed-Term and Part-Time Employees (2006), intended to address discrimination against fixed-term and part-time workers and to improve their working conditions;
- The Act on the Promotion of Employment and Vocational Rehabilitation for Disabled Persons (enacted 1990, amended in 2000 and 2007); and
- The Act on the Employment (etc.) of Foreign Workers (2003), which regulates the hiring and use of foreign workers.

Freedom from discrimination in Korea after the start of the provisional application of the EU-Korea FTA

In September 2015, a joint study between the EU and Korea was launched under the EU Partnership Instrument regarding the ILO Fundamental Convention 111. The study, which was announced at the fourth meeting of the Committee on Trade and Sustainable Development and intended to support the implementation of Chapter 13 of the EU-Korea FTA, compared Korean practices and the practices of EU Member States and made recommendations with respect to improving compliance with this Convention.[200]

The final report of the joint study on the ILO Fundamental Convention 111, released in March 2017, concludes that while both Parties have made serious efforts to reduce discrimination in the workplace in recent years, all need to continue to innovate methods to educate and to combat both classic discrimination and core discrimination as society and the workplace change. In particular, Korea was found to have enacted quite progressive legislation in the area of age-related discrimination, and was not assessed to have any serious complaints regarding discrimination on the basis of religion. However, the report also noted that migrant workers and women still face significant challenges, drawing particular attention to the gender wage gap in Korea, which is the highest among OECD countries.[201]

With regard to gender-based discrimination in the workplace, key indicators used by the OECD include the gender wage gap (defined as the difference between the median earnings of men and women relative to the median earnings of men) and the gender

[198] ILO, "Application of International Labour Standards 2014: Report III (Part 1A)", Report of the Committee of Experts on the Application of Conventions and Recommendations, 2014, 343-4; and "Report of the Committee of Experts on the Application of Conventions and Recommendations. Report III (Part 1A)", 2012, 529.

[199] ITUC (2012).

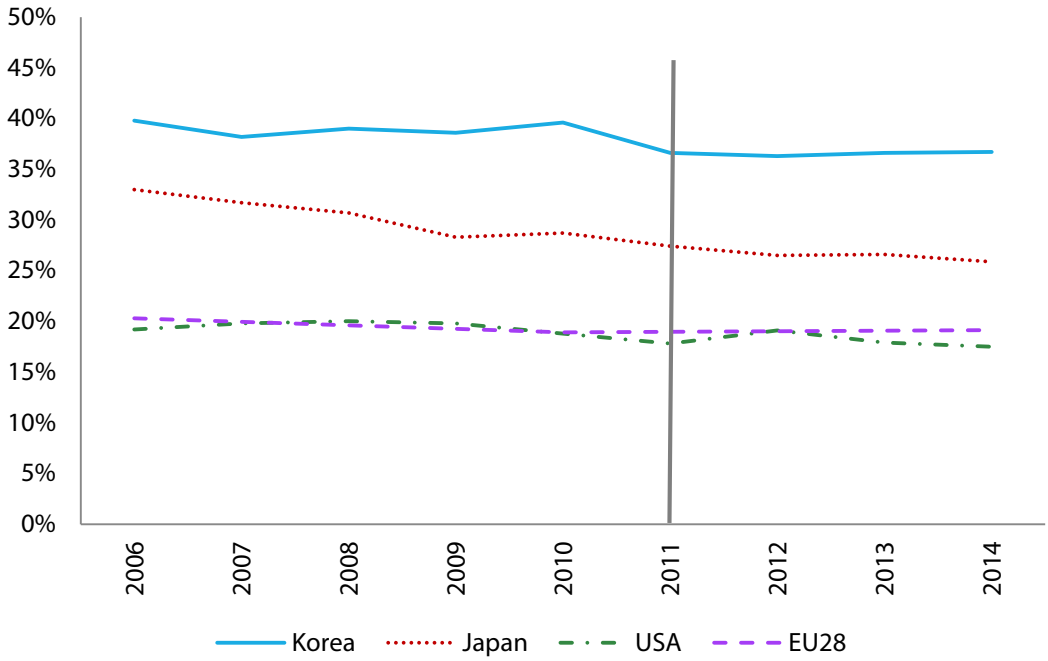
[200] http://korea-euilo111.com/

[201] Final report of the Comparative study of the implementation of ILO Convention 111 in the Republic of Korea and the Member States of the European Union, p. 207-8.

employment gap (defined as the difference between male and female employment rates).[202]

The figure below presents data concerning the gender wage gap in Korea from 2006-2014 against comparative data from Japan, the United States and the EU28 (which we again use as control group of countries).

Figure 98: Gender wage gap in Korea, Japan, US and EU28, 2006-2014

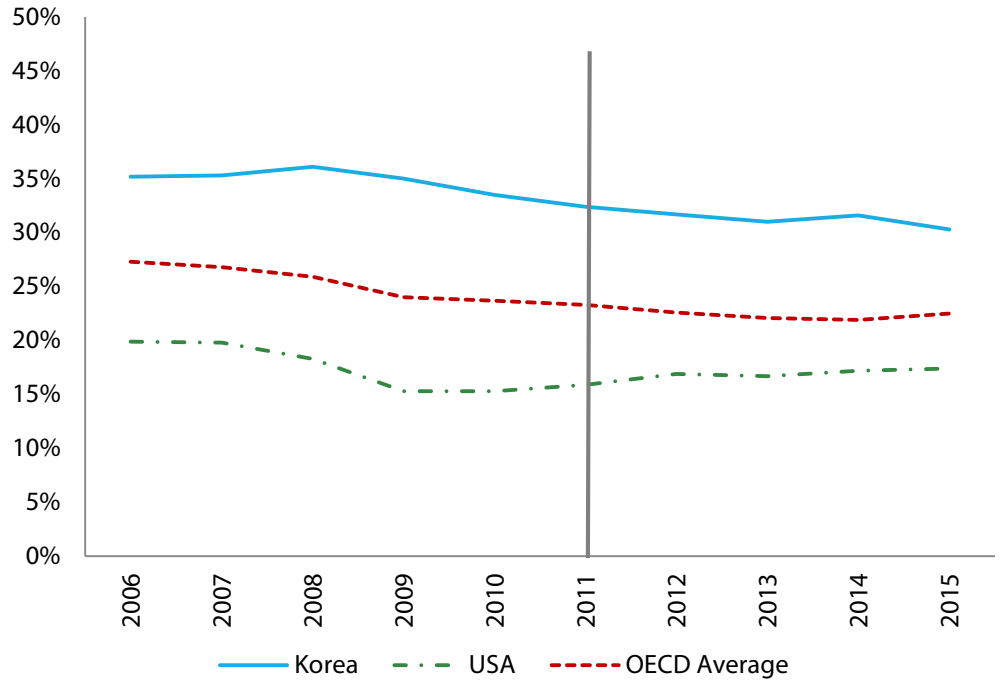


Source: Own compilation, based on OECD data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

There has been very little movement in the gender wage gap in Korea since the start of the provisional application of the EU-Korea FTA in 2011, indicating that the FTA had no observable effect in this respect. The gender wage gap in Korea stood at 36.6 percent in 2011, and increased very slightly to 36.7 percent by 2014; this can be contrasted with the situation in neighbouring Japan, where the gender wage gap decreased slightly over the same period from 24.7 percent to 25.9 percent, or the US, where the gender wage gap also slightly decreased over this period (from 17.8 percent to 17.5 percent). The following figure shows the development of the gender employment gap in Korea from 2006 to 2015 with comparative data from the US as well as the OECD average (data from Japan and from the EU28 is not available for this indicator from the OECD).

[202] https://www.oecd.org/gender/data/. Note that the OECD only reports on the "unadjusted" wage gap, which does not control for working hours, sector, seniority or occupation, i.e. wage-determining factors that are often heavily skewed by gender. This "unadjusted" wage gap is also used by Eurostat and DG Justice as the standard indicator of the gender wage gap, as it provides an overall picture of gender inequality in the labour market, and because there is no consensus on which adjustment method is most appropriate (as many of the individual factors commonly adjusted for, such as working hours or industry, are themselves the result of gendered practices). See, for example: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Gender_pay_gap_(GPG); http://ec.europa.eu/justice/gender-equality/files/gender_pay_gap/140319_gpg_en.pdf; http://www.research.mbs.ac.uk/ewerc/Portals/0/docs/gendersocial/paysynthesis.pdf

Figure 99: Gender employment gap in Korea, US and OECD, 2006-2015



Source: Own compilation, based on OECD employment data (full-time equivalent employment rate). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Similar to the gender wage gap, the gender employment gap decreased slightly in Korea from 32.4 percentage points in 2011 to 30.3 percentage points in 2015, a change broadly in line with the OECD average, where the gender employment gap decreased over the same period from 23.3 to 22.5 percentage points. In the USA, in contrast, the gender employment gap actually increased over this period, from 15.9 to 17.4 percentage points. Notable effects of the EU-Korea FTA in terms of the gender employment gap in Korea can therefore not be discerned. In the EU28, in comparison, Eurostat's Labour Force Survey, which uses a different methodology to determine the employment rate, found that the gender employment gap had decreased slightly from 11.6 percentage points to 10.4 percentage points between 2011 and 2015.[203]

Another area of concern discussed in the final report of the study on the implementation of ILO Convention 111, and also addressed in annual ILO reports on the application of International Labour Standards,[204] relates to the discrimination between regular and non-regular workers, as non-regular workers disproportionately suffer discriminatory treatment regarding wages, benefits and working conditions. Although non-regular workers are protected from these forms of discriminatory treatment under the Act on the Protection (etc.) of Fixed-Term and Part-Time Workers, enacted in 2006 and updated in 2014 to include the concept of punitive damages, in practice most non-regular workers do not report discretionary treatment as they risk termination of their contracts or having their applications for correction rejected due to the lack of a suitable "comparison group" which is necessary to prove discrimination. The number of applications for correction of discriminatory treatment on this basis therefore fell sharply after 2008 and has remained

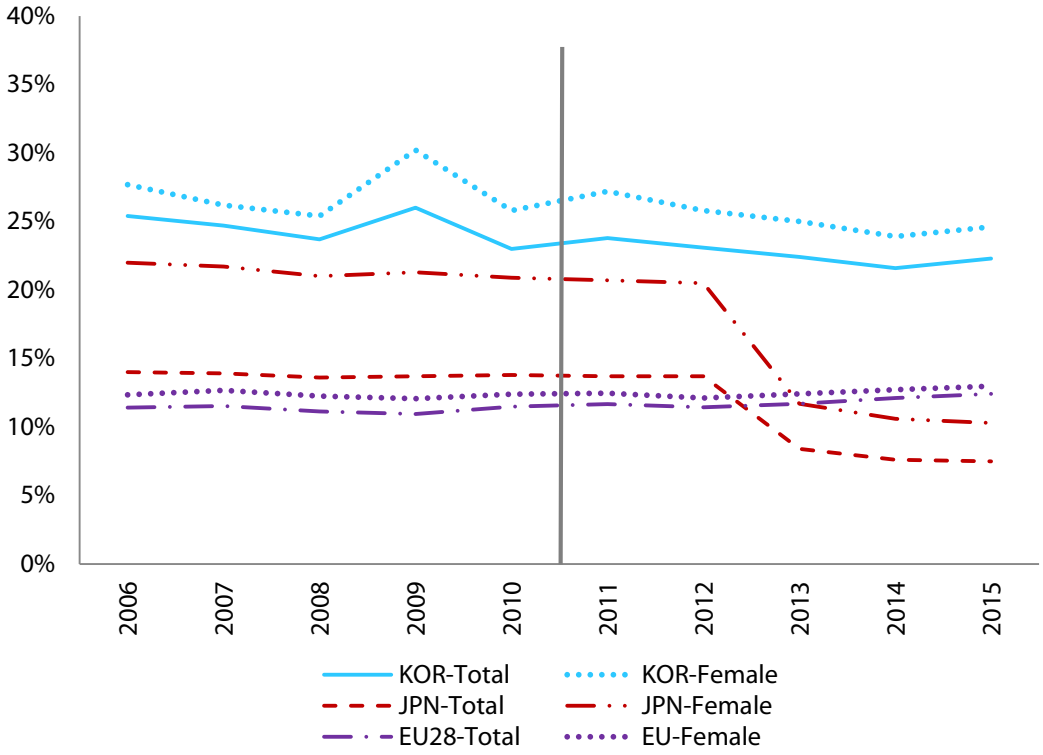
[203] Eurostat, Employment rates by sex, age and citizenship [lfsa_ergan]. Accessed 19 September 2017. Note that while the OECD reports *full-time equivalent* employment rates, Eurostat defines the employment rate as the percentage of employed persons in relation to the comparable total population, where an employed person is defined as a person who worked even one hour during the reference week for pay, profit or family gain. The figures from the OECD and Eurostat are therefore not directly comparable.

[204] ILO reports on the Application of International Labour Standards, 2012 to 2016.

low, comprising fewer than 100 cases per year.[205] For more detail on non-regular workers, see the section below on the right to just and favourable conditions of work.

Women in Korea are overrepresented among the population of non-regular workers, a point of concern that has been noted in reports by both the ILO and UN Human Rights Committee.[206,207] Recent statistics provided by the Korean government indicated that approximately 70 percent of all individuals on non-regular contracts are women.[208] The gender breakdown of the share of non-regular employees in Korea is presented in the figure below, with Japan and the EU28 included for comparison purposes (the US does not provide these figures to the ILO).

Figure 100: Share of non-regular employees among women and among total employed in Korea, Japan and the EU28, 2006-2015



Source: Own compilation, based on ILO data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Since 2011, the share of non-regular employment among women has remained fairly stable in Korea and is consistently higher than the share of non-regular employment among all employees. From 2011 to 2015, the share of non-regular employment among women decreased in Korea by 2.6 percentage points from 2011 to 2015 (from 27.2 percent to 24.6 percent), compared for a decrease of 1.5 percentage points for all workers. This can be contrasted with the situation in Japan, where the overall share of non-regular employment, as well as the gender gap in non-regular employment, decreased substantially over the same period. In the EU28, although women are more likely than the average worker to be in non-regular employment, this gap is much

[205] Final report of the Comparative study of the implementation of ILO Convention 111 in the Republic of Korea and the Member States of the European Union, p. 228-32.

[206] See ILO reports on the Application of International Labour Standards from 2012 to 2016.

[207] UN Human Rights Committee, "Concluding observations on the fourth periodic report of the Republic of Korea", 3 December 2015.

[208] ITUC (2012), 10.

smaller and has remained generally stable since 2006. The high gender wage gap in Korea relative to other OECD countries was noted with concern by two of the interviewees, who emphasised the seriousness of the problem. One interviewee stated that their organisation had brought up the gender wage gap with the Korean government as part of discussions within the framework of the FTA, but was not able to assess offhand whether progress had been made in this area that could be attributable to the FTA. Another interviewee commented in the context of the gender wage gap that while the Fundamental ILO Conventions 100 and 111 on non-discrimination had been ratified by Korea, these conventions did not appear to have been fully implemented.[209]

A key issue with respect to the freedom from discrimination in Korea relates to the working conditions and treatment of migrant workers, which also ties in to the rights to peaceful assembly and association and to join trade unions, as well as the right to just and favourable conditions of work. The particular situation of migrant workers in Korea is therefore a cross-cutting concern, and is discussed in detail in the box below.

Human and labour rights situation of migrant workers in Korea

Since the late 1980s, Korea has increasingly become a destination for immigration from China and other south or south-east Asian countries.[210] The situation of many of these migrant workers raises a number of serious human rights concerns which have been consistently mentioned in annual ILO reports on the implementation of its labour conventions since before the start of the provisional application of the FTA.[211]

The Korean government is not party to the UN International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families.[212] Although workers who arrive legally under the Employment Permit System (EPS) are in theory subject to the same protections as Koreans, significant instances of abuse and discrimination, including poor working conditions (such as long hours and lower or withheld wages), are reported to occur in practice,[213] and enforcement action on the part of the authorities is reported to result in few penalties for the offending employers.[214] Female migrant workers are particularly vulnerable to sexual harassment and wage discrimination.[215] As one interviewee pointed out, there are two different forms of the EPS that apply respectively to non-Korean foreigners and to ethnic Koreans holding foreign citizenship, with the latter group receiving better training opportunities and more flexible visa conditions in the labour market.[216]

[209] It should be noted that Korean implementation of ILO Convention 111 on non-discrimination was highlighted at the 2013, 2014 and 2015 International Labour Conferences, in which the Committee of Experts on the Application of Conventions and Recommendations urged the Korean government, among other things, to "review the effectiveness of the measures taken regarding non-regular workers to ensure that they do not in practice result in discrimination on the basis of sex and employment status". (See e.g. http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_343022.pdf)

[210] The Migration Research and Training Centre of the International Organisation for Migration (IOM MRTC). *Migration Profile of the Republic of Korea.* 2012.

[211] See ILO reports on the Application of International Labour Standards by the Committee of Experts on the Application of Conventions and Recommendations from 2007 to 2016, as well as the extended discussion of the Korean case related to ILO Convention 111 in the Extracts from the Record of Proceedings from the ILO Conference Committee on the Application of Standards, 2015.

[212] UN General Assembly, Human Rights Council. Report of the Special Rapporteur on the rights to freedom of peaceful assembly and of association on his mission to the Republic of Korea. 2016.

[213] Ludwig Boltzmann Institute. Civil and political rights in the Republic of Korea and in the Democratic People's Republic of Korea: An overview of the main human rights challenges on the Korean Peninsula. 2014.

[214] For example, in its 2013 Report on the Application of International Labour Standards, the ILO pointed out that the government's own statistics found 7,994 violations in 2,241 workplaces employing foreign workers that were inspected in 2011, of which 1 768 concerned wages and other working conditions. Of these cases, only 74 resulted in fines, and only six cases resulted in prosecutions (497).

[215] ITUC. Internationally recognised core labour standards in Republic of Korea. Report for the WTO General Council review of the trade policies of Republic of Korea. 2012.

[216] IOM MRTC. *Migration Profile of the Republic of Korea.* 2012.

Despite a revision to the EPS in 2009 in order to allow switching between jobs on the basis of unfair treatment or withholding of wages,[217] migrant workers remain restricted in the number of times that they can change employers without losing their visa status, a restriction that has been criticised sharply by both the ILO and the UN Human Rights Committee[218,219] Additionally, a migrant worker desiring to change workplaces requires their employer to notify the government of their change in status, a request which some employers have reportedly refused to carry out.[220] Many migrant workers therefore feel pressured into remaining with unfair or abusive employers for fear of losing their legal status.[221] Since 2014, under the EPS, migrant workers who lose their jobs may only receive their severance pay after they have left Korea and returned to their home country, a measure that the Korean Constitutional Court ruled to be constitutional in 2016.[222]

The restrictions of the permit system drive many migrants into an illegal status, making them even more vulnerable to abuse and discrimination. Irregular migrants face significant difficulties in enforcing their rights, and are unable to join trade unions. There have been cases reported of employers withholding pay or travel documents, possibly indicating forced labour.[223] Irregular migrant workers also face the possibility of deportation if caught during a government inspection. Starting in September 2011, the government began cracking down on irregular migrant workers, in some cases through reportedly violent workplace raids that have been condemned by UN experts for the use of excessive force and arbitrary arrest of migrant workers.[224]

A particular challenge in combating unfair practices by employers, noted also by ILO reports and multiple interviewees for this study, is the denial of the right to freedom of association for migrant workers.[225] Migrant workers who have joined unions have been threatened with, or have been subject to, deportation. The Migrants' Trade Union (MTU) was founded in 2005 and its existence has since been subject to numerous legal challenges by the government of Korea, including the arrest and deportation of several of its leaders.[226] A Supreme Court decision in August 2015 eventually forced the government to recognise the MTU.[227] Although the recognition of the MTU was hailed by the interviewed stakeholders as a crucial step going forward, they emphasised that migrant workers, particularly irregular migrant workers, are still highly vulnerable to poor working conditions and continue to face significant challenges enforcing their rights. The interviewees did not perceive that the FTA had an impact on the situation of migrant rights in particular.

Conclusions

Key indicators of gender-related discrimination—namely, the gender wage gap, the gender employment gap, and the share of non-regular employees that are women—have all remained relatively unchanged in Korea since the start of the provisional application of the EU-Korea FTA in 2011. Furthermore, no significant changes (positive or negative) with respect to gender or other forms of discrimination in Korea were discerned through the literature review or stakeholder interviews. Regarding the specific situation of migrant workers, the interviewees did not consider that the FTA had a significant impact. In other words, there is no evidence that the EU-Korea FTA has either improved on or

[217] See the Act on Foreign Workers' Employment, Etc., as amended 9 October 2009.

[218] Additionally, the ILO has consistently expressed its scepticism regarding the effectiveness of the "unfair treatment" exception for changing jobs, noting that the government has not provided a satisfactory answer regarding how this criterion is assessed. See, for example, the ILO reports on the Application of International Labour Standards from 2013, 2014, and 2015.

[219] UN Human Rights Committee, "Concluding observations on the fourth periodic report of the Republic of Korea", 2015.

[220] ITUC. 2012.

[221] Ludwig Boltzmann Institute. 2014.

[222] Se-jeong, Kim. "Providing severance pay to foreign workers after departure constitutional." *The Korea Times.* 12 April 2016.

[223] ITUC. 2012.

[224] Ludwig Boltzmann Institute. 2014.

[225] For example, see the case discussion of the application of ILO Convention 111 in Korea in ILO, "Conference Committee on the Application of Standards, Extracts from the Record of Proceedings", 2015, Part II/98.

[226] ITUC. 2012.

[227] ITUC. Update on Core Legal Standards in South Korea for the EU Domestic Advisory Group of the EU-Korea FTA. 5 October 2016.

worsened pre-existing trends related to the right to freedom from discrimination, i.e. the effect of the FTA appears to be neutral relative to the existing trends and controls.

8.3.2. Impact of the EU-Korea FTA on the right to peaceful assembly and association, and to join trade unions

References to the right to peaceful assembly and association and the right to join trade unions in international law and the EU-Korea FTA

As discussed previously, Chapter 13 of the EU-Korea FTA sets out commitments regarding multilateral labour standards and agreements. Article 13.4.3(a) commits both Parties to respecting, promoting, and realising the principles concerning fundamental labour rights, including "freedom of association and the effective recognition of the right to collective bargaining". Article 13.4.3 also provides that "The Parties reaffirm the commitment to effectively implementing the ILO Conventions that Korea and the Member States of the European Union have ratified respectively. The Parties will make continued and sustained efforts towards ratifying the fundamental ILO Conventions as well as the other Conventions that are classified as 'up-to-date' by the ILO."

Korea has not yet ratified the two fundamental ILO Conventions dealing with freedom of association, the right to organise, and collective bargaining,[228] despite the commitment in Article 13.4.3 to "make continued and sustained efforts towards [ratification]".[229]

Article 20 of the UDHR states that "(1) Everyone has the right to freedom of peaceful assembly and association. (2) No one may be compelled to belong to an association." Additional references to the right to freedom of peaceful assembly and association are included in Articles 21 (peaceful assembly) and 22 (association) of the ICCPR.[230] Although Korea has ratified the ICCPR, it has a reservation against Article 22 on the freedom of association.[231]

Right to peaceful assembly and association and the right to join trade unions in Korea prior to the EU-Korea FTA

The right to join unions is enshrined in Article 33 of the Constitution of the Republic of Korea, which states that "workers shall have the right to independent association,

[228] The Freedom of Association and Protection of the Right to Organise Convention, 1948 (No.87) and the Right to Organise and Collective Bargaining Convention, 1949 (No.98).

[229] Note that as a result of the non-ratification of ILO Conventions 87 and 98, the Korean government is not obliged to report on their application to the ILO, and thus the status of these rights is not subject to regular assessment and reporting by the ILO Committee of Experts on the Application of Conventions and Recommendations.

[230] Articles 21 and 22 of the ICCPR read: "Article 21. The right of peaceful assembly shall be recognized. No restrictions may be placed on the exercise of this right other than those imposed in conformity with the law and which are necessary in a democratic society in the interests of national security or public safety, public order (ordre public), the protection of public health or morals or the protection of the rights and freedoms of others. Article 22. 1. Everyone shall have the right to freedom of association with others, including the right to form and join trade unions for the protection of his interests. 2. No restrictions may be placed on the exercise of this right other than those which are prescribed by law and which are necessary in a democratic society in the interests of national security or public safety, public order (ordre public), the protection of public health or morals or the protection of the rights and freedoms of others. This Article shall not prevent the imposition of lawful restrictions on members of the armed forces and of the police in their exercise of this right. 3. Nothing in this Article shall authorize States Parties to the International Labour Organisation Convention of 1948 concerning Freedom of Association and Protection of the Right to Organize to take legislative measures which would prejudice, or to apply the law in such a manner as to prejudice, the guarantees provided for in that Convention."

[231] Reservation: "The Government of the Republic of Korea [declares] that the provisions of [...], article 22 [...] of the Covenant shall be so applied as to be in conformity with the provisions of the local laws including the Constitution of the Republic of Korea." Source: Office of the United Nations High Commissioner for Human Rights, 2017.

collective bargaining, and collective action." However, Article 33 explicitly states that these rights are limited in the case of public officials and workers employed by important defence industries.[232]

The Trade Union and Labour Relations Adjustment Act (TULRAA) was enacted in Korea in 1997. This legislation gave workers the right to establish and become members of trade unions, which must be certified by the Korean Ministry of Labour. However, the TULRAA also includes provisions that weaken labour rights. For example, it bans wage payments to trade union officials, prohibits unemployed workers from retaining union membership, and penalises employers that unilaterally engage in negotiations for trade union recognition.[233] In light of these shortcomings, the OECD began a special monitoring process in 1997 in attempt to motivate the Korean government to update its labour laws to better reflect international standards. While some progress was achieved under this process (e.g. the 1999 legalisation of the Korean Confederation of Trade Unions, KCTU), the monitoring ended in 2007. The OECD listed a number of matters as still outstanding, including the high numbers of arrested and imprisoned union leaders and members, the alignment of the legislation on "obstruction of business" with matters related to freedom of association, and the previously mentioned shortcomings associated with the TULRAA.[234] It was in this climate that the start of the provisional application of the EU-Korea FTA began in 2011.

Right to peaceful assembly and association and the right to join trade unions in Korea after the start of the provisional application of the EU-Korea FTA

Changes in the right to freedom of assembly and association can be discerned through examining key industrial relations indicators. One indicator consists of trade union density (the proportion of the eligible workforce that are union members), which measures the extent of unionisation. A second indicator is collective bargaining coverage, which measures the number of employed workers whose pay and/or employment conditions are determined by one or more collective bargaining agreements as a proportion of all those who are eligible to conclude a collective bargaining agreement.[235] The figures below present the development of these indicators in Korea with comparative figures from Japan, the US and the EU28 between 2000 and 2012 (data was unavailable for later years).

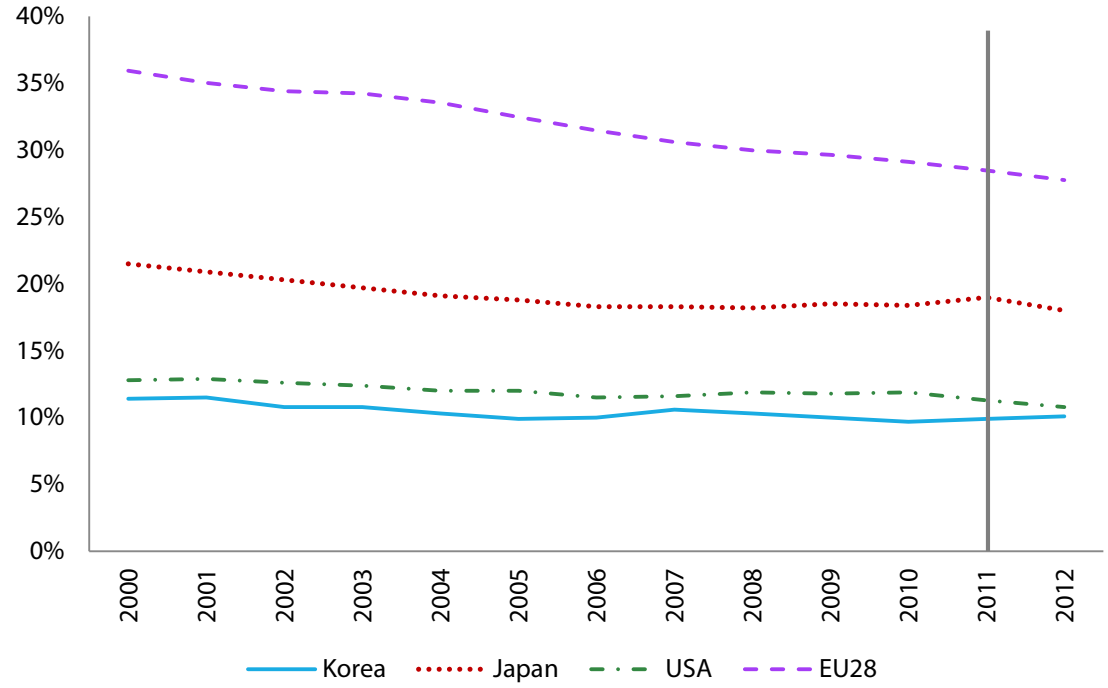
[232] Article 33 of the Korean constitution reads: "(1) To enhance working conditions, workers shall have the right to independent association, collective bargaining, and collective action. (2) Only those public officials who are designated by Act, shall have the right to association, collective bargaining, and collective action. (3) The right to collective action of workers employed by important defense industries may be either restricted or denied under the conditions as prescribed by Act."

[233] ITUC. "Survey of violations of Trade Union Rights – Korea, Republic of." 2011. Available at http://survey.ituc-csi.org/Korea-44-Republic-of.html?lang=en#tabs-2

[234] Trade Union Advisory Committee to the OECD (TUAC), *Upholding Labour Rights In Korea In An OECD Context.* Paris, 2016. 3.

[235] ILO. Social Dialogue Indicators - International Statistical Inquiry 2008-2009. Geneva, 2011.

Figure 101: Trade union density rate in Korea, Japan, US and EU28, 2000-2012



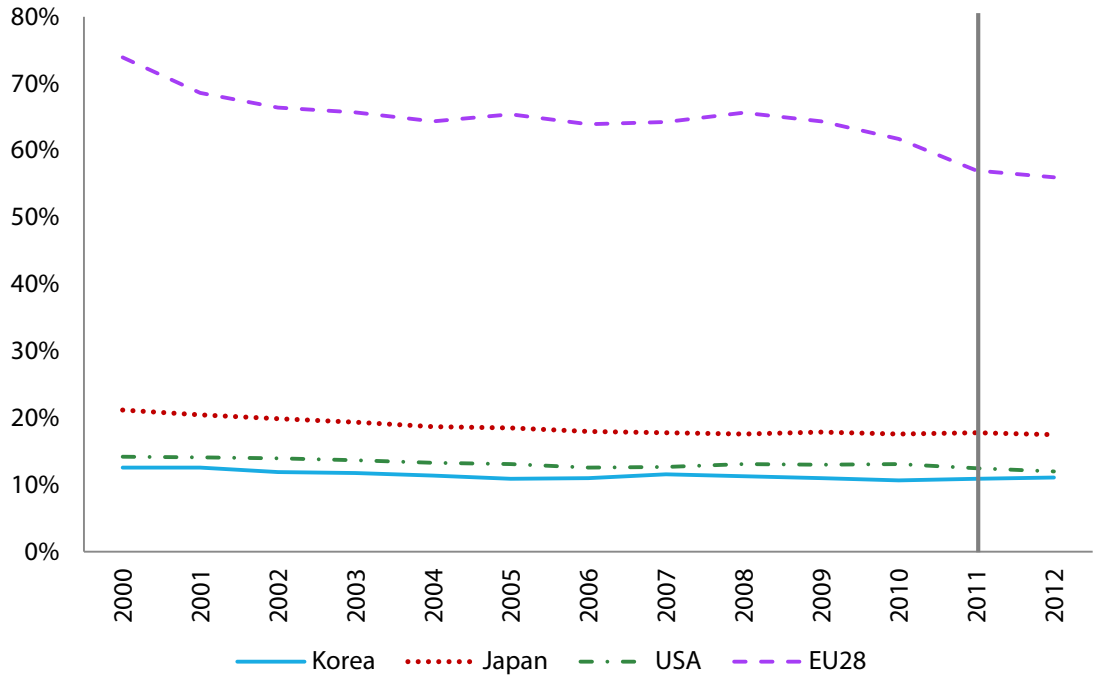
Source: Own compilation, based on ILO data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

The trade union density rate in Korea (depicted in the figure above) has followed a slight downward trend since 2000; however, this is consistent with trends present in the other countries presented for comparison (the USA, Japan and the EU28).[236] The rate of trade union density in Korea stood at 9.9 percent at the time of the start of the provisional application of the EU-Korea FTA in 2011 and moved very little (to 10.1 percent) by 2012.

The collective bargaining coverage rate (see the following figure) follows a similar trajectory to that of trade union density from 2000-2012 for all countries presented above, i.e. a slight downward trend. Again, between 2011 and 2012, the coverage rate in Korea moved very little, from 10.9 percent to 11.1 percent. Due to the lack of data for subsequent years it is unclear whether these very minor increases indicated a trend, or were just minor deviations in the data collected.

[236] For more discussion on the possible causes of declining trade density in the EU, see the European Commission reports *Industrial Relations in Europe* (available from http://ec.europa.eu/social/main.jsp?catId=575) and *Employment and Social Developments in Europe* (available from http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8030&furtherPubs=yes)

Figure 102: Collective bargaining coverage rate in Korea, Japan, US and EU28, 2000-2012



Source: Own compilation, based on ILO data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

In addition to statistical data, there is a large body of evidence and reports of Korean developments available with respect to this right in more recent years, some examples of which are provided below:

In December 2013, the Korean Railway Workers' Union (KRWU) organised a strike in response to a government-sponsored rail privatisation plan. The Korean government and the employer (Korail) took action against the KRWU in the form of raids on union offices, retaliatory dismissals, and criminal charges for the obstruction of business, though all necessary procedures for a legal strike had been followed.[237] Korean police subsequently raided the headquarters of the KCTU (to which the KRWU belongs) in order to arrest union officials responsible for the KRWU strike. The raid was conducted without a search warrant and ultimately the sought after union leaders were not found, though 138 other union members were arrested on the grounds of obstruction of justice.[238]

On November 14, 2015, several planned protests took place in Seoul in response to the Korean government's proposed labour law reforms, which included granting greater freedom to companies to lay off workers.[239] On the day of the protests, Korean police issued a notice of prohibition, set up bus barricades around the site of the protests, and deployed water cannons and tear gas when protesters attempted to move these barricades.[240] Following these incidents, several union officers and members were

[237] International Trade Union Confederation (ITUC). *Update on Core Labour Standards in South Korea - EU Domestic Advisory Group of the EU-Korea FTA.* 2016.

[238] Nam, Hyun-woo. "KCTU Disputes Legality of Police Raid". *The Korea Times* 2013.

[239] The proposed labour reform was initially the result of a tripartite agreement that was signed by the Federation of Korean Trade Unions (FKTU) in September 2015 and involved increasing employment security for non-regular workers. However, the reforms that were ultimately presented to the Korean Parliament were substantially different from the principles of the original agreement.

[240] Al Jazeera, "Dozens Injured At South Korea Anti-Government Protest". 2016.

arrested and currently remain in custody. Among those arrested was the president of the KCTU, who was indicted in January 2016 on eight different charges (including general obstruction of traffic and a violation of the Act on Assembly and Demonstration) and sentenced to five years in prison. Following the protests, the police also raided the offices of the KCTU and seized documents, equipment and computers.

The Korean electronics giant Samsung has been criticised by international labour unions—as well as by the Korean press—for its "no-union" policy. Unofficial (i.e., unrecognised and not legally registered) labour unions representing current and laid-off employees, notably the Samsung General Labour Union, have been active in criticising the Samsung Group's "crackdown on labour unions".[241] A leaked document from 2012 purported to be an internal executive presentation describing union-busting tactics employed to prevent workers from organising was heavily criticised by the International Trade Union Confederation (ITUC) and the global trade union IndustriALL.[242,243] Since 2013, Samsung's alleged "no-union" policy and the government's inaction in response has been the subject of a standing freedom of association case at the ILO brought by the KCTU, ITUC, IndustriaALL, and the Korean Metal Workers' Union (KMWU). In its communication submitted to the ILO, the KMWU indicates that Samsung workers face "systematic surveillance, intimidation, dismissals and wage and social victimization when they try to exercise their right to form and participate in trade unions," and that outsourced, contract workers were used as a strategy to prevent labour organisation.[244]

The box below further illustrates the difficult situation of labour unions in one of Korea's most important export industries, the automotive industry, in spite of the fact that this industry has experienced clear benefits as a result of the FTA in terms of the sectoral value added, as our economic analysis has indicated.

[241] Ock, Hyun-ju. "Unregistered Samsung labour union plans Europe tour". *The Korea Herald.* 2016.

[242] ITUC. "Global reach of Samsung's medieval practices revealed in new report". 2016.

[243] IndustriALL. "IndustriALL Executives condemn Samsung for union busting". 2013.

[244] ILO, "381st Report of the Committee on Freedom of Association", 2017, 77-

Labour rights in the Korean automotive industry

The automotive industry recorded the highest growth in absolute terms in the years following the start of the provisional application of the EU-Korea FTA, and saw the largest relative gain of any sector with respect to the share of post-FTA EU imports from Korea. Since the start of the provisional application of the FTA, vehicles have become Korea's second-largest export sector to the EU in terms of trade volume. Despite this increase in export volume under the FTA—accompanied by one of the largest gains in value-added of any sector in Korea[245]—labour rights, particularly the right to freedom of association and the right to join a trade union, remain an area of concern in this sector.

As is the case in other industrial sectors, prominent members of the national trade union representing auto workers, the Korean Metal Workers Union (KMWU), have been subject to harassment, arrest, and even jail time for taking part in strike activities. Several auto industry union members were among those receiving prison sentences for taking part in the general demonstrations on November 14, 2014.[246] Previously, the former chair of the KMWU had been arrested in June 2013 and detained for nearly a year for protesting the authorities' dispersion of a union sit-in protest.[247]

Auto workers who participate in labour actions also face the possibility of retaliation by their employers. In 2012, Hyundai filed 15 lawsuits against workers that had participated in factory sit-ins, requesting total damages of KRW 16.2 billion (approximately EUR 13.4 million).[248] In 2015, a Korean appeals court upheld a ruling against a trade union of laid-off workers of Ssangyong Motor Co. that required the trade union to pay KRW 3.3 billion (approximately EUR 2.7 million) in compensation to the company for holding unauthorised strikes in 2009,[249] which had been forcibly shut down by the police.[250]

Another significant complaint regarding labour issues in the automotive sector is the use of non-regular/contract labour and the difficulty for auto workers in obtaining permanent worker status. For example, even after the Seoul High Court's 2011 ruling that an in-house subcontracted worker employed at Hyundai for over two years must be recognised as a permanent worker, Hyundai announced in 2012 that it would not accept the ruling or negotiate any changes in worker status.[251] Many firms often choose to fire workers who have nearly reached two years of service, rather than convert them to permanent workers.[252]

In January 2016, the situation in the Republic of Korea was subject to a mission of a UN Special Rapporteur on the Rights to Freedom of Assembly and Association. The Special Rapporteur subsequently presented a report to the UN Human Rights Council noting serious concerns with the state of the right to freedom of assembly and association regarding labour unions.[253] The Special Rapporteur reported that the right to collective action was limited for the public service and workers in the defence industry. Dismissed workers are also reported to be forbidden from being members of a union; according to the report of the Special Rapporteur, the Korean Teachers and Education Workers Union (comprising approximately 60 000 members) was decertified by the government due to its inclusion of nine dismissed employees.[254] Self-employed workers, workers whose pay

[245] See the economic analysis in section 5.

[246] ITUC. "Update on Core Labour Standards in South Korea". 5 October 2016, Report for the EU Domestic Advisory Group of the EU-Korea FTA.

[247] Korean Metal Workers Union. "Jailed Korean Trade Unionist Released: Former Chair of KMWU Ssanyong Motor Branch Freed on Bail". 2014.

[248] ITUC. "Internationally recognised core labour standards in Republic of Korea." Report for the WTO General Council review of the trade policies of Republic of Korea. 2012.

[249] Yonhap News Agency. "Ssangyong labor union ordered to pay compensation for strikes". 2015.

[250] ITUC. "Korea: Brutal attack against the Ssangyong Motors Branch workers". 2009.

[251] ITUC (2012).

[252] Domestic Advisory Group under the EU-Korea Free Trade Agreement, *Opinion on the Fundamental Rights at Work in the Republic of Korea, Identification of Areas for Action*. Brussels, 2013.

[253] UN Human Rights Council, *Report of the Special Rapporteur on the rights to freedom of peaceful assembly and of association on his mission to the Republic of Korea*. 2016.

[254] The UN Human Rights Committee also noted its concern in its "Concluding observations on the fourth periodic report of the Republic of Korea" (2015) regarding the "unreasonable restrictions" on the right to freedom of association for public officials and for dismissed workers in Korea, and called on the government of Korea to withdraw its reservation to article 22 of the ICCPR (10).

is based on performance, and workers who are paid by clients rather than their employers also cannot form legally-recognised trade unions.

As indicated above, in spite of Article 13.4 of the EU-Korea FTA, the Korean government still has not ratified fundamental ILO Conventions 87 and 98 dealing with the right to freedom of assembly and association. The EU Domestic Advisory Group (DAG) has repeatedly brought up the issue of the Korean ratification of ILO conventions at the annual Civil Society Forums under the FTA, but has reported that no concrete actions have been taken by the Korean government to date.[255] The ITUC—which has representation on the EU DAG—has since described the situation in Korea as having clearly regressed in the years following the start of the provisional application of the EU-Korea FTA.[256]

Although Korea has not ratified the ILO conventions related to the freedom of assembly and association and thus does not regularly report on their application, social partners can still bring freedom of association related complaints to the ILO to have the case examined by the Committee on Freedom of Association. The following table lists the freedom of association cases from Korea that have been brought to the ILO since 1992.

[255] Additionally, the EU DAG requested in 2014 that the European Commission request formal consultations with the Korean government (as specified in Article 13.14 of the FTA) regarding ratification of these ILO conventions, but formal consultations never took place.

[256] ITUC (2016).

Table 35: Freedom of association cases brought to the ILO since 1992

Year	Case	Complainants	Allegations	Status
2016	3238	International Trade Union Confederation (ITUC), Federation of Korean Trade Unions (FKTU), Korean Confederation of Trade Unions (KCTU)	Confidential	Active
	3237	KCTU, International Transport Workers' Federation (ITF), Public Services International (PSI), Korean Public Service and Transport Workers' Union (KPTU)	Confidential	Active
	3227	ITUC, FKTU, Korean Metal Workers Union (KMWU)	Confidential	Active
2015	3138	ITUC, FKTU, KCTU	Official plan by the Ministry of Labour promotes the revision of collective agreements in force containing clauses deemed illegal or unreasonable by the government	Closed
2013	3047	ITUC, KCTU, KMWU, IndustriALL Global Union	"No-union" corporate policy at Samsung in the context of misused subcontracting and precarious employment relations; anti-union practices; resistance to collective bargaining and non-compliance with concluded agreements	Follow-up
2011	2829	KCTU, KPTU	Repression of trade unions and violation of collective bargaining rights in several public institutions and enterprises; refusal to recognise cargo truck drivers as workers; threat to cancel registration of the Korean Transport Workers' Union (KTWU)	Closed, with request to be informed of new developments
2009	2707	KCTU, Korean Professors Trade Union (KPU)	National legislation restricts the right to organise of university professors	Closed, with request to be informed of new developments
2007	2620	ITUC, KCTU	Government refused to register the Migrants' Trade Union (MTU) and carried out a targeted crackdown on this union by arresting and often deporting activists	Closed
	2602	KCTU, Korean Metalworkers' Federation (KMWF), International Metalworkers' Federation (IMF)	Precarious workers in disguised employment relationships in the automotive sector denied legal protection under TULRAA and left vulnerable to dismissal or anti-union discrimination	Closed, with request to be informed of new developments
	2569	Education International (EI), Korean Teachers and Education Workers	Absence of dialogue in the development of a system of teacher evaluation; prohibition of	Closed, with request to be informed of new

Year	Case	Complainants	Allegations	Status
		Union (KTU)	the right of assembly; denial of the right to strike; imposition of disciplinary sanctions against teachers who participated in union assemblies	developments
2000	2093	International Union of Food, Agriculture, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF), Korean Federation of Tourism Workers' Union (KFTWU)	Refusal to negotiate successor agreement; violence against, and arrest of, trade unionists during a labour dispute	Closed
1995	1865	KCTU, KMWF, Korean Automobile Workers Federation (KAWF), International Confederation of Free Trade Unions (ICFTU)	Non-conformity of several provisions of the labour legislation with freedom of association principles; dismissal of several public servants for the exercise of illegal collective action	Follow-up
1994	1789	IMF	Violation of the rights to bargain collectively and to strike	Closed
1992	1629	KTUC, International Federation of Building and Woodworkers (IFBWW), World Confederation of Organisations of the Teaching Profession (WCOTP), International Federation of Free Teachers' Unions (IFFTU), Korean Teachers' and Educational Workers' Unions (CHUNKYOJO) and the International Federation of Journalists (IFJ)	Labour law restricts the right of workers to form organisations of their own choosing, right of public servants to organise, right of private school teachers to unionise, right of public servants to engage in collective action, and prohibits third-party intervention in labour disputes; anti-union repression actions carried out by government	Closed, with request to be informed of new developments

Source: Own compilation, based on ILO NORMLEX database, Supervising the application of International Labour Standards: Freedom of association cases.

As can be seen from the table above, three freedom of association cases at the ILO were initiated by Korean trade unions in 2016, more than in any year since 2007. However, relevant cases were also brought in regular intervals in previous years. In addition to the three active cases initiated in 2016, there are two cases left in "follow-up" status, including the case against Samsung's "no-union" policy from 2013 and a public service case that has been open since 1995. A further five cases are technically closed, but with a "request to be kept informed of new developments", indicating that a violation of freedom of association standards or principles was found and that the Committee has issued recommendations to the government that it expects to be implemented.[257]

Several interviewees expressed concern regarding the state of the right to freedom of association and the right to join trade unions. In particular, interviewees stressed that public servants and teachers face considerable restrictions with respect to the freedom of association and have been denied the right to organise in recent years.[258] The Korean government had reportedly revoked the legal status of the Korean Teachers and Education Workers Union (KTU) and the Korean Government Employees Union (KGEU) in

[257] http://www.ilo.org/global/standards/applying-and-promoting-international-labour-standards/committee-on-freedom-of-association/lang--en/index.htm

[258] Article 5 of the Trade Union and Labour Relations Adjustment Act specifically excludes teachers and public servants from the general provisions on trade unions.

2013, with the result that the members were no longer able to engage in collective bargaining with their employers. Several interviewees also stated that they considered the labour rights situation in Korea, particularly regarding the freedom of association and the right to join trade unions, to have deteriorated since 2011.[259]

Conclusions

The available evidence concerning indicators on union density rate and collective bargaining coverage rate, as well as insights from relevant reports and interviews, suggest that the situation regarding the right to peaceful assembly and association and the right to join unions has not improved in Korea since the start of the provisional application of the FTA in 2011. While relevant ILO and UN reports cited above do not identify a clear trend,[260] several of the interviewed stakeholders reported that they perceived the situation to have deteriorated over the last few years. However, as multiple interviewees suggested, it is not possible to distinguish the impact of the FTA from the pre-existing political context of the country, which was unfavourable to unions even before the start of the provisional application of the FTA.

8.3.3. Impact of the EU-Korea FTA on the right to just and favourable conditions of work and the right to rest and leisure

References to the right to just and favourable conditions of work and the right to rest and leisure in international law and the EU-Korea FTA

Article 23 of the UDHR states that "(1) Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment. (2) Everyone, without any discrimination, has the right to equal pay for equal work. (3) Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection. (4) Everyone has the right to form and to join trade unions for the protection of his interests." Article 24 of the UDHR also references the right to rest and leisure: "Everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay." The right to just and favourable conditions of work and to rest and leisure is also enshrined in Article 7 of the International Covenant on Economic, Social and Cultural Rights (ICESCR).[261]

Chapter 13 of the EU-Korea FTA sets out commitments regarding multilateral labour standards and agreements. Under Article 13.4.2, both Parties "reaffirm the commitment, under the 2006 Ministerial Declaration of the UN Economic and Social Council on Full Employment and Decent Work, to recognising full and productive employment and

[259] In June 2017, the ITUC released their Global Rights Index 2017 report, which "ranks 139 countries against 97 internationally recognised indicators to assess where workers' rights are best protected in law and in practice." Notably, Korea was included in the ten worst-ranking countries for workers' rights for the first time in the 2017 report. (See http://www.ituc-csi.org/ituc-global-rights-index-2017-18767.)

[260] As noted above, however, as Korea has not ratified ILO Conventions 87 and 98, the ILO does not provide reports on the situation of these rights in Korea within their standard reporting cycle.

[261] Article 7 of the ICESCR reads: *"The States Parties to the present Covenant recognize the right of everyone to the enjoyment of just and favourable conditions of work which ensure, in particular: (a) Remuneration which provides all workers, as a minimum, with: (i) Fair wages and equal remuneration for work of equal value without distinction of any kind, in particular women being guaranteed conditions of work not inferior to those enjoyed by men, with equal pay for equal work; (ii) A decent living for themselves and their families in accordance with the provisions of the present Covenant; (b) Safe and healthy working conditions; (c) Equal opportunity for everyone to be promoted in his employment to an appropriate higher level, subject to no considerations other than those of seniority and competence; (d) Rest, leisure and reasonable limitation of working hours and periodic holidays with pay, as well as remuneration for public holidays"*

decent work for all as a key element of sustainable development for all countries and as a priority objective of international cooperation and to promoting the development of international trade in a way that is conducive to full and productive employment and decent work for all, including men, women and young people." The right to rest and leisure is not directly referenced in the FTA.

Right to just and favourable conditions of work and the right to rest and leisure in Korea prior to the EU-Korea FTA

In Korea, the right to just and favourable conditions of work is particularly relevant in the context of non-regular/precarious employment. While there is no broadly accepted specific definition of the latter term, it is usually interpreted as encompassing employment with uncertain duration, low pay, and lack of access to social protection and benefits.[262] Fixed-term workers, project/task-based contractors, seasonal workers and day-labourers fall into this category.

Precarious employment in Korea became more widespread after the Asian financial crisis of 1997 and the subsequent labour market reforms required by the IMF in return for the bailout it provided to the Korean government.[263] In response to greater labour market flexibility, companies began to replace permanent workers with temporary workers and subcontractors and hired such non-regular workers for new positions in order to reduce labour costs and decrease the power of trade unions (the vast majority of union members in Korea are permanent employees, given that non-regular workers often face obstacles to unionising).[264] The disproportionately low pay, poor working conditions and inadequate social insurance situation of these non-regular workers was already noted with concern by the ILO monitoring bodies and the UN Committee on Economic, Social and Cultural Rights in the last reporting cycle on Korea's application of the ICESCR in 2009.[265]

In response to the growing number of non-regular workers, in 2006 the Korean government passed the Fixed-Term and Part-time Work Act. Under this Act, an employer can hire a fixed-term employee for a maximum of two years, after which the employee must be given permanent status, with certain exceptions (e.g. contractors for specific projects). The Act stipulates that fixed-term and part-time employees should not be treated less favourably than permanent employees who work for the same employer and who perform the same or similar work, and it establishes a complaint process for non-regular workers who allege unfair treatment.[266] An amendment package to increase protection for non-regular workers was proposed in 2009, but this package was rejected by the Korean National Assembly.[267]

The right to rest and leisure is most relevant in Korea with respect to working hours. From the time that Korea joined the OECD in 1996 up until the year 2008, Korea consistently reported the longest number of yearly working hours of any OECD country. In 1996, the average worker in Korea worked 2 637 hours per year, nearly 800 hours more than the OECD average of 1 866 hours per year.[268] Korea introduced a 40 hour work week with the revised Labor Standards Act in 2004, which also capped the

[262] ILO, *Polices And Regulations To Combat Precarious Employment*. Geneva, 2011.

[263] Shin, Kwang-Yeong. "Economic Crisis, Neoliberal Reforms, And The Rise Of Precarious Work In South Korea". *American Behavioral Scientist* 57.3 (2012): 335-353.

[264] Shin (2012), 344.

[265] UN Committee on Economic, Social and Cultural Rights, "Consideration of reports submitted by States parties under articles 16 and 17 of the Covenant: Concluding observations of the Committee on Economic, Social and Cultural Rights," 2009.

[266] Chun, Yun-Ku. Employment Laws Regulating Non-Regular Work In Korea - An Introductory Guide. Seoul: Korea Labor Institute, 2013.

[267] Chun (2013), 9.

[268] OECD Stat, average annual hours actually worked per worker.

maximum amount of allowable overtime at 12 hours per week.[269] The new law was gradually phased in according to company size and became fully applicable to all workers by 2011. By 2011, also the year of the start of the provisional application of the FTA, the average annual hours worked in Korea had fallen by nearly 600 hours per year to 2 090, compared to the OECD average of 1 770.[270] Although ILO data on weekly working hours was not collected for Korea until 2009, the years directly prior to the FTA also show a slight drop, with the proportion of workers reporting that they work more than 49 hours per week falling from 39.6 percent in 2009 to 35 percent in 2011.[271]

Right to just and favourable conditions of work and the right to rest and leisure in Korea after the start of the provisional application of the EU-Korea FTA

For an assessment of the impact of the EU-Korea FTA on the right to just and favourable conditions of work, one can examine the share of non-regular employees with respect to the total number of employees in Korea over time.[272] Non-regular workers in Korea perform duties similar to those of regular workers, but are often paid lower wages and do not receive benefits such as unemployment insurance.[273] Many non-regular workers are employed in export-oriented manufacturing sectors such as semi-conductors, motor vehicles, chemicals, and electronics, according to the International Trade Union Confederation (ITUC).[274]

In November 2011, the government of Korea undertook a set of measures in order to "remove irrational discrimination against non-regular workers and reinforce the social safety net for vulnerable workers", including new requirements for non-regular workers in the public sector to be given open-ended contracts. While the government reported that 22 069 non-regular workers had been converted to regular workers within the first year, the Federation of Korean Trade Unions argued that the measures had led to a deterioration in the quality of female employment in the public sector (as women are overrepresented as a proportion of irregular workers; see the section on non-discrimination above), and in particular, that the proportion of dispatched and part-time workers among women in the public sector increased as a result.[275] One interviewee also commented that the government was seeking to extend the period after which a temporary worker must be converted to a permanent worker from two years to four years.

The following figure shows the development in the share of non-regular employees in Korea between 2006 and 2015, with Japan and the EU28 for comparison (statistics were not available from the USA).

[269] Labour Standards Act, Chapter IV.

[270] OECD Stat, average annual hours actually worked per worker.

[271] ILO Stat, employment distribution by hours actually worked. Note that while the ILO only provides data on hours worked per week, the OECD usually provides data on hours worked both per week and per year; however, data on hours worked per week is not available from the OECD for Korea.

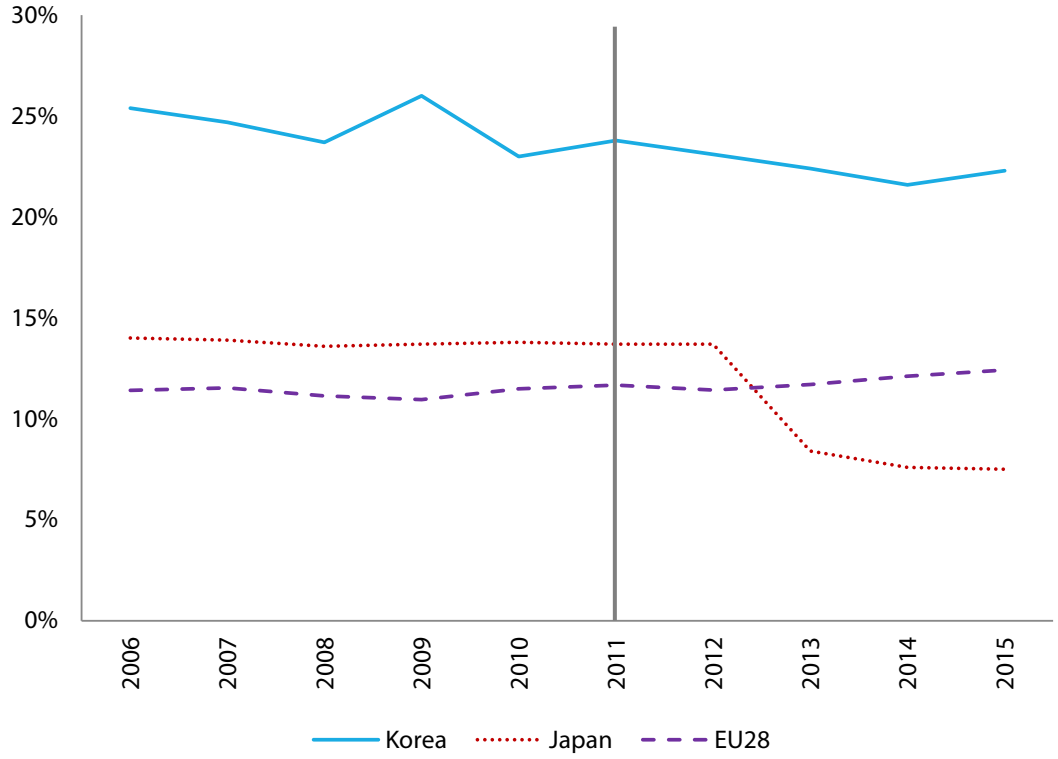
[272] Committee on Economic, Social and Cultural Rights,. *General Comment No. 23 on the Right to Just and Favorable Conditions of Work*. The International Network for Economic, Social and Cultural Rights (ESCR-Net), 2016.

[273] See the case discussion of the application of ILO Convention 111 in Korea in ILO, "Conference Committee on the Application of Standards, Extracts from the Record of Proceedings", 2015, Part II/98.

[274] ITUC, *Internationally Recognised Core Labour Standards In The Republic Of Korea - Report For The WTO General Council Review Of The Trade Policies Of The Republic Of Korea*. Geneva, 2012.

[275] ILO, "Application of International Labour Standards 2014: Report III (Part 1A)", Report of the Committee of Experts on the Application of Conventions and Recommendations, 2014, 316.

Figure 103: Share of non-regular employees in Korea, Japan and EU28, 2006-2015



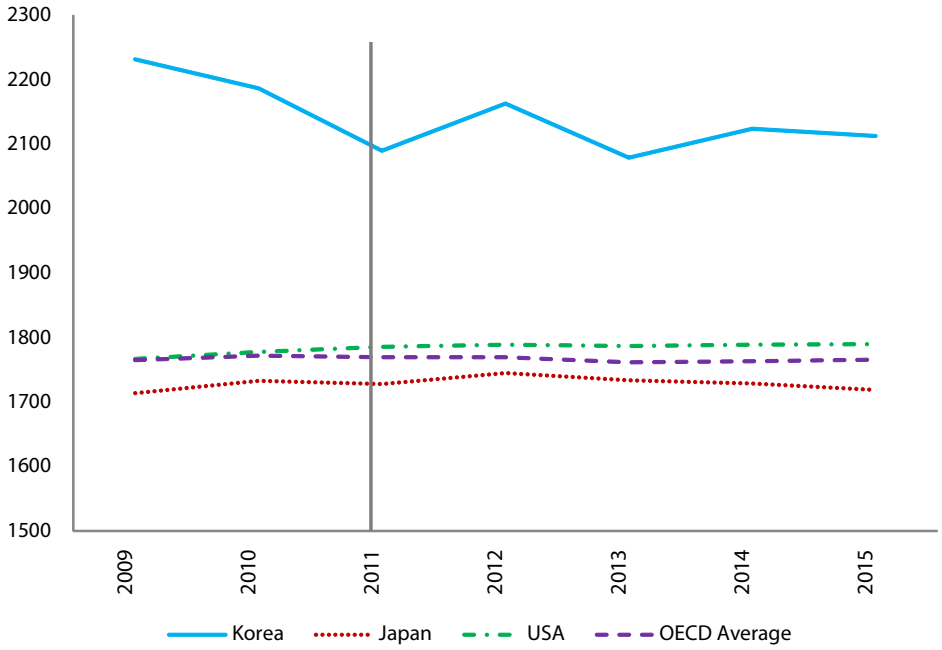
Source: Own compilation, based on ILO data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Non-regular employees as a share of total employees in Korea decreased between 2004 and 2015, though there was only a small drop between the start of the provisional application of the EU-Korea FTA in 2011 and 2015 (from 23.8 percent to 22.3 percent), possibly attributable to the above-mentioned policy measures introduced in 2011. The proportion of non-regular employees dropped more sharply over this period in Japan (from 13.7 percent to 7.5 percent), but slightly increased in the EU28 (from 11.7 percent to 12.4 percent).

The right to just and favourable conditions of work is also linked with the human rights situation of migrant workers, who often work under non-regular conditions and are subject to discrimination and restrictions, e.g. concerning their right to unionise. Overall, outcomes for migrant workers since 2011 have been mixed, with progress in some aspects (e.g. the recognition of the Migrants' Trade Union in 2015) and apparent deterioration in others (e.g. a reported increase in government crackdowns and workplace raids since 2011). Please see the box in the section on freedom from discrimination for more in-depth discussion of the situation of migrant workers in Korea.

In order to assess the impact of the FTA on the right to rest and leisure, one can observe changes in average working hours since the start of the provisional application of the FTA. The following figure shows the change in working hours per year in Korea since 2009, as reported by the OECD, with figures from Japan, the USA, and the OECD average for comparison.

Figure 104: Average annual working hours in Korea, Japan, US and the OECD, 2009-2015



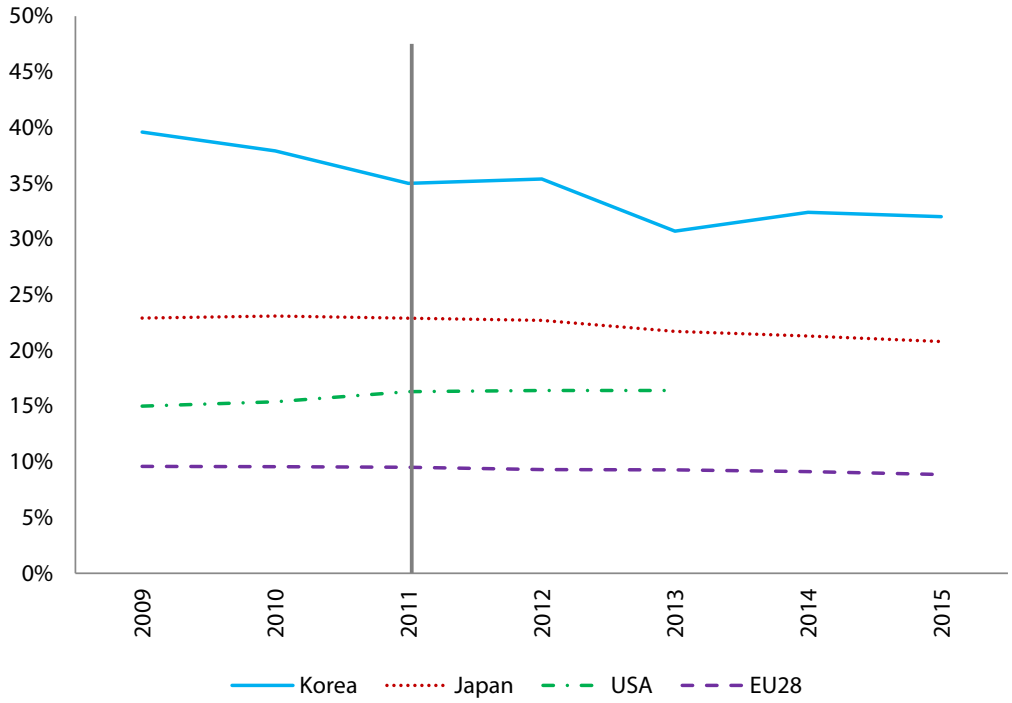
Source: Own compilation, based on OECD data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year. Note that OECD data does not include the EU28, as not all EU Member States are also members of the OECD.

As the figure above shows, annual working hours in Korea are higher than any in the comparison countries, but have declined in Korea over the long term while remaining relatively stable in Japan, the US and the OECD on average. However, despite the new legislated limits on working hours that were introduced with the revised Labour Standards Act and expected to be fully phased in by 2011, the OECD actually recorded a slight rise in total average working hours per year in Korea between 2011 and 2015, from 2 090 to 2 113.[276]

In contrast, an alternative dataset from the ILO, which begins in 2009, shows a similar pattern in the long-run but outlines a different trend in the post-2011 period. The following figure shows the proportion of workers in Korea that work 49 or more hours per week on average from 2009 to 2015, with figures from Japan, the US and the EU28 for comparison.

[276] OECD Stat, Average annual hours actually worked per worker. Accessed 2017-03-10.

Figure 105: Proportion of workers working on average 49 or more hours per week in Korea, Japan, US and EU28, 2009-2015



Source: Own compilation, based on ILO data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

As with the data on annual working hours from the OECD, the ILO data on weekly working hours shows Korean working hours well above the reference group but with a clear pattern of long-term decline. In particular, and in contrast to the development of average working hours according to the OECD dataset, a clear decrease in the proportion of workers in Korea working 49 hours or more per week can be observed in the post-FTA period between 2011 and 2015, from 35 percent to 32 percent. A decrease in working hours since the FTA implementation was also observed by the European Chamber of Commerce in Korea.[277] Again, this downward trend is possibly attributable to the above-mentioned policy measures introduced in 2011, rather than to the effect of the FTA.

One interviewee expressed the concern that labour laws limiting working hours and overtime only apply to the "working week", which does not include Saturday and Sunday, and therefore additional overtime beyond the weekly limit can be permitted on the weekends. Another interviewee argued that the right to just and favourable conditions of work, as well as the right to rest and leisure, were fundamentally linked to the freedom of association and the right to join trade unions, as the exercise of these rights requires a thriving trade union movement.

Conclusions

The available indicators provide a mixed picture of the state of the rights to just and favourable conditions of work and to rest and leisure in Korea. The share of non-regular employees as a share of total employees in Korea has slightly decreased since the start of the provisional application of the EU-Korea FTA, but is still high at 22.3 percent (in 2015). The situation of conditions of work for migrant workers in Korea continues to be a

[277] European Economic and Social Committee (EESC), Draft information report: EU-Korea Free Trade Agreement (evaluation), 2017. General findings.

matter of concern, as in the period before the start of the provisional application of the FTA. Interviewees stressed the continuing difficulties faced by migrant workers since 2011, but did not consider the FTA to have had a significant impact in either direction.

Weekly working hours have declined in Korea since the start of the provisional application of the FTA in 2011, reflecting a longer-term trend corresponding to the gradual phasing-in of the 40 hour working week between 2004 and 2011. As the 40 hour workweek legislation became fully applicable across the economy in July 2011, the same time as the start of the provisional application of the FTA, it is not possible to isolate the effect of the FTA from the effect of the new legislation.

8.3.4. Impact of the EU-Korea FTA on the right to food

References to the right to food in international law and the EU-Korea FTA

Article 25(1) of the UDHR states that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."

The right to an adequate living standard, in particular the right to food, is also enshrined in Article 11 of the ICESCR:

> "1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.
>
> 2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:
>
> > (a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;
> >
> > (b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need".

The EU-Korea FTA does not refer explicitly to the Right to Food. However, it includes commitments that are relevant when discussing this right, most notably the elimination or reduction of tariffs on nearly all agrifood products, although tariffs on sensitive agricultural product categories are still in the process of being phased out (see the agricultural sector case study in section 10.2).

Right to food in Korea prior to the EU-Korea FTA

Korea historically struggled with food insecurity in the aftermath of the Second World War and Korean War, and in 1968 was one of the major recipients of aid under the United Nations World Food Programme (UN WFP). Since the 1970s, however, Korea has made large strides in the area of food security, and hunger is not considered to be a problem in modern Korea. Korea has become a net donor to the UN WFP in recent

years.[278] Since 1990, the number of people suffering from undernourishment in Korea has been considered by the UN WFP to be not statistically significant, and the proportion of the population struggling with undernourishment lies clearly below 5 percent.[279]

Agriculture as a proportion of Korean GDP has decreased dramatically over the course of the country's industrial development, from 39.4 percent in 1965 to 2.5 percent by 2011.[280] Korea is a large net importer of agricultural products. Arable land is scarce, and agricultural production focuses on domestic staples such as rice crops and livestock for domestic consumption. The agricultural industry has been heavily protected by the government, with high tariffs on agricultural imports (see section 10.2).[281]

Korea acceded to the ICESCR, which elaborates the right to food in international law (see above), in 1990. The Constitution of the Republic of Korea is recognised by the UN Food and Agriculture Organisation as having directive principles that contribute to the realisation of the right to adequate food.[282]

[278] UN WFP, "Republic of Korea Increases Support for Zero Hunger." 16 February 2015.

[279] Food and Agriculture Organisation of the United Nations, *The State of Food Insecurity in the World 2015*.

[280] World Bank, Agriculture, value added (% of GDP). Accessed 2017-03-10.

[281] Note that self-sufficiency in food is not necessarily a requirement for the right to food or food security. See, for example: Anderson, Kym and Anna Stutt. 2012. "Agriculture and Food Security in Asia by 2030." Asian Development Bank Institute Working Paper Series.

[282] Article 10 and Article 34 of the Constitution of the Republic of Korea. Source: UN FAO, The Right to Food Around the Globe: Republic of Korea. http://www.fao.org/right-to-food-around-the-globe/countries/kor/en/

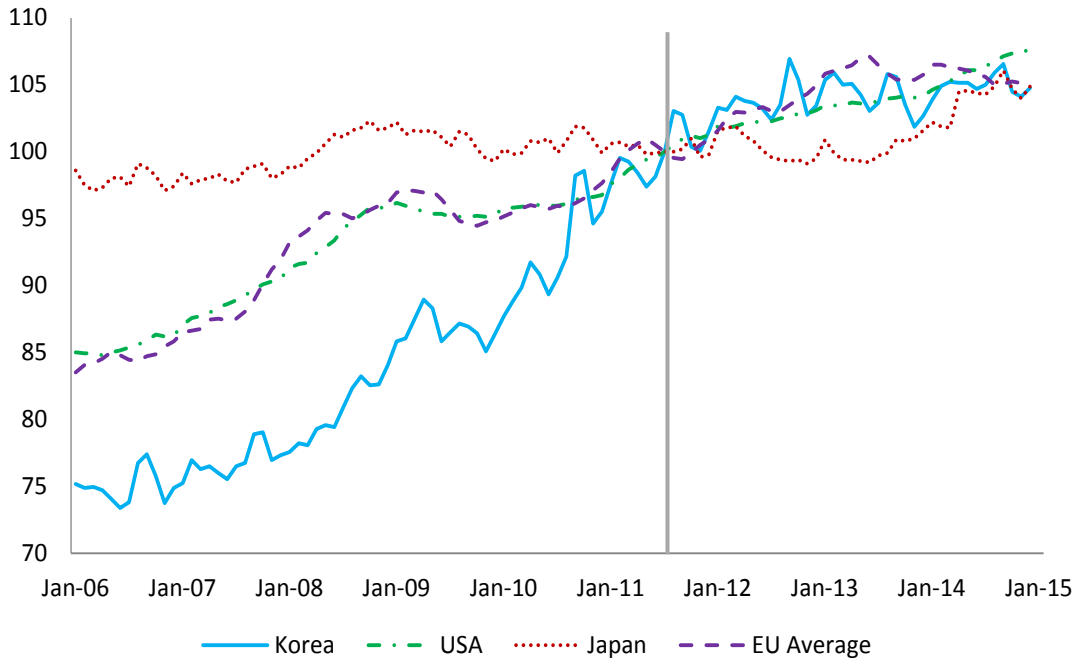
Right to food in Korea after the start of the provisional application of the EU-Korea FTA

The Economist's Global Food Security Index 2016 ranks Korea 28 out of 113 countries for food security, the same rank that it held in 2012 when the index was introduced. Since 2012, Korea has consistently maintained top results in several of the 28 indicators, including the presence of food safety net programmes, access to financing for farmers, and food consumption as a share of household expenditure (13.2 percent in 2016, slightly higher than the value of 12.7 percent in 2012).[283] Additionally, the right to food was not included in the list of issues released by the UN Committee on Economic, Social and Cultural Rights in relation to the most recent reporting period (to be completed in the course of 2017) on Korea's application of the ICESCR, in which this right is enshrined, nor was it mentioned in the submission of the National Human Rights Commission of Korea.[284, 285]

One way of discerning the impact of the FTA on the right to food is through examining domestic changes in food prices in general, as well as changes induced by the FTA on the price of food due to food exports from the EU to Korea.

The following figure shows the overall development of food price inflation in Korea from 2006 to 2015, with comparative figures from the USA, Japan and the EU.

Figure 106: Monthly indexed food price inflation in Korea, Japan, US and 20 EU Member States, base July 2011=100, 2006-2015



Source: Own compilation, based on data from The Economist Intelligence Unit/UN Food and Agriculture Organisation, 2016. Note that the EU average excludes the following eight Member States due to lack of data: Croatia, Cyprus, Estonia, Malta, Latvia, Lithuania, Luxembourg and Slovenia. The vertical line marks the beginning of the start of the provisional application of the EU-Korea FTA.

[283] The Economist Intelligence Unit, Global Food Security Index 2016. http://foodsecurityindex.eiu.com/Country/Details#South%20Korea

[284] UN Committee on Economic, Social and Cultural Rights, "List of issues in relation to the fourth periodic report of the Republic of Korea", 2017.

[285] National Human Rights Commission of Korea, "Opinion Regarding the Preparation of the List of Issues Prior to the Committee on Economic, Social and Cultural Rights' Review of the Fourth State Report by the Republic of Korea", 2017.

Overall food prices in Korea increased sharply after 2006 but have gradually levelled off in recent years, including in the period since the FTA came into effect. Since the start of the provisional application of the EU-Korea FTA in 2011, food prices in Korea have increased by just under 5 percent. As the figure above shows, this value is well within the same range as the reference group of Japan, the US and the EU. The implementation of the FTA therefore does not seem to have had any significant negative impact on domestic prices.

The impact of the FTA on the right to food can be further discussed through examining changes food exports from the EU to Korea and related price effects.

Since 2010, the year before the start of the provisional application of the FTA, EU exports of agrifood products to Korea have increased as a proportion of total exports to Korea, from 4.7 percent to 5.0 percent by 2015. In absolute terms, the trade volume of EU agrifood products exported to Korea has also increased substantially since the start of the provisional application of the FTA, from approximately EUR 1 700 million in 2011 to approximately EUR 2 400 million in 2015. Despite this growth in exports, however, the EU share of total agrifood imports in Korea remains small compared to that of other partners. Approximately 12 percent of Korean imports of agrifood goods were sourced from the EU in 2015, a figure that has increased only slightly since the start of the provisional application of the FTA in 2011. This proportion can be compared to that of the US (approximately 20 percent) and Japan (2 percent). (See the agricultural case study in section 10.2 for more detail.)

The year-to-year growth in quantities and prices exported to Korea, however, show a more positive picture of the impact of the FTA for consumers of imported agrifood products in Korea. Exports of agrifood products from the EU to Korea have not only grown annually in quantity by about 20 percent—the second largest growth rate per export sector, after vehicles—but have also seen an annualised reduction in price of about 10 percent (see the economic analysis in section 5).

The table below shows price changes for agrifood products in Korea due to the FTA based on the results of the CGE model, which provide a conservative estimate of relative price changes induced by the FTA (see section 7.1 for further details).

Table 36: Price changes in agrifood products in Korea due to the implementation of the EU-Korea FTA

Sector	Price change in Korea (%)
Agriculture	-0.21
Processed food	-0.70

Source: GTAP, WITS, Ifo Trade Model.

For the product sectors presented above, the FTA resulted in a negative price change, i.e. a lower price. The largest price changes were observed for processed food products. Overall, the economic analysis therefore shows a (minor) reduction in the prices of food for Korean consumers due to the FTA.

At the same time, however, the econometric analysis conducted for this study shows a potential negative impact for domestic agrifood producers, particularly in the processed food sector, which have experienced a decrease in value-added as a result of the FTA (one of the few sectors in Korea for which this has been the case). The negative value added in the processed foods sectors mainly stem from decreases in the dairy product and animal sectors. Small losses are also evident in the agricultural sectors. A lower value added implies higher pressure on the wages and employment and thus a potential need for restructuring.

Conclusions

International indicators suggest that food security is not a serious problem in modern Korea. Nevertheless, the available quantitative evidence suggests that the EU-Korea FTA has likely had a positive impact on the right to food in Korea through an increase in the quantity of imported agrifood products along with a minor reduction in the price of food induced by the FTA. Given the size of the changes and the relatively small share of products from the EU within Korea's total agrifood imports, this positive effect is minor. However, the FTA has likely also put some pressure on domestic producers of processed foods in the form of reducing their value-added.

8.4. Conclusions

Overall, the EU-Korea FTA is assessed to have not changed the status quo of human and labour rights in Korea as they were when the FTA came into effect, in the sense that little change (positive or negative) over the 2011 situation and/or longer term trends can be observed for the rights subject to this analysis. The results of the detailed assessment presented in the previous sub-sections are summarised in the following table. As shown in the table, the only right for which a minor impact of the FTA can be determined is the right to food. Following the evidence from the economic analysis, food prices have decreased to a minor extent as a direct result of the FTA.

Table 37: Summary of assessment of FTA impacts on human rights in Korea

Human right	Observed impact of the FTA	Comments
Freedom from Discrimination	Neutral	Key indicators—gender wage gap, the gender employment gap, and the share of non-regular employees that are women—have all remained relatively unchanged in Korea since the start of the provisional application of the EU-Korea FTA in 2011. Furthermore, no significant changes (positive or negative) with respect to gender or other forms of discrimination in Korea were discerned through the literature review or stakeholder interviews.
Right to Peaceful Assembly and Association	Neutral	Available evidence concerning indicators on union density rate and collective bargaining coverage rate, as well as insights from relevant reports and interviews, suggest that the situation regarding the right to peaceful assembly and association and the right to join unions has not improved in Korea since the start of the provisional application of the FTA in 2011 (however, key data was only available until 2012). While relevant ILO and UN reports cited above do not identify a clear trend, several of the interviewed stakeholders reported that they perceived the situation to have deteriorated over the last few years. However, as multiple interviewees suggested, it is not possible to distinguish the impact of the FTA from the pre-existing political context of the country, which was unfavourable to unions even before the start of the provisional application of the FTA.
Right to Join Trade Unions	Neutral	
Right to Just and Favourable Conditions of Work	Neutral	Available indicators provide a mixed picture: the share of non-regular employees as a share of total employees in Korea has slightly decreased since the start of the provisional application of the EU-Korea FTA, but is still high at 22.3 percent (in 2015). The situation of migrant workers in Korea continues to be a matter of concern, as in the period before the start of the provisional application of the FTA. Interviewees stressed the continuing difficulties faced by migrant workers since 2011, but did not consider the FTA to have had a significant impact in either direction.
Right to Rest and Leisure	Neutral	Weekly working hours have declined in Korea since the start of the provisional application of the FTA in 2011, reflecting a longer-term trend corresponding to the gradual phasing-in of the 40 hour working week between 2004 and 2011, with the 40 hour workweek legislation becoming fully applicable across the economy in 2011.
Right to Food	Minor reduction of food prices	Available quantitative evidence suggests that the EU-Korea FTA resulted in an increase in the quantity of imported agrifood products along with a minor reduction in the price of food induced by the FTA. Given the size of the changes and the relatively small share of products from the EU within Korea's total agrifood imports, this positive effect is minor. However, the FTA has also likely put some pressure on domestic producers of processed foods in the form of reducing their value-added.

Source: Civic Consulting.

9. Environmental analysis

In this section, we analyse whether and how the FTA has affected the environment both locally and globally. We start by presenting descriptive statistics on greenhouse gas emissions. Then, we use the general equilibrium model and data on sectoral greenhouse gas emissions to quantify the impact of the EU-Korea FTA on climate warming since the start of its provisional application in 2011.

The key findings of the evaluation are that:

- **International trade is often attributed to having a negative environmental impact as trade in goods goes along with an expanding transportation sector; moreover, it is argued that environmental standards may be lowered as a consequence of international location competition. On the other hand, international trade may lead to more efficient and resource-saving production. Hence, the environmental effects of an FTA are ex-ante unclear.**
- **Measuring any direct causal effects of the FTA on environmental variables is complicated due to the fact that the counterfactual environmental outcomes (those that would have materialised without the agreement) are unobservable. One area where causal analysis is possible is the area of greenhouse gas emissions; applying the CGE model, we are able to simulate additional CO_2 emissions that are directly induced by the FTA.**
- **The CGE analysis conducted for this study shows that due to the EU-Korea FTA, CO_2 emissions in the EU would have increased by 0.12 percent, if there were no emissions trading system in place. Since the ETS covers most industrial CO_2 emissions in Europe, it most likely has prevented the realisation of these CO_2 emission changes. In Korea, emissions increase by 0.19 percent compared to the counterfactual situation of not having an FTA.**
- **However, the EU-Korea FTA leads overall to a net reduction of global CO_2 emissions by 4.1 million tonnes CO_2. The global CO_2 reduction can almost be fully ascribed to only two countries that suffer from trade diversion effects, namely China (reduction of 2.8 million tonnes CO_2) and the United States (reduction of 1.3 million tonnes CO_2). Note that these aggregated estimates include higher emissions of EU and Korea as well and these are, due to the mentioned effect of the ETS overestimated with respect to the EU.**
- **The descriptive analysis of indicators concerning other environmental areas, such as air pollution, water quality, biodiversity, waste management and deforestation does not indicate any observable impact of the EU-Korea FTA (see Annex XI). However, modelling these environmental variables is out of the scope of CGE analysis.**

9.1. Background on possible effects of trade on the environment

The EU-Korea FTA explicitly states that the signing Parties are "convinced of the contribution of international trade to sustainable development in its economic, social and environmental dimensions, including (…) the protection and preservation of the environment and natural resources".[286] Indeed, ensuring that the EU's trade policy agenda is consistent with its environmental objectives is a key challenge against which the success of the EU-Korea FTA is to be assessed.

Nowhere has the divide between critical voices and advocates of globalisation been more compelling than in the debates about the environment and free trade. For instance Copeland and Taylor (2004) systematically investigate this subject. Generally speaking, the FTA could have affected environmental outcomes in various ways.[287,288] First, to the

[286] EU-Korea FTA, Preamble.

[287] The following draws on Copeland, B., and S. Taylor, "Trade, Growth and the Environment". *Journal of Economic Literature* 42.1 (2004): 7-71 and Copeland, B., J. Cherniwchan, and S. Taylor (2017), "Trade and the Environment: New Methods, Measurements, and Results, forthcoming in *Annual Reviews*.

extent that the FTA leads to an expansion of economic activity, it could have led to higher pollution and could have put additional strain on bio-resources because higher levels of output require more environmental inputs. Through this channel, the FTA could lead to deforestation, water pollution, an increase in greenhouse gas emissions and air pollution, and create more industrial and municipal waste. These negative effects might even be accelerated through negative environmental externalities in the absence of regulation. A regional agreement addressing issues of environmental protection and obligating the Parties to undertake concrete actions might counteract the negative effects that can potentially occur because of increases in production activity.

On the other hand, the literature also emphasises that higher income levels open up the possibility for governments to adopt more stringent environmental regulation and/or for businesses to invest in mitigation measures, which would then reduce negative environmental impacts. A priori, the effect of this income (or scale) effect on the environment is ambiguous. Second, the FTA leads to a change in the sectoral composition of the economy: it induces certain sectors to expand and others to shrink. When the polluting sectors shrink, there will be positive effects at the local level. However, their shrinking is related to an expansion in the partner country of the FTA or elsewhere; so the global effect can be, again, ambiguous. Finally, the agreement can also have effects on firms within narrowly defined sectors. The reason is that trade liberalisation typically leads to a larger expansion of efficient firms compared to the less efficient ones. To the extent that the efficient ones also use cleaner technologies, the intra-sectoral reallocation of market shares should reduce emissions.[289] However, the opposite effect would also be possible: firms squeezed by additional competition could find it necessary to spend less on environmental mitigation measures. As a consequence, the within-sector effects could also go both ways. To sort out the effects, an empirical assessment is needed. The EU-Korea FTA ensures fast tariff dismantlement for environmentally friendly goods in order to promote sustainable development through green technologies. Within three years from the start of its provisional application, almost all such goods were planned to have duty free access to the Korean and EU markets.[290]

The subsequent descriptive analysis uses various statistics. Data sources include the OECD database on instruments used for environmental policy, as well as statistics from the World Bank's WDI, data provided by the OECD and the World Input-Output Database (WIOD) Environmental Accounts.

9.2. Greenhouse gas emissions

Greenhouse gases increase the world's temperature by releasing carbon dioxide (CO_2) through processes such as deforestation, land use, and burning of fossil fuels. This amount already increased by one-third since the beginning of the industrial revolution.[291] The European Commission states that "CO_2 is [...] responsible for 64 percent of man-made global warming".[292] Another gas, the hydrocarbon gas methane (CH_4), also

[288] In the public consultation, five respondents to a question regarding impacts on the environment indicated that there have been impacts on the environment in Korea due to EU-Korea trade since the start of the provisional application of the FTA, whereas three respondents indicated that there have been impacts on the environment in the EU.

[289] Evidence for the environmental effects of NAFTA on the firm-level supports this optimistic view. Cherniwchan, Jevan, "Trade Liberalization and the Environment: Evidence from NAFTA and U.S. Manufacturing", *Journal of International Economics* 105 (2017): 130-149.) shows that nearly two-thirds of the aggregate reductions in PM_{10} and SO_2 emissions from the U.S. manufacturing sector between 1994 and 1998 can be attributed to trade liberalisation following NAFTA.

[290] As shown in case study on EGS, after the start of the provisional application of the FTA, the EU reduced its preferential tariffs to zero. In contrast, preferential tariffs imposed by Korea did not decrease to zero but fell below 2 percent, corresponding to an overall reduction of 6 percentage points compared to MFN tariffs.

[291] *NASA Causes of Global Climate Change - Vital Signs of the Planet*. NASA's Jet Propulsion Laboratory and California Institute of Technology, http://climate.nasa.gov/causes/ 25 February 2016.

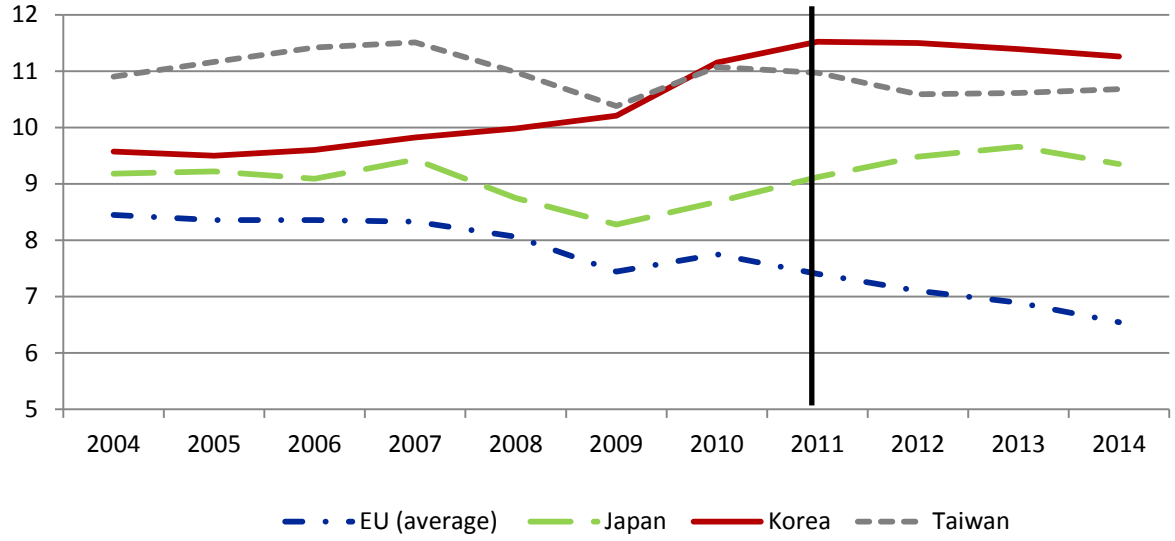
[292] https://ec.europa.eu/clima/change/causes_en

influences the climate. It is generated through agricultural processes and through the decomposition of waste in landfills. According to the European Commission, methane is responsible for 17 percent of total man-made global warming. A third relevant gas is nitrous oxide (N_2O), which is produced by soil cultivation practices, fossil fuel combustion, and biomass burning. It is an even more powerful greenhouse gas than CO_2, but less abundant. In the following, this report will mostly refer to the main source of global warming—carbon dioxide—as in most climate and environmental analyses.

Korea faces significant challenges concerning air pollution and water quality. It ranked in place 103 out of 180 regarding the Environmental Risk Exposure measure calculated by Yale University's Environmental Performance Index (EPI).[293] While this measure takes both water and air quality into account, air pollution is the more serious issue for Korea.

Figure 107 shows the evolution of the emission of the greenhouse gas CO_2 per capita for different areas over the period 2004 to 2014. While CO_2 emissions per capita are slightly decreasing for the countries of the EU, they increased until 2011 and then stabilised in Korea at a high level (nearly double the EU value). It does not seem to be the case that the EU-Korea FTA drove this development. The FTA was introduced in 2011 and there is no notable change in development following this year, but rather a stabilisation of the emission level. The upward tendency of CO_2 emissions in Korea might represent increases in production and development that induce higher emissions of CO_2, while countries in the EU have implemented emission reduction strategies and also faced production losses following the financial crisis in 2008 and 2009, which also reduced greenhouse gas emissions.

Figure 107: Development of CO_2 emissions, tonnes per capita

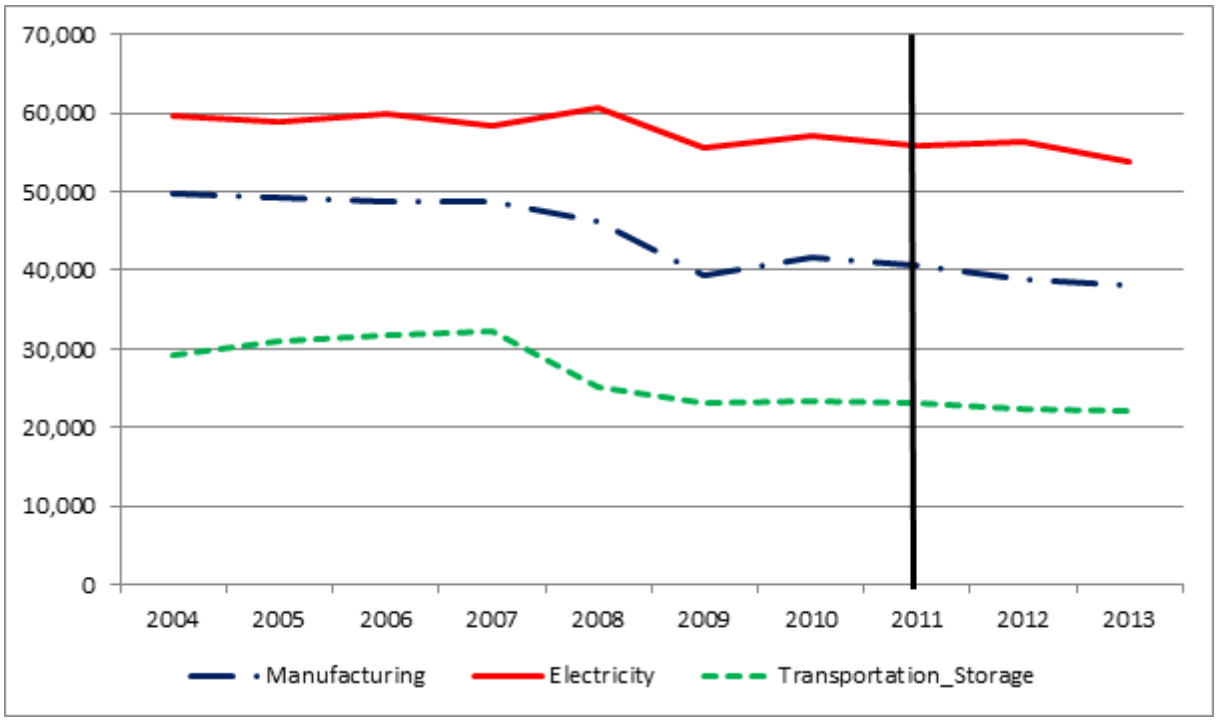


Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

A closer look at the sectoral emissions of the EU reveals that the CO_2 emissions in the top 3 emitting sectors, namely manufacturing, electricity and transportation storage, stayed approximately constant over the period from 2004 to 2013. Only in 2009, well before the start of the provisional application of the EU-Korea FTA in 2011, a remarkable decrease in CO_2 emissions can be observed which can be attributed to the effects of the global economic crisis. Figure 108 visualises this evolution.

[293] http://epi.yale.edu/

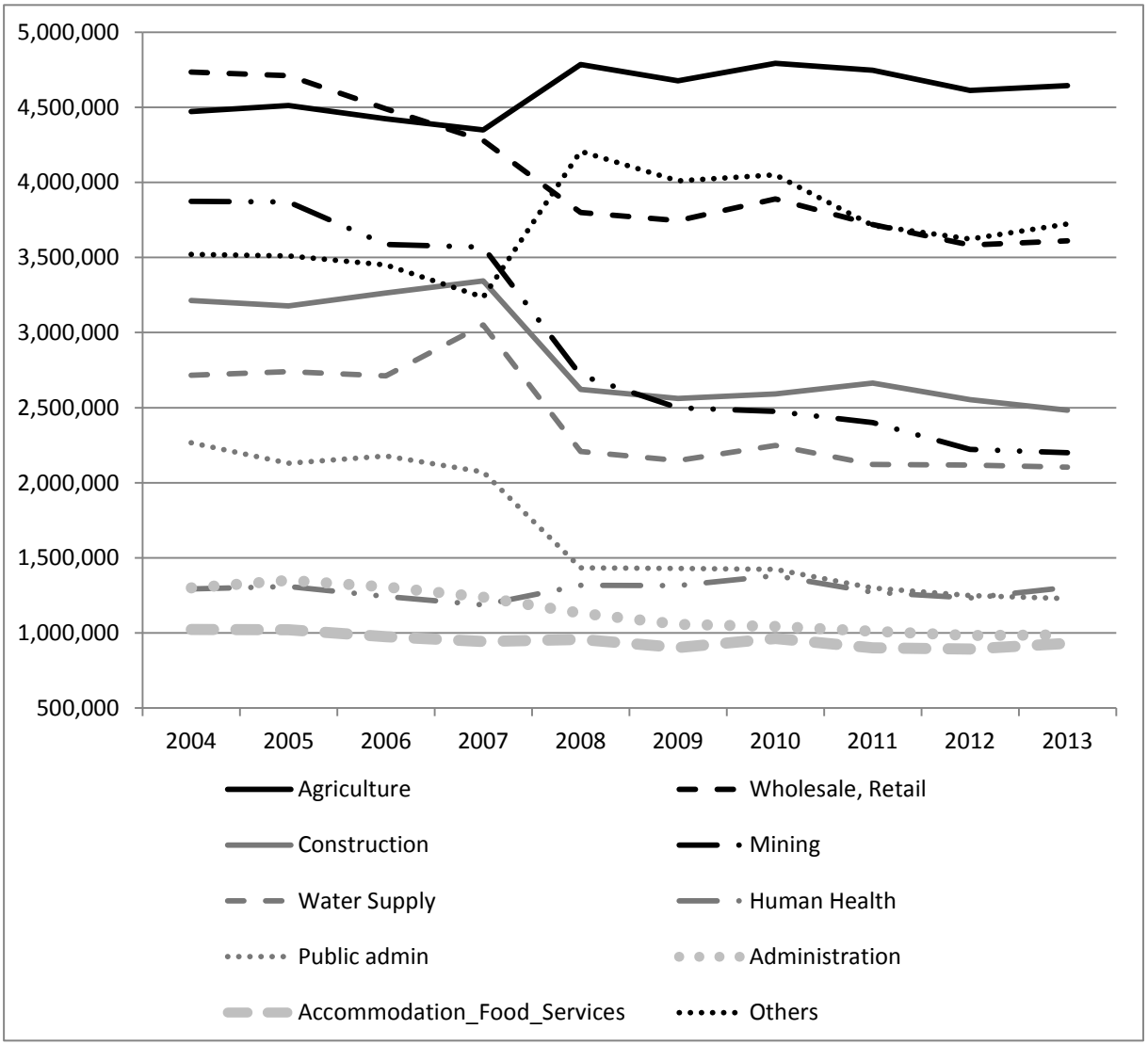
Figure 108: Development of CO_2 emissions in the top 3 emitting sectors in the EU, in thousand tonnes of CO_2



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Still focusing on developments in the EU, Figure 109 shows the evolution of CO_2 emissions for a larger number of different sectors. The majority of sectors produce constant CO_2 emissions during the depicted period. The drop in CO_2 emissions in the construction, mining, public administration and wholesale retail sectors can likely be attributed to the world economic crisis that hit EU economies in 2008 and 2009. Only the agricultural sector experiences a slight increase in CO_2 emissions.

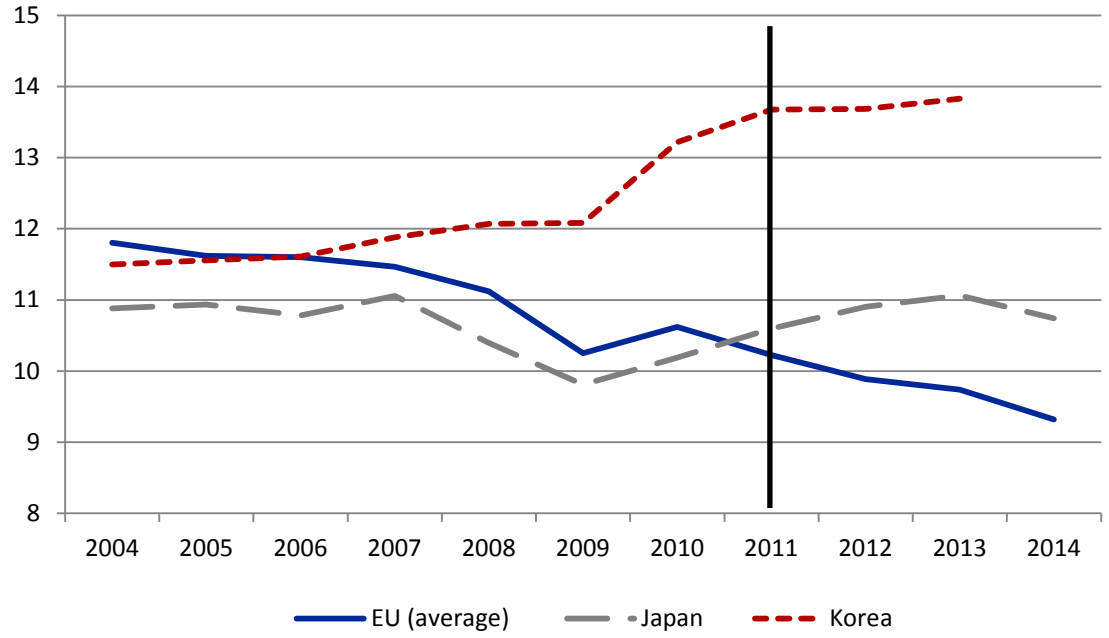
Figure 109: Development of sectoral CO_2 emissions in the EU, in thousand tonnes of CO_2



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 110 below depicts the emission of all greenhouse gases including CO_2, CH_4 and N_2O over the period from 2004 to 2014. A decrease for EU countries and an increase for Korea can be observed. However, in Korea, this trend already began prior to the start of the provisional application EU-Korea FTA, at around the same time as in Japan.

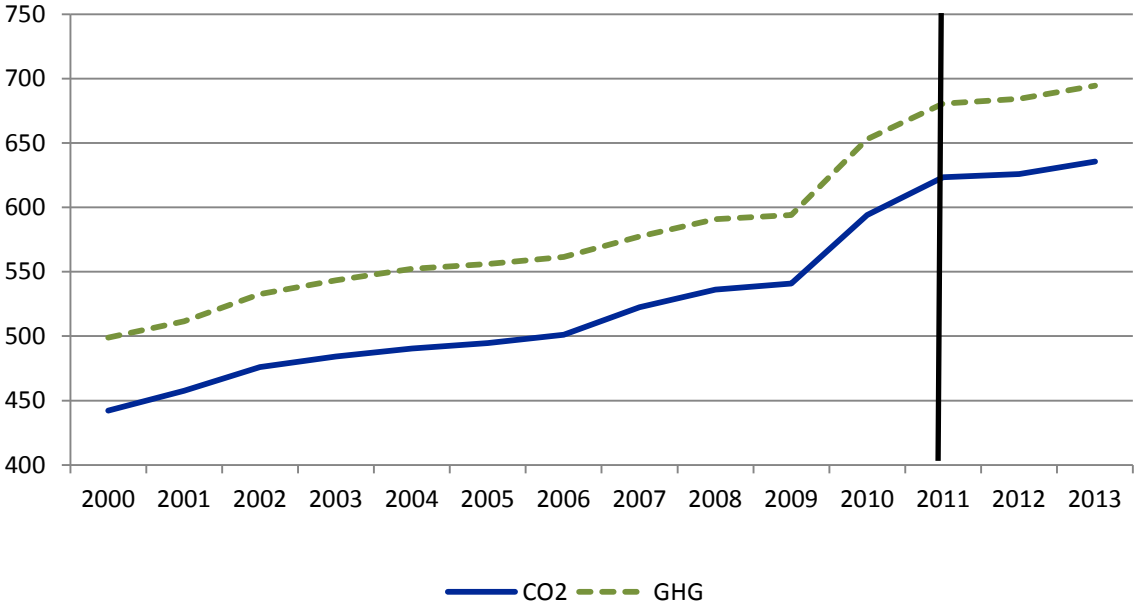
Figure 110: Development of GHG emissions, tonnes per capita



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

The following figure shows the development of CO_2 and total greenhouse gas emissions in Korea prior to the start of the provisional application of the EU-Korea FTA, this time in absolute values. There is a moderate increase of CO_2 and greenhouse gas emissions from 2000 to 2009 and a steeper increase after the year 2009. The increase seems to slow down and stagnate following the start of the provisional application of the EU-Korea FTA in 2011.

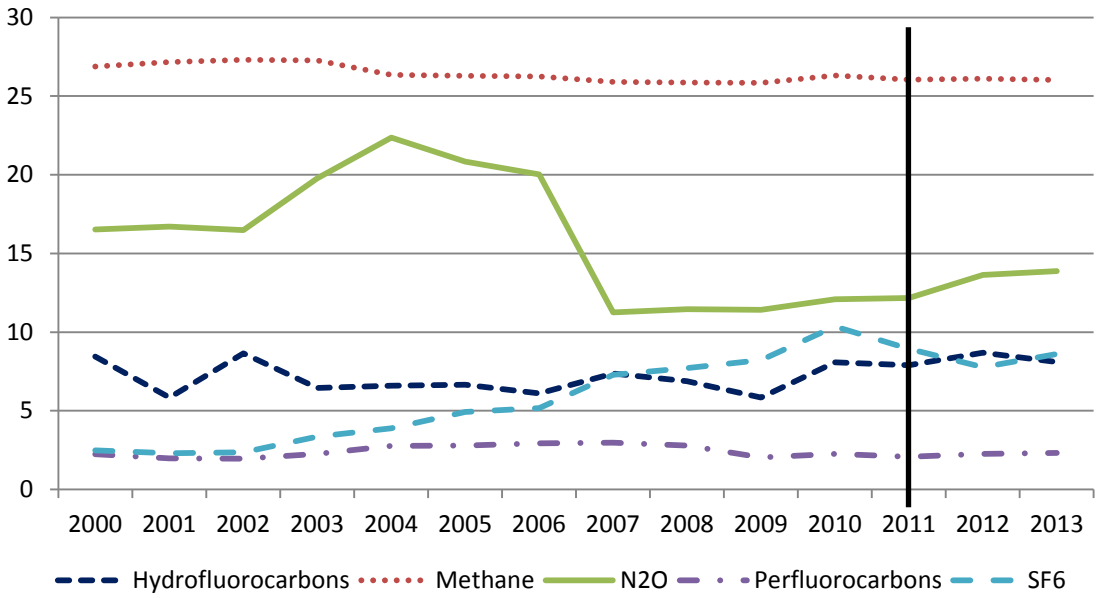
Figure 111: Development Korean GHG and CO_2 emissions, in thousands of tonnes of CO_2 equivalent



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Figure 112 below differentiates between different types of greenhouse gases other than CO_2, again in absolute values. It can be observed that the levels of emissions of these gases in Korea were approximately constant before the start of the provisional application of the EU-Korea FTA. The only exceptions are N_2O emissions that suddenly dropped in 2007 and remained at a substantially lower level thereafter, and Perfluorocarbons that steadily increased until 2010 before levelling out. All emissions depicted in this graph remained stable after the start of the provisional application of the EU-Korea FTA.

Figure 112: Development of other emissions in Korea, in thousands of tonnes of CO_2 equivalent



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

9.3. General equilibrium analysis of CO2 emissions

For reasons mentioned before, measuring any direct causal effects of the FTA on environmental variables is complicated by the fact that the counterfactual environmental outcomes (those that would have materialised without the agreement) are unobservable. One area where causal analysis is possible is the area of greenhouse gas emissions, as modern CGE models that are used for assessing economic impacts of trade flows also estimate greenhouse gas emissions under different scenarios.

The interactions between trade and environmental outcomes such as greenhouse gas emissions are not straightforward. The source of the complication lies in the presence of counteracting influences. For measuring the FTA's effect on greenhouse gas emissions, there are two mechanisms to address. First, the expansion of economic activity including increased transportation of goods has direct effects on emissions that are essentially calculated by multiplying sectoral greenhouse gas emission coefficients and sectoral output levels in the status quo and the counterfactual situation (obtained from CGE analysis), taking upstream and downstream domestic and international sector linkages into account. The outcome is ambiguous a priori, as the agreement leads to the specialisation of countries in more efficient, and possibly less polluting sectors. This, in turn, leads to trade diversion away from other trade partners (in the EU-Korea context: China and the US) that may be more inefficient and possibly more polluting than the partners within the FTA. Second, the agreement may have explicit implications for the conduct of environmental policies and implicit ones that result from the logic of the

Environmental Kuznets Curve (EKC).[294] When studying CO_2 emissions, another factor is potentially important, too: firms with an inefficiently high use of fossil fuels have higher energy costs and are less competitive internationally. When trade costs fall, inefficient domestic firms are challenged by stiffer import competition from efficient foreign firms, while efficient domestic firms expand output at the cost of inefficient foreign producers. This effect is stronger the higher the costs (market price plus taxes or the costs of emission permits) are, but it is always present as long as fossil fuels command positive market prices.

Indeed, theoretically and empirically, exporting firms are on average cleaner than non-exporting ones.[295] When their share in total production rises, emissions fall due to a composition effect. Those firms also may have increased incentives to invest into emission-reducing abatement, in particular when emissions are caused by burning costly fuels. Moreover, as societies grow richer, they may allocate more resources to clean up the environment and use greener technologies. These technique effects also tend to lower emissions. Empirical cases have been discussed in the literature where the composition and technique effects have indeed overturned the scale effect.[296]

The core of this subsection aims at providing indications regarding the net effect of the EU-Korea FTA on environmental outcomes. Using the Ifo Trade Model and employing data from the GTAP-E database, we can calculate the change in CO_2 emissions arising from the change in sectoral output in each country of the world due to the FTA. As CO_2 is a global pollutant, it is important to calculate the global, i.e. world-wide effect. However, the model also allows us to shed light on how country-level emissions change due to the FTA. For example, depending on the global structure of comparative advantage, it is possible that the agreement leads to a reallocation of activity in Europe and Korea away from CO_2-intensive sectors towards more environmentally-friendly ones (composition effect). This leads to lower emissions in both regions, while it induces third countries to specialise more strongly in CO_2-intensive sectors (including sectors that are CO_2-intensive due to land use change, e.g. deforestation in developing countries). The Ifo model is well suited to address these effects. It can also be used to single out the CO_2 emissions caused by additional transportation. This analysis will allow for composition effects but will treat technologies as constant; this may lead to underestimation of the cleaning-up effects of trade.

Note that the reported CO_2 changes refer to estimated output change based on the counterfactual simulation of the Ifo Trade Model, as more recent sectoral CO_2 emissions are not available.[297] Thus, the reported results need to be interpreted as follows: the changes would have occurred given the sectoral value added changes by the FTA (provided in section 5.5, CGE analysis) and keeping the emitting rates of the industries, as observed in 2011, constant. This basically means that the counterfactual emissions only increase or decrease because of a higher or lower output level and not because of changes in production technologies. We kept the rate of emissions that are emitted per unit of output constant. Hence, one can derive a linear change in emissions based on the counterfactual output. All values on emissions are on an annual basis.

[294] According to the EKC, there exists an inverted u-shaped relationship between per capita income and environmental degradation. Thereby it assumes increasing environmental degradation for increases of lower levels of per capita income and decreasing environmental degradation for increases in higher levels of per capita income.

[295] Forslid, Rikard, Toshihiro Okubo, and Karen Helene Ulltveit-Moe. "Why are Firms that Export Cleaner? International Trade, Abatement and Environmental Emissions." 2015. CEPR Discussion Paper no. 8583

[296] Copeland, Brian R., and M. Scott Taylor. Trade, Growth, and the Environment. 2004. NBER Working Paper no. 9823.

[297] See chapter 5.4 for a detailed explanation of the data used for the CGE model

9.4. Local CO_2 emission changes in Europe

Assessing local emissions in Europe is complicated due to the EU emissions trading system (ETS). Technically, the ETS fixes the quantity of CO_2 emissions and thus, no additional emissions can occur because of the EU-Korea FTA. However, not all sectors are included in the ETS, which covers 45 percent of greenhouse gas emissions of the participating countries (EU28 and Iceland, Liechtenstein, Norway).[298] The Emission Trading System includes CO_2 emissions from power and heat generation, energy-intensive industry sectors and commercial aviation (the latter one since 2016). Not included are other greenhouse gas emissions or CO_2 emissions from agriculture, the transportation sector and private households. Between 2013 and 2022, the EU lowers the cap on CO_2 emission allowances by a linear reduction factor of 1.74 percent per annum.[299] Under such a quantity constrained regime, any increase or decrease in the demand for emissions only leads to changes in the prices of pollution permits but not to changes in quantity of CO_2 emitted. The existence of the ETS therefore limits positive efficiency effects of trade, but also potential negative consequences through scale effects.

We begin the analysis of additional CO_2 emissions in Europe with the following thought experiment: how would CO_2 emissions have changed following the start of the provisional application of the FTA if there was no quantitative restriction as in the ETS? Figure 113 below displays this hypothetical change in CO_2 emissions at the country level. Changes are in percentage terms and are derived from sectoral value added and sectoral CO_2-intensities. Since in the real world the ETS exists and limits CO_2-emissions, these estimated changes can be seen as an upper bound of the additional emissions caused. It is highly unlikely that the effects have materialised in such a range as reported below.

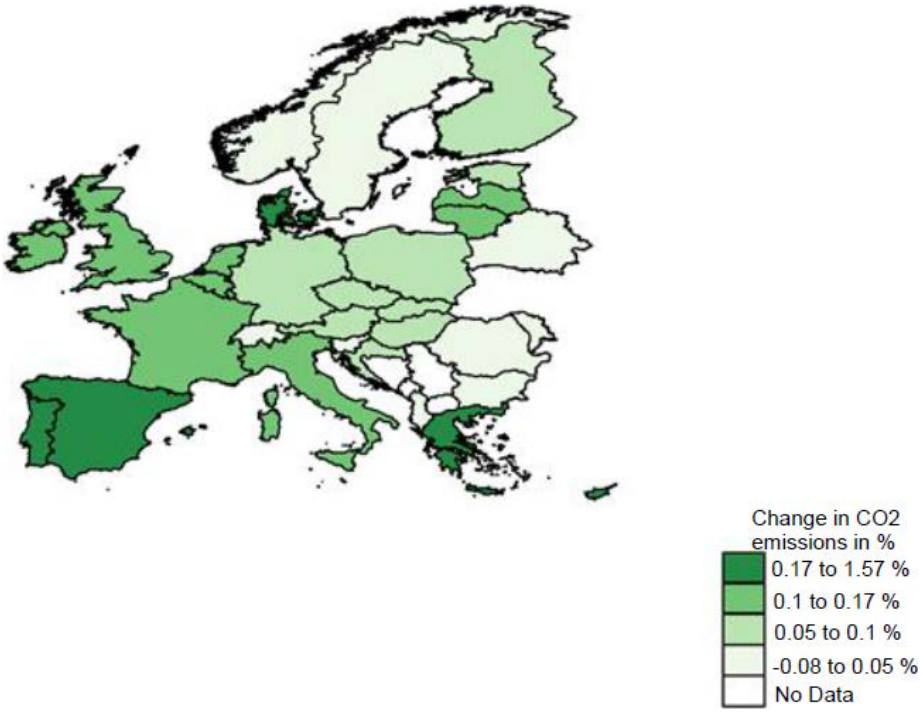
The changes in 23 out of 28 EU countries, including all major economies, range between 0 and 0.2 percent increases in CO_2. The two highest values, i.e. those for Malta (1.6 percent) and Cyprus (0.6 percent), could be driven by the relative importance of the CO_2-intensive transportation sectors in these countries. It is also driven by measurement error, which tends to be high when statistical entities become small.[300]

[298] https://ec.europa.eu/clima/policies/ets_en

[299] https://ec.europa.eu/clima/policies/ets/cap_en

[300] The reason is that idiosyncratic features (e.g., one single, large transaction) may dominate the aggregate picture.

Figure 113: Change in CO_2 emissions from domestic production (%)



Source: Ifo Trade Model (2017). The figure shows the change in CO2 emissions in percent. The darker the shaded area of a country is, the higher the change. The legend shows how the different shades are categorised. The legend of the figure provides intervals for the variable of interest.

Even though this scenario is counterfactual by construction, there are still two lessons to be learned from it: First, it predicts a worst-case scenario that materialises if the ETS is entirely ineffective; hence, it shows to what extent additional CO_2 emissions are at stake. Second, it indicates additional demand for CO_2 emissions and thus, how emission allowances are reallocated across Europe. Given the fact that the quantity of emission allowances is fixed, we necessarily observe a price adjustment. Whether this price adjustment leads to a reallocation of emission permits across Europe depends on the degree to which countries experience increases in value added and how CO_2-intensive the growing sectors are.

Roughly speaking, if countries were equally affected by production increases due to the FTA, no cross-border reallocation of emission allowances would occur. In contrast, if these effects affected countries asymmetrically thereby generating excess demand for emission allowances in only a few countries, we would observe cross-border adjustments via the emissions trading system. Countries with additional demand for permits must purchase net additional permits; countries with reduced demand will sell them, so that total emissions remain constant.

For Norway, which participates in the European ETS but is not a Party of the EU-Korea FTA, we only observe negative CO_2 changes. Thus, we can predict an outflow of emission allowances induced by the FTA. For the remaining countries with positive changes, this pattern is ex-ante ambiguous and depends on the cost structure of emission avoidance. Economically, this cost structure corresponds to the price elasticity of demand for emission allowances, which might differ across countries and industries. The ambiguity of the cross-border adjustments are best illustrated by the following example, in which we only focus on France and Germany and all other demands for emission allowances are held constant: Although French demand for emission allowances increases more than German demand, there could also be a net flow of emission allowances towards Germany if costs of emission avoidance are higher in Germany than in France. Thus, German firms would be willing to pay a price for CO_2 allowances which exceeds the costs of emission avoidance of French firms, and subsequently, CO_2 emissions increase in Germany and

decrease in France. Therefore, it is ex-ante impossible to clearly disentangle the reallocation process of emission permits.

Table 39 shows the change in CO_2 emissions by sectors. The CO_2 level before and after the FTA equals the sum of emissions of all EU28 Member States of each sector. Given the decrease in sectoral value added in the automotive sector of 414 million EUR (-0.19 percent), it is not surprising that the level of CO_2 decreases as well (-0.16 percent). As explained in the automotive case study (see section 10.1) the European value added includes value added generated by Korean firms in Europe (which have significant car manufacturing operations in the EU).[301]

The largest EU CO_2 increases are generated in the agriculture, fishing and processed food sector (see Table 38). This development coincides with the generated sectoral value added effects of the general equilibrium analysis (see section 5.5). The actual economic development in the agricultural sector shows an upward trend of EU exports towards Korea, which coincides with increased CO_2 emissions simulated by the CGE model. This shift in CO_2 emissions from Korea towards Europe becomes evident when one looks at the decrease of CO_2 emissions in Korea (-0.72 percent). Although the European emissions increase in the agricultural sector, the sector's global CO_2 emissions decrease by 0.02 percent, which equals 0.07 million tonnes of CO_2.

The CO_2 emissions in the EU electronic equipment sector would increase by 0.35 percent due to increase output. The results of the interviews confirmed that the EU-Korea FTA is considered to have boosted the competitiveness of EU exporters in this sector relative to competitor countries, which results in higher emissions due to increased production. This development is validated by the actual increasing developing trend of European exports in this sector.

The trade and transport sectors would increase their CO_2 emissions by an average of 0.17 percent. This development stems from increasing European trade activity. The remaining industries, except the energy sector would be confronted with increasing CO_2 emissions, although the magnitude is rather small in percentage terms.

Table 38: Changes in European CO_2 emissions by sector

Region	CO_2 level without FTA (million tonnes)	CO_2 level with FTA (million tonnes)	Difference in CO_2 Level	Change in %
Agriculture	32.67	32.77	0.10	0.32
Automotive	2.14	2.13	0.00	-0.16
Business services	15.69	15.69	0.00	0.00
Chemicals	33.72	33.74	0.02	0.04
Construction	8.22	8.22	0.00	0.04
Electronic equipment	0.52	0.52	0.00	0.35
Energy	76.15	76.09	-0.06	-0.08
Financial and Insurance services	2.19	2.19	0.00	0.03
Fishing	3.71	3.71	0.00	0.09

[301] Hyundai and Kia have established production facilities in the Czech Republic and Slovakia; see the case study on the automotive sector in section 10.1.

Machinery and equipment	5.95	5.97	0.02	0.34
Manufacturing	0.75	0.76	0.00	0.05
Metals	32.30	32.32	0.01	0.04
Other services	24.10	24.12	0.02	0.07
Processed food	11.32	11.35	0.03	0.26
Raw material	4.96	4.96	0.00	0.03
Telecoms	1.62	1.62	0.00	0.03
Textile	2.49	2.49	0.00	0.03
Trade	14.51	14.53	0.02	0.14
Transport	587.11	588.22	1.11	0.19
Utilities	566.47	566.84	0.37	0.07
Wood paper and minerals	40.60	40.64	0.04	0.11

Source: Ifo Trade Model (2017).

As a brief conclusion, we can state the following: even in a world without ETS, additional CO_2 emissions induced by the FTA are relatively low (below 0.2 percent in the vast majority of EU countries). Since the ETS covers most industrial CO_2 emissions in Europe, it most likely has prevented the realisation of the CO_2 emission changes reported above. In addition, trade diversion effects lead to a reduction of overall CO_2 emissions in a global perspective (see section 9.6 below).

9.5. Local CO_2 emission changes in Korea

Based on the results of the CGE analysis, the Korean CO_2 level is expected to increase with the EU-Korea FTA by 0.24 million tonnes, compared to the counterfactual situation which corresponds to an overall increase of 0.19 percent. Since no such quantity limitation comparable to the ETS existed in Korea in 2011, we would expect that the additional output induced by the FTA indeed translated proportionally into higher emissions. The reason is that the absence of a trading scheme implicitly sets the price of emitting CO_2 to zero. Hence, any change in output becomes fully effective in the emitted quantity of CO_2.

In 2015, Korea implemented an emissions trading system similar to the one of the EU. The Korean ETS is partially even more ambitious than the European one, e.g. it covers 68 percent of Korean greenhouse gas emissions. By 2020, the objective of the Korean ETS is to lower greenhouse gas emissions by 30 percent compared to a business as usual scenario. The phase-in with free allocation of emission allowances takes three years. During that time, CO_2 emissions will be reduced by 4 percent. The caps for 2019 onwards are not yet announced.[302] However, it is clear that as in Europe, quantitative limitations of emissions imply that the future effects of the FTA cannot have any effects on the level of emissions but only on the price of emission permits.

The percentage changes of CO_2 emissions in Korea are larger than for the EU28 countries. The effects are heterogeneous across and within sector groups. The manufacturing sectors lead to moderate changes of 0.2 percent in the machinery sector and higher increases of CO_2 levels in the automotive sector. The automotive sector's CO_2

[302] https://icapcarbonaction.com/en/?option=com_etsmap&task=export&format=pdf&layout=list&systems%5B%5D=47

level increases by almost 3.7 percent, which corresponds to the strong increase of Korean sectoral value added in the automotive sector (4.1 percent). The reduction of trade barriers between the EU and Korea makes it easier for Korean car manufacturers to serve the EU market through exports rather than through local production in Europe, leading to a shift of value added towards Korea. In other manufacturing sectors, such as chemicals, CO_2 emissions increase between 1 and 2 percent. The agricultural CO_2 level decrease by 0.7 percent, which can be ascribed to the declining value added (190 million EUR). Interestingly, Korean trade and transport CO_2 emissions decreased, because of decreasing sectoral value added. This decrease can be explained by trade diversion effects. The remaining sectors are quite heterogeneous as well. As mentioned in the previous section, in a global perspective trade diversion effects more than compensate the increases in emissions in Korea (see section 9.6 below).

Table 39: Changes in Korean CO_2 emissions by sector

Region	CO_2 level without FTA (million tonnes)	CO_2 level with FTA (million tonnes)	Difference in CO_2 Level	Change in %
Agriculture	3.63	3.60	-0.03	-0.72
Automotive	0.76	0.79	0.03	3.76
Business services	2.15	2.18	0.03	1.24
Chemicals	3.20	3.23	0.03	1.03
Construction	2.70	2.70	0.00	0.13
Electronic equipment	0.27	0.27	0.00	0.29
Energy	14.10	14.38	0.28	1.99
Financial and Insurance services	0.33	0.33	0.00	-0.14
Fishing	3.18	3.19	0.00	0.09
Machinery and equipment	0.94	0.94	0.00	0.21
Manufacturing	0.36	0.36	0.00	0.42
Metals	11.25	11.35	0.10	0.90
Other services	3.86	3.86	0.00	-0.05
Processed food	1.24	1.24	0.00	-0.01
Raw material	0.37	0.38	0.00	0.35
Telecoms	0.29	0.29	0.00	-0.01
Textile	0.99	1.00	0.01	0.91
Trade	4.26	4.24	-0.02	-0.41
Transport	57.79	57.54	-0.25	-0.43
Utilities	14.23	14.29	0.06	0.40
Wood paper and minerals	3.64	3.63	-0.01	-0.31

Source: Ifo Trade Model (2017).

9.6. Effects on global CO_2 emissions

The aforementioned local effects are only of limited informative value since greenhouse gas emissions have world-wide consequences no matter where the pollution has occurred. Hence, one has to assess the global CO_2 emission differences in order to take the effect of the EU-Korea FTA fully into account.

As mentioned earlier, trade diversion leads to a shift in the composition of bilateral imports and exports. For example, due to the lowering of trade costs between the EU and Korea, one could expect higher European steel imports from Korea and lower steel imports from other countries; since Korea produces steel that is most likely more environmentally friendly than e.g. China, global CO_2 emissions would decrease ceteris paribus. Thus, CO_2-intense EU imports would be replaced by cleaner Korean production and vice versa.

Opposite effects could also be expected: since the agreement increases welfare in both the EU and Korea, they trade less in CO_2-intensive goods but more in human capital-intensive services. Thus, the structure of comparative advantages for the EU and Korea shifts towards industries that are less CO_2-intensive. At the same time, the EU and Korea might import more CO_2-intense products from the rest of the world. This would lead to a situation where emissions occur in some countries with large manufacturing export sectors but can ultimately be attributed to the consumption of goods in the EU and Korea.

Ex-ante, these fundamentally different trade diversion effects can sufficiently be described only by a general equilibrium analysis at the global level. The distribution of changes in CO_2 emissions across different regions of the world is shown in the table below.

Table 40: Changes in CO_2 emissions by world region

Region	CO_2 level without FTA (million tonnes)	CO_2 level with FTA (million tonnes)	Difference in CO_2 level (million tonnes)	Change in %
Korea	129.6	129.8	0.24	0.19
EU28	1 467	1 469	1.7	0.12
Canada	354.2	354.0	-0.2	-0.1
US	3 884	3 883	-1.35	-0.03
China	6 220	6 217	-2.81	-0.05
Japan	333.24	332.98	-0.26	-0.08
Turkey	88.21	88.20	-0.02	-0.02
ASEAN	643.46	643.21	-0.25	-0.04
Least Developed Countries	11.92	11.92	-0.001	-0.01
Other developing Countries	2 127.0	2 126.6	-0.5	-0.02
Rest of the world	4 961.3	4 960.3	-1.0	-0.02
World total	19 488	19 484	*-4.1*	*-0.02*

Source: Ifo Trade Model (2017).

The GE analysis conducted for this study yields a net reduction of global CO_2 emissions by 4.1 million tonnes CO_2.[303] The global CO_2 reduction can almost be fully ascribed to only two countries that suffer from trade diversion effects, namely China (-2.8 million tonnes CO_2) and the United States (-1.3 million tonnes). As already mentioned, the aggregated estimates include higher emissions of EU countries as well and these are, due to the ETS in place, overestimated (see section 9.4). The largest CO_2 emission reductions in percentage terms can be found in the machinery and equipment sectors (0.1 percent reduced CO_2 emission at a global level, see the table below). An overall increase in efficiency might be one potential reason for this result. In absolute terms, the largest reduction of emissions can be observed in the utilities sector, accounting for a reduction of 2.53 million tonnes, more than half of the overall reduction at global level.

[303] To provide a measure of comparison, global CO_2 emissions yield approximately 20 billion tonnes. The reduction in global emissions of 4.1 million tonnes of CO_2 is approximately equivalent to the greenhouse gas emissions that are produced by 866 000 passenger vehicles driven for one year (US average), see https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Table 41: Changes in global CO_2 emissions by sector

Region	CO_2 level without FTA (million tonnes)	CO_2 level with FTA (million tonnes)	Difference in CO_2 Level (million tonnes)	Change in %
Agriculture	330.65	330.58	-0.07	-0.02
Automotive	31.48	31.47	-0.01	-0.05
Business services	96.93	96.95	0.02	0.02
Chemicals	645.25	644.98	-0.27	-0.04
Construction	121.35	121.33	-0.02	-0.02
Electronic equipment	26.16	26.15	-0.01	-0.06
Energy	1 081.84	1 082.03	0.19	0.02
Financial and insurance services	27.23	27.23	0.00	-0.01
Fishing	44.84	44.82	-0.01	-0.03
Machinery and equipment	125.85	125.72	-0.13	-0.10
Manufacturing	47.54	47.54	0.00	0.00
Metals	954.96	954.50	-0.46	-0.05
Other services	347.20	347.13	-0.07	-0.02
Processed food	144.50	144.46	-0.04	-0.03
Raw material	149.45	149.44	-0.01	-0.01
Telecoms	15.29	15.29	0.00	-0.01
Textile	73.94	73.93	-0.01	-0.02
Trade	200.07	200.03	-0.04	-0.02
Transport	3 539.09	3 538.77	-0.32	-0.01
Utilities	10 393.39	10 390.86	-2.53	-0.02
Wood paper and minerals	1 091.20	1 090.92	-0.29	-0.03

Source: Ifo Trade Model (2017).

9.7. Other environmental indicators

The descriptive analysis of indicators concerning other environmental areas, such as air pollution, water quality, biodiversity, waste management and deforestation does not indicate any observable impact of the EU-Korea FTA. The full descriptive analysis of these indicators is presented in Annex XI.

10. Case studies

This section presents the eight case studies conducted with respect to the EU-Korea FTA. Five of these case studies are sectoral, focusing on the automotive, agriculture, electronics, environmental goods and services, and postal services sectors. The other three case studies are cross-cutting, focusing on the rules of origin of the EU-Korea FTA, the use of tariff preferences under the FTA, and the implementation of the institutional mechanisms of the TSD chapter.

10.1. Case study on the automotive sector

This case study examines the development of EU-Korea trade in vehicles since the start of the provisional application of the EU-Korea FTA in 2011, with a particular focus on passenger cars. The case study analyses the effects of the reduction in tariffs resulting from the EU-Korea FTA, and the degree to which non-tariff trade costs affecting EU-Korea automotive trade have been removed. This case study also reviews the impact of the EU-Korea FTA on the competitiveness of EU producers, as well as other impacts.

Reasons for selecting the automotive sector as a case study included the following: the sector experienced a considerable decrease in protection levels due to the EU-Korea FTA; the sector was deemed sensitive during the FTA negotiations; and, the sector is of high economic relevance for both the EU and Korea.

This case study is based on the results of desk research, the economic analysis, the public consultation, and stakeholder interviews.[304]

10.1.1. Background on the EU and Korean automotive sector

Both the EU and Korea are major producers and exporters of motor vehicles. In 2016, the EU accounted for 19.8 percent of global motor vehicle production (equivalent to 21.7 million units, making it the second largest producer after China), and Korea accounted for 4.5 percent (4.2 million units, making it the sixth largest producer globally).[305] In the same year, the EU exported 6.3 million passenger cars (equivalent to 29 percent of production),[306] whereas Korea exported 2.7 million vehicles (corresponding to approximately two-thirds of its production). In the EU, the automotive sector accounts for roughly 4 percent of EU GDP and provides an estimated 12 million jobs in manufacturing, sales, maintenance and transport.[307] In Korea, the automotive sector accounts for about 3 percent of GDP and was ranked first within the manufacturing industry in terms of employment, production, and added value in 2014 (the last year in which data was available).[308,309]

For Korea, the EU is the third most important export market (13 percent of vehicles exported),[310] while for the EU automotive industry, the relative importance of Korea as export market is smaller, with Korea as its ninth most important market (accounting for

[304] For a list of interviewees, see Annex IX.

[305] International Organization of Motor Vehicle Manufacturers (OICA).

[306] European Automobile Manufacturers' Association (ACEA).

[307] Commission Services' calculations on data supplied by IHS Automotive, copyright 2016 © IHS Global Insight.

[308] KAMA, Korean Automobile Industry Annual Report 2014.

[309] KBS World Radio, "The Korean automobile in crisis and what it can do to overcome the difficulty." http://world.kbs.co.kr/english/program/program_economyplus_detail.htm?No=5728

[310] North America and the Middle East are the first and second most important export markets for Korean cars, respectively (See KAMA, Korean Automobile Industry Annual Report 2014).

2.9 percent of all motor vehicle exports in 2016).[311] However, Korea's importance as a car export destination for the EU is increasing.

10.1.2. Industry views of the FTA prior to its implementation

At the time of negotiations, the EU automotive industry emphasised its discontent with the EU-Korea FTA. While the European Automobile Manufacturers' Association (ACEA) supported the elimination of Korean tariffs in the motor vehicles sector, the timing of EU tariff elimination was regarded as being too quick, and the provisions allowing for permanent duty drawback as well as the relaxation of origin criteria for motor vehicles (an increase from 40 percent to 45 percent of foreign content) were both thought to provide an unfair advantage for Korean producers. Additionally, while the automotive annex of the FTA was acknowledged as breaking new ground on non-tariff measures, the industry voiced concern that not all Korean regulations were to be harmonised with EU or international standards; it also complained that loopholes existed in the provisions and feared that new non-tariff trade costs could still be created through health, safety, and environmental regulations.[312]

10.1.3. Overview of relevant FTA provisions

As mentioned above, the EU-Korea FTA contains a novel sector-specific annex on motor vehicles and parts (Annex 2-C). As differences in regulations between the EU and Korea represented a significant barrier for motor vehicle exporters at the time of negotiations, this Annex highlighted the importance of regulatory convergence, and recognised that the World Forum for Harmonisation of Vehicle Regulations (WP.29) within the framework of the United Nations Economic Commission for Europe (UNECE) is the relevant international standard-setting body for the products covered in the Annex. The Annex applies to all forms of motor vehicles and parts other than tractors, snow mobiles and golf carts, and construction machinery.

The FTA stipulates that the EU and Korea are to accept all products in the scope of Appendices 2-C-2 and 2-C-3, respectively, that fulfil UNECE regulations as complying with national regulations, and commits both Parties to harmonise certain national regulations with the corresponding UNECE regulations within five years of the start of the provisional application of the FTA "without undue delay". The EU and Korea are to enter into consultations to find solutions for technical issues that are not covered by the Annex.

Annex 2-C also committed the EU and Korea to avoiding the introduction of new regulations departing from UNECE regulations in the absence of a legitimate road safety, environmental or public health justification. The Parties are to review technical regulations that differ from existing UNECE regulations at least every three years to assess if their imposition is still valid.

Additionally, the FTA stipulates most-favoured nation treatment for internal taxes and emissions regulations with respect to products covered by Annex 2-C (including as provided in any free trade agreement); prohibits the EU and Korea from preventing the introduction of products with new technologies or features to the market without a legitimate human health, safety or environmental justification; and prohibits the EU and Korea from introducing other regulatory measures impeding market access for products covered by Annex 2-C, except if measures are necessary for road safety, the protection of the environment or public health and the prevention of deceptive practices. The FTA also mandates that UNECE-type approval certificates issued by the competent authorities are considered as providing a presumption of conformity for the relevant products within the scope of Annex 2-C.

[311] European Automobile Manufacturers' Association (ACEA), Statistics Korea.

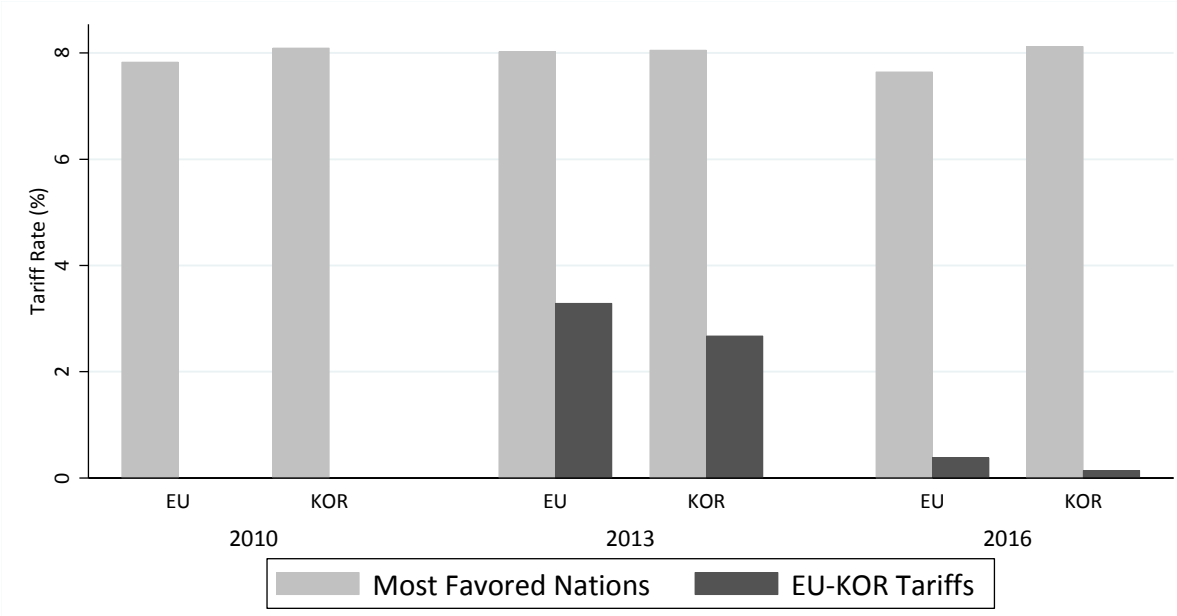
[312] Quoted based on: LSE Enterprise Limited. *An Assessment of the EU-Korea FTA*. 2010.

Annex 2-C established the Working Group on Motor Vehicles and Parts as a means of facilitating cooperation and addressing problems between the EU and Korea. Disputes in the area of motor vehicles and parts fall within the dispute settlement framework set out in Chapter 14 of the FTA, and are to be considered a "matter of urgency", with shorter timelines foreseen than for ordinary dispute settlement proceedings.

10.1.4. Evolution of tariffs in the automotive sector after the start of the provisional application of the FTA

Most of the products[313] in the automotive sector listed in the tariff schedule provided in Annex 2-A of the EU-Korea FTA (Chapter 87 – Vehicles other than railway or tramway rolling stock, and parts and accessories thereof) were traded free of tariffs after 2011. A second fraction of tariffs was fully eliminated after three years, with the rest reduced to zero after five years. For a full picture of the extent to which the FTA reduced tariffs in the automotive sector, the figure below presents the trade-weighted tariffs in 2010 (before the start of the provisional application of the FTA) and in 2013 and 2016. Between 2010 and 2016, tariffs on imports in the automotive sector were reduced in both Korea and the EU by around 95 percent. In 2010, trade-weighted tariffs in the EU and Korean automotive sector were around 8 percent. By 2016, these tariffs had been reduced to roughly 0.5 percent. Since tariffs imposed on most favoured nations stayed at approximately the same level, EU vehicles exported to Korea under preferential tariffs faced a comparatively better situation than those of other countries that did not have an FTA with Korea. The same is also true for Korean car exports to the EU.

Figure 114: Tariffs on vehicles (trade-weighted in %)



Source: Own compilation, based on TARIC (2017). Note: The MFN tariffs of a country are imposed on imports from all WTO members except those with which a country has a preferential trade agreement. In 2010, both Korea and the EU imposed MFN tariffs on each other. 2013 and 2016 show the situations as of 2013 and 2016, not the target level of tariffs after full implementation of the agreement. Included product groups are detailed in a subsequent table on trade costs.

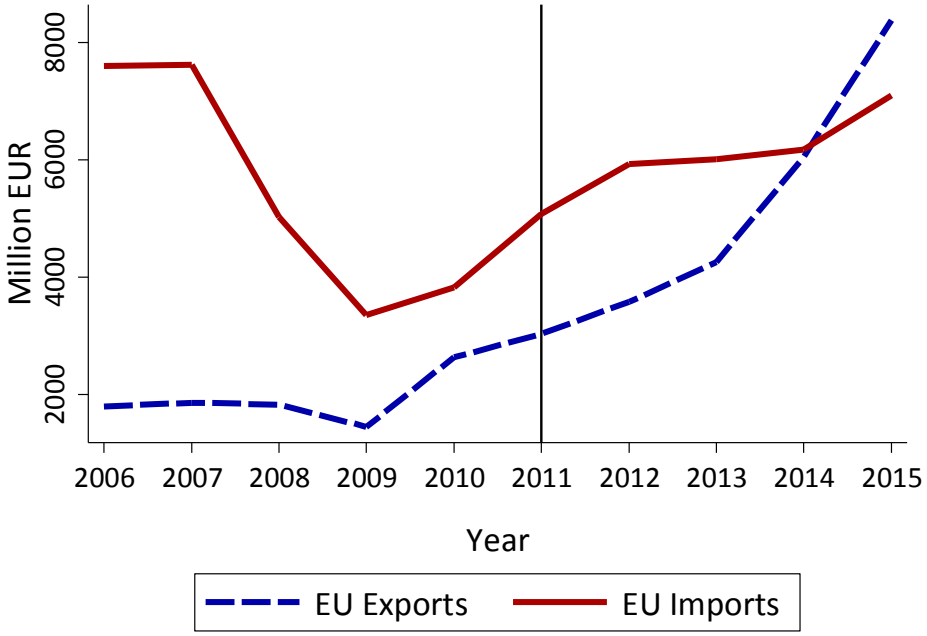
No problems were reported by interviewed stakeholders regarding the implementation of the tariff reduction schedule.

[313] In Annex 2-A, products in the tariff schedule of Korea are listed according to the Harmonised Tariff Schedule of Korea (HSK2007), whereas products in the tariff schedule of the EU are listed according to the Combined Nomenclature (CN2007).

10.1.5. Effects of the FTA on trade in the automotive sector

The figure below presents EU vehicle imports from and exports to Korea from 2006 to 2015. Two aspects of this figure stand out. First, we observe a sharp fall in imports from Korea over the years 2008-2009, which must be set in the context of the financial crisis and the subsequent devaluation of the KRW, which led to a decline in imports denoted in EUR. While the recovery beginning in 2009 has been strong, the EU has yet to return to pre-crisis levels of imports. The second observation is that EU exports soared from a mere EUR 2 billion in 2006 to over EUR 8 billion in 2015. Most of this 400 percent increase corresponds to the post-FTA period.

Figure 115: EU exports to and imports of vehicles from Korea



Source: Own compilation, based on COMEXT (2017).

With respect to the differentiation of EU exports and imports in the automotive sector, 90 percent of EU automotive exports and 76 percent of imports are concentrated in the top ten products of each category.[314] To put this extreme concentration into perspective, in 2015 the EU exported 158 products in the automotive sector and imported 138 products.

The top 10 EU import goods from Korea are:

- Diesel cars 1500-2500 CC (CN 87033219)
- Gasoline cars 1000-1500 CC (CN 87032319)
- Gasoline cars 1500-3000 CC (CN 87032210)
- Gasoline cars ≤ 1000 CC (CN 87032110)
- Parts for assembly (CN 87082990
- Parts and accessories (CN 87089997)
- Aluminium parts and accessories (CN 87087050
- Gear boxes (CN 87084050)
- Parts for drive-axles (CN 87085099)
- Gear Boxes for Diesel or Semi-Diesel ≤ 2500 CC (CN 87084020)

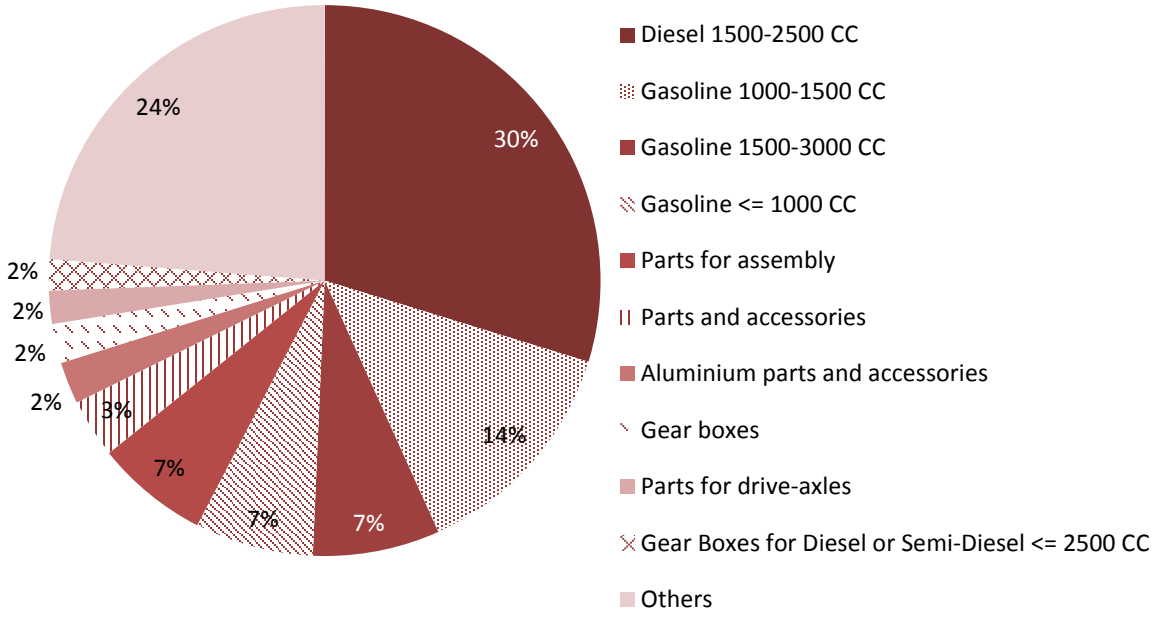
[314] Recall that automotive trade accounts for 17 percent of total trade between the parties.

The top 10 EU export goods to Korea are:

- Diesel cars 1500-2500 CC (CN 87033219)
- Diesel cars >2500 CC (CN 87033319)
- Gasoline cars >3000 CC (CN 87032410)
- Gasoline cars 1500-3000 CC (CN 87032319)
- Diesel cars ≤ 1500 CC (CN 87033110)
- Diesel cars of weight > 20 t (CN 87042391)
- Gear boxes (CN 87084050)
- Parts and accessories (CN 87089997)
- Road tractors (CN 87012010)
- Crane lorries (CN 87051000)

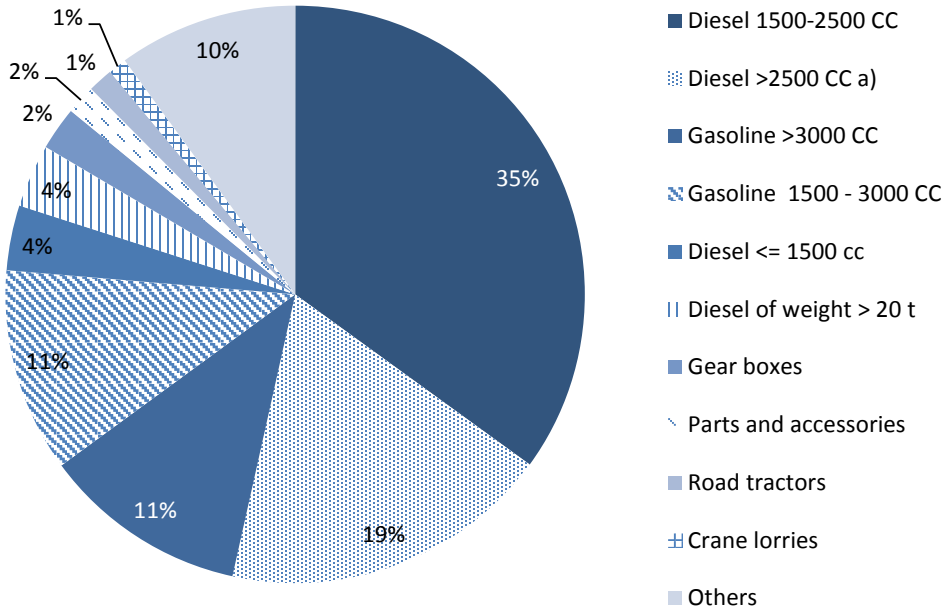
The share of the top ten EU import goods from Korea and EU export products to Korea are provided in the following figures.

Figure 116: Top 10 EU automotive import products from Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

Figure 117: Top 10 EU automotive export products to Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

The table below specifies the growth in price and quantity over the period 2011 to 2015 for the top 10 EU export and import products with respect to Korea. Note that the COMEXT database presents quantities in tonne equivalents for all goods. While this may be a counterintuitive measurement for some goods (e.g. cars), it enables a good means of comparison.[315]

Notably, the most prominent product both on the import and export sides corresponds to diesel cars with a medium cylinder capacity. Three of the top ten imported products are motor cars with spark ignition engines (gasoline cars). These are vehicles with small- to medium-sized cylinder capacity, which simultaneously experienced growth in prices and (for the third listed product) a decrease in quantities sold. The growth in EUR-denominated prices shown in the table below for the top three imported Korean products is based on COMEXT data, which is not exchange rate-adjusted (see section 5.2.1 above). Price changes in the automotive sector induced by the FTA are further explored below.

[315] The database does not provide the same data on a unit basis.

Table 42: Numbers and growth rates of top 10 EU import goods from Korea

Product	Price 2011 *(EUR 1000 per tonne)*	Price 2015 *(EUR 1000 per tonne)*	Growth in Prices (%)	Quantity 2011 *(1000 tonnes)*	Quantity 2015 *(1000 tonnes)*	Growth in Quantities (%)
Diesel 1500-2500 CC	8.3	10.3	23.5	200.3	205.1	2.4
Gasoline 1000-1500 CC	5.5	7.3	32.1	100.5	130.8	30.1
Gasoline 1500-3000 CC	6.2	8.5	36.7	92.5	62.3	-32.6
Gasoline ≤ 1000 CC	5.4	6.3	16.1	72.9	78.4	7.6
Parts for assembly	4.2	3.8	-9.2	41.6	122.5	194.8
Parts and accessories	4.7	8.4	79.5	41.0	29.3	-28.6
Aluminium parts and accessories [a)]	NA	4.5	NA	NA	38.7	NA
Gear boxes [a)]	NA	11.9	NA	NA	13.9	NA
Parts for drive-axles [a)]	NA	3.9	NA	NA	35.7	NA
Gear Boxes for Diesel Or Semi-Diesel ≤ 2500 CC	8.6	11.0	28.0	16.4	11.8	-28.2

Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2010. This is likely due to a change in classification.

Turning to EU exports depicted in the table below, two of the top ten products are also gasoline cars. Prices for gasoline cars with high cylinder capacity (>3000 CC) are comparatively high, which suggests that these are likely premium vehicles.

Table 43: Numbers and growth rates of top 10 export goods to Korea

Product	Price 2011 *(EUR 1000 per tonne)*	Price 2015 *(EUR 1000 per tonne)*	Growth in Prices (%)	Quantity 2011 *(1000 tonnes)*	Quantity 2015 *(1000 tonnes)*	Growth in Quantities (%)
Diesel 1500-2500 CC	12	15.1	25.9	42.9	194.1	352.7
Diesel >2500 CC	16.4	24.5	49.2	14.7	63.2	330.5
Gasoline >3000 CC	21	38.6	84.1	29.9	24.8	-16.9
Gasoline 1500 - 3000 CC	14.5	18.6	28.6	39.1	51.3	31.2
Diesel <= 1500 cc	NA	8.0	NA	NA	38.1	NA
Diesel of weight > 20 t	7.7	9.3	21.0	16.7	32.0	91.2
Gear boxes	16.3	16.8	3.2	12.2	12.1	-0.9
Parts and accessories	10.4	13.1	26.0	12.0	10.4	-12.9
Road tractors	7.9	10.5	33.8	12.0	11.3	-6.5
Crane lorries	6.2	6.8	10.1	9.3	12.3	33.3

Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2010. This is likely due to a change in classification.

Our interviews with stakeholders confirmed the data presented above. The EU-Korea FTA was assessed by all stakeholders as having helped increase exports of EU vehicles to Korea in recent years. This was in contrast to the aforementioned expectations at the time of negotiations of the FTA, when the EU automotive industry voiced concerns that the agreement would result in an influx of Korean cars in the EU market. However, stakeholders also noted that the trend of increasing EU exports to Korea had already begun before the start of the provisional application of the FTA.

In support of the price growth exhibited by some of the top EU export goods to Korea, stakeholders also confirmed the importance of premium vehicles as a driver of EU exports, attributing this to growing Korean demand for such vehicles, as well as the larger effects the reduction in tariffs has had on higher-value luxury cars. In contrast, interviewees pointed out that EU mass market brands have had less success making headway in the Korean market. For such manufacturers, the Korean market has limited potential even after the introduction of the FTA due to lack of Korean demand. As further evidence of the importance of premium vehicles with respect to total EU vehicle exports to Korea, ACEA also highlighted in a position paper that while the EU trade balance in the sector has shifted from a deficit to a surplus since 2014 in terms of value, the picture is different in terms of vehicle units, where the EU has faced a trade deficit (of roughly 145 000 units in 2015).[316]

Separately, but also of relevance to EU-Korea trade in vehicles are the investments of Hyundai and Kia in the EU. (See the box below.)

[316] ACEA, "The implementation of the EU-Korea FTA – ACEA Assessment", 2016.

Hyundai and Kia in the EU

Prior to the start of the provisional application of the EU-Korea FTA, Korean automotive producers Hyundai and Kia (both brands of Hyundai Motor Group) had already invested significantly in the EU.

Hyundai's European flagship plant, Hyundai Motor Manufacturing Czech (HMMC), was opened in November 2008 in Nošovice, in the Czech Republic, following an investment of EUR 1 billion. The plant has a production capacity of over 300 000 cars per year. Kia opened Kia Motors Slovakia (KMS) in April 2007 in Žilina, Slovakia, which also has a production capacity of over 300 000 cars per year. In 2014, 71 percent of Hyundai and Kia vehicles sold in the EU were produced in either the latter two plants or Hyundai's plant in Turkey (in 2011 and 2012, the number of Korean cars of European origin already exceeded the number of imported Korean cars).

These investments have contributed to making the Czech Republic and Slovakia the world's top two producers of cars per capita. In 2014, these plants produced value added of nearly EUR 1.2 billion and employed approximately 6 900 staff. More generally, Hyundai represents close to 10 percent of employment in the "manufacturing of motor vehicles" sector in the Czech Republic, while Kia represents over 20 percent of employment in this sector in Slovakia.

Hyundai and Kia are also key buyers in the EU automotive supply industry. According to company data, as of 2014, 72 percent of total supplies (corresponding to EUR 5.5 billion) were sourced from within the EU. One interviewee also noted that some EU-produced car parts that had originally been exported to Korea had, to a certain extent, been diverted to Korean plants in the EU.

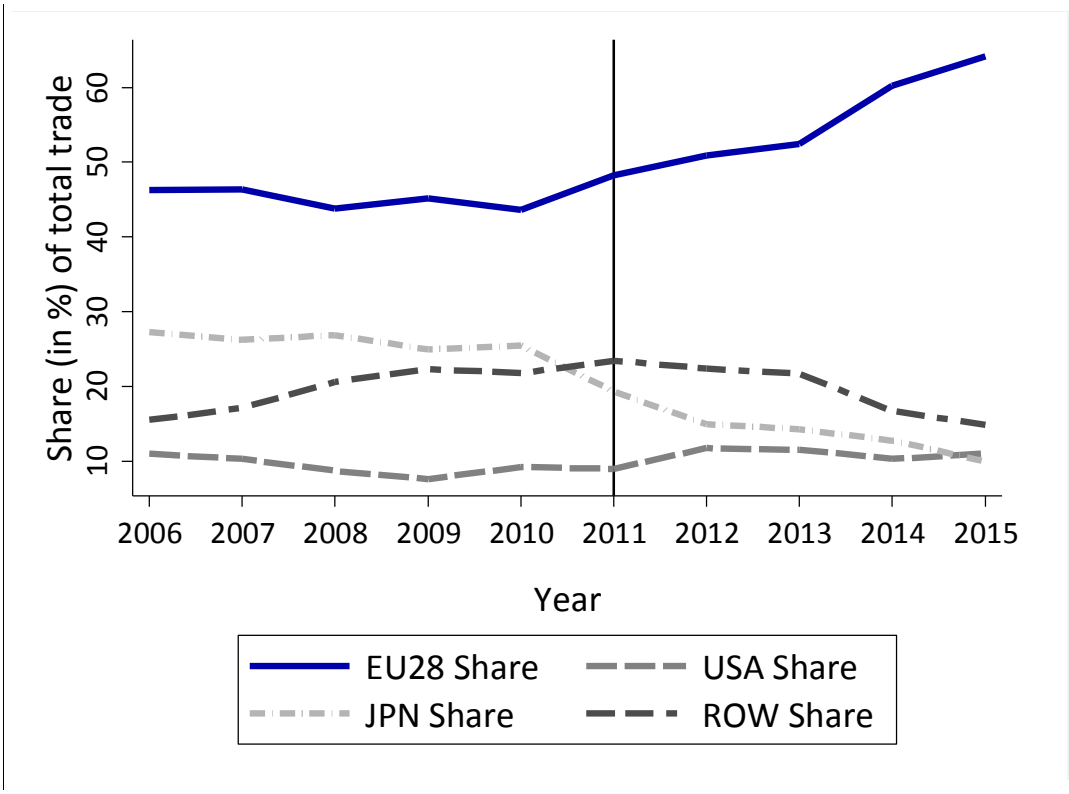
Source: Stakeholder interviews; Commission Services' calculations on data supplied by IHS Automotive, copyright 2016 © IHS Global Insight; London Economics, "The economic and societal benefits deriving from the presence of Hyundai and Kia in Europe", 2013/2015; Copenhagen Economics 2014, "The impact of trade liberalization on the EU automotive industry: trends and prospects."

10.1.6. Effects of the FTA on the competitiveness of EU automotive producers

In addition to looking at the development of EU trade with Korea, it is also important to examine EU trade with Korea relative to other countries in order to assess how the EU-Korea FTA has affected the competitiveness of the EU industry. To this end, the figure below plots the evolution of the EU share of Korean automotive imports during the last decade. The other shares represented include the US, which is home to some of the biggest car producers in the world, Japan, which is also an important player in the sector and should have more product-affinity with neighbouring Korea, and the rest of the world (RoW). At first glance, we observe that the EU share of Korean imports is remarkably high over the entire period. Looking closer at this share, it remains constant during the pre-FTA period, but records an 18 percentage point increase in the post-FTA period. In contrast, Japan (which is currently engaged in FTA negotiations with Korea) loses market share from 2011-2014, as does RoW from 2013-2014. The share of Korean imports from the US is roughly stable at around 10 percent of automotive imports.[317] The figure highlights the strong performance of EU vehicle exports to Korea and leads to the conclusion that the EU outperformed its competitors in this sector. It also shows that the EU's fourfold increase in sales cannot be exclusively linked to favourable market conditions in Korea. The aforementioned devaluation of the EUR against the KRW since 2009 likely played an important role in this development, since it made imports from the EU more attractive. Still, given that the USD and JPY experienced similar exchange rate dynamics, this variable alone cannot explain the growth of market share observed.

[317] Note that under the KORUS FTA, which entered into force on March 12, 2012, Korea was not scheduled to reduce its tariff on US passenger car imports until the fifth year after implementation of the agreement. (See U.S.-Korea FTA Business Coalition, "Automotive Provisions in the U.S.-Korea FTA".)

Figure 118: Share of Korean automotive imports



Source: Own compilation, based on UN Comtrade (2017).

In spite of this comparatively strong performance of EU vehicle exports to Korea, stakeholders did not see a strong boost for the competitiveness of the EU automotive industry on the Korean market, but rather emphasised that the EU-Korea FTA has helped to create a more level playing field for the EU industry relative to the US. Stakeholders also emphasised that EU automotive companies with production sites in the EU and the US were utilising both the EU-Korea FTA and the US-Korea FTA. It was further stressed that European exports to Korea are highly dependent on diesel vehicles, as the EU-Korea FTA only provides for equivalence in the emissions of diesel but not gasoline vehicles (see below). EU exports have therefore been strongly affected by the consequences of the manipulation of emission control systems in diesel cars, with a sharp drop in sales of Volkswagen cars following a sales ban and registration cancellation of its cars in Korea.[318] Recently, the share of diesel cars in EU exports to Korea and the overall number of units exported to Korea decreased.[319]

Another indicator that can shed light on the competitive situation of the EU automotive sector consists of revealed comparative advantage (RCA), which compares EU exports in a given manufacturing sector (as a proportion of total EU manufacturing exports) with the same sector's share of total exports from a group of reference countries. RCA values greater than one mean that the given EU industry performs better than the reference group and has a comparative advantage, whereas values below one indicate the opposite.[320]

The figure below presents the RCA index for EU motor vehicles manufacturing from 2007-2013 (data for later years was not available). As shown in the figure, the RCA index in this sector increased noticeably from slightly below 1.00 to 1.15 from 2009 to

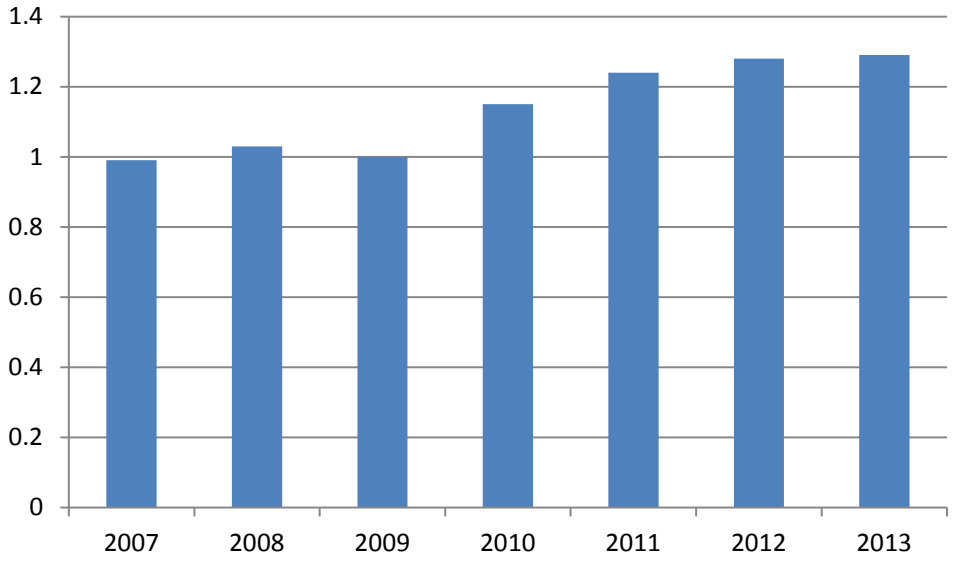
[318] http://pulsenews.co.kr/view.php?year=2017&no=101779

[319] EU exports to Korea fell by 15 percent year-to-date by October 2016 (164 256 units), according to ACEA.

[320] DG GROW, "European Competitiveness Report 2014".

2010, after which it increased gradually to 1.29 as of 2013. While a causal link to the FTA cannot be drawn here, the development of this index provides some further support of the increase in competitiveness evidenced in Figure 118 above.

Figure 119: RCA index EU28 – motor vehicles manufacturing, 2007-2013



Source: EU Structural Change 2015 (DG GROW); European Competitiveness Report 2014 (DG GROW). Note: RCA indices from 2007-2012 were calculated using a base of 105 reference countries, whereas RCA indices in 2013 were calculated using a base of 142 reference countries.

10.1.7. Evolution of trade costs, remaining non-tariff trade costs, and implementation of customs-related provisions

Evolution of trade costs

As discussed in section 10.1.1, non-tariff trade costs (NTTCs) were a key concern for the EU automotive industry, to the extent that they were expected to overshadow the advantages of tariff elimination. The following table presents tariff and NTTC reductions in the automotive sector due to the FTA.

Table 44: Decomposition of tariff and NTTC reductions in trade costs

Sector	EU Imports		EU Exports	
	Tariff Reduction (%)	NTTC Reduction (%)	Tariff Reduction (%)	NTTC Reduction (%)
Automotive	4.7	5.6	7.4	2.6

Source: Ifo Trade Model.

The table illustrates that tariff and non-tariff barrier reductions were of varying importance for the EU and Korea in this sector (see section 5.5 for more details on how reductions in trade costs were calculated).[321] While trade costs for Korean exporters decreased more due to changes in non-tariff trade costs (accounting for 5.6 percent of

[321] Note that CGE results for the automotive sector refer to the entire sector (GTAP classification).

trade cost reductions in this sector, relative to 2.6 percent of trade cost reductions for EU exporters), trade costs for EU car producers decreased more due to the reduction in tariffs (i.e. accounting for 7.4 percent of the reduction in trade costs, compared to 4.7 percent of the reduction in trade costs faced by Korean exporters). The NTTC reductions that did materialise on both sides are likely to be at least partly attributable to the provisions of the FTA's automotive annex (which sought to mitigate NTTCs in this sector, e.g. by accepting specified products that fulfil UNECE regulations as complying with national regulations, and commitments to harmonise certain national regulations with the corresponding UNECE regulations, as described in more detail in section 10.1.3).

Remaining non-tariff trade costs

As discussed in detail above, the EU-Korea FTA's sector-specific annex on motor vehicles and parts aimed to further regulatory convergence based on international (UNECE) regulations, and to reduce non-tariff trade costs. In line with the limited reduction of trade costs for EU exporters, all interviewed automotive industry stakeholders were of the opinion that the EU-Korea FTA has not sufficiently reduced non-tariff trade costs in automotive trade. Key issues raised by stakeholders include:

- *Insufficient harmonisation of Korean regulations with UNECE regulations*. There has, however, been slow progress in certain areas (e.g. Korea recently announced the intention of harmonising regulations on seat distance requirements after several years of negotiations);
- *Exclusion of petrol cars from Annex 2-C*. While Korean and EU standards on diesel emissions are considered equivalent under the FTA, Korea uses US standards rather than EU standards on petrol emissions. Cars manufactured to comply with EU standards on petrol emissions are not accepted by Korea.

In addition, specific non-tariff trade costs for EU vehicle and car parts manufacturers exporting to Korea are caused by:

- *Requirements concerning the vehicle itself*, e.g. vehicle mass certification, ground clearance requirements, vehicle width standards, axle load of vehicles;
- *Requirements concerning specific equipment*, such as compliance with the Korean Radio Act or the allocation of radar frequencies;
- *Specific certification, testing and documentation requirements*, e.g. emissions and noise certification, self-certification compliance checks, car parts certification scheme, battery drop test, natural gas vehicle homologation documentation of defects and repair history.

In the interviews, stakeholders emphasised that these requirements led to additional costs. However, none of the interviewed automotive producers that were exporting vehicles to Korea could quantify these costs, as they were composed of a variety of different elements, such as administrative efforts, costs of additional certifications, costs of additional documentation, costs of increased uncertainty etc.

More details on the NTTCs faced by the automotive sector and their current status are provided in Annex V.

Implementation of customs-related provisions of the FTA

Interviewees did not indicate any significant problems with the customs-related provisions of the EU-Korea FTA (such as rules of origin, including the relaxation of the origin criteria from 40 to 45% foreign content) in the context of the automotive sector. Provisions on duty drawback in the FTA, which—as mentioned previously—were also opposed by the EU automotive industry at the outset of the FTA, have not led to negative consequences in practice according to interviewees. In fulfilment of the Safeguard

Regulation,[322] the Commission has regularly monitored the automotive industry (and other sensitive industries) that could be potentially affected by the provisions. Thus far, it has consistently reported that the allowance of duty drawback has not had any significant impact on Korea's manufacturing patterns. Specifically, it has not led to an increase of imported inputs from Korea's neighbouring countries. Stakeholders confirmed this finding, stating that the use of duty drawback has been fairly limited thus far and no major problems have been experienced.

10.1.8. Other effects of the FTA in the automotive sector

Effects on sectoral value added

Based on the CGE model, the effects of the EU-Korea FTA on the sectoral value added of the automotive industry presented in the table below are heterogeneous across the EU and Korea. While value added slightly declines in the EU in absolute terms due to the FTA (by 0.19 percent or USD 551 million (EUR 524 million)), Korean sectoral value added increases by 4.13 percent or USD 1.4 billion (EUR 1.3 billion).

Table 45: Sectoral growth in value added

Sector	European value added growth (%)	European value added growth (USD million)	Korean value added growth (%)	Korean value added growth (USD million)
Automotive	-0.19	-550.84	4.13	1 408.28

Source: Ifo Trade Model.

These CGE results imply that while exports to Korea have increased, the sectoral value added of the automotive industry slightly decreases. This result may be seen as surprising. It also seems at odds with increasing EU exports to Korea. However, note that the CGE model compares the status quo situation with the FTA to a constructed counterfactual without the FTA. It cannot be interpreted as an actual decline in activity over time. Rather, the result indicates that, without the agreement, the sector would have growth slightly faster. The reason for this dampening of industry dynamics has to do with the basic economics of preferential trade agreements and value added networks:

- Within each sector, a preferential trade agreement can lead to trade diversion, i.e., the fact that due to capacity constraints, additional exports to the partner country are offset by lower exports to third markets. The extent to which this happens depends on the dynamics of other sectors as well. For example, the car industry relies on human capital which is also much demanded in other industries, such as machinery, which expands due to the FTA and competes away factors of production.
- Furthermore, it is unclear if the domestic value-added content remains unchanged after the FTA. For example, if intermediate imports from Korea become cheaper, they are likely to crowd out domestic inputs. If more cars are then exported to Korea, export figures increase; but their value-added content has shrunk, and under certain circumstances, an overall loss in value-added can occur.
- Additionally, higher exports can also come at the cost of lower domestic sales. Thus, rising exports and lower sectoral value-added are not mutually exclusive.

[322] Regulation (EU) No 511/2011 of the European Parliament and of the Council of 11 May 2011 implementing the bilateral safeguard clause of the Free Trade Agreement between the European Union and its Member States and the Republic of Korea.

Aggregating value-added numbers shows that the Korean automotive sector expands more than the European sector shrinks. This reflects an increase in consumption possibilities which is the most relevant economic target figure.

- In recent years, the EU automotive industry has undergone a process of servitisation and of international as well as intranational outsourcing. An increasing share of the value of output in the industry is made up by value added sourced from services industries, such as software development, or from other sectors such as electronics (the value-added of which increased by 0.39 percent in the EU, see section 5.5.3). If the EU-Korea FTA has led to a shift in EU car production towards high-end vehicles which make greater use of advanced features, it is very well possible that the additional sales to Korea contain a smaller share of genuine value added generated in the automotive industry as it is delineated in our data. Technological progress and changing consumer preferences therefore lead to industry definitions becoming increasingly blurred, and to the development from a manufacturing-driven automotive industry towards a computer science-based industry. Stakeholders have also stressed the importance of premium vehicles as a driver of EU exports, attributing this to growing Korean demand for such vehicles; moreover, the reduction in tariffs has had a larger effect on higher-value luxury cars, leading to the greatest price reduction (in absolute terms) in this segment.

Effects on producers

As discussed in sections 5.4 and 5.5, the econometric analysis showed that the EU-Korea FTA led to an increase of both EU exports to Korea and Korean exports to the EU in the automotive sector (by 41.1 and 47.0 percent, respectively), clearly representing a positive effect for producers.[323]

Effects on employment

Although our CGE model holds employment constant and mirrors a world without unemployment, it is still able to illustrate employment effects. From a theoretical point of view, the EU-Korea FTA would not create or destroy jobs; the model rather indicates how labour is reallocated in the economy across sectors. Economically, the reallocation of production factors towards sectors in which an economy enjoys comparative advantages generates gains from trade. However, in the short-run, these necessary reallocation effects are related to adjustment costs. The reported labour market reallocation effects in the table below are long-run effects, and in the long-run, the new allocation is more efficient than the previous one. Short-run costs, e.g. retraining, can however occur.

[323] As described in section 5.4, this result of the econometric panel data analysis is based on bilateral sector-level trade flows for the period 2000-2014, and isolates the causal effects of the trade agreement from other determinants of bilateral trade such as the evolution of GDP, price levels, other trade policy initiatives, or changes in the structure of comparative advantage. As of the last year in the sample, 2014, the agreement was not fully phased in and the economic effects have certainly not fully ramped up either. Hence, the estimated effects can be understood as lower bounds of the long-run effects.

Table 46: Employment effects in the EU and Korean automotive sectors

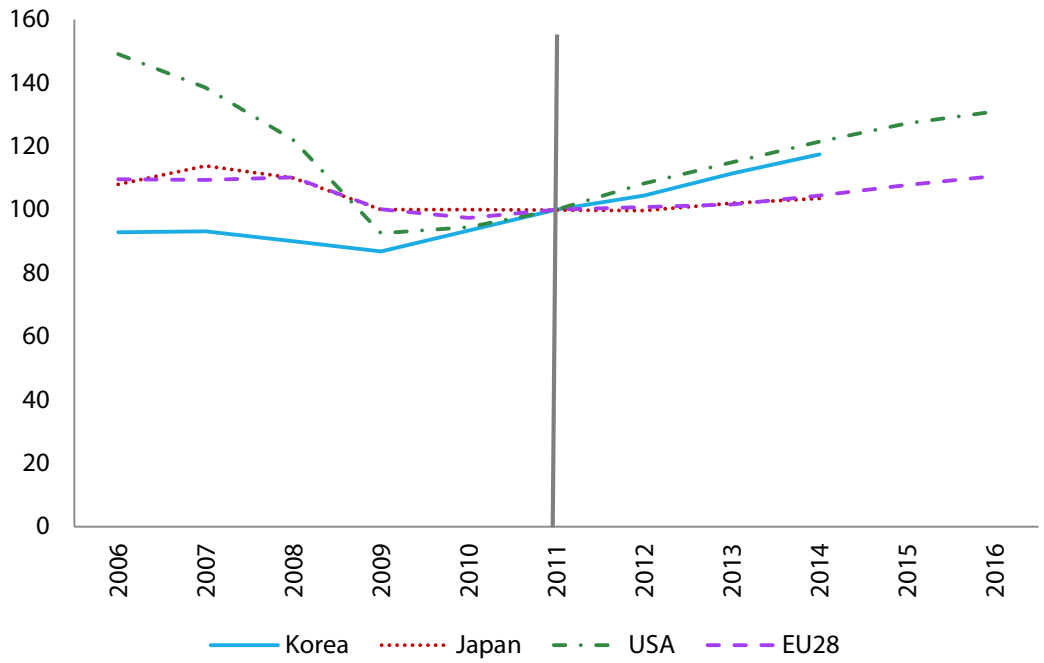
Countries	Initial Employment (1000 employees)	Change in automotive sectoral employment (1000 employees)	Change in automotive sectoral employment (%)
EU28	4 227	-9.00	-0.22
KOR	829	29.21	3.52

Source: Ifo Trade Model.

As shown in the table above, EU automotive sectoral employment undergoes a small decrease of 0.22 percent. In Korea, automotive sectoral employment increases more significantly, by 3.52 percent.

It is important to once again note that the model results above relate to a comparison of employment effects under the EU-Korea FTA against a theoretical counterfactual situation in which no FTA was in place. These results can be compared against real-world employment data in the automotive sector in order to provide a sense of perspective. The following figure shows the development in total employment in the automotive sector in the EU and Korea since 2006, with the US and Japan provided for comparison.

Figure 120: Total employment in the manufacture of automobiles in Korea, Japan, US and EU28, index 2011 = 100, 2006-2016.



Source: Own compilation, based on data from Eurostat, Statistics Korea, the US Bureau of Labor Statistics and the Japanese Ministry of Economy, Trade and Industry. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year. Note that the index base year for Japan is 2010 due to the lack of data in 2011.

As the figure above shows, total employment in the automotive sector has increased since 2011 in both Korea and the EU, as well as in the comparison countries of the US and Japan (although in the latter only slightly). This growth in employment amounted to 17.4 percent in Korea and 10.6 percent in the EU since the start of the provisional application of the EU-Korea FTA. The modelling results showing a negative employment effect in the EU automotive sector, in other words, should not be interpreted to mean that total EU employment in the sector has decreased as a result of the FTA, but that EU

employment in this sector simply increased less than it otherwise would have in the absence of the FTA.

With particular regard to SMEs in the automotive sector, detailed data for the period after the start of the provisional application of the FTA is not available. It can be noted that SME employment in the manufacturing of motor vehicles, trailers, and semi-trailers decreased by 14 percent from 2008-2014. However, a causal link between this decrease in SME employment and the EU-Korea FTA cannot be drawn (a reality also brought up in the interviews, in which stakeholders noted the difficulties of disentangling the effects of the FTA from other effects on jobs).[324]

Effects on consumers

As discussed in sections 5.4 and 5.5 above, the results of the CGE model show that the EU-Korea FTA was responsible for a 0.17 percent decrease in prices in the EU automotive sector, and a 0.69 percent decrease in prices in the Korean automotive sector (see Table 30), which is a clear positive development for consumers. In the interviews, stakeholders also suggested that EU-made cars would in principle by less expensive on the Korean market due to the reduction in tariffs, and vice versa.

It should also be noted that demand for EU cars among Korean consumers has increased in recent years (driven by a variety of reasons independent of the FTA, including changing tastes and rising fuel prices, the latter of which incentivised some consumers to purchase vehicles with more fuel-efficient diesel engines). The fact that the EU-Korea FTA has increased the accessibility of EU cars to help meet this demand can also be viewed as a positive development for consumers.[325] However, it was also noted by the Korean Ministry of Trade, Industry, and Energy (MoTIE) that further investment in Korea on the part of the EU automotive industry is required to accommodate Korean consumers with respect to after-care services, etc.

Effects on the environment

A potential environmental effect of particular relevance for automotive trade consists of changes in emissions. To this end, the table below presents the sectoral changes in CO_2 emissions due to the EU-Korea FTA, based on the CGE model. As shown in the table, CO_2 emissions from the EU automotive sector decreased by 0.16 percent (3 000 tonnes) owing to the FTA (which is closely linked to the reduction in added value observed). In contrast, CO_2 emissions from the Korean automotive sector increased by 3.76 percent (30 000 tonnes). In a global perspective, the CO_2 emissions of the automotive sector decreased overall very slightly (with a net reduction of 10 000 tonnes, including EU and Korean emissions), due to trade diversion effects (see section 9.6).

[324] DG GROW, "Annual Report on European SMEs 2014/2015".

[325] Mundy, Simon. "Imported Cars on the March in South Korea". *Financial Times,* June 20, 2013.

Table 47: Sectoral growth in CO_2 emissions (automotive sector)

Sector	European CO_2 growth (%)	European CO_2 growth (million tonnes)	Korean CO_2 growth (%)	Korean CO_2 growth (million tonnes)	Global CO_2 growth* (%)	Global CO_2 growth* (million tonnes)
Automotive	-0.16	-0.003	3.76	0.03	-0.05	-0.01

Source: Ifo Trade Model. Note: *Global CO_2 growth includes EU and Korean emissions. As indicated in section 9above, the calculated change in emissions in the EU is likely to be neutralised due to the EU emissions trading system (ETS). Technically, the ETS fixes the quantity of CO_2 emissions. Under such a quantity constrained regime, any increase or decrease in the demand for emissions only leads to changes in the prices of pollution permits but not to changes in quantity of CO_2 emitted.

10.1.9. Conclusions

This case study concludes that several key concerns expressed by the EU automotive industry ahead of the start of the provisional application of the EU-Korea FTA have not materialised: no particular problems have been uncovered with respect to the FTA's tariff elimination schedule, rules of origin, and duty drawback provisions as concerns this sector; moreover, EU exports to Korea have strongly increased, especially exports of premium cars. Other positive effects (e.g. on consumers) in this sector were also reported.

While there has not yet been a strong surge of Korean car exports to the EU, a notable increase of Korean car parts for assembly in Korean manufacturing operations in the EU seems to have taken place, which is one possible explanation for a slightly lower added value for the sector in the EU (in combination with other structural changes).

The EU industry's concern related to non-tariff trade costs is still relevant: for example, progress in terms of harmonisation of Korean regulations with international regulations has been slow to materialise, and new barriers such as a new scheme for certifying car parts have been introduced since the start of the provisional application of the EU-Korea FTA. This indicates the difficulty of NTTC reduction at a practical level, in spite of the regular efforts of the Working Group on Motor Vehicles and Parts in facilitating cooperation and addressing sector-related problems between the EU and Korea.

10.2. Case study on agriculture

This case study examines the development of EU-Korea trade in agrifood products since the start of the provisional application of the EU-Korea FTA in 2011, with a particular focus on the effects of tariff elimination, customs-related provisions and the provisions on sanitary and phytosanitary measures.

Reasons for selecting this case study included the following: the sector experienced a considerable decrease in protection levels due to the EU-Korea FTA; the sector was deemed sensitive during the FTA negotiations; and, the sector is of high economic relevance for the EU.

This case study is based on the results of desk research, the economic analysis, the public consultation, and stakeholder interviews.[326]

[326] For a list of interviewees, see Annex IX.

10.2.1. Background on the EU and Korean agrifood sector

As of 2016, the EU was the top agrifood exporter worldwide, accounting for a total value of EUR 131 billion and comprising more than 7 percent of all goods exported from the EU.[327] The EU exported approximately EUR 2.6 billion worth of agrifood products to Korea in 2016 (accounting for 5.9 percent of total extra-EU exports), making Korea its 13th most important agrifood export destination. From the Korean perspective, the EU is the third-most important exporter of foodstuffs, following the United States and China. EU agrifood imports from Korea in the same year only accounted for 0.2 percent of total extra-EU agrifood imports, ranking Korea as its 62nd most important agrifood import source.[328]

In both the EU and Korea, agriculture represents approximately 3 percent of GDP. Specifically in the EU agrifood sector, the large majority of firms are SMEs, though turnover is split 50-50 between SMEs and large agrifood corporations. Agriculture and the food and drink industry account for about 7.5 percent of all employment in the EU. [329]

10.2.2. Industry views of the FTA prior to its implementation

At the time of negotiations, EU agrifood industry was satisfied with the FTA overall. While the industry did not anticipate huge increases in overall exports, the completion of the FTA was viewed as an important part of maintaining the competitiveness of EU exports compared to those of other countries that have completed FTAs with Korea, e.g. the United States. EU meat, cheese and spirit exporters were specifically noted as supportive of the agreement.

However, there were also some areas of concern regarding the FTA. In particular, some stakeholders felt that the language of the agreement's provisions on sanitary and phytosanitary (SPS) measures was rather weak with respect to pre-listing (which provides EU Member State authorities with the ability to approve establishments as eligible for export to Korea without prior inspection by Korean authorities) and the principle of regionalisation regarding animal disease outbreaks. In spite of this, industry associations admitted that the language of the SPS provisions of the EU-Korea FTA was stronger than that of the US-Korea FTA.[330]

10.2.3. Overview of relevant FTA provisions

Chapter 5 of the FTA on SPS measures seeks to minimise the negative effects of sanitary and phytosanitary measures on trade while protecting human, animal or plant life or health in the Parties' territories. Chapter 5 of the FTA, which builds on the WTO SPS Agreement, commits the EU and Korea *inter alia* to exchanging information on matters related to the development and application of SPS measures that affect or may affect EU-Korea trade with a view to minimising their negative trade effects; cooperating, at the request of either Party, to develop a common understanding on the application of international standards in areas that affect or may affect EU-Korea trade; recognising the concept of pest- or disease-free areas and areas of low pest or disease prevalence and establishing close cooperation on the determination of such areas; and, cooperating in the development of animal welfare standards in international fora.

Additionally, Chapter 5 of the EU-Korea FTA establishes a Committee on SPS Measures to oversee the implementation of this chapter and address problems between the EU and Korea in this area. Geographical indications (GIs) for agrifood products, foodstuffs, wines

[327] European Commission (DG AGRI). *Agrifood Trade in 2015*. 2016.

[328] European Commission (DG AGRI). *Agrifood Trade Statistical Fact Sheet: European Union-South Korea*. 2016.

[329] European Commission (DG AGRI). *Agrifood Trade in 2015*. 2016.

[330] LSE Enterprise Limited. *An Assessment of the EU-Korea FTA*. 2010.

and spirits are also recognised under Chapter 10 of the FTA on intellectual property rights.

Chapter 3 of the FTA on trade remedies also stipulates that the EU and Korea may apply agrifood safeguard measures (i.e. higher import duties) should the aggregate volume of imports of an originating agricultural good in any year exceed a trigger level as set out in its Schedule included in Annex 3 to Chapter 3 of the FTA. The higher duty imposed should not exceed the lesser of the prevailing MFN applied rate, or the MFN applied rate of duty in effect on the day immediately preceding the date of the start of the provisional application of the FTA, or the tariff rate set out in the Party's Schedule included in Annex 3.[331]

Finally, of particular relevance for the agricultural industry is Article 2.7 of the FTA on the administration and implementation of tariff-rate quotas (TRQs). Each Party administers and implements the TRQs set out in Appendix 2-A-1 of its tariff schedule included in Annex 2-A. Each Party shall also ensure, among other things, that its procedures for administering its TRQs are transparent, made available to the public, timely, non-discriminatory, responsive to market conditions, minimally burdensome to trade, and reflect end-user preferences; and, that any person of a Party who fulfils the importing Party's legal and administrative requirements shall be eligible to apply and to be considered for a TRQ allocation by the Party (see also below).

10.2.4. Evolution of tariffs in the agrifood sector after the start of the provisional application of the FTA

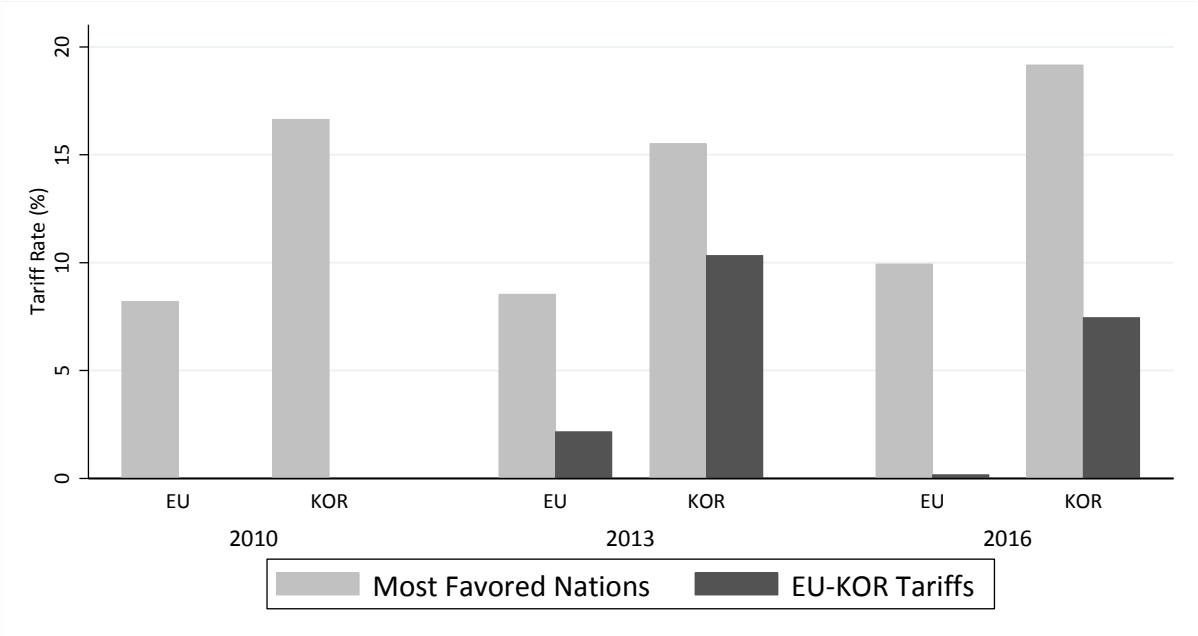
The tariff reduction schedule in the EU-Korea FTA lists over 1 500 agrifood products. For Korea, there was no phase-in period for roughly 35 percent of these products, meaning that tariffs were immediately reduced to zero after the start of the provisional application of the FTA in 2011. For approximately 45 percent of agrifood products, tariffs will be fully reduced 10 years after the start of the provisional application of the FTA. For the remaining 20 percent of agrifood products, tariffs will be fully eliminated 20 years after the start of the provisional application of the agreement. (For example, cattle—both milk cows and beef cattle—will take 15 years to enter Korea free of duties.) Other tariffs with longer phase-in periods include those for Ginseng tea (754.3 percent, reduced over 10 years), popcorn (630 percent, reduced over 13 years), and sweet corn, excluding those for seed (370 percent, reduced over 13 years). For the EU, tariffs on more than 50 percent of products were eliminated by the end of 2011. The rest had grosso modo been reduced to zero within five years of the start of the provisional application of the FTA, with some remaining tariffs to be phased out in the next three years. Certain products such as rice,[332] sweet peppers, garlic, onions and condensed milk were excluded from the EU-Korea FTA altogether.

The figure below provides the trade-weighted tariffs for the agrifood sector in 2010 (before the start of the provisional application of the FTA) and in 2013 and 2016.

[331] Agricultural safeguard measures have been triggered several times, but for problems that were relatively minor. Most recently, Korea applied such a safeguard measure for pork (HSK 0203.19.1000 and HSK 0203.19.9000), as the aggregate volume of pork imports from the EU in 2017 (178.5 metric tons, as of January 17 2017) exceeded the relevant trigger level of 176 metric tons set out in Korea's schedule in Annex 3 of the FTA. Starting from February 20, 2017, the tariff on EU exports of the concerned pork products to Korea was increased from 10.2 percent to 22.5 percent.

[332] The rice industry in Korea is particularly sensitive and heavily protected—the industry is closed to FDI and is excluded from the scope of concessions in all regional trade agreements. Rice imports were subject to a quota until 1 January 2015, and replaced it with an import tariff of 513 percent. (See: World Trade Organization Secretariat, *Trade Policy Review: Republic Of Korea*. 2016.)

Figure 121: Tariffs on agrifood products (trade-weighted in %)



Source: Own compilation, based on TARIC (2017). Note: The MFN tariffs of a country are imposed on imports from all WTO members except those with which a country has a preferential trade agreement. In 2010, both Korea and the EU imposed MFN tariffs on each other. 2013 and 2016 show the situations as of 2013 and 2016, not the target level of tariffs after full implementation of the agreement. Included product groups are detailed in a subsequent table on trade costs.

As shown in the figure above, both the EU and Korea applied MFN tariffs on each other's exports as of 2010. As of 2013 and 2016, preferential tariffs applied, though the phase-in of tariff reductions was (and is) still taking place. Specifically, the average tariff the EU imposed on Korean agrifood products decreased from around 8 percent in 2010 to less than one percent in 2016. The average tariff Korea imposed on EU agrifood products decreased from 16 percent in 2010 to around 8 percent in 2016.

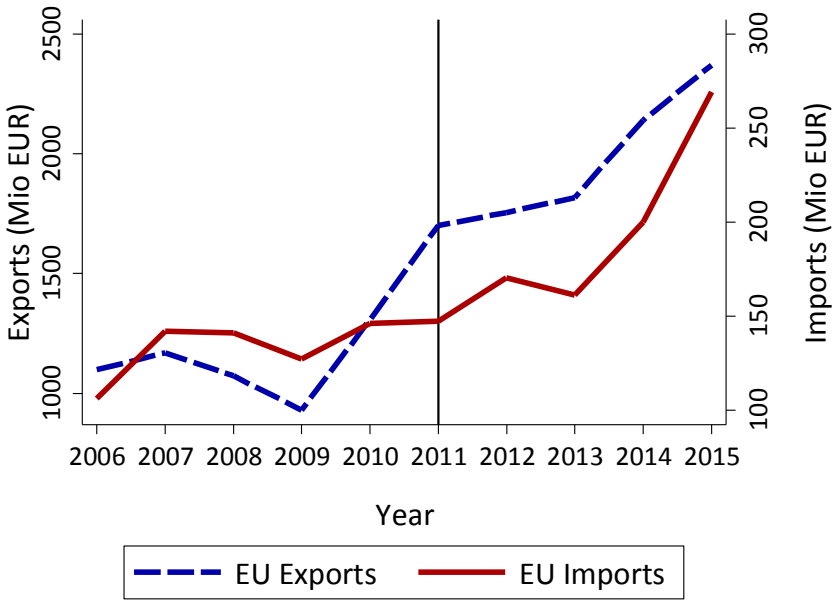
No problems were reported by stakeholders in the agrifood sector regarding the implementation of the tariff reduction schedule under the EU-Korea FTA.

10.2.5. Effects of the FTA on trade in the agrifood sector

The figure below sketches the evolution of EU exports (left y-axis) to and imports from Korea (right y-axis) of agrifood products from 2006-2015. Over both the pre- and post-FTA period, EU exports grew rapidly by roughly 54 and 41 percent, respectively. For Korean exports to the EU, no trend is recognisable in the pre-FTA period, but a clear positive pattern emerges in the post-FTA period. Despite the fact that EU imports from Korea in this sector more than doubled over ten years, the EU still exports far more than it imports from Korea. However, this fact must be placed in the context that Korea is a net food importer, while the EU is a net food exporter.

The figure below shows that EU agricultural exports have followed an upward trend since before the start of the provisional application of the FTA in 2011. This may be due to two reasons: first, EU exporters may have anticipated the tariff reductions achieved by the FTA and entered the Korean market earlier to secure a first mover advantage. Second, the years 2010 and 2011 may reflect the recovery from the world economic crisis in 2008/2009.

Figure 122: Agrifood trade: EU exports to and imports from Korea, 2006-2015



Source: Own compilation, based on COMEXT (2017). Note the difference in scales between the two vertical axes. Included product groups are detailed in a subsequent table.

With respect to the differentiation of EU exports and imports in the agrifood sector, EU exports to Korea are more diversified than its imports. Specifically, the top 10 EU exports to Korea make up less than 40 percent of total exports, whereas 64 percent of EU imports from Korea are concentrated in the top 10 goods.

The top 10 EU import goods from Korea are:

- Coffee essences (CN 21011100)[333]
- Non-alcoholic beverages (CN 22029010)
- Pasta, dried (CN 19023010)
- Fresh or chilled mushrooms (CN 70959900)
- Pasta, cooked or prepared (CN 19023090)
- Mucilages and thickeners (CN 13023900)
- Preparations of surimi (CN 16042005)
- Sauces and condiments (CN 21039090)
- Waters (CN 22021000)
- Fruit and other edible parts of plants (CN 20089967)

The top 10 EU export goods to Korea are:

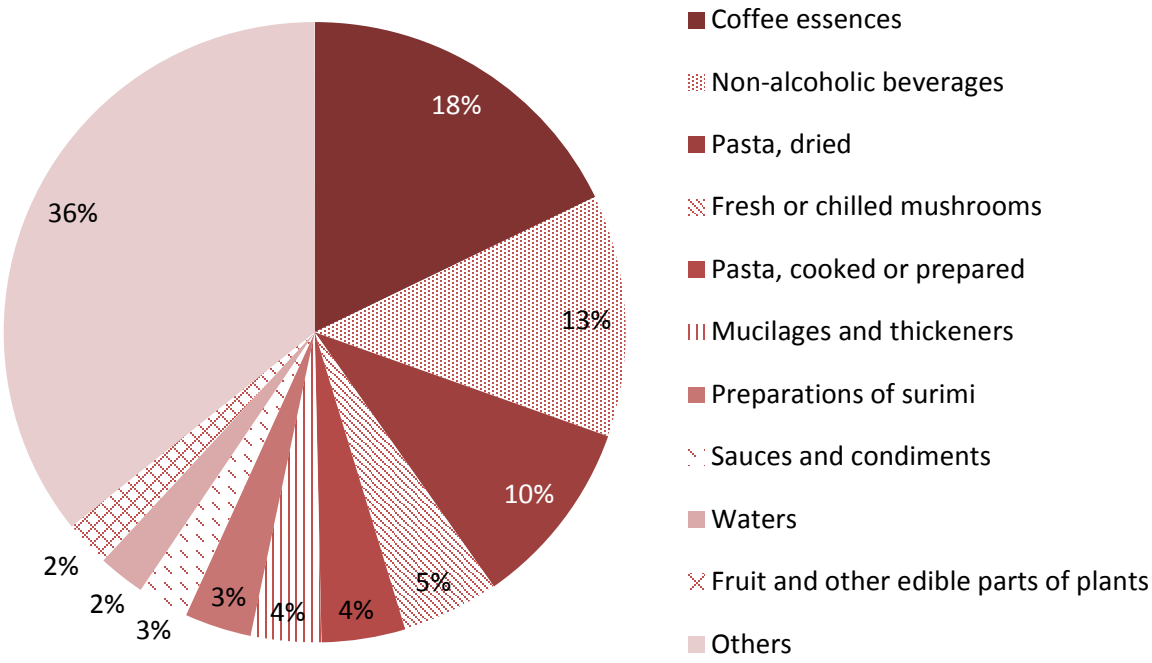
- Boneless swine meat (CN 02032955)
- Scotch Whisky (CN 22083071)
- Swine bellies (CN 02032915)
- Wheat and meslin (CN 10019900)
- Maize (CN 10059000)
- Fresh mozzarella (CN 4061030)
- Food preparations (CN 21069098)
- Edible offal of swine, frozen (CN 20649000)

[333] The main Korean agrifood export to the EU is coffee essences. Korea is not itself a coffee growing nation, but it imports coffee beans (mostly from nearby countries such as Vietnam and Indonesia), treats them, and re-exports them. The domestic value added in that industry may, therefore, lie substantially below the corresponding gross export revenue. Our simulation model accounts for this phenomenon.

- Natural milk constituents (CN 40490210)
- Molluscs (CN 16055900)

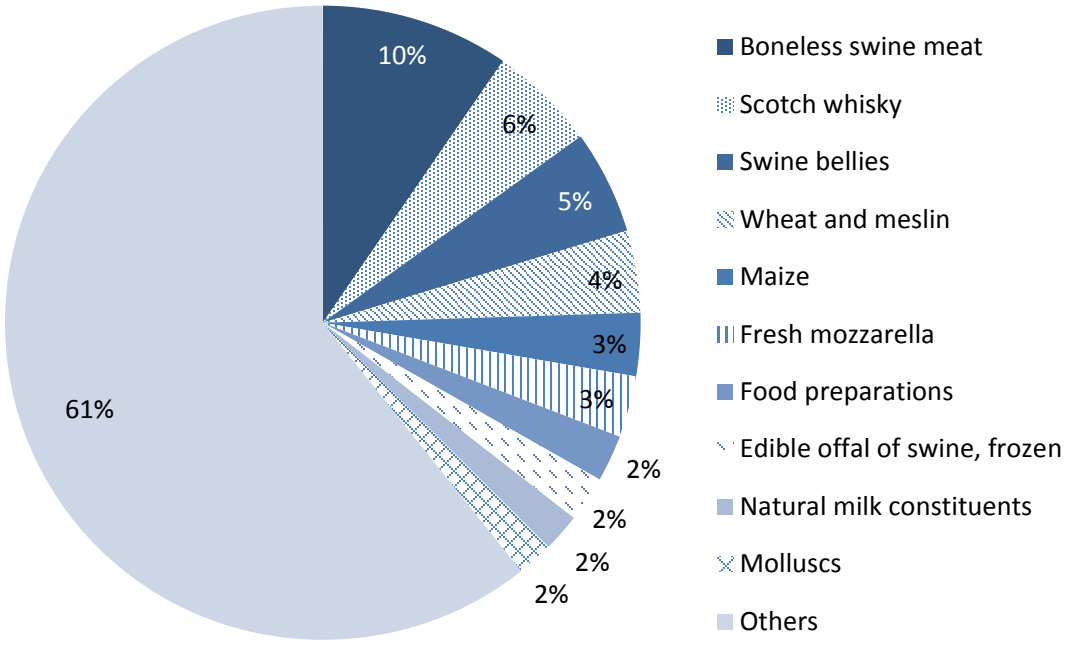
The figures below depict the product concentration of EU exports to and imports from Korea within the agrifood sector:

Figure 123: Top 10 EU agrifood import products from Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

Figure 124: Top 10 EU agrifood export products to Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

The table below specifies the growth in price and quantity over the period 2011 to 2015 for the top ten EU agrifood imports from Korea. Note that the COMEXT database presents quantities in tonne equivalents for all goods. While this may be a counterintuitive measurement for some goods, it enables a good means of comparison.[334]

As shown in the table, prices of imported non-alcoholic beverages and pasta (both dried and cooked or prepared) grew significantly over this period. Quantities of non-alcoholic beverages imported from Korea nearly tripled.

Table 48: Numbers and growth rates of top 10 EU agrifood imports from Korea

Product	Price 2011 (1000 EUR per tonne)	Price 2015 (1000 EUR per tonne)	Growth in Prices (%)	Quantity 2011 (1000 tonnes)	Quantity 2015 (1000 tonnes)	Growth in Quantities (%)
Coffee essences [a)]	NA	8.1	NA	NA	4.1	NA
Non-alcoholic beverages	0.6	0.8	24.5	10.5	30.6	192.7
Pasta, dried	2.0	2.9	40.8	4.2	6.3	49.8
Fresh or chilled mushrooms	3.6	3.8	6.8	1.3	2.4	81.6
Pasta, cooked or prepared	1.5	2.0	32.7	2.9	3.9	35.3
Mucilages and thickeners	7.6	10.3	35.3	0.5	0.7	40.1
Preparations of surimi	1.9	2.6	36.1	2.2	2.4	12.3
Sauces and condiments	1.8	2.6	44.4	1.0	1.9	90.0
Waters [a)]	NA	0.8	NA	NA	5.6	NA
Fruit and other edible parts of plants [a)]	NA	22.8	NA	NA	0.2	NA

Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2011. This is likely due to a change in classification.

The table below specifies the growth in price and quantity over the period 2010 to 2015 for the top ten EU agrifood exports to Korea. As shown in the table, the price of Scotch whiskey exported to Korea grew significantly (by 46 percent), whereas the prices of maize, food preparations, and natural milk constituents fell. However, the decrease in prices in maize and food preparations were offset by significant growth in quantities exported (112.8 percent and 36.7 percent, respectively).

[334] The database does not provide the same data on a unit basis.

Table 49: Numbers and growth rates of top 10 EU agrifood exports to Korea

Product	Price 2011 (1000 EUR per tonne)	Price 2015 (1000 EUR per tonne)	Growth in Prices (%)	Quantity 2011 (1000 tonnes)	Quantity 2015 (1000 tonnes)	Growth in Quantities (%)
Boneless swine meat	2.7	2.7	.9	68.4	80.8	18.3
Scotch Whisky	8.2	11.9	46	18	10.6	-41.3
Swine bellies	2.6	2.9	10.2	46.5	42.9	-7.7
Wheat and meslin [a)]	NA	0.2	NA	NA	531.3	NA
Maize	0.2	0.2	-31.1	222.4	473.3	112.8
Fresh mozzarella [a)]	NA	3.0	NA	NA	24.6	NA
Food preparations	3.7	3.3	-10.8	12.3	16.8	36.7
Edible offal of swine, frozen	1.4	1.5	4.9	25.1	36.1	43.7
Natural milk constituents	2.5	2.3	-8.0	20.6	19.8	-4.2
Molluscs	NA	10.7	NA	NA	4.0	NA

Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2011. This is likely due to a change in classification.

In spite of the limited export growth of some of the top 10 EU agrifood export products, significant export growth for other agrifood products exported to Korea led to an overall strong increase in EU exports of agrifood products to Korea (see Figure 122).[335] The EU-Korea FTA was viewed in our interviews and the public consultation as a success story with respect to liberalising and facilitating trade in the agrifood sector between the EU and Korea. According to stakeholders, substantial market access was granted to both parties, and this was true across sectors: FoodDrinkEurope indicated in its response to the open public consultation that access to the Korean market has very much improved since the start of the provisional application of the EU-Korea FTA in 2011. According to the European Dairy Association and Eucolait, the European Association of Dairy Trade, market access has slightly increased, in parallel to increasing exports. For the fruits and vegetables sector, the EU-Korea FTA was viewed as having improved trade between the Parties, though it was stated that growth in EU exports to Korea have been driven primarily by increased volumes of already-traded products, rather than trade in new products. More specifically, it was stated that the FTA contributed to greater parity in terms of export volumes between the Parties, though the value of Korean fruit and vegetables imported by the EU is still more than double the value of EU fruit and vegetables exported by the EU to Korea (approximately EUR 9 million versus EUR 4 million as of 2015). While Korea is not currently the most important market in Asia for this sector, interest in exporting to Korea among EU fruit and vegetable producers was reported to be increasing.

For some other sectors, however, specific effects of the FTA on EU-Korea trade patterns were reported to be more difficult to distinguish. For example, two key factors make it difficult to assess the impact of the EU-Korea FTA on pig meat exports to Korea, according to our interviews. First, the 2010-2011 outbreak of foot-and-mouth disease in Korea led to the culling of a large number of domestic pigs, and Korea began importing

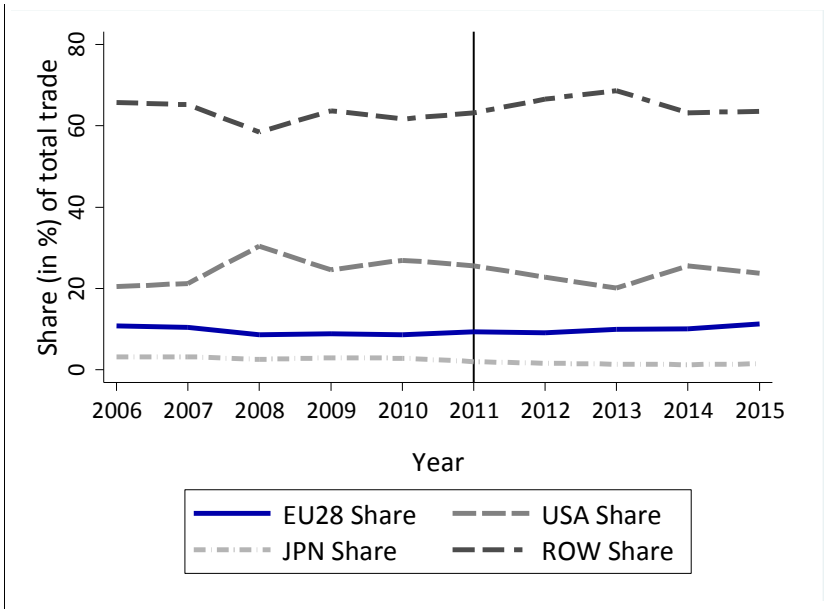
[335] As Korea has not yet fully phased out tariffs in the agri-food sector, further benefits may be experienced by EU exporters in this sector in the next years.

more EU pig meat to meet demand. Secondly, increased demand in China in recent years was said by one interviewee to have drawn the focus of EU pig meat exporters away from the Korean market—approximately 45 percent of EU pig meat exports are sent to China. However, Korea was characterised in the interview as a promising market, and its importance as an export destination for EU pig meat was projected as increasing in the future (particularly in light of the fact that tariff elimination for certain pork products under the FTA will be completed in the next years). [336]

10.2.6. Effects of the FTA on the competitiveness of EU agrifood producers

The figure below illustrates the Korean import composition of agricultural goods from the EU and selected competitors (US, Japan, and RoW). Generally, the shares from each destination did not change significantly; the EU's share remained at a level of approximately 12 percent over the entire period of observation. The market shares for the US (the chief exporter to Korea, particularly with respect to corn, meat, hides, soybeans, milling wheat, and cotton),[337] Japan, and RoW also stayed roughly constant over the entire period at 20 percent, 2 percent, and 65 percent, respectively (market shares of Australia and New Zealand also remained broadly stable).

Figure 125: Share of Korean agrifood good imports per country of origin, 2006-2015



Source: Own compilation, based on UN Comtrade (2017).

The interviews largely confirmed the data presented above: several stakeholders were of the view that the EU-Korea FTA helped ensure that market share was not lost to other major competitors. For the dairy sector, the FTA helped maintain the competitiveness of the EU relative to other key dairy exporters (the US, New Zealand, Australia, Argentina and Uruguay), particularly relative to New Zealand and Australia, which are geographically closer to Korea. The EU-Korea FTA was also viewed as having helped

[336] A case study on Danish exports of pig meat to Korea in a 2016 study for DG AGRI arrived at similar conclusions. (See https://www.copenhageneconomics.com/dyn/resources/Publication/publicationPDF/0/390/1488184295/copenhagen-economics-2016-impacts-of-eu-trade-agreements-on-the-agricultural-sector.pdf)

[337] https://www.ers.usda.gov/topics/international-markets-trade/countries-regions/south-korea/trade/

preserve the competitiveness of EU pig meat exporters, particularly relative to the US, which also has an FTA with Korea and is the EU's main competitor in this area.[338]

10.2.7. Evolution of trade costs, remaining non-tariff trade costs, implementation of customs-related provisions, and geographical indications

The table below shows the decomposition of trade costs in the agriculture and processed food sectors. It therefore distinguishes changes in non-tariff trade costs from tariff reductions for both EU imports and exports of agricultural/processed food goods. As shown in the table, tariffs were reduced significantly for EU agriculture and processed food exports to Korea (accounting for 24.3 percent and 30.7 percent of total trade cost reduction, respectively), while non-tariff trade costs (NTTCs) were reduced to a lesser degree.[339] For Korean agriculture exports, NTTCs were also reduced significantly (accounting for close to 10 percent of total trade cost reduction).

Table 50: Decomposition of tariff and NTTC cost reduction in agrifood sectors

Sector	EU Imports		EU Exports	
	Tariff Reduction (%)	NTTC Reduction (%)	Tariff Reduction (%)	NTTC Reduction (%)
Agriculture	0.3	7.8	24.3	2.9
Processed Food	5.7	3.1	30.7	5.1

Source: Ifo Trade Model. Notes: The tariff and non-tariff barrier cost reductions describe the situation after full implementation of the agreement relative to the pre-agreement situation. NTTC reductions are calculated as observed in 2016. a) This sector is still subject to relatively high tariffs imposed by Korea.

SPS-related non-tariff trade costs

As indicated in the previous table, the reduction of non-tariff trade costs for EU exporters was limited in both the agricultural and processed food sectors. This is in line with the answers of those respondents of the open public consultation that provided an assessment of whether non-tariff trade costs when exporting goods to Korea decreased since the start of the provisional application of the EU-Korea FTA in 2011 (two agrifood stakeholders suggested that they have decreased slightly, and two others considered them to have remained the same).

Concerns also remain regarding non-tariff measures related in particular to sanitary and phytosanitary measures, e.g. in the context of outbreaks of African swine fever (ASF, see also the box below) and Bovine spongiform encephalopathy (BSE). Following the BSE crisis in Europe at the end of the 90s, Korea banned imports of beef and other products from Member States due to BSE-related restrictions that still remain in place today.[340] In

[338] However, it was noted that tariffs on certain products (e.g. frozen pork belly) were phased out more rapidly under the US-Korea FTA, which gives US producers a slight advantage relative to EU producers in the years prior to the full-phasing out of tariffs under the EU-Korea FTA.

[339] Regarding the sub-sectors within agriculture, EU exports of cereals, dairy products, and vegetables/fruits/nuts saw some of the largest tariff reductions. EU exports of wheat, sugar cane/sugar beet, oil seeds, and beverages and tobacco products underwent some of the largest reductions in NTTCs.

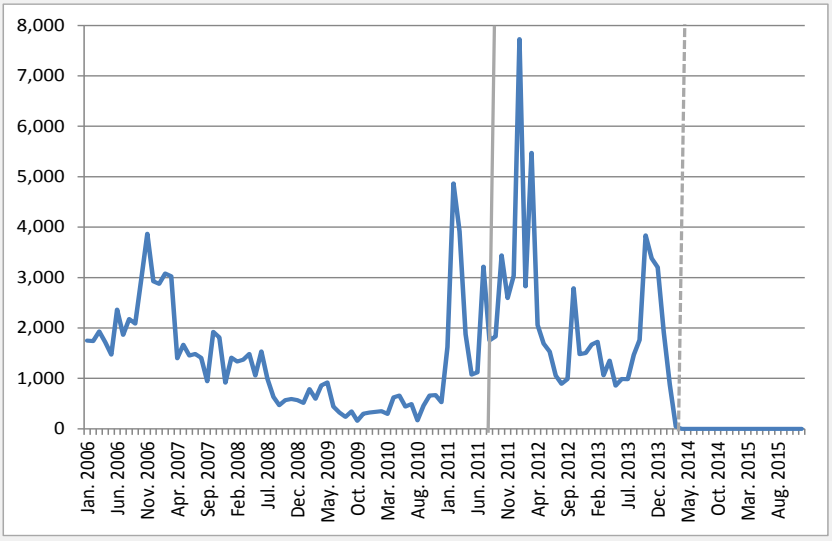
[340] According to one interviewee, in 2011, Korea accepted the applications of four countries that wish to begin exporting beef to Korea, but will not accept any new applications until the approval process for these four is complete (which is not anticipated to be soon). It was noted that the approval process initially only involved the Korean Ministry of Agriculture, but the Ministry of Food and Drug Safety has since become involved, which has made the process more burdensome. If and when market access to Korea is granted at the country level, approval processes for each beef producer will be launched.

a 2012 study commissioned by the Dutch Ministry of Economic Affairs, Agriculture and Innovation, several Korean meat importers, restaurants and hotel chains stated that EU meat is perceived as unsafe in Korea due to BSE.[341] In view of the fact that Korea has resumed imports from other countries with the same OIE status, the EU considers the measures by Korea unjustified, discriminatory and not respecting OIE status. The topic has repeatedly been discussed in the Committee on Sanitary and Phytosanitary Measures. Korea has recently started to evaluate MS applications but has not yet indicated the timeframes for the overall process.[342] A stakeholder also reported that EU exporters of agrifood products in general face long delays when waiting to obtain approval from Korean authorities, which makes the export process quite burdensome.

Polish pork exports to Korea following the 2014 ASF outbreak

In early 2010, an outbreak of African swine fever was discovered in Poland. Regionalisation is being applied in order to control the outbreak, in which no pigs, their semen, embryos or ova are allowed to be moved from the infected area. However, following the discovery of the outbreak, Korea placed an import ban on pork from Poland. The ban was effective immediately and affected all pork products. The ban was intended to prevent an outbreak of the disease in Korea and was not related to food safety or public health concerns, as the disease does not affect humans. It should also be noted that Korean law on animal quarantines stipulates that countries which export pork products to Korea must remain disease-free for at least three years prior to the first shipment. The figure below presents the development of Polish pork exports to Korea over time. As shown in the figure, exports to Korea increased quite sharply for a brief period following the start of the provisional application of the EU-Korea FTA in 2011. Thereafter, Polish pork exports to Korea fell and remained low until picking up again at the end of 2013. Once the Korean ban came into effect in 2014, exports fell to zero.

Figure 126: Monthly Polish pork exports to Korea, 2006-2015 (EUR 1 000)



Source: Own compilation, based on COMEXT (2017). Note: the solid line represents the start of the provisional application of the EU-Korea FTA, while the dashed line represents the introduction of the Korean ban on imports of Polish pork.

Sources: DG AGRI; Yonhap News Agency, "S. Korea Places Ban on Pork Imports from Poland", February 20, 2014:

An interviewee emphasised that the EU wishes for Korea to accept its regionalisation system, though discussions are still ongoing. More generally, rather than recognising the EU as a single entity, Korea has so far concentrated on bilateral negotiations with individual Member States regarding SPS issues. However, the EU-Korea FTA was viewed as providing a framework in which relevant issues can be raised and addressed. This is

[341] See van Berkum, S. "EU meat export opportunities in the Far East", 2012.

[342] See EU Market Access Database, http://madb.europa.eu/madb/sps_barriers_details.htm?isSps=true&barrier_id=10760.

also documented in the most recent annual report on the FTA, which with respect to a 2015 meeting of the Trade Committee indicated that both sides "raised their respective concerns related to the implementation of the agreement or market access in general, in particular in the areas of SPS [and], technical barriers to trade […] and instructed the specialised committees and working groups to continue to seek solutions to the issues of both sides".[343]

In addition to the topics mentioned above, other relevant issues that continue to affect EU-Korea trade were identified by stakeholders in the interviews and the open public consultation. These include:

Animals/animal products:

- *Transparency regarding national sanitary requirements* was cited most often by respondents as a problem concerning EU-Korea trade in animals/animal products in Korea (indicated by four respondents to the open public consultation). This was followed by problems related to the approval of establishments for products of animal origin, which three respondents indicated as a problem in Korea.
- *Procedure for registering production establishments:* There is currently no "fast track" procedure if a producer has already registered one facility with the Korean Ministry of Food and Drug Safety and wishes to register another; clear guidelines on the information required from producers is also not readily available from the Korean authorities.
- *EU not considered a single entity:* The fact that the EU is not considered a single entity by Korea is reported to cause significant problems in some cases. Especially problematic is the "born and raised" clause, which provides that all meat products should derive from animals which are born and raised in the exporting country. This topic was raised several times in the Committee on Sanitary and Phytosanitary Measures. So far, the only improvement negotiated concerns live pigs, which can be now born and raised in another Member State authorised to export pork, but more than three months prior to slaughtering in the exporting Member State. Also of relevance are the conditions Member States have negotiated in their bilateral veterinary certificates. For example, for Germany it is reported that imported dairy products can be used for the manufacture of products that are subsequently exported to Korea, if they exclusively originate from EU Member States or EU approved third countries and comply with all EU import requirements. However, according to an interviewee from a European dairy sector association, the fact that the EU is not considered a single entity by Korea poses a problem, as one-third of EU dairy production crosses borders.
- *Restrictions on soft raw milk cheeses:* While EU exports of these cheeses (e.g. Camembert) were previously banned, Korea recently modified its legislation on raw milk cheeses so that certain EU products are allowed, based on final amendments to the standards on heat treatment conditions released in June 2016. Under the newly revised standards, cheese maturated over 60 days above 2 degree Celsius are authorised for the importation to Korea, so if the soft cheese meets the criteria, there is no restriction on import.[344]

Fruits and vegetables:

- *Pest risk assessment:* Exporting fresh fruits and vegetables to Korea (and any other non-EU country) requires bilateral negotiations to define the conditions

[343] European Commission, Annual Report on the Implementation of the EU-Korea Free Trade Agreement, 2016

[344] On 24 December 2014, South Korea also lifted its ban on imports of non-pasteurised Italian cheeses, including Parmigiano Reggiano and Grana Padano, as result of a joint effort by the EU Delegation and the Italian Embassy in Seoul, and the European Commission. See: http://trade.ec.europa.eu/doclib/html/153063.htm.

under which specific products can be exported. These conditions are defined by a Pest Risk Assessment, which typically includes identifying relevant quarantine pests, and conducting orchard visits and inspections. This must be done on a Member State-by-Member State[345] and product-by-product basis, which reportedly results in a lengthy procedure that hampers the industry's ability to quickly react to changes in demand. In contrast, fresh produce from Korea (and other third countries) can enter the EU without undergoing such a negotiation process, as long as compliance with the Plant Health Directive 2000/29 is ensured.

All agrifood products:

- *Photograph requirements:* The Korean Ministry of Food and Drug Safety has asked EU exporters to take photographs of their products prior to shipping such that the photographs could be compared to the shipments upon arrival.

Implementation of customs-related provisions and management of TRQs

With respect to customs-related provisions of the FTA, the majority of interviewees from the agrifood sector did not report experiencing any problems. However, a relevant issue mentioned by some stakeholders concerns the administration of tariff rate quotas. TRQs are often administered in the form of import licenses, where companies will apply for licenses to import a share of a given quota, and if total demand exceeds the quota, companies will be allocated a percentage (e.g. 50 percent) of the share they originally applied for. In other cases, TRQs are administered via auction, whereby companies will bid for a share of the quota. In both cases, it is the responsibility of the importing country to decide on the details of administration, though Annex 2-A-1 of the EU-Korea FTA provides general guidelines on the specific volume of TRQs, etc.

The Korean TRQ schedules and their management approaches for EU agrifood exports under Appendix 2-A-1 of the FTA are presented in the table below. Note that the number of years in the TRQ schedule for each product (i.e. the number of years over which the permissible quantity of duty-fee goods is liberalised) varies across products.

Table 51: Korean TRQs for EU agrifood exports under the EU-Korea FTA

Product	Imple-mentation period	TRQ amount (tonnes)		Management approach	
		Year 1	Annual increment	Agency	How to allocate
Flatfish	12 years	800	8% compound	-	First come first served
Milk or cream powder , Milk and cream (evaporated)	Current tariff to be maintained	1 000	3% compound (to be fixed from year 16 onwards)	Korea Agro-Fisheries Trade Corporation	Import right to be put up for public sale (quarterly)
Food whey	10 years	3 350	3% compound	Korea Dairy Industries Association	Import right to be distributed
Butter and other fats and oils derived from milk	10 years	350	3% compound	Korea Agro-Fisheries Trade Corporation	Import right to be put up for public sale (auction to be held in first month when FTA takes effect)
Fresh, curd grated or	15 years (10 for cheddar)	4 560	3% compound	Korea Dairy Industries	Import right to be distributed

[345] There is no EU-level procedure, as national plant protection authorities are responsible for the negotiations.

Product	Imple-mentation period	TRQ amount (tonnes)		Management approach	
		Year 1	Annual increment	Agency	How to allocate
powdered, processed, and all other cheeses				Association	
Honey, natural	Current tariff to be maintained	50	3% compound (to be fixed from year 16 onwards)	Korea Agro-Fisheries Trade Corporation	Import right to be put up for public sale (quarterly)
Oranges	Season tariff	20	20 tonnes (up to year 6) 40 tonnes (years 7-11) 60 tonnes (year 12 and onwards)	Korea Agro-Fisheries Trade Corporation	Up to year 11: import right to be put up for public sale (August every year) Year 12 onwards: import right to be distributed
Malt and malting barley	15 years	10 000	Increase by 800 tonnes every year up to year 5 3% compound from year 6 onwards	Korea Agro-Fisheries Trade Corporation	Import right to be distributed
Prepared dry milk and other	10 years	450	3% compound	Korea Dairy Industries Association	Import right to be distributed
Supplementary feeds, animal	12 years	5 500	3% compound	Korea Feed Ingredients Association Korea Feed Milk Replacer Association	Import right to be distributed
Dextrins	12 years	28 000	Increase by 2 500 tonnes annually up to year 5, 3% compound from year 6 onwards	Korea Agro-Fisheries Trade Corporation	Import right to be distributed

Sources: on EU-Korea FTA, Appendix 2-A-1; Ministry for Food, Agriculture, Forestry and Fisheries, Korea-EU FTA Agricultural Products, Food & Beverage Outcome of Negotiations and Implementation Plan, in: EU-Korea Free Trade Agreement – Putting the FTA Into Practice, 2011.

Additionally, the table below presents the 2012-2015 utilisation rates of the TRQs listed above. As shown in the table, by 2015, the utilisation rates of several products subject to Korean TRQs were equal to or close to 100 percent. However, other products had noticeably lower rates, for which some potential reasons are outlined below:[346]

- *Honey:* There are not many Korean retailers, due to a relatively low level of awareness of EU honey in Korea;[347]
- *Oranges:* Korean consumers' preferences for EU oranges remain low;
- *Prepared dry milk:* Many would-be Korean importers of EU prepared milk are small companies and EU suppliers reportedly avoid making contracts with such

[346] According to information provided by EU Delegation to the Republic of Korea in Seoul.

[347] One stakeholder also commented that the size of the quota for honey (which will ultimately reach a maximum of 75 tonnes) is too small.

companies, with some opting to set up their own local affiliates/branches in Korea for the sales of such products.

Table 52: Utilisation rates of TRQs, 2012-2015

Product	Utilisation rate (%)			
	2012	2013	2014	2015
Flatfish	16.5	-	-	-
Milk or cream powder , Milk and cream (evaporated)	71.9	100.0	99.8	100.0
Food whey	89	99.8	97.3	99.7
Butter and other fats and oils derived from milk	98.3	77.1	99.4	100.0
Fresh, curd grated or powdered, processed, and all other cheeses	97.2	99.3	99.0	98.8
Honey, natural	68	2.2	55.5	51.6
Oranges	-	-	-	-
Malt and malting barley	76.7	80.6	89.3	81
Prepared dry milk and other	29.1	58.7	52.9	40.0
Supplementary feeds, animal	99.5	99.0	99.7	99.7
Dextrins	79.3	56.2	65.1	97.3

Source: Own compilation, based on data provided by the EU Delegation to the Republic of Korea. Notes: Utilisation rates refer to rates as of June 30 in each year. Rates refer to total imported quantity of a product as a percent of the first year TRQ amount.

According to Eucolait, the Korean procedures for administering TRQs managed through an auction system (e.g. the TRQs for butter and skimmed milk powder) are not transparent and Korean importers must pay an auction fee which is nearly equivalent to the MFN duty on these products, which almost eliminates the benefit of the TRQ. According to the EU Delegation to the Republic of Korea in Seoul, a Korean importer of EU food products also argued that there was much room for improvement in terms of TRQ management on the part of Korean agencies.

Another stakeholder cited an overall lack of relevant information regarding the tender procedure for TRQs managed by the Korea Agro-fisheries Trade Corporation (which is not a government entity). This stakeholder also noted that EU exporters affected by TRQs face difficulties in establishing themselves in the Korean market on a long-term basis, as exporters who lose their bid for a share of a given quota from one year to the next may be forced to end their cooperation with importers in Korea.

Geographical indications

Annexes 10-A and 10-B to Chapter 10 list a total of 165 EU geographical indications (GIs) (e.g. Pecorino Romano, Scotch Whisky) and 63 Korean GIs (e.g. Jeju Pork, Korean Red Ginseng) as within the scope of protection of the FTA. The FTA also permits the addition of new GIs to the FTA via a decision of the Working Group on Geographical Indications.[348] No major issues concerning the initial list of geographical indications protected through the EU-Korea FTA were indicated by interviewees or in the open public consultation. Already in 2010, in a statement of support of the FTA, FoodDrinkEurope commented on the high level of protection afforded to EU GIs in Korea by the FTA, stating that such protection will keep the Korean market free of counterfeit products, and

[348] EU-Korea FTA, art. 10.25.

mentioning that such protection constitutes a useful precedent for future FTAs to be negotiated by the EU.[349]

Furthermore, an interviewee reported that thus far, the Korean government has been proactive concerning the enforcement of GI protection in Korea and has responded whenever the EU has raised issues of non-compliance. According to the interviewee, the EU side has also been proactive when Korea raised enforcement issues. Overall, there have not been a large number of GI violations. However. no other GIs have yet been added to Annexes 10-A and 10-B since the start of the provisional application of the FTA. Discussions regarding expanding the list of protected GIs under the FTA are currently still ongoing. For more information on the protection of GIs, see section 6.4.

10.2.8. Other effects of the FTA in the agrifood sector

Effects on sectoral value added

The table below presents the effects of the EU-Korea FTA on sectoral value added for the agrifood industry based on the results of the CGE model. With respect to agriculture, the CGE model estimates a 0.29 percent increase in EU value added (USD 1.29 billion/EUR 1.18 billion) and a 1.07 percent decrease in Korean value added (USD 242 million/EUR 221 million). For processed food, the model estimates a 0.1 percent increase in EU value added (USD 376 million/EUR 343 million) and a 0.4 percent increase in Korean value added (USD 30 million/EUR 27 million).

Table 53: Sectoral growth in value added

Sector	European value added growth (%)	European value added growth (million USD)	Korean value added growth (%)	Korean value added growth (million USD)
Agriculture	0.29	1 294	-1.07	-242
Processed food	0.10	376	0.40	30

Source: Ifo Trade Model.

It should also be noted that the aggregate increase in value added reported above is distributed among several sub-sectors: for example, positive value-added growth occurs in the EU cereal grains, dairy products, sugar cane/sugar beet, and live animals sectors.

Effects on producers

As discussed in sections 5.4 and 5.5, the econometric analysis showed that the EU-Korea FTA led to an increase of both EU exports to Korea and Korean exports to the EU in the crop and animal production sector (by 28.0 percent and 33.8 percent, respectively) as well as in the manufacture of food, beverages and tobacco sector (by 29.3 percent and 18.4 percent, respectively), which clearly represents a positive effect for producers in both Parties.[350]

[349] FoodDrinkEurope, "EU-Korea Free Trade Agreement – Statement of Support", 2010.

[350] As described in section 5.4, this result of the econometric panel data analysis is based on bilateral sector-level trade flows for the period 2000-2014, and isolates the causal effects of the trade agreement from other determinants of bilateral trade such as the evolution of GDP, price levels, other trade policy initiatives etc.

Effects on employment

The table below presents the employment effects of the EU-Korea FTA in the agriculture/processed food sectors in the EU and Korea, based on the results of the CGE model. As shown in the table, employment in the agricultural and processed food sectors increases slightly in the EU due to the FTA (by 0.2 percent/0.06 percent), but decreases slightly in Korea (by 1.52 percent/0.39 percent).

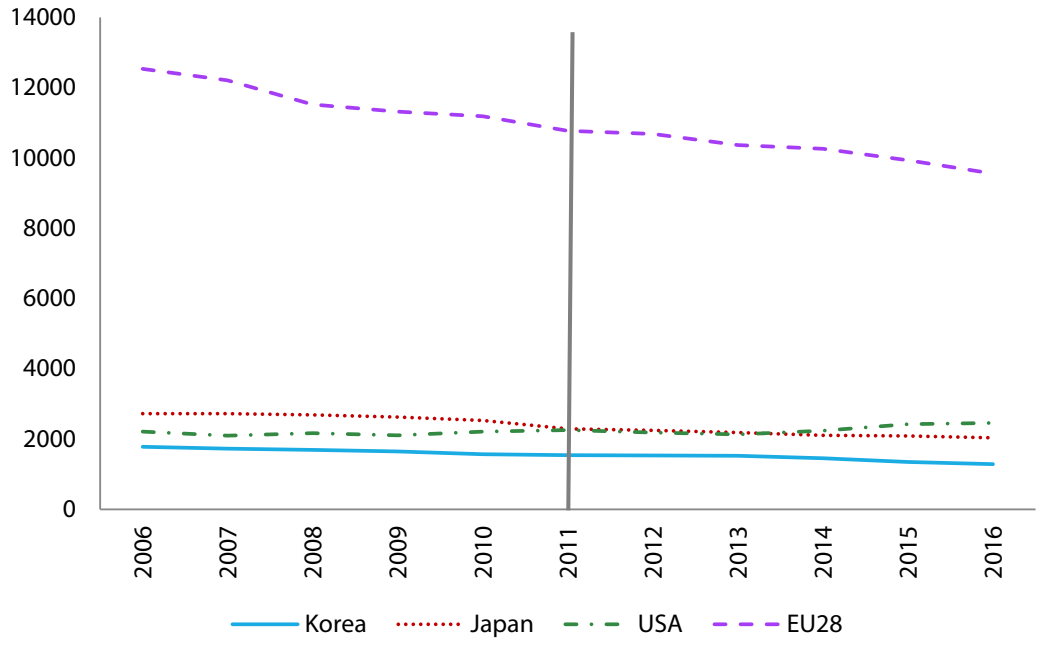
Table 54: Employment effects in the EU and Korean agriculture/processed food sectors

MS	Initial employment (1000 employees)	Change in sectoral employment (1000 employees)	Change in sectoral employment (%)	Initial employment (1000 employees)	Change in sectoral employment (1000 employees)	Change in sectoral employment (%)
	Agriculture			Processed Food		
EU28	6 037	12	0.20	5 794	3	0.06
KOR	618	-9	-1.52	377	-1	-0.39

Source: Ifo Trade Model.

Note that the figures in the table above compare the employment effects of the EU-Korea FTA to a theoretical counterfactual situation in which there was no FTA in place. To provide a sense of perspective, these results can be compared against real-world employment data in the agricultural sector. The following figure shows the development in total employment in the agricultural sector in the EU and Korea since 2006, with the United States and Japan provided for comparison.

Figure 127: Total employment in the agricultural sector in Korea, Japan, US and EU28, index 2011 = 100, 2006-2016.



Source: Own compilation, based on OECD data. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

As shown in the figure above, employment in the agricultural sector has declined since 2011 in each of the countries depicted, except for the United States. In percentage terms, the decline in agricultural employment in the five years between 2011 and 2016 was greatest in Korea at 16.6 percent, and slightly lower in the EU, at 11.3 percent. In other words, while the CGE model shows a slight positive employment effect in the EU agricultural as a result of the FTA, this does not mean that agricultural employment as a whole increased, but rather that it decreased slightly less in the EU (slightly more in Korea) than it otherwise would have without the FTA.

EU SME employment in the food products manufacturing industry decreased by 2 percent from 2008-2014, and SME employment in the beverages manufacturing industry decreased by 4 percent over the same period.[351] However, a causal link between this decrease in SME employment and the EU-Korea FTA cannot be drawn.

Effects on consumers

As discussed in sections 5.4 and 5.5, the results of the CGE model show that the EU-Korea FTA was responsible for a 0.03 percent decrease in prices in the EU agricultural and processed food sectors. In Korea, the FTA resulted in price decreases of 0.21 percent and 0.7 percent in the agricultural and processed food sectors, respectively. However, an interviewee also noted that EU products are often more expensive in Korean stores (likely due to marketing choices), as these products are targeted at the upper end of the market.

Apart from the decrease in prices, some interviewed stakeholders also suggested that Korean consumers have benefited from larger choice and higher quality of products, which is in part due to increased access to geographical indications.

Effects on the environment

The table below presents the changes in CO_2 emissions due to the EU-Korea FTA for the agriculture and processed food sectors, based on the CGE model. As shown in the table, CO_2 emissions from the EU agriculture and processed food sectors increased slightly, by 0.32 percent (100 000 tonnes) and 0.26 percent (30 000 tonnes), respectively. CO_2 emissions from the Korean agriculture and processed food sectors decreased slightly, by 0.72 percent (30 000 tonnes) and 0.01 percent (100 tonnes), respectively. In a global perspective, the CO_2 emissions of the agriculture and processed food sectors decreased slightly overall (with a net reduction of world CO_2 emissions of 70 000 tonnes and 40 000 tonnes respectively, including EU and Korean emissions), due to trade diversion effects (see section 9.6).

[351] See DG GROW, "Annual Report on European SMEs 2014/2015".

Table 55: Sectoral growth in CO_2 emissions (agriculture and processed food sectors)

Sector	European CO_2 growth (%)	European CO_2 growth (million tonnes)	Korean CO_2 growth (%)	Korean CO_2 growth (million tonnes)	Global CO_2 growth* (%)	Global CO_2 growth* (million tonnes)
Agriculture	0.32	0.10	-0.72	-0.03	-0.02	-0.07
Processed food	0.26	0.03	-0.01	-0.0001	-0.03	-0.04

Source: Ifo Trade Model. Note: *Global CO_2 growth includes EU and Korean emissions. As indicated in section 9 above, the calculated change in emissions in the EU is likely to be neutralised due to the EU emissions trading system (ETS). Technically, the ETS fixes the quantity of CO_2 emissions. Under such a quantity constrained regime, any increase or decrease in the demand for emissions only leads to changes in the prices of pollution permits but not to changes in quantity of CO_2 emitted.

10.2.9. Conclusions

As expected by the agricultural industry at the time of negotiations, the FTA has helped maintain the competitiveness of EU exports to Korea relative to countries such as the United States. Moreover, EU agricultural and processed food exports increased significantly (both by close to 200 percent), thus exceeding industry expectations at the outset of the FTA. However, SPS-related non-tariff trade costs remain, including a longstanding ban on EU beef exports to Korea.

10.3. Case study on electronic goods

This case study examines the development of EU-Korea trade in electronic goods since the start of the provisional application of the EU-Korea FTA in 2011. The case study examines the effects of the reduction in tariffs resulting from the EU-Korea FTA, and the degree to which non-tariff trade costs affecting EU-Korea trade in electronics have been removed. This case study also reviews the impact of the EU-Korea FTA on the competitiveness of EU producers.

Reasons for selecting the electronic goods sector as a case study included the following: the sector experienced a considerable decrease in protection levels due to the EU-Korea FTA; the sector was deemed sensitive during the FTA negotiations given Korea's comparative advantage; and, the sector is of high economic relevance for both the EU and Korea.

This case study is based on the results of desk research, the economic analysis, the public consultation, and stakeholder interviews.[352]

10.3.1. Background on the EU and Korean electronics sector

Electronics manufacturing is an important component of the EU and Korean economies, though this industry is of much greater importance for Korea (electronics—particularly consumer electronics, which include office machines, telecommunications, household electrical machinery, and photographic equipment—represents the third-most important Korean export sector to the EU, after machinery and automobiles). In the EU, electronics

[352] For a list of interviewees, see Annex IX.

manufacturing is also the subject of an industrial strategy adopted by the European Commission in 2013 as part of the Digital Single Market strategy.[353]

In 2013, the value added of the EU ICT manufacturing sector amounted to EUR 50 billion (slightly less than 0.4 percent of EU GDP).[354] In the same year, the information and communications industry in Korea accounted for KRW 136 trillion (EUR 112 billion), or 9.9 percent of Korean GDP.[355] As of 2015, the export value of Korea's ICT products accounted for 7.1 percent of the global market, making Korea the third-largest ICT exporter after China and the US.[356]

10.3.2. Industry views of the FTA prior to its implementation

At the time of negotiations, DigitalEurope (representing the EU digital technology industry) had not taken a formal position on the FTA. However, in a position paper written during the negotiations, DigitalEurope stated that lowering EU tariffs and non-tariff trade costs would put EU firms at a competitive disadvantage, given Korea's strength in this sector and given the closed nature of the Korean market due to non-tariff trade costs (NTTCs); as such, any FTA that saw reductions in EU trade restrictions would have to ensure an opening of the Korean market via reducing tariffs and NTTCs. DigitalEurope also voiced concerns about the relaxation of preferential rules of origin that would result in an increase in the use of non-originating materials and thus in the creation of an un-level playing field. It was also noted that deviating from harmonised preferential rules of origin would introduce an extra layer of complexity to EU exporters. Finally, support for continuation of the "no [duty]-drawback rule" was voiced, also out of concern of creating an un-level playing field.[357]

10.3.3. Overview of relevant FTA provisions

Similar to the automotive sector, the FTA has a sector-specific annex on non-tariff measures on electronics. Annex 2-B of the FTA aims to reduce non-tariff trade costs in this sector via minimising diverging domestic requirements and eliminating costly and time-consuming third-party testing and certification procedures.

This Annex applies to all standards, technical regulations, and conformity assessment procedures introduced or maintained by the EU or Korea concerning the safety and electromagnetic compatibility (EMC) of all products listed in Appendix 2-B-1 of the FTA. The International Organisation for Standards (ISO), the International Electrotechnical Commission (IEC) and the International Telecommunication Union (ITU) are recognised as the relevant international standard setting bodies for EMC and safety of covered products; the EU and Korea are also committed to using relevant international standards established by these bodies, or relevant parts of these standards, as a basis for any standards, technical regulations, or conformity assessment procedures.

With a view to reducing obstacles to trade, Annex 2-B requires the EU and Korea to accept covered products into their markets on the basis of a suppliers' declaration of conformity (unless otherwise provided), which is to act as positive assurance of conformity to its technical regulations on EMC or safety of covered products. If a Party requires that a given SDoC must also be accompanied by a test report, the report may

[353] European Commission, *Electronics Strategy for Europe*. See https://ec.europa.eu/digital-single-market/en/electronics-strategy-europe

[354] https://ec.europa.eu/jrc/sites/jrcsh/files/ICT%20Sector%20and%20R&D%20performance%20in%20the%20EU%202016.pdf

[355] Statistics Korea, *Explore Korea through Statistics 2014.*

[356] WTO Trade Policy Review on the Republic of Korea, 2016.

[357] EICTA, "EICTA Position Paper on EU-Korea Free Trade Agreement", 2008.

be produced by a laboratory in the counterpart's own territory.[358] Beyond this, the Parties may not require any other form of product registration that could prevent or otherwise delay the placing on the market of products that comply with the Parties' technical regulations.

The use of the SDoC as set out in Article 3(b) of Annex 2-B of the FTA was mandated for the EU upon the start of the provisional application of the EU-Korea FTA, whereas Korea was granted a three-year transitional period following the start of the provisional application of the agreement to comply. Additionally, for a list of 53 products covered in Appendix 2-B-3,[359] Korea can continue to require positive assurance of conformity with its technical regulations on safety of covered products (e.g. third-party testing) even after this three-year period, if not doing so would create risks for human health and safety. Notwithstanding this, both Korea and the EU can reintroduce requirements for mandatory third party testing or certification for EMC or safety of covered products, or introduce administrative procedures for approving or reviewing test reports if the following conditions are met:

- There are urgent, and compelling reasons related to the protection of human health and safety that justify doing so;
- The reasons for the introduction of such requirements or procedures are supported by substantiated technical or scientific information regarding the performance of the products in question;
- The requirements or procedures are not more trade-restrictive than necessary to fulfil the Party's legitimate objective, taking account of the risks that non-fulfilment would create; and,
- The Party could not have reasonably foreseen the need for introducing any such requirements or procedures at the time of start of the provisional application of this Agreement.

Every five years following Korea's introduction of the SDoC, the Parties are committed to reviewing the possibility of gradually eliminating technical and administrative requirements, including mandatory third-party testing, through expanding the introduction of the SDoC. Additionally, both Parties are committed to cooperating on maintaining and expanding the voluntary arrangements for mutual acceptance of test reports between them, and to cooperating on promoting common understanding on regulatory issues.

10.3.4. Evolution of tariffs in the electronic goods sector after the start of the provisional application of the FTA

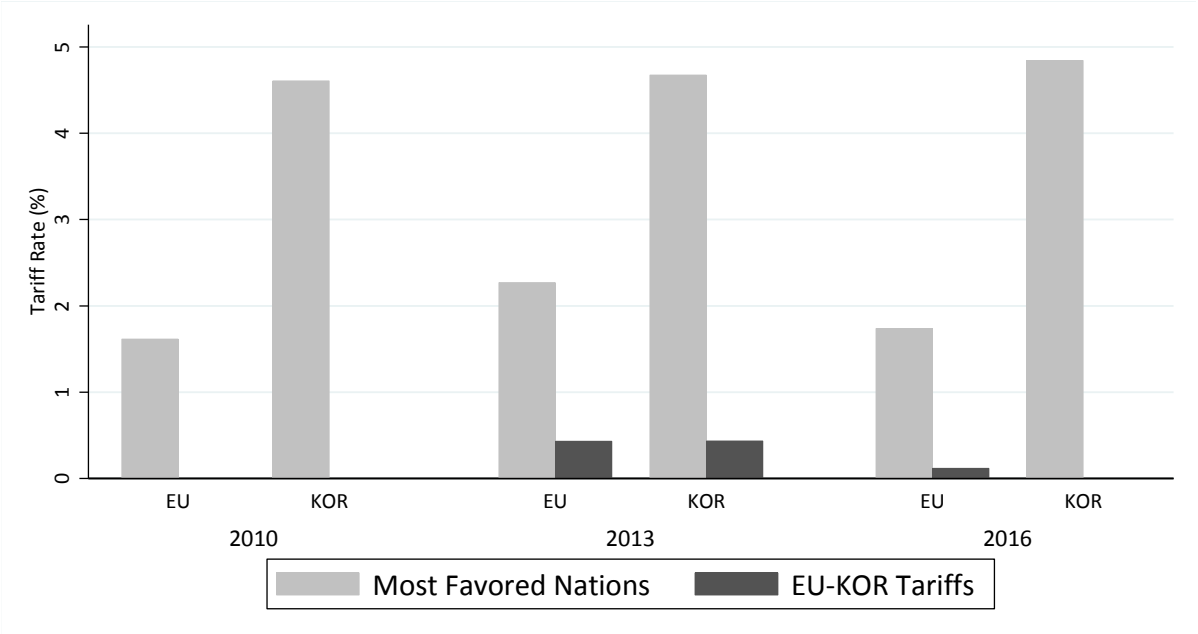
Tariffs in this sector were simultaneously reduced for the EU and Korea. For the large majority of approximately 800 products, tariffs were removed immediately upon the start of the provisional application of the FTA. For some other products, tariffs were reduced over a three-year period. The tariffs on a few remaining products were reduced over a five-year period. No problems were reported by stakeholders in this sector regarding the implementation of the tariff reduction schedule under the EU-Korea FTA.

The figure below presents the trade-weighted tariffs for the electronics sector in 2010 (before the start of the provisional application of the FTA) and in 2013 and 2016.

[358] Note that with respect to radio equipment, Annex 2-B only covers the recognition of test reports from notified test laboratories for EMC and Certified Body (CB) test laboratories under the IECEE CB scheme for (electrical) safety, but does not cover conformity assessment.

[359] The list covers mainly household electrical machinery, including inter alia vacuum cleaners, dish washers, electric blankets, and humidifiers.

Figure 128: Tariffs on electronic products (trade-weighted in %)



Source: Own compilation, based on TARIC (2017). Note: The MFN tariffs of a country are imposed on imports from all WTO members except those with which a country has a preferential trade agreement. In 2010, both Korea and the EU imposed MFN tariffs on each other. 2013 and 2016 show the situations as of 2013 and 2016, not the target level of tariffs after full implementation of the agreement. Included product groups are detailed in a subsequent table on trade costs.

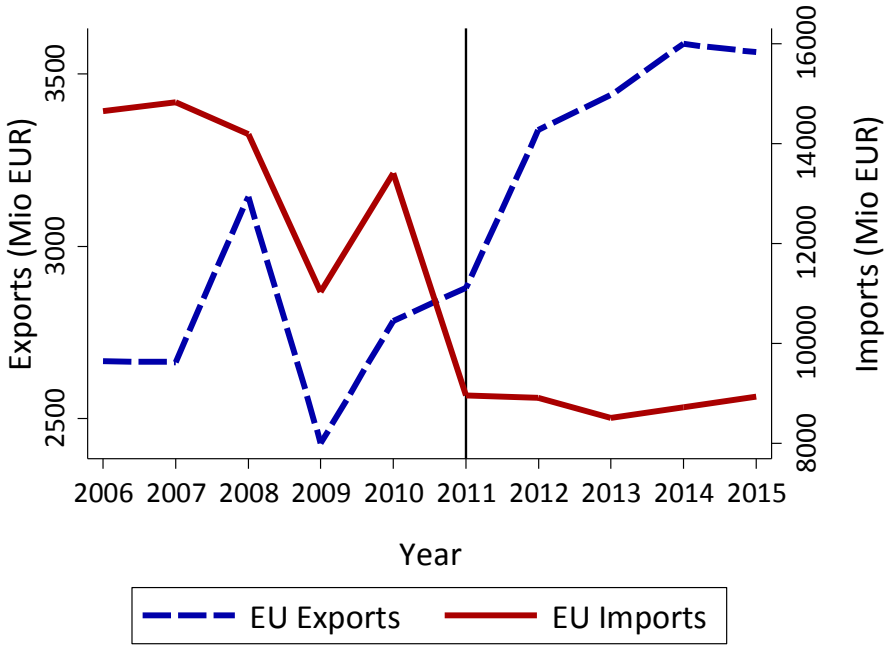
As shown in the figure above, tariffs on imports in the electronics sector were reduced in both Parties from 2010 to 2016, but to a larger degree in Korea. However, since pre-FTA tariffs were not very high, electronics benefited only moderately from the agreement in comparison to other sectors. However, as will be discussed subsequently, non-tariff trade costs were more significant for this sector.

10.3.5. Effects of the FTA on trade in the electronic goods sector

The figure below presents EU exports to and imports of electronics from Korea from 2006 to 2015. As shown in the figure, EU exports to Korea (left y-axis) in this sector increased between 2011 and 2015. EU imports from Korea (right y-axis) fell sharply after 2010 and remained stable thereafter at around EUR 9 billion per year. This drop in electronics imports from Korea is notable, given that companies could benefit from preferential tariffs under the FTA since 2011, and given that the EUR-KRW exchange rate remained relatively stable during this period (see section 5.2.1 for more details on the exchange rate); however, it is possible that the worsening of the EU debt crisis played a role in reducing demand.[360] Irrespective of this, the EU's imports of electronic products from Korea in 2015 were still worth three times more than its exports to Korea.

[360] Another potential reason cited in the 2014 annual report on the implementation of the EU-Korea FTA was the relocation of electronics production from Korea to countries in Southeast Asia, which would imply that such products would be imported to the EU via the latter countries, rather than from Korea under the tariff preferences of the EU-Korea FTA.

Figure 129: EU exports to and imports of electronics from Korea, 2006-2015



Source: Own compilation, based on COMEXT (2017). Note the difference in scales between the two vertical axes.

With respect to the differentiation of EU exports and imports in the electronics sector, EU exports are more diversified than imports. Specifically, 33 percent of EU exports to Korea in this sector are concentrated in the top 10 products, compared to 59 percent of EU imports from Korea that are concentrated in the top 10 products. Regardless, the fact that in 2015 the EU exported 492 products in this sector to Korea and imported 479 products illustrates that EU trade in both directions is highly concentrated.

The top 10 EU import goods from Korea are:

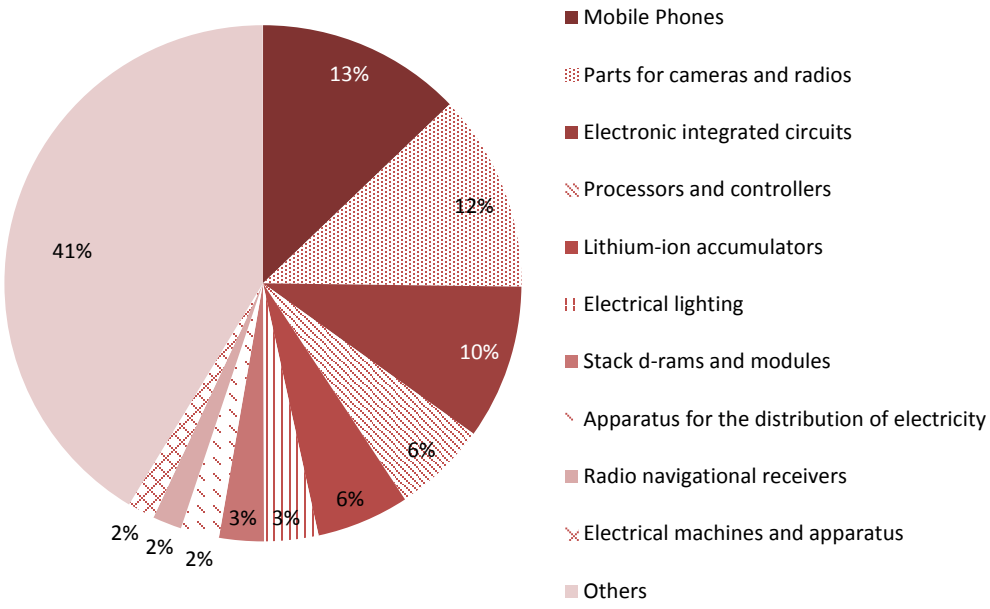
- Mobile phones (CN 85171200)
- Parts for cameras and radios (CN 85299092)
- Electronic integrated circuits (CN 85423990)
- Processors and controllers (CN 85423190)
- Lithium-ion accumulators (CN 85076000)
- Electrical lighting (CN 85122000)
- Stack d-rams and modules (CN 85489020)
- Apparatus for the distribution of electricity (CN 85371099)
- Radio navigational receivers (CN 85269120)
- Electrical machines and apparatus (CN 85437090)

The top 10 EU export goods to Korea are:

- Processors and controllers (CN 85423190)
- Electronic integrated circuits (CN 85423990)
- Apparatuses for line telephony (CN 85371099)
- Radar apparatuses (CN 85261000)
- Switching and routing apparatuses (excluding telephones) (CN 85176200)
- Inverters with capacity >7.5 kva (CN 85044088)
- Parts suitable with the apparatus of heading (CN 85389099)
- AC motors of an output >750 kw (CN 85015399)
- Static converters (CN 85044090)
- Boards, panels, consoles, desks and other bases (CN 85372091)

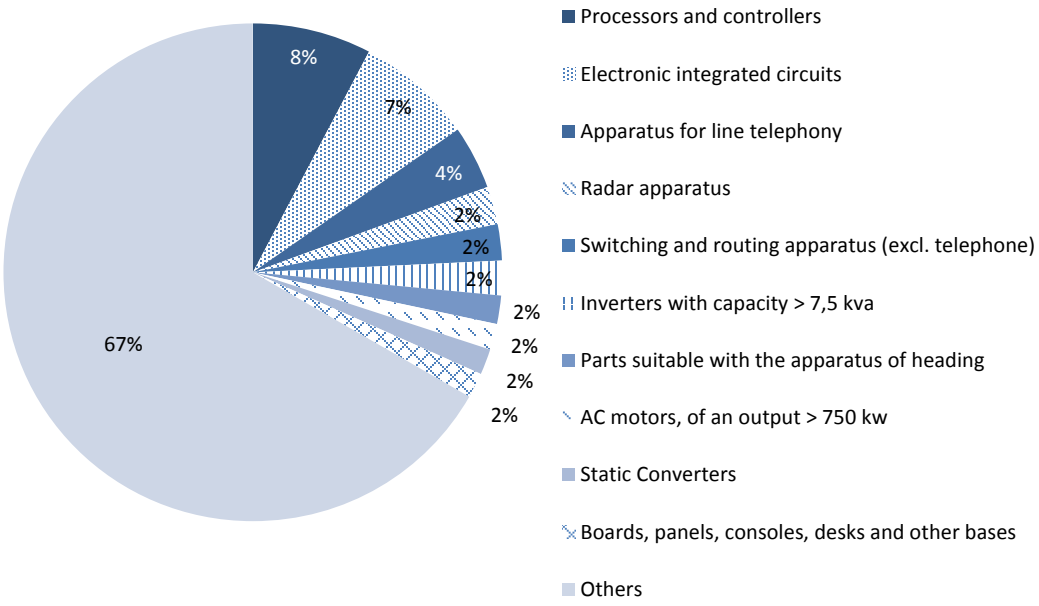
The figures below depict the product concentration of EU exports to and imports from Korea within the electronics sector:

Figure 130: Top 10 EU electronics import products from Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

Figure 131: Top 10 EU electronics export products to Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

The two tables below present the growth in price and quantity over the period 2011 to 2015 for the top 10 EU imports and exports in the electronics sector. Note that the COMEXT database presents quantities in tonne equivalents for all goods. While this may

be a counterintuitive measurement for some goods, it enables a good means of comparison.[361]

As shown below, all top EU imports from Korea for which data was available experienced a marked price increase, but at the same time underwent a significant reduction in quantities traded (the exception being apparatuses for the distribution of electricity, which saw growth in quantities traded of 60.4 percent).

Table 56: Numbers and growth rates of top 3 EU electronics imports from Korea

Product	Price 2011 *(EUR 1000 per tonne)*	Price 2015 *(EUR 1000 per tonne)*	Growth in Prices (%)	Quantity 2011 *(1000 tonnes)*	Quantity 2015 *(1000 tonnes)*	Growth in Quantities (%)
Mobile Phones	391.1	564.9	44.4	3.6	2	-43.7
Parts for cameras and radios	22.1	45.5	106.3	63	24.3	-61.4
Electronic integrated circuits	1 403.6	2 224.3	58.5	0.6	0.4	-37.3
Processors and controllers	1 002.4	2 207.9	120.3	0.5	0.2	-52.0
Lithium-ion accumulators	NA	33.5	NA	NA	15.4	NA
Electrical lighting [a)]	NA	20.2	NA	NA	14.9	NA
Stack d-rams and modules	1 019.3	2 043.8	100.5	0.2	0.1	-33.4
Apparatuses for the distribution of electricity	51.7	59.0	14.0	2.3	3.6	60.4
Radio navigational receivers [a)]	NA	175.3	NA	NA	0.9	NA
Electrical machines and apparatuses [a)]	NA	55.9	NA	NA	2.7	NA

Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2011. This is likely due to a change in classification.

While there are many missing values for 2011 with respect to EU exports to Korea, data is available for the top 3 electronics exports. As shown in the table below, both prices and quantities grew for exports of these products (processors and controllers, electronic integrated circuits, and apparatuses for line telephony).

[361] The database does not provide the same data on a unit basis.

Table 57: Numbers and growth rates of top 3 EU electronics exports to Korea

Product	Price 2011 *(EUR 1000 per tonne)*	Price 2015 *(EUR 1000 per tonne)*	Growth in Prices (%)	Quantity 2011 *(1000 tonnes)*	Quantity 2015 *(1000 tonnes)*	Growth in Quantities (%)
Processors and controllers	1 353.5	2 913.7	115.3	0.1	0.12	23.8
Electronic integrated circuits	1 605.9	1 633.0	1.7	0.1	0.2	60.7
Apparatuses for line telephony	80.4	90.1	12.0	0.9	1.6	74.0
Radar apparatuses [a)]	NA	283.6	NA	NA	0.3	NA
Switching and routing apparatus (excl. telephone) [a)]	NA	325.9	NA	NA	0.3	NA
Inverters with capacity > 7,5 kva [a)]	NA	47.4	NA	NA	1.7	NA
Parts suitable with the apparatus of heading [a)]	NA	61.9	NA	NA	1.1	NA
AC motors, of an output > 750 kw [a)]	NA	16.9	NA	NA	3.6	NA
Static Converters	72.3	64.8	-10.5	0.7	0.9	28.4
Boards, panels, consoles, desks and other bases [a)]	NA	38.8	NA	NA	1.5	NA

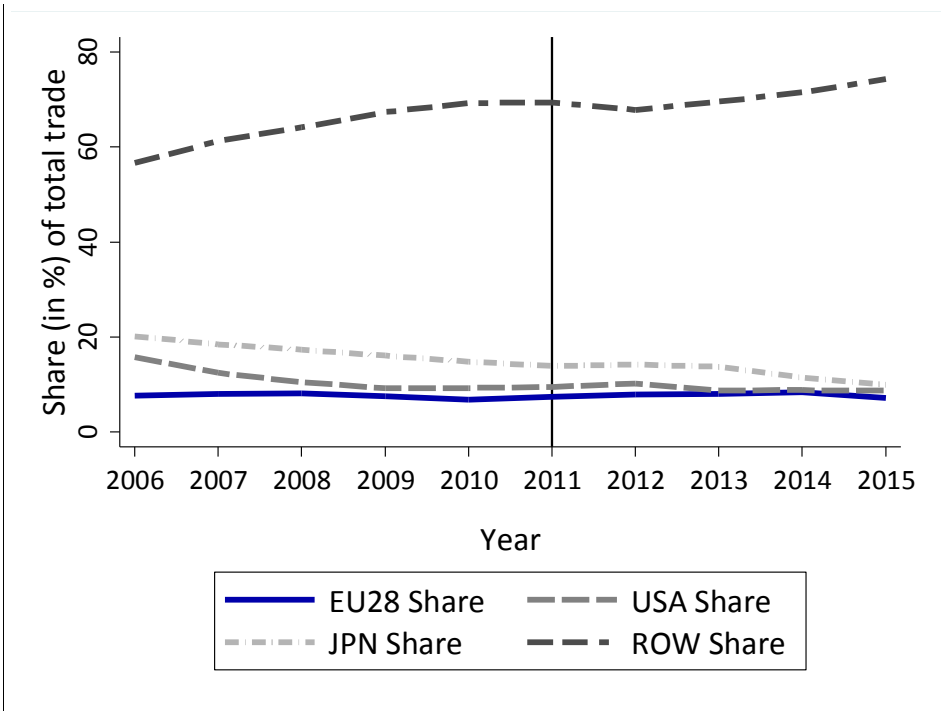
Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2011. This is likely due to a change in classification.

The results of the interviews confirmed that the FTA is considered to have been effective in liberalising trade in the electronics sector.

10.3.6. Effects of the FTA on the competitiveness of EU electronic goods producers

With a view to understanding the EU's competitive position following the start of the provisional application of the EU-Korea FTA, the figure below presents the market share of Korean electronics imports from the EU, alongside the market share of Korean electronics imports from the US, Japan, and ROW. As shown in the figure, the EU's share of total Korean imports is quite low. Korean imports from the EU in this sector were slightly higher than 7 percent of the total in 2006 and remained fairly constant over the entire period of observation. However, the EU's performance in this regard appears stronger in comparison to the Japan and the USA. Both of the latter lost market share over the 10-year period of observation, ultimately reaching levels similar to that of the EU in recent years. The results of the interviews confirmed that the EU-Korea FTA is considered to have boosted the competitiveness of EU exporters in this sector relative to competitor countries.

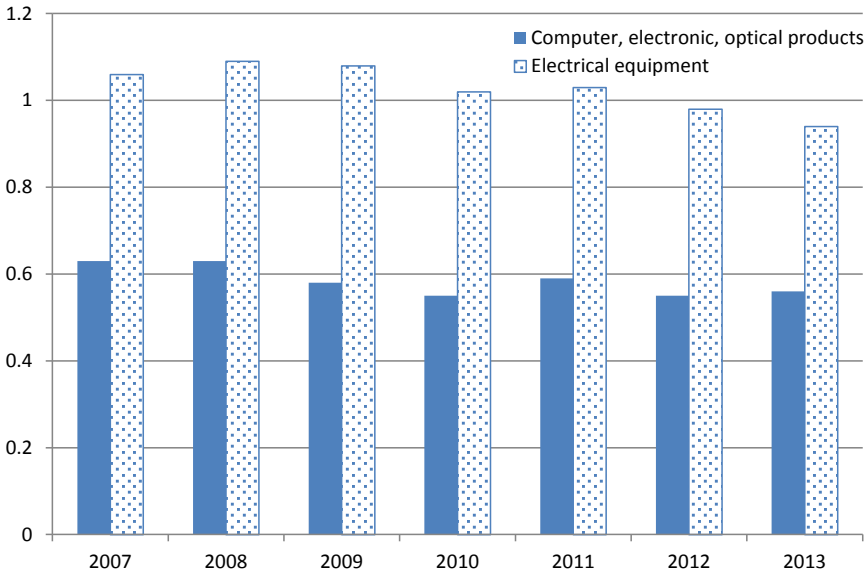
Figure 132: Share of Korean electronics imports, 2006-2015



Source: Own compilation, based on UN Comtrade (2017).

Similar to the previous case study on the automotive sector, the figure below presents the revealed comparative advantage of the EU computer, electronic, and optical products manufacturing sector and the EU electrical equipment manufacturing sector from 2007-2013. (Again, values greater than one indicate that a given EU industry perform better than the reference group and thus have a comparative advantage.) As shown in the figure, the RCA index for the electrical equipment manufacturing sector decreased only slightly since the start of the provisional application of the FTA (from 1.03 to 0.94), though the downward trend in this indicator had already begun since 2008. The same pattern is true with respect to the computer, electronic and optical products manufacturing sector. The marginal changes in competitiveness observed below do not contradict the data in the previous figure, in which the EU share of total Korean electronics imports stays roughly constant but that of RoW increases.

Figure 133: RCA index EU28 – computer, electronic, optical products and electrical equipment manufacturing, 2007-2013



Source: EU Structural Change 2015 (DG GROW); European Competitiveness Report 2014 (DG GROW). Note: RCA indices from 2007-2012 were calculated using a base of 105 reference countries, whereas RCA indices in 2013 were calculated using a base of 142 reference countries.

10.3.7. Evolution of trade costs, remaining non-tariff trade costs, and implementation of customs-related provisions

Evolution of trade costs

As mentioned earlier, tariff reductions in this sector played only a minor role in reducing trade costs compared to other industries, while non-tariff trade costs were of greater significance. To understand the extent to which both tariffs and non-tariff trade costs were mitigated in the electronics sector, the table below presents the percent reductions in tariff and NTTCs for EU electronics imports from and exports to Korea resulting from the EU-Korea FTA. As shown in the table, and in line with the above-presented export and import evolutions, the non-tariff barrier reductions for EU imports of electronics from Korea do not account for any portion of trade cost reduction (note that NTTCs faced by Korean electronics companies in the EU market were already lower than those faced by similar EU companies in the Korean market before the start of the provisional application of the FTA), while non-tariff barrier reductions account for over 25 percent of trade cost reduction for EU exports to Korea. The latter information helps explain the relatively sharp increase in EU exports in this sector shown previously and can likely be (at least in part) attributed to the FTA's annex on non-tariff measures in the electronics sector, which sought to mitigate third-party testing and certification procedures by introducing the suppliers declaration of conformity, among other things (for more details on this Annex, see section 10.3.3).

Table 58: Decomposition of Tariff and NTTC cost reduction for electronics

Sector Description	EU Imports		EU Exports	
	Tariff Reduction (%)	NTTC Reduction (%)	Tariff Reduction (%)	NTTC Reduction (%)
Electronic equipment	1.4	0	0.9	25.3

Source: Ifo Trade Model.

Remaining non-tariff trade costs

Even in light of the reduction in NTTCs for EU exports shown in the previous table, problems concerning NTTCs were still reported by stakeholders. It was noted that EU exporters still face significant non-tariff trade costs due to local testing and certification when entering the Korean market. In more detail, issues raised included:

- *Local testing and certification procedures:* As referenced previously, Annex 2-B of the FTA specifies that Korea will recognise test reports issued by EU laboratories that have concluded voluntary arrangements for mutual acceptance of test reports with a Korean conformity assessment body. This was intended to reduce the time and costs associated with undertaking testing procedures in Korea for EU exporters. However, in practice, test reports prepared in the EU must still be prepared in line with Korean standards (which EU laboratories are not always familiar with), and it can be more efficient for some companies to simply submit their products for a second round of testing in Korea. As such, the burden of third-party testing for electronics is still an issue for EU exporters.

- *KOSHA regulations:* New regulations adopted by the Korea Occupational Safety and Health Agency (KOSHA) were raised as an issue by interviewees and respondents to the public consultation. Specifically, in 2013, KOSHA adopted new legislation requiring third-party certification (required to be performed in Korea) for imported electronic, electrical and mechanical products. Such third-party certification was described as costly and was noted to have deterred some EU exporters.

Implementation of customs-related provisions of the FTA

Interviewed stakeholders did not indicate problems regarding the customs-related provisions of the FTA. Moreover, as mentioned in section 10.1.7, the European Commission undertakes monitoring of sensitive industries (including electronics) with respect to duty drawback, and has consistently reported that the allowance of duty drawback has not had any significant impact on Korea's manufacturing patterns.

10.3.8. Other effects of the FTA in the electronic goods sector

Effects on sectoral value added

With a view to the CGE results in the table below, the electronics sector records positive and sizable effects in terms of value added for both the EU and Korea. Specifically, absolute value added increased more in the EU (USD 559 million/EUR 532 million) than in Korea (USD 365 million/EUR 347 million). However, in percentage terms, the value added of the Korean electronics sector increased by more (0.64 percent compared to 0.39 percent in the EU).

Table 59: Sectoral growth in value added

Sector	European value added growth (%)	European value added growth (USD million)	Korean value added growth (%)	Korean value added growth (USD million)
Electronic equipment	0.39	559.24	0.64	365.06

Source: Ifo Trade Model.

Effects on producers

As discussed in sections 5.4 and 5.5, the econometric analysis showed that the EU-Korea FTA led to a strong increase of EU exports to Korea of 81.1 percent in the manufacture of computer, electronic and optical sector, and of 60.5 percent in the manufacture of electrical equipment sector. In contrast, Korean exports to the EU decreased by 1.5 percent in the manufacture of computer, electronic and optical equipment sector, and increased by 15.4 percent in the manufacture of electrical equipment sector (note that the effects on Korean exports to the EU in this sector were not statistically significant). On this basis, it can be said that EU producers in these sectors were positively impacted by the FTA, whereas conclusions cannot be drawn regarding the impact on Korean producers.[362]

Effects on employment

The table below presents the employment effects of the EU-Korea FTA on the EU and Korean electronics sectors, based on the results of the CGE model. As shown in the table, employment increases marginally in both the EU and Korean electronics sectors (by 0.37 percent and 0.06 percent, respectively) owing to the FTA.

Table 60: Employment effects in the EU and Korean electronics sectors

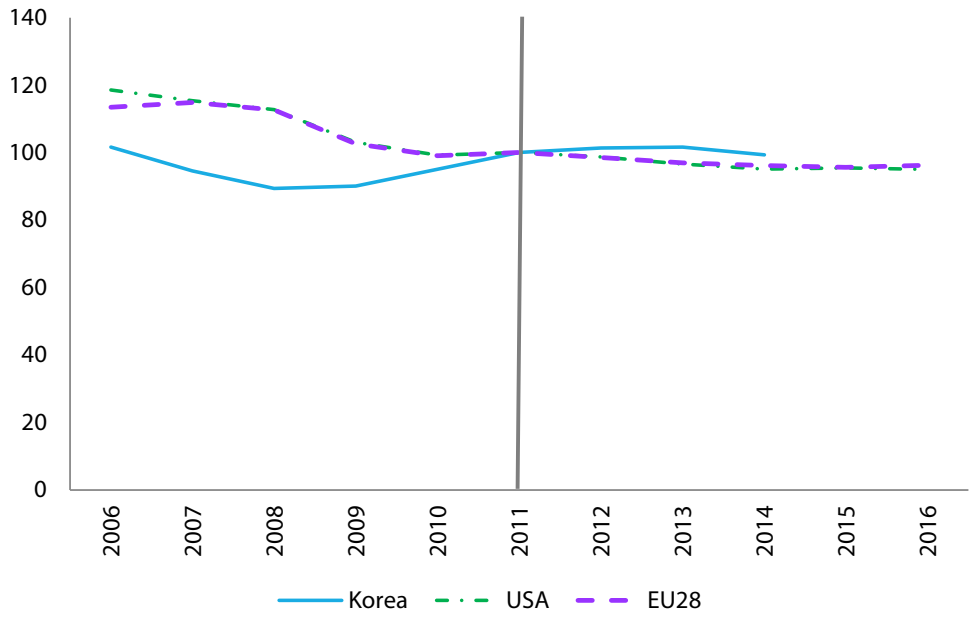
Countries	Initial Employment (1000 employees)	Change in sectoral employment, electronic equipment (1000 employees)	Change in sectoral employment, electronic equipment (%)
EU28	2 076	8	0.37
KOR	1 377	1	0.06

Source: Ifo Trade Model.

Note that the model results above relate to a comparison of employment effects under the EU-Korea FTA against a theoretical counterfactual situation in which there was no FTA in place. These results can be compared against real-world employment data to provide a sense of perspective. The following figure shows the development in total employment in electronics sectors in the EU and Korea since 2006, with the United States provided for comparison (comparable sectoral data for Japan is not available).

[362] As described in section 5.4, this result of the econometric panel data analysis is based on bilateral sector-level trade flows for the period 2000-2014, and isolates the causal effects of the trade agreement from other determinants of bilateral trade such as the evolution of GDP, price levels, other trade policy initiatives, etc.

Figure 134: Total employment in the manufacture of electronics in Korea, US and EU28, index 2011 = 100, 2006-2016.



Source: Own compilation, based on data from Eurostat, Statistics Korea, and the US Bureau of Labor Statistics. The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

As the figure above shows, total employment in electronics sectors has slightly decreased in each of the depicted countries since 2011. This decrease was smallest in Korea, at just 0.6 percent of electronics employment since the start of the provisional application of the FTA. In the EU, employment in electronics sectors decreased by 3.8 percent between 2011 and 2016. Therefore, while the CGE model shows positive employment effects of the FTA in the electronics sectors for both Korea and the EU, this does not indicate that employment as a whole increased in these sectors, but rather that employment decreased by less than it otherwise would have without the FTA.

Effects on consumers

As discussed previously in section 7.1, the CGE model shows that the EU-Korea FTA caused decreases in prices of 0.02 percent and 0.37 percent in the EU and Korean electronic equipment sectors, respectively, representing a positive development for consumers.

Effects on the environment

The table below presents the changes in CO_2 emissions due to the EU-Korea FTA for the electronics sector, based on the results of the CGE model. As shown in the table, CO_2 emissions from the EU and Korean electronics sectors increased slightly (by 0.35 percent/2 000 tonnes and 0.29 percent/1 000 tonnes, respectively). In a global perspective, the CO_2 emissions of the electronics sector decreased overall slightly (with a net reduction of world CO_2 emissions in this sector of 0.06 percent/10 000 tonnes, including EU and Korean emissions), due to trade diversion effects (see section 9.6).

Table 61: Sectoral growth in CO_2 emissions

Sector	European CO_2 growth (%)	European CO_2 growth (million tonnes)	Korean CO_2 growth (%)	Korean CO_2 growth (million tonnes)	Global CO_2 growth* (%)	Global CO_2 growth* (million tonnes)
Electronic equipment	0.35	0.002	0.29	0.001	-0.06	-0.01

Source: Ifo Trade Model. Note: *Global CO_2 growth includes EU and Korean emissions. As indicated in section 9 above, the calculated change in emissions in the EU is likely to be neutralised due to the EU emissions trading system (ETS). Technically, the ETS fixes the quantity of CO_2 emissions. Under such a quantity constrained regime, any increase or decrease in the demand for emissions only leads to changes in the prices of pollution permits but not to changes in quantity of CO_2 emitted.

10.3.9. Conclusions

This case study concludes that the EU-Korea FTA has led to a substantial increase of EU exports of electronic goods to Korea across all Member States. The case study also indicates that the FTA was successful in addressing, to some extent, the concerns expressed by industry at the time of negotiations. Namely, the provisions in Annex 2-B on electronics appear to have been successful in reducing at least some of the non-tariff trade costs faced by EU exporters in the Korean market, as evidenced by the significant NTTC cost reduction for electronics (25.3 percent). However, as noted by stakeholders, other NTTCs still exist in Korea and pose obstacles to EU exporters seeking to access the market.

10.4. Case study on environmental goods and services

Chapter 13 of the EU-Korea FTA on trade and sustainable development states that the EU and Korea are to facilitate and promote trade in environmental goods and services (EGS). In this light, this case study will analyse the development of EU-Korea trade in this sector since the start of the provisional application of the EU-Korea FTA in 2011. It will also examine the importance of EGS in the economies of the EU and Korea.

Reasons for selecting the environmental goods and services sector as a case study included the following: the sector experienced a decrease in protection levels due to the EU-Korea FTA; and, both the EU and Korea seek to increase the economic relevance of EGS.

This case study is based on the results of desk research, the economic analysis and stakeholder interviews.[363]

10.4.1. Background on the EU and Korean EGS sector

In the EU, output of EGS per unit of GDP has grown by more than 50 percent between 2003 and 2013. As of 2013, EGS gross value added was estimated to represent 2.1 percent of GDP.[364] In Korea, Green Industry (which is similar in scope to EGS but also includes enhanced coverage of energy efficiency and resource efficiency-related products and activities)[365] accounted for KRW 92.5 trillion (EUR 76 billion) worth of sales in 2010

[363] For a list of interviewees, see Annex IX.

[364] http://ec.europa.eu/eurostat/statistics-explained/index.php/Environmental_goods_and_services_sector

[365] UNEP, *Measuring the Environmental Goods and Services Sector: Issues And Challenges*. 2014.

(representing 4.5 percent of total sales across industries that year). Green industry in Korea also accounted for approximately 3 million jobs, representing 5.4 percent of total employment.[366]

For several years, Korea has worked to integrate green growth into its overall industrial development strategy, making Korea a growing market for environmental technology exporters.[367] More information on relevant markets for environmental goods and services in Korea is presented in the box below.

Markets for EGS in Korea

Air pollution control

In addition to its commitments under the 2015 Paris Climate Agreement, Korea has implemented several domestic initiatives to reduce air pollution. For example, its 2010 National Strategy for Low Carbon Green Growth emphasises expanding the green technology sector and helping SMEs to green their businesses, among other things. It also sets medium and long term GHG emissions targets. Current technologies and services in demand include: emissions monitoring systems and measurement technologies, air pollution control equipment/pollution abatement technologies, carbon capture and storage (CCS), and pollution-free and low-emission vehicles.

Waste Management and Recycling

The Korean government has also prioritised recycling/re-use of waste, reducing landfilling, and improving waste to energy capacity, as well as improving hazardous waste management. In this regard, there is domestic demand for technologies and services such as waste collection technologies, sanitary landfill systems, environmental monitoring and analytical equipment, sorting, crushing and grinding machines, and waste incinerators.

Water and wastewater treatment

With respect to wastewater treatment, recent legal changes require limiting the volume of sludge discharged into the ocean, which has increased demand for waste-to-energy technology and sludge de-watering systems. Demand for technologies such as advanced filtration systems and water re-use equipment and services also exists on the part of the Korean high-tech industrial sector due to strict domestic effluent standards.

Source: US Department of Commerce 2016 Top Markets Report Environmental Technologies Country Case Study (South Korea).

10.4.2. Definition of EGS and overview of relevant FTA provisions

According to the definition used by Eurostat, environmental goods and services (EGS) are those produced for the purpose of environmental protection (i.e., preventing, reducing and eliminating pollution and any other degradation of the environment) as well as resource management (i.e., preserving and maintaining the stock of natural resources and hence safeguarding against depletion).[368] Currently, there is no internationally recognised definition of EGS. The EU and Korea, together with 16 other participants accounting for the majority of global trade in environmental goods,[369] have been negotiating an Environmental Goods Agreement (EGA) to remove tariff and non-tariff trade costs to trade in environmental goods since January 2014. The EU ultimately hopes to allow the addition of new products to the agreement in the future, in addition to expanding the scope of the EGA to include environmental services. Officials last held talks

[366] Jung, Ho Seog, and Kyung Sam Min. A Measurement On Green Economy In Korea: Green Industry Statistics. 2013.

[367] See US Department of Commerce 2016 Top Markets Report Environmental Technologies Country Case Study (South Korea) for the US perspective, and the following sub-sections for the EU perspective.

[368] http://ec.europa.eu/eurostat/statistics-explained/index.php/Environmental_goods_and_services_sector

[369] The full list of EGA participants includes: Australia, Canada, China, Costa Rica, the EU, Hong Kong, Iceland, Israel, Japan, Korea, New Zealand, Norway, Singapore, Switzerland, Liechtenstein, Taiwan, Turkey, and the United States.

in the framework of this agreement in December 2016—while negotiations were not finalised, further talks are planned. Expected benefits of the EGA include inter alia helping to meet the climate and energy targets of the 2015 Paris Agreement, reducing dependency on fossil fuels, and making cities greener and more sustainable.[370]

In the negotiation process, each participant has provided a list of products considered as environmental goods. The EU aims at eliminating duties on products used for:[371]

- Generation of renewable energy;
- Control of air pollution;
- Management of solid and hazardous waste;
- Management of waste water and water treatment;
- Environmental remediation and clean up;
- Noise and vibration abatement;
- Resource and energy efficiency; and,
- Environmental monitoring and analysis.

Chapter 13 of the EU-Korea FTA explicitly addresses trade favouring sustainable development in Article 13.6, which provides that the parties "shall strive to facilitate and promote trade and foreign direct investment in environmental goods and services, including environmental technologies, sustainable renewable energy, energy efficient products and services and eco-labelled goods, including through addressing related non-tariff trade costs".

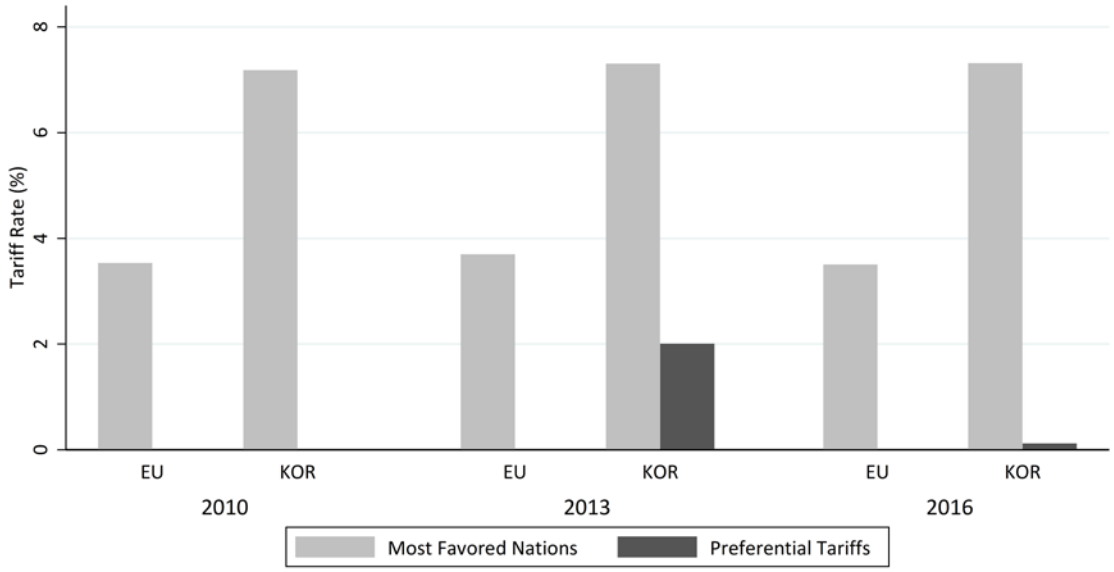
10.4.3. Evolution of tariffs in the environmental goods sector after the start of the provisional application of the FTA

The figure below displays trade-weighted tariffs that the EU and Korea imposed on environmental goods before and after the start of the provisional application of the EU-Korea FTA. As shown in the figure, after the start of the provisional application of the FTA, the EU reduced its preferential tariffs to zero while the MFN tariffs remained at the same level. Preferential tariffs imposed by Korea were also reduced to less than half of a percent, corresponding to an overall reduction of over 7.5 percentage points compared to MFN tariffs.

[370] WTO, Environmental Goods Agreement", www.wto.org. 2017.

[371] http://trade.ec.europa.eu/doclib/press/index.cfm?id=1438.

Figure 135: Tariffs on environmental goods (trade-weighted in %)

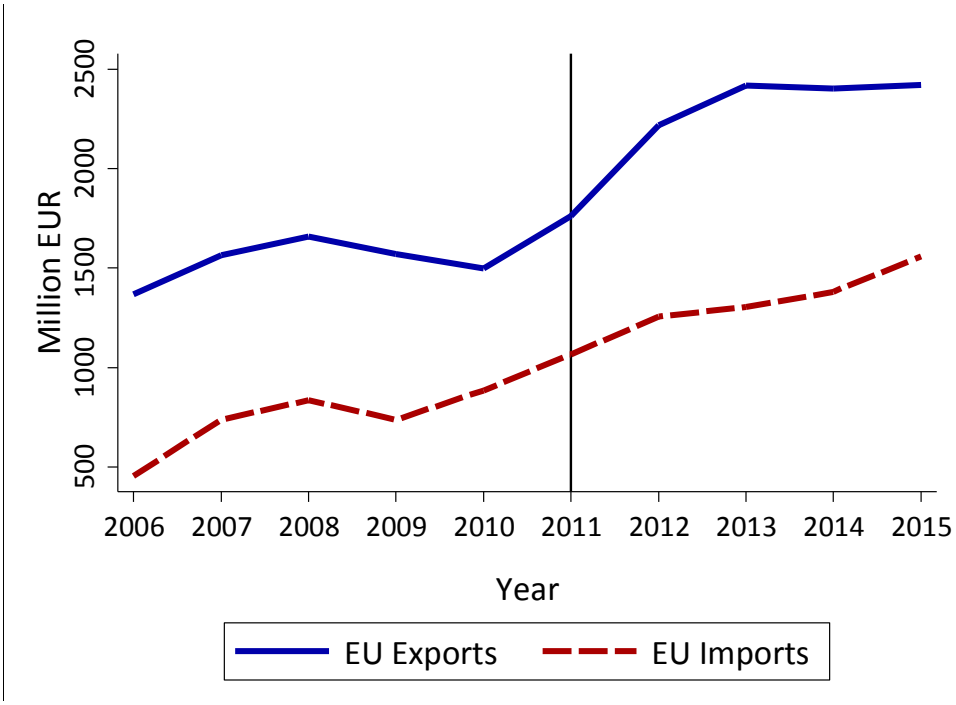


Source: Own compilation, based on TARIC (2017). Note: The MFN tariffs of a country are imposed on imports from all WTO members except those with which a country has a preferential trade agreement. In 2010, both Korea and the EU imposed MFN tariffs on each other. 2013 and 2016 show the situations as of 2013 and 2016, not the target level of tariffs after full implementation of the agreement. Included product groups are detailed in a subsequent table on trade costs.

10.4.4. Effects of the FTA on trade in the EGS sector

The figure below presents EU exports to and imports of environmental goods from Korea from 2006 to 2015. As shown in this figure, both exports to and imports from Korea in this sector increased over the period of observation. The trade volume doubled from less than EUR 1 900 million in 2006 to EUR 3 800 million in 2015. It should also be noted that this increase occurred to a great extent in the post-FTA period of 2011 to 2015. EU exports remained almost constant until 2011 and experienced a boost in 2011, 2012 and 2013. Thereafter, exports flattened out at approximately EUR 2.5 billion. In contrast, imports from Korea followed a more balanced growth path. It is also notable that EU exports of environmental goods to Korea have always exceeded imports.

Figure 136: EU exports to and imports of environmental goods from Korea, 2006-2015



Source: Own compilation, based on COMEXT (2017).

EU exports to and imports of environmental goods from Korea are both highly concentrated. Ten products within the class of environmental goods, which contains 99 differentiated products according to the WTO, account for 81 percent of EU exports and 86 percent of EU imports, respectively.

The top 10 EU import goods from Korea are:

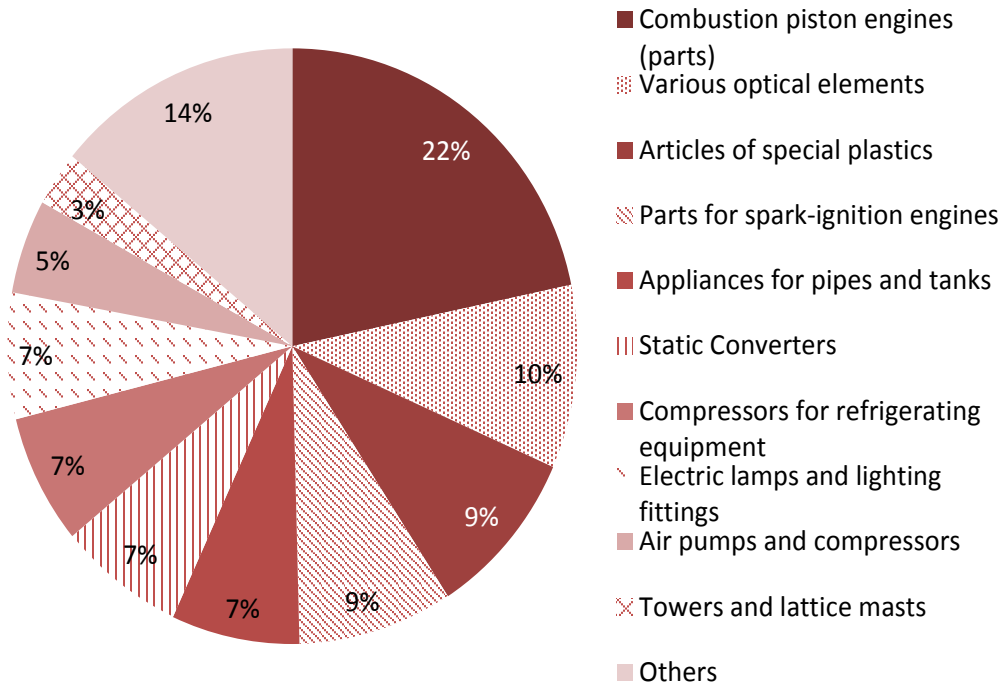
- Combustion piston engines (parts) (HS 840999)
- Optical elements (HS 392690)
- Articles of special plastics (HS 900190)
- Parts for spark-ignition engines (HS 840991)
- Appliances for pipes and tanks (HS 848180)
- Static Converters (HS 850440)
- Compressors for refrigerating equipment (HS 841430)
- Electric lamps and lighting fittings (HS 940540)
- Air pumps and compressors (HS 841480)
- Towers and lattice masts (HS 730820)

The top 10 EU export goods to Korea are:

- Combustion piston engines (parts) (HS 840999)
- Appliances for pipes and tanks (HS 848180)
- Air pumps and compressors (HS 841480)
- Static Converters (HS 850440)
- Heat exchange unit (HS 841950)
- Parts for spark-ignition engines (HS 840991)
- Centrifuges (HS 842119)
- Articles of special plastics (HS 392690)
- Parts for electric motors and generators (HS 850300)
- Vacuum pumps (HS 841410)

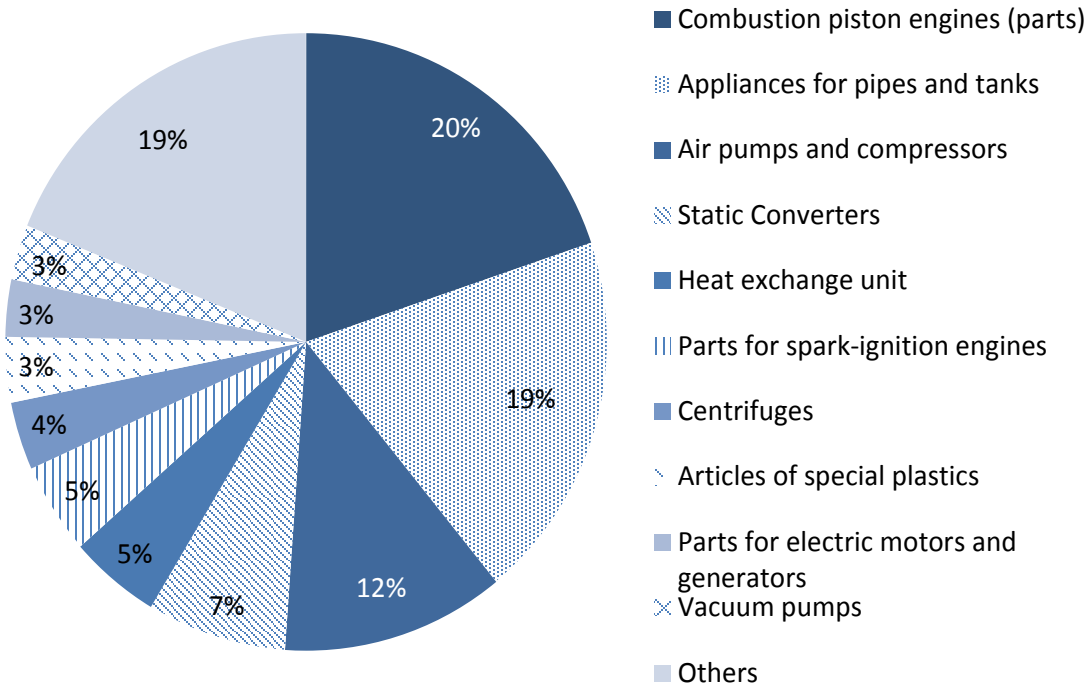
The figures below depict the product concentration of EU exports to and imports from Korea within the environmental goods sector. Notably, parts of combustion piston engines represent both the top export and import good for the EU in this sector.

Figure 137: Top 10 EU environmental goods import products from Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

Figure 138: Top 10 EU environmental goods export products to Korea, sector concentration



Source: Own compilation, based on COMEXT (2017). Note: Percentages are based on trade value (EUR).

The table below presents the evolution of prices and quantities for the top 10 environmental goods imported from Korea. Note that the COMEXT database presents quantities in tonne equivalents for all goods. While this may be a counterintuitive measurement for some goods, it enables a good means of comparison.[372]

As shown in the table, the import goods that underwent the largest increase in quantity were electric lamps and lighting fittings (267.5 percent) and parts for spark-ignition engines (92.9 percent). The import goods that saw the largest price growth were appliances for pipes and tanks (68.7 percent) and articles of special plastics (66.7 percent).

Table 62: Numbers and growth rates of top 10 EU environmental goods imports from Korea

Product	Price 2011 *(EUR 1000 per tonne)*	Price 2015 *(EUR 1000 per tonne)*	Growth in Prices (%)	Quantity 2011 *(1000 tonnes)*	Quantity 2015 *(1000 tonnes)*	Growth in Quantities (%)
Combustion piston engine (parts)	9.1	11.7	28.2	20.3	28.8	42.0
Various optical elements	8.6	9.8	14.0	20.1	15.9	-21.1
Articles of special plastics	6.9	11.6	66.7	11.0	12.4	12.9
Parts for spark-ignition engines	9.2	12.3	34.0	5.8	11.1	92.9
Appliances for pipes and tanks	12.6	21.2	68.7	4.5	5.3	19.6
Static Converters	28.0	30.9	10.6	3.7	3.6	-3.7
Compressors for refrigerating equipment	7.6	5.8	-23.1	10.8	18.9	74.7
Electric lamps and lighting fittings	183.1	49.0	-73.2	0.6	2.2	267.5
Air pumps and compressors	17.9	24.0	33.9	2.2	3.3	52.8
Towers and lattice masts [a)]	NA	2.5	NA	NA	18.8	NA

Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2011. This is likely due to a change in classification.

The same indicators for the export side are provided in the table below. Notably, export prices for parts of combustion piston engine decreased in the post-FTA period by almost 12 percent (compared to an increase in import prices of the same product shown above). However, the negative price change was outweighed by a 26 percent increase in export

[372] The database does not provide the same data on a unit basis.

quantities, which corresponds to an overall volume increase of roughly 11 percent. Separately, export prices increased markedly for appliances for pipes and tanks (97.8 percent), air pumps and compressors (56.4 percent), and heat exchange units (68.4 percent); exported quantities also increased significantly for appliances for pipes and tanks (20.9 percent), air pumps and compressors (41.9 percent), and static converters (32.3 percent).

Table 63: Numbers and growth rates of top 10 EU environmental goods exports to Korea

Product	Price 2011 *(EUR 1000 per tonne)*	Price 2015 *(EUR 1000 per tonne)*	Growth in Prices (%)	Quantity 2011 *(1000 tonnes)*	Quantity 2015 *(1000 tonnes)*	Growth in Quantities (%)
Combustion piston engine (parts)	33.2	29.3	-11.8	13.0	16.4	25.5
Appliances for pipes and tanks	20.6	40.7	97.8	9.5	11.5	20.9
Air pumps and compressors	22.2	34.7	56.4	5.9	8.4	41.9
Static converters	46.6	56.1	20.5	2.4	3.2	32.3
Heat exchange units	18.2	30.7	68.4	5.5	3.8	-30.1
Parts for spark-ignition engines	21.7	21.9	0.9	8.6	5.3	-38.5
Centrifuges [a)]	NA	91.6	NA	NA	0.9	NA
Articles of special plastics	16.3	18.1	11.1	3.9	4.6	17.7
Parts for electric motors and generators	18.3	24.7	34.7	2.7	2.9	8.8
Vacuum pumps	24.5	32.8	33.8	3.8	2.1	-44.3

Source: Own compilation, based on COMEXT (2017). Note: a) Data for this product were not available in the year 2011. This is likely due to a change in classification.

For a closer look on how trade in certain environmental services has developed since the start of the provisional application of the FTA, the figures below present EU exports to and imports from Korea of water collection, treatment and supply, and sewerage and waste management services from 2006-2014.[373]

[373] The full industry description is "sewerage; waste collection, treatment and disposal activities; materials recover; remediation activities and other waste management services".

Figure 139: EU exports to and imports of water collection, treatment and supply services from Korea, 2006-2014 (EUR million)

Source: Own compilation, based on WIOD (2017).

As shown in the figure above, while the value of EU imports from Korea of water collection, treatment and supply services is much lower than the value of its corresponding exports, both imports and exports of this service increased since the start of the provisional application of the EU-Korea FTA (by 20 percent and 30 percent, respectively).

Figure 140: EU exports to and imports of sewerage and waste management services from Korea, 2006-2014 (EUR million)

Source: Own compilation, based on WIOD (2017).

As shown in the figure above, EU exports to and imports from Korea of sewerage and waste management services followed a downward trend since 2008, but both began increasing following the start of the provisional application of the FTA in 2011. Specifically, EU exports of these services to Korea increased by 37 percent between 2011 and 2014, while EU imports from Korea increased by 49 percent over the same period.

The results of the interviews confirmed the overall trends described above. A Danish business organisation emphasised that exports of environmental goods and services to Korea have performed well in recent years, with wind turbines and related services, pumps, and water treatment services being among the top Danish exports of EGS to Korea. These exports remained fairly stable until the start of the provisional application of the EU-Korea FTA in 2011, at which point they increased slightly. According to the interviewee, this is an indication that the FTA had a positive effect on trade in this sector, though higher demand in Korea for such goods and services irrespective of the FTA probably also played a role. A major producer pointed to the difficulties to discern FTA effects in this sector. In contrast to other sectors, exports of EGS can involve major investments that are project-based and do not lead to a constant flow of exports to Korea, such as supplying a power plant. For such an example, see the box below.

Siemens' projects in Korea

Siemens, together with Korean customer POSCO Energy & Construction, completed three combined cycle power plant units in Incheon from 2014-2015 that will provide energy to the Seoul metropolitan area. Siemens delivered three power islands, each consisting of a gas turbine, a steam turbine, a generator, a triple-pressure Benson heat recovery steam generator and an instrumentation & controls system for the overall plant. The company was also responsible for the basic engineering and commissioned the components and the overall plant.

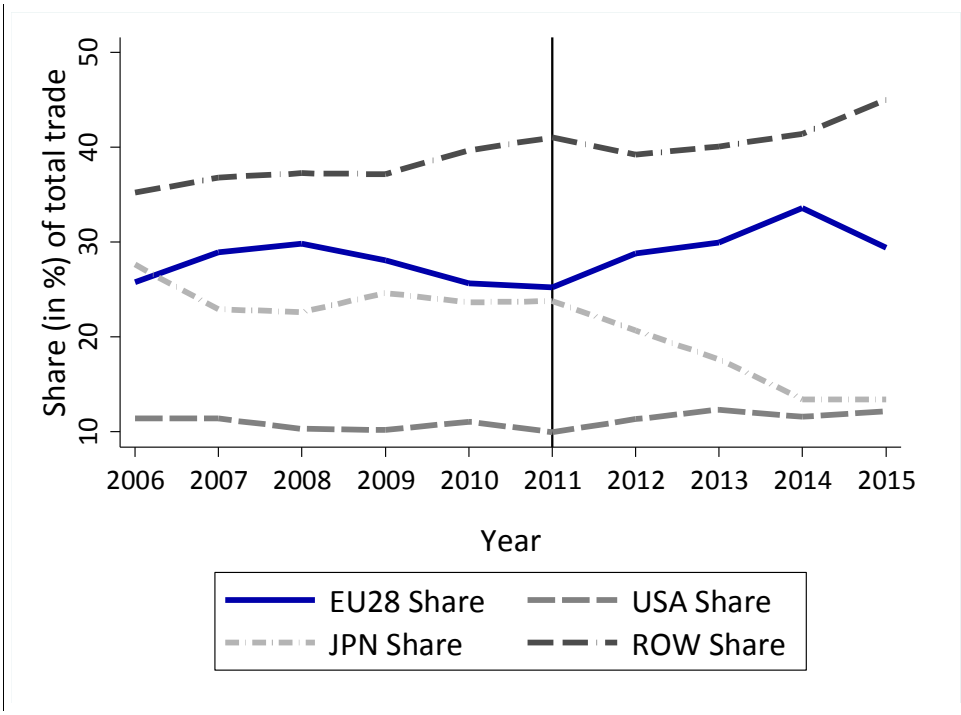
To date, Siemens has sold more than 10 gas turbines for eight projects in Korea. This corresponds to an installed power generating capacity of 6.3 gigawatts. Five projects (Bugok, Andong, Ansan, Daegu, POSCO) have now been completed, with the other three scheduled to take up operation in the course of 2016 and 2017.

Source: http://www.pennenergy.com/articles/pennenergy/2015/04/siemens-completes-3-combined-cycle-power-plant-units-in-south-korea.html

10.4.5. Effects of the FTA on the competitiveness of EU EGS producers

The figure below presents the evolution of the EU share of Korean environmental goods imports from 2006-2015, alongside the evolution of competitors' (Japan, the United States, and RoW) market shares in this sector. As shown in this figure, the market share held by EU exporters moved between 25 and 30 percent in the pre-FTA period. From 2011 on, EU exports gained additional market share, which peaked in 2014 only to drop in 2015. While Japanese exporters lost significant market share after 2011, the United States' market share improved slightly. Korean imports from RoW increased steadily from 35 percent in 2006 to 43 in 2015, which indicates a higher degree of import diversification and thus, a higher degree of competition. In this light, the performance of EU exports in this sector is all the more notable.

Figure 141: Share of Korean environmental goods imports, 2006-2015



Source: Own compilation, based on UN Comtrade (2017).

In the interviews it was confirmed that EU-Korea FTA has provided EU EGS providers with an advantage against competitors, particularly Japan.

10.4.6. Remaining non-tariff trade costs

Korean regulations are not fully harmonised with relevant international standards (e.g. IEC standards), which was assessed in the interviews as a difficulty for companies exporting to Korea. A recent US government report came to a similar conclusion by considering Korean standards and marking requirements as potential barriers for environmental technologies companies attempting to export to Korea. The report stated that the Korean Agency for Technology and Standards (KATS) requires separate, often redundant, safety certifications for certain electrical products, which could lead to burdens related to additional testing for products that already meet international standards and to Korea-specific labelling stipulations.[374]

10.4.7. Other effects of the FTA in the EGS sector

Increased trade in environmental goods and services, as observed since the start of the provisional application of the FTA could potentially be beneficial for the environment, due to expected improvements in emission control, use of renewable energy, increased efficiency in energy production and use etc. However, due to the diverse range of products falling under this category, and a lack of relevant, specific data, such potential benefits cannot be quantified. No data on social and environmental impacts of the FTA in the EGS sector was available from the interviewed stakeholders or from other sources.

[374] US Department of Commerce 2016 Top Markets Report Environmental Technologies Country Case Study (South Korea)

Also, due to the specific definition of the sector no results of the CGE modelling were available.[375] These impacts have been analysed across sectors in sections 7 and 9.

10.4.8. Conclusions

This case study concludes that environmental goods and services have grown in importance in the economies and the EU and Korea. In reflection of this importance, EU-Korea trade in EGS has increased markedly since the start of the provisional application of the EU-Korea FTA. The improved competitive position of EU exporters on the Korean market is notable, as is indicated by their increased market share in the years after the start of the provisional application of the FTA compared to other exporters of EGS, especially Japan.[376]

10.5. Case study on postal services

This case study discusses the commitments laid out in the EU-Korea FTA with a view to liberalising trade in postal and courier services (such as the commitment to establish the principles of a regulatory framework for the postal sector, as well as the non-binding Understanding on the Korean Postal Reform Plan), and examines the extent to which these commitments have impacted EU providers in this sector. This case study also discusses some of the remaining barriers to EU-Korea trade in postal and courier services.

Reasons for selecting the postal and courier services sector as a case study included the following: the sector experienced a decrease in protection levels due to the EU-Korea FTA; the sector was deemed sensitive during the FTA negotiations; and, the extent to which FTA commitments have been fulfilled could expose potential problems with the implementation of the FTA.

This case study is based on the results of desk research, the economic analysis, the public consultation, and stakeholder interviews.[377]

10.5.1. Background on the EU and Korean postal sector

In 2011, the EU postal sector accounted for EUR 91 billion (or 0.72 percent of EU GDP), with letter post alone representing EUR 44 billion thereof (or 0.34 percent of EU GDP). 82 billion letters and 6.4 billion parcels were delivered in the EU in the same year. In 2013, about 1.2 million people were employed by universal postal service providers, and other providers of postal services also represented an important source of employment. [378]

In 2011, Korea Post realised revenues of KRW 2.5 trillion (EUR 2.1 billion) and delivered 4.8 billion letters and parcels.[379] Postal services in Korea face competition from express/courier services, which have grown at an average annual rate of 14.5 percent from 2004-2015 in Korea.[380]

Further information on postal services in Korea is presented in the box below.

[375] Similar to almost all other CGE models, for modelling of causal effects of the FTA, we use data from the Global Trade Analysis Project (GTAP), which does not include EGS as a separate sector.

[376] Note that it is at this stage unclear whether the drop of EU market share in 2015 is an outlier or not.

[377] For a list of interviewees, see Annex IX.

[378] https://ec.europa.eu/growth/sectors/postal-services _en

[379] Korea Post Annual Report, 2014.

[380] WTO 2016 Trade Policy Review on the Republic of Korea.

Postal services in Korea

Universal Service

In Korea, the scope of universal postal service is defined as including the following:

- Ordinary postal items weighing less than or equal to two kilogrammes per item
- Parcel postal items weighing less than or equal to 20 kilogrammes per item
- Special postal items and other postal items specified by presidential decree

Korea Post

Korea Post is the national operator and regulator of postal services in Korea, in accordance with national rules and regulations including the Postal Service Act. It falls under the authority of the Korean Ministry of Science, ICT and Future Planning. In addition to postal services, Korea Post also provides postal savings services and postal life insurance services.

Korea Post currently has a monopoly on the following postal services in Korea:

- Delivery of letters weighing less than or equal to 350 grams, for which the postal charge does not exceed 10 times the ordinary postal charge prescribed by presidential decree
- Delivery of registered letters dispatched by a state agency or local government

Beyond the abovementioned services, postal services are open to competition. Under the Foreign Investment Promotion Act, postal services are not open to foreign investment.

Korea Post is responsible for setting postal rates, though it must first consult the Korean Ministry of Strategy and Finance. However, such consultation is not required with respect to postal rates for domestic and international parcels, EMS and postal money orders. In 2015, Korea Post made a profit, with 39 percent of its income linked to postal financial services and 37 percent of its income linked to letter services.

Sources: WTO 2016 Trade Policy Review on the Republic of Korea; Universal Postal Union; Korea Postal Service Act.

10.5.2. Overview of relevant FTA provisions

Chapter 7 of the EU-Korea FTA concerns trade in services, establishment and electronic commerce and aims to establish the necessary arrangements for progressive reciprocal liberalisation of trade in services and for cooperation on e-commerce. It sets out specific commitments regarding market access and national treatment limitations for services sectors in the EU and Korea, and states that neither Party may adopt new or more discriminatory measures regarding services and service suppliers of the other Party in comparison to these commitments. In other words, this chapter commits each Party to opening certain segments of its services markets to providers from the other Party.

Annex 7-A-4 to Chapter 7 contains the schedule of the abovementioned services sector commitments for Korea. This Annex includes courier services (including express delivery services) among the sectors subject to market access and national treatment liberalisation, though some exclusions and limitations are noted. First, courier services exclude services to "collect, process, and deliver letters for which exclusive rights are reserved for the Korean Postal Authority (KPA, or Korea Post) under the Postal Service Act. The exclusive rights of the KPA include the right of access to its postal network and operation thereof."[381] In terms of limitations, the provision of services is limited to air and sea transport modes with respect to the cross-border supply of courier services. Regarding commercial presence, trucking business licenses for EU providers wishing to operate in Korea are subject to economic needs tests.[382]

[381] A footnote to this commitment explains that Article 3 of the Enforcement Decree of the Postal Service Act allows private couriers to operate commercial document services, which include unsealed freight-attached documents/dispatch notes, trade-related documents, foreign capital or technology-related documents, and foreign exchange/related documents.

[382] It was noted in the interviews that Korea is currently considering a regulatory change to eliminate this requirement.

Under the EU's schedule of commitments in the services sector in Annex 7-A-1, the handling of addressed written communications on any kind of physical medium (e.g. letters or postcards) and express delivery services are excluded from the list of commitments when they "fall into the scope of the services which may be reserved for items of correspondence the price of which is less than five times the public basic tariff, provided that they weigh less than 350 grams". No other exclusions or reservations apply to Korean providers of postal and courier services operating in the EU.

Postal and courier services are also specifically referenced under sub-section C of Chapter 7 of the FTA (Article 7.26). This section states that no later than three years after the start of the provisional application of the FTA, with a view to ensuring competition in postal and couriers services not reserved to a monopoly, the Trade Committee shall set out the principles of the regulatory framework for postal services, which should address issues such as anti-competitive practices, universal service, individual licenses, and the nature of the regulatory authority.

With respect to the institutional framework of the FTA, postal and courier services fall within the scope of the Committee on Trade in Services, Establishment and Electronic Commerce established under Article 7.3 of the agreement. The table below presents the postal and courier services-related topics that were discussed at the meetings of this Committee, as well as the other forums in which postal and courier services were brought up within the framework of the EU-Korea FTA.

Table 64: FTA committee discussions of postal and courier services

Year	Committee	Discussion points
2012	Committee on Trade in Services, Establishment and Electronic Commerce	▪ Issues related to the implementation of both Parties' commitments on postal and courier services
	Trade Committee	▪ Issues related to the implementation of both Parties' commitments on postal and courier services
2013	Committee on Trade in Services, Establishment and Electronic Commerce	▪ Issues related to the implementation of both Parties' commitments on postal and courier services ▪ It was noted that the work on the postal reform principles had to be concluded by June 2014
2014	Committee on Trade in Services, Establishment and Electronic Commerce	▪ Issues related to the implementation of both Parties' commitments on postal and courier services ▪ Both Parties agreed to engage in order to deliver the principles of the regulatory framework for postal and courier services by the next meeting of the Trade Committee
2015	Committee on Trade in Services, Establishment and Electronic Commerce	▪ Issues related to the implementation of both Parties' commitments on postal and courier services ▪ Review of the postal principles as well as discussion of express delivery services

Sources: Own compilation, based on the annual reports of the EU-Korea FTA, 2013-2016.

As shown in the table above, the deadline to establish the aforementioned principles of the regulatory framework for postal services no later than three years after the start of the provisional application of the agreement was missed, as these principles had not yet been delivered by the time of the 2014 meeting of the Committee on Trade in Services, Establishment and Electronic Commerce. These principles are still being discussed at the annual meetings of this Committee, with the goal of fulfilling Article 7.26.

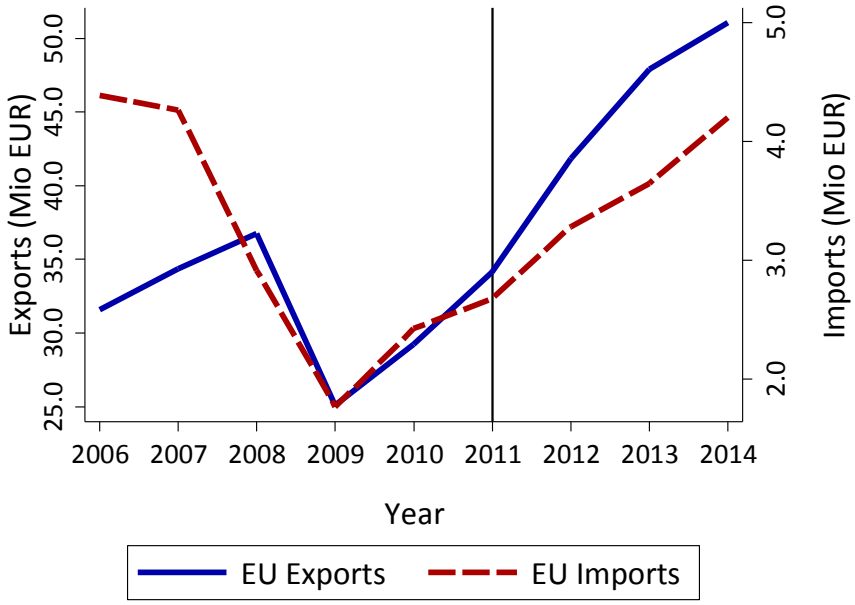
Finally, the FTA also contains a non-binding Understanding on the Korean Postal Reform Plan. This Understanding states that the Korean government will amend the Postal Service Act (PSA) and its related laws or subordinate regulations in order to gradually

expand the exceptions to the KPA's aforementioned monopoly to increase the scope of private delivery services that are permitted. Such amendments would be based on a number of factors, including domestic market conditions, the experience of other countries with postal liberalisation, and the need to ensure universal service. Korea amended Article 2 of its Postal Service Act in June 2014 such that where the weight of a letter (excluding registered letters sent by a State agency or a local government) exceeds 350 grams or the charge imposed by a letter delivery business operator for the delivery of a letter is more than 10 times of the charge for a letter-post item prescribed by Presidential Decree, any person may engage in business for delivery of letters for other persons. Additionally, Korea announced its intention to specifically amend Article 3 of the Enforcement Decree of the PSA to expand the exceptions to the KPA's monopoly to include all international document express delivery services by the start of the provisional application of the FTA. This amendment was promulgated in June of 2011. Beyond the latter amendments, no regulatory changes affecting the scope of Korea Post's monopoly were reported to have been made.

10.5.3. Effects of the FTA on trade in the postal services sector

The figure below shows the value of EU exports to (left y-axis) and imports from (right y-axis) Korea of postal and courier services. As shown in this figure, the sector's size is relatively small; in 2014 the trade volume amounted to EUR 50 million. From 2010 onwards, a positive trend in EU exports of postal and courier services is observed, which accelerated in the years following the start of the provisional application of the agreement. In 2014, EU exports were thus 50 percent higher than pre-FTA years. In contrast, postal and courier service imports from Korea particularly suffered during the financial crisis in 2008-2009, but recovered strongly beginning in 2010 and returned to pre-crisis levels in 2014.[383]

Figure 142: EU exports to and imports of postal services from Korea, 2006-2014



Source: Own compilation, based on WIOD (2017). Note: Eurostat data on postal and courier services underwent a methodological change in 2013, when the BPM6 compilation methodology was introduced, replacing the BPM5

[383] Note that postal and courier services are complementary to other business activities. On the basis of the analysis presented in previous sections, a positive development in trade with respect to postal and courier services is to be expected.

methodology. As using data without methodological changes for the entire period of observation is essential, WIOD data was used instead for the purpose of this analysis. The latter are assembled using a consistent approach to these changes in methodology and rely on mirror data to prevent excessive misreporting errors.

However, it should be noted that the data above only cover three years after the start of the provisional application of the agreement. Moreover, since the sector's liberalisation was scheduled to be implemented gradually, the patterns emerging from the figure below may reflect the general increase in business relations among the two parties and may not be directly linked to a reduction of trade barriers. It should also be noted that the resolution of the data does not allow for a further breakdown of this sector into sub-categories; an analysis of price and quantity dynamics is also not possible.

For additional data regarding the degree of trade liberalisation in this sector, the OECD compiles a Services Trade Restrictiveness Index (STRI) for various services sectors of its member countries, including for courier services. The STRI indices take values between zero and one, with one being the most restrictive. The table below presents the STRI indices for courier services in Korea and the average STRI indices for courier services in the OECD members of the EU from 2014 to 2016.[384]

Table 65: STRI for courier services in the EU and Korea, 2014-2016

Country/Region	2014	2015	2016
Korea	0.385	0.376	0.364
EU	0.191	0.191	0.190

Source: Own compilation, based on OECD (2017). Notes: EU STRI calculated using simple averages of STRIs for Member States that are also OECD countries.

As shown in the table above, the STRI indices for courier services in Korea decreased marginally between 2014 and 2016, from 0.385 to 0.364, while the STRI indices for courier services in the EU stayed more or less constant. However, the STRI indices in Korea remained roughly double those for the EU during the same period, indicating that trade in postal/courier services is significantly more restricted in the Korea relative to the EU, even after the start of the provisional application of the EU-Korea FTA.

In support of the data presented above, interviewed stakeholders agreed that the EU-Korea FTA has not had a significant effect on EU-Korea trade in this sector. This lack of effect could possibly be partially attributed to the lack of regulatory provisions in the FTA; one interviewee also recommended upgrading the existing FTA with a standard set of trade facilitation measures. These were reported *inter alia* as designating one or more contact points for customs inquiries, adopting simplified customs procedures for the efficient release of goods (ideally within one hour of arrival), allowing the electronic submission of customs documentation, adopting procedures for expedited shipments, and providing importers with access to administrative review for customs-related matters, among other things.

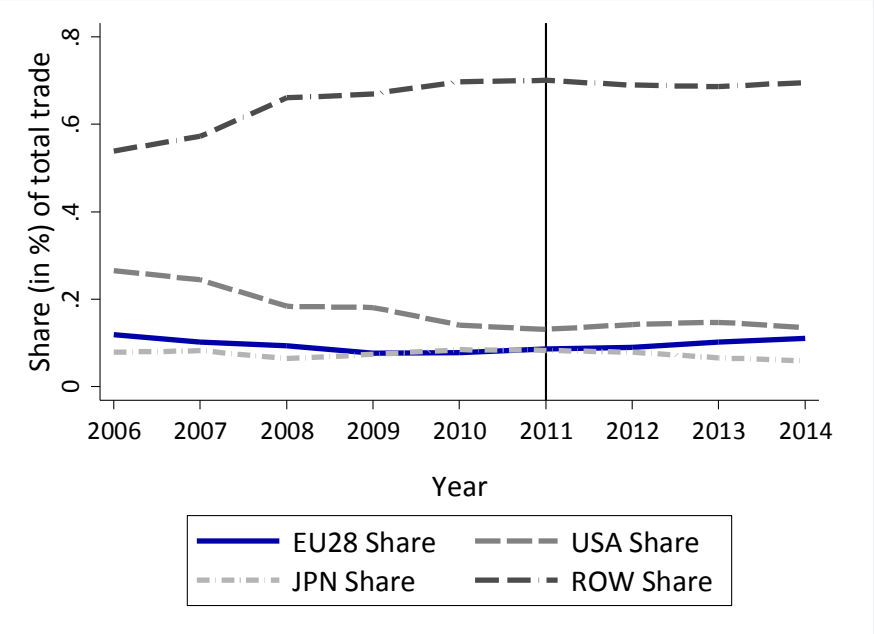
10.5.4. Effects of the FTA on the competitiveness of EU courier services providers

The figure below presents the market share of Korean postal and courier service imports from the EU, the USA, Japan, and RoW. As shown in the figure, the EU share of Korean imports remained constant over the ten year period of observation at around 11 percent. In comparison, the share of imports from the US decreased slightly and the share of

[384] EU Member States that are also OECD countries include Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

imports from RoW increased slightly in the period prior to the start of the provisional application of the EU-Korea FTA, while the share of imports from Japan stayed roughly constant over the entire period.

Figure 143: Share of Korean postal/courier service imports, 2006-2014



Source: Own compilation, based on WIOD (2017).

The interviews conducted for this case study confirmed that the EU-Korea FTA has not had a major impact on the competitiveness of EU providers in this sector, especially when accounting for the fact that many large international providers were already operating in Korea prior to the start of the provisional application of the agreement.

It was also noted in the interviews that in comparison to the EU, the US express delivery services sector is better equipped to address customs-related challenges in Korea due to the fact that relevant provisions on express delivery services were included in the US-Korea FTA. For example, the latter agreement specifies the maximum time that can be taken for customs clearance and gives US companies more opportunities to seek recourse in response to actions of the Korean customs authorities that they view as unjustified.[385]

10.5.5. Remaining barriers to trade

In the interviews, remaining barriers to trade in postal and courier services with respect to access to the Korean market were identified, including the use of a Common Express Terminal: In July 2016, the Korean customs authorities began performing additional physical inspections of inbound express shipments under the de minimis threshold flagged for inspection at a Common Express Terminal (CET) in the Incheon International Airport. These inspections were previously conducted on site, and the use of this terminal was reported as causing significant delays (minimum of half a day) in the delivery of time-sensitive shipments. In addition, it was noted that all shipments are remotely-X-rayed from the CET before they are flagged for inspection. The insufficient number of X-

[385] During the interviews, it was also mentioned that the US-Korea FTA contains commitments for Korea to increase the independence of its postal regulator, but it was reported that steps in this direction have yet to take place.

ray operators in the CET was reported as having slowed clearance times down significantly. Moreover, affected express service providers face additional customs charges for the "use" of the CET. The requirement to use the CET does not apply to the express mail service arm of Korea Post and other local freight forwarders.

10.5.6. Other effects of the FTA in the postal services sector

Effects on producers

According to interviewees, the overall effect of the EU-Korea FTA on providers has been neutral, as many EU providers were already operating in Korea prior to the start of the provisional application of the FTA. However, one interviewee also noted that the FTA's provisions concerning postal services provide additional legal certainty for operators, which constitutes a positive impact.

Effects on consumers

Interviewed stakeholders assessed the impact of the FTA on consumers as neutral—while increased choice in theory represents a positive impact for consumers, as stated above, most postal/courier services providers were already operating in Korea prior to the start of the provisional application of the agreement.

Effects on the environment

No sectoral data on environmental impacts of the FTA in the postal services sector was available from the interviewed stakeholders or from other sources. Also, due to the specific definition of the sector no results of the CGE modelling were available.[386] These impacts have been analysed across sectors in sections 7 and 9.

10.5.7. Conclusions

As discussed in this case study, the EU and Korea have yet to establish the principles of the regulatory framework for postal services as foreseen in Article 26 of the FTA, though talks are still ongoing with a goal of fulfilling this article in 2017. The data show that the value of EU exports to and imports from Korea in the area of postal and courier services have increased since the start of the provisional application of the FTA. However, this increase should be interpreted cautiously, as the liberalisation of this sector will take place gradually over time. Overall, on the basis of the available evidence, the impact of the FTA on the postal services sector appears to have been smaller than its impact on the goods sectors analysed in the previous case studies.

10.6. Case study on rules of origin

This case study examines the EU-Korea FTA's provisions on rules of origin (RoO) and the effect that their application has had on EU-Korea trade. Particular attention is given to the ways in which exporters have been affected by the introduction of approved exporter status and origin declarations.

Reasons for selecting rules of origin as a case study included the following: the provisions on rules of origin in the EU-Korea FTA are considerably different from the EU's standard text for RoO at the time of negotiations, and a goal of the EU-Korea FTA was to simplify

[386] Similar to almost all other CGE models, for modelling of causal effects of the FTA, we use data from the Global Trade Analysis Project (GTAP), which does not include postal services as a separate sector.

RoO for exporters. In addition, there is potential relevance of RoO to human rights in relation to outward processing zones on the Korean peninsula.

This case study incorporates the results of desk research, the open public consultation, and stakeholder interviews.[387]

10.6.1. Overview of key aspects of the Protocol on Rules of Origin

The EU-Korea FTA's protocol concerning the definition of originating products and methods of administrative cooperation (Protocol on RoO) lays out various provisions regarding the rules of origin that apply to goods exported from the EU to Korea and vice versa. These provisions concern the direct transport rule, approved exporter status, the use and verification of origin declarations, duty drawback, and outward processing zones (OPZ), among others.

The table below summarises key articles in the Protocol on RoO of the EU-Korea FTA. Certain provisions from these articles are explained in the following sub-sections and are presented in Annex V.

[387] For a list of interviewees, see Annex IX.

Table 66: Protocol on RoO – key articles

Article	Description
2 – Originating products	▪ Products must be wholly obtained or sufficiently worked/processed in a Party to benefit from preferential tariffs
4 – Wholly obtained products	▪ Defines wholly obtained products
5 – Sufficiently worked or processed products	▪ Defines sufficiently worked or processed products
6 – Insufficient working or processing	▪ Defines operations considered as insufficient working or processing
13 – Direct transport	▪ Products must be transported directly between Parties to benefit from preferences; exception can be made for products transported through other territories if they are not released for free circulation and are not manipulated
14 – Drawback of, or exemption from, customs duties	▪ Permits duty drawback but requires Parties to review duty drawback schemes ▪ Permits Parties to initiate consultations on limiting duty drawback under certain circumstances
15 – Proof of origin: general requirements	▪ Requires that products are accompanied by an origin declaration in order to benefit from preferential tariffs
16 – Conditions for making out an origin declaration	▪ Mandates that only approved exporters may issue origin declarations ▪ Mandates that exporters are prepared to submit supporting documents at any time to the customs authority of the exporting Party ▪ Requires that origin declarations must be made by typing/stamping/printing the text in Annex III to the Protocol on RoO ▪ Requires that origin declarations are signed by the exporter in manuscript, unless the exporter has provided the customs authority of the exporting party with a written statement accepting full responsibility for any origin declaration that identifies him or her
17 – Approved exporter	▪ Establishes that the customs authority of an exporting Party has the authority to authorise any qualifying exporter as an “Approved Exporter”
27 – Verification of proofs of origin	▪ Establishes that the customs authority of an exporting Party is to perform verification of origin should the customs authority of the corresponding importing Party has doubts as to the authenticity of a proof of origin
28 – Dispute settlement	▪ Establishes that the Customs Committee is to hear disputes that cannot be settled between the customs authorities of importing and exporting Parties
Annex IV – Committee on OPZ on the Korean Peninsula	▪ Establishes the Committee on OPZ on the Korean Peninsula and charges it with identifying areas that could be designated as OPZ

Source: Own compilation, based on the EU-Korea FTA, Protocol on RoO.

10.6.2. Functioning of the Protocol on Rules of Origin

Definition of originating products

The Protocol on RoO defines originating products as those that are either wholly obtained in a Party (e.g. live animals that were born and raised in the EU or Korea, or vegetable products grown and harvested in the EU or Korea), or products that have undergone sufficient working or processing in either Party. The criteria for determining sufficient processing are described for each product in product-specific rules:[388]

- *Change of tariff heading*. E.g. a screw originates in the EU if it is made from imported materials of any other heading.
- *Value added.* E.g. a car originates in the EU if no more than 45 percent of the value of the inputs has been imported from outside Korea or the EU to manufacture it.
- *Specific operations.* E.g. apparel originates in the EU if the spinning of the fibres and the knitting of the yarns have taken place there.
- *A combination of these rules.* The different rules have to be fulfilled alternatively or in combination. E.g. machine tools originate in the EU if there is a change of tariff heading or if the machine tool does not include more than 45 percent of non-originating products.

Operations such as washing, cleaning, simple painting and polishing operations, and change of packaging do not constitute sufficient working and processing.

The EC annual reports on the implementation of the EU-Korea FTA do not indicate that the definition of originating products was subject to discussion in the Committees or Working Groups, and in the open public consultation, a majority of respondents that had an opinion were satisfied in this respect.[389] This was largely confirmed by the interviewed business stakeholders, who, however, also pointed out that definition of originating products in the EU-Korea is not fully harmonised with the provisions of other EU FTAs (e.g. concerning the maximum percentage of non-originating products that are allowed in an originating product), leading to some administrative burdens as EU exporters have to perform different origin calculations, depending on the export destination. This was noted as a particular problem for SMEs, who often lack the resources to handle such administrative burdens. More details on how rules of origin affect SMEs are presented in the box below.

[388] Examples from European Commission 2011, The EU-Korea Free Trade Agreement in Practice.

[389] See stakeholder consultation report.

Rules of origin and SMEs

The rules of origin of the EU-Korea FTA can affect SMEs in different ways. On the one hand, the RoO of the EU-Korea FTA represent an additional administrative burden for enterprises, in that they are not fully harmonised with the RoO of other EU FTAs. Significant resources are required to tackle issues like this one—for example, in a survey of companies on the impact of FTAs conducted by the Asian Development Bank and the Asian Development Bank Institute, one respondent stated it operated exclusive teams to handle rules of origin and constructed computer programs/implemented a system to source inputs/check production processes and automatically verify if rules of origin were met. As several stakeholders interviewed for this evaluation confirmed, while larger firms may have the capacity to invest in such resources, SMEs often cannot afford to do so.[a)]

On the other hand, the FTA's provisions on rules of origin may mitigate, to some extent, a different problem for SMEs with respect to RoO—namely, that the fixed costs associated with rules of origin (e.g. the costs of applying for approved exporter status) are proportionately larger for shipments of lesser value and thus affect SMEs more, as the latter tend to make smaller shipments.[b)] Specifically, Article 16.1(b) of the Protocol on RoO exempts exporters of consignments worth EUR 6 000 or less from obtaining approved exporter status, which mitigates some costs for SMEs that fall under this category. However, SMEs who do not meet this exemption were reported by interviewees as having had difficulties in this respect.

Sources: a) Cheong, Inkyo and Jungran Cho. "Republic Of Korea". *Asia's Free Trade Agreements: How is Business Responding?* Masahiro Kawai and Ganeshan Wignaraja. The Asian Development Bank and the ADB Institute with Edward Elgar Publishing, 2011. 130-158. b) Dan, Ciuriak. *Making Free Trade Deals Work for Small Business: A Proposal for Reform of Rules of Origin*. C.D. Howe Institute, 2015.

However, some specific problems concerning the definition of originating products were raised by interviewed stakeholders. One problem concerns smoked salmon. Raw salmon can be exported from Norway to Korea duty free under Korea's FTA with the European Free Trade Association (comprising Iceland, Liechtenstein, Norway and Switzerland). In contrast, Denmark imports raw salmon from Norway and cleans, processes, and smokes it for export. However, because these operations do not constitute sufficient working or processing under Article 5 of the Protocol on RoO, Danish smoked salmon producers must pay MFN tariffs when exporting to Korea. Separately, a manufacturer of nutrition products reported that it had anticipated being able to export its (EU-processed) products to Korea duty free, but ultimately had to pay duties because some ingredients were sourced from outside of the EU.

Origin declarations and approved exporter status

The EU-Korea FTA is the first EU FTA where only self-certification (the origin declaration) is relied on for exporting goods. Originating goods exported under the FTA must be accompanied by an origin declaration that is made out by the exporter by typing, stamping or printing on the invoice, the delivery note or another commercial document the following text, using one of the linguistic versions set out in Annex III to the Protocol on RoO and in accordance with the legislation of the exporting Party: "The exporter of the products covered by this document (customs authorisation No... ()) declares that, except where otherwise clearly indicated, these products are of ... () preferential origin."

Origin declarations are to bear the original signature of the exporter in manuscript, though approved exporters (described in more detail below) are not required to sign these declarations, provided they give the customs authority of the exporting Party a written undertaking that they accept full responsibility for any origin declaration which identifies them as if it had been signed in manuscript by them. The exporter issuing an origin declaration must also be prepared to submit at any time all appropriate documents proving the originating status of products upon the request of the customs authority of the exporting Party.

In order for exporters to be able to issue an origin declaration under the EU-Korea FTA and to then benefit from the tariff preferences of the FTA, they have to apply for approved exporter status, unless they export consignments of products whose total value does not exceed EUR 6 000. National customs authorities are responsible for granting exporters this status, provided they have offered to the satisfaction of the customs authorities all guarantees necessary to verify the originating status of their products, as

well as fulfil the other requirements of the Protocol on RoO. Approved exporters are granted a customs authorisation number from the customs authority of their country, which will appear on the origin declarations the exporter in question issues.

For the most part, the annual reports on the implementation of the EU-Korea FTA and our interviews with businesses and other relevant stakeholders did not indicate the existence of major problems with origin declarations and approved exporter status, although it was also emphasised that the application process for approved exporter status and the required documentation varies across Member States and can reportedly be time- and resource-consuming.[390] Additionally, one interviewed stakeholder noted that their company had faced significant issues concerning the acceptance of origin declarations and approved exporter status by the Korea Customs Services (KCS). Specifically, the KCS has raised issues of a clerical nature (e.g. where an origin declaration is placed on the product, the signatory on the declaration, etc.) and has also initiated disputes with the company (a multinational) regarding approved exporter status, insisting that a different arm of the company should hold this status, even though this arm does not export.

Separately, several stakeholders commented on problems regarding origin verification. In the past, the KCS performed origin verifications in a manner equivalent to the direct verification method (i.e. by directly approaching importers), rather than using the indirect verification method foreseen in the EU-Korea FTA, whereby the verification request is sent to the customs authority of the exporting country. However, according to the Report from the Commission to the European Parliament and the Council on Trade and Investment Barriers,[391] Korea has since 2016 accepted the indirect origin verification method following EU interventions.[392]

In the open public consultation, a large majority of those that had an opinion (17 out of 23 respondents) were satisfied with the functioning of the provisions concerning approved exporter status. The majority of those with an opinion (16 out of 25 respondents) were also satisfied with the functioning of the provisions concerning rules of origin.[393]

Direct transport

The Protocol on RoO also states that products must be transported directly between the EU to Korea and vice versa in order to benefit from the tariff preferences of the FTA. An exception to this provision refers to products constituting one single consignment, which can be transported via other territories or temporarily warehoused in other territories as long as goods are not released for free circulation and do not undergo operations other than unloading, reloading, and any other procedure necessary to preserve them in good condition. Exporters must provide customs authorities in the destination country with evidence verifying that the direct transport provision has been satisfied, e.g. in the form of a certificate issued by the customs authorities in the country of transit that provides an exact description of the products, the dates of unloading/reloading and where applicable, the names of the ships or the other means of transport use, and the conditions under which the products remained in the country of transit.

[390] This was also mentioned as a potential reason for the limited use of tariff preferences in the 2015 Annual Report on the Implementation of the EU-Korea FTA by the European Commission (for more details, see the case study on the use of tariff preferences).

[391] http://trade.ec.europa.eu/doclib/docs/2017/june/tradoc_155642.pdf

[392] In spite of this shift to the indirect method, an interviewee noted that the KCS has on occasion failed to adhere to guidelines (published on its website, see http://www.customs.go.kr/kcshome/main/content/ContentView.do?contentId=CONTENT_ID_000002337&layoutMenuNo=23247) regarding which country's authorities are responsible for performing origin verification.

[393] See stakeholder consultation report.

By December 2011 (about half a year after the provisional application of the FTA), the EU-Korea FTA Customs Committee had already met in Seoul and discussed the issue of "redrafting of the provision on direct transport",[394] without the agreement having been amended thus far. The interviews confirmed the widely held view that the current rules are problematic for certain sectors: this provision particularly affects EU exporters who make use of logistical hubs (mostly Singapore) for operations such as repackaging and labelling prior to distributing their products to various Asian markets (relevant e.g. for exporters in the spirits and chemical industries). In order to benefit from the preferential tariffs of the FTA, some companies have chosen to ship goods directly from the EU to Korea. However, in these cases, companies cannot react swiftly to demand fluctuations, as shipping from the EU to Korea can take well over a month. Some stakeholders suggested that replacing the direct transport provision with a "non-alteration" provision such as that included in the future EU-Vietnam FTA (which would allow for affixing marks, labels, seals, or any other documentation to ensure compliance with specific domestic requirements of the importing country in logistical hubs)[395] would be beneficial for affected exporters.

In the open public consultation, slightly over half of those that had an opinion (11 out of 20 respondents) were satisfied with the functioning of the provisions concerning the direct transport provision, whereas the remaining respondents were either rather not or not at all satisfied in this respect.[396]

Duty drawback

Duty drawback is permitted under the EU-Korea FTA, though the EU and Korea must exchange available information on a yearly basis regarding the operation of their duty drawback and inward processing schemes. Additionally, at any time after the initiation of this review, either Party may request consultations with the other Party to discuss possible limitations on duty drawback and inward processing schemes for a particular product, in case there is evidence of a change in sourcing patterns since the start of the provisional application of the FTA which may have a negative effect on competition for domestic producers of like or directly competitive products in the requesting Party. If an arbitration panel rules that limiting duty drawback/inward processing is warranted, the parties shall within 90 days of the ruling (no more than 150 days after) limit the maximum duty refund rate on non-originating material for the product in question to 5 percent.

During negotiations of the EU-Korea FTA, duty drawback was an issue of concern for the EU automotive sector. As described in detail in the case study on the automotive sector (see section 10.1.7), the European Commission has regularly monitored the use of duty drawback. Specifically, it has examined the foreign content in Korean exports of electronics, textiles, cars, and car parts to the EU. Thus far, the Commission has concluded that the allowance of duty drawback for the aforementioned products has not had any significant impact on Korean use of inputs imported from its neighbouring countries. Furthermore, no problems concerning duty drawback were raised in the interviews with businesses and other relevant stakeholders or the open public consultation.

[394] *Annual Report on the Implementation of the EU-Korea FTA.* European Commission, 2013.

[395] http://trade.ec.europa.eu/doclib/docs/2016/june/tradoc_154622.pdf.

[396] See stakeholder consultation report.

10.6.3. Other aspects related to the Protocol on Rules of Origin

Administrative cooperation

Instead of the EU's standard provisions on anti-fraud (such as the possibility of temporarily withdrawing tariff preferences in the event of a major breach of customs legislation by one of the parties), the EU-Korea FTA contains special provisions on administrative cooperation, which state that where a Party has made a finding on the basis of objective information of a failure to provide administrative cooperation and/or irregularities or fraud, on the request of that Party, the Customs Committee shall meet within 20 days of such a request to resolve the situation. These provisions are acknowledged as exceptional in a statement on special provisions on administrative cooperation in the FTA.

In the interviews with business stakeholders and EC officials, fraud was generally not regarded as a relevant issue affecting EU-Korea trade. The European Anti-Fraud Office (OLAF) considers that the lack of standard anti-fraud provisions in the FTA with Korea renders the functioning of the mutual administrative assistance in customs matters ineffective as there is no consequence for not providing it.

Outward processing zones

The Kaesong Industrial Complex is located in North Korea, across the demilitarised zone from South Korea. It contains production facilities for 124 South Korean companies and began operating in 2004, using North Korean labour to produce goods (ranging from clothing to car parts) that were exported to South Korea.[397] In 2016, South Korea closed the complex in response to a North Korean rocket launch, citing the need to prevent North Korea using funds earned through Kaesong to finance its nuclear and ballistic missile programmes. Kaesong was privately run, but both North and South Korean governments were involved as well; the South Korean government argued that Kaesong would help boost the North Korean company and increase cooperation between the two sides of the peninsula.[398]

Korea had an interest in granting the preferential tariffs of the EU-Korea FTA to products manufactured in Kaesong, and to this end wished to designate Kaesong as an outward processing zone (i.e. a site in which goods are temporarily exported abroad for processing and exempted from duties upon re-importation). However, the EU had significant reservations in this regard with respect to human rights. On top of North Korea's poor domestic human rights record, concerns were also raised with respect to working conditions within Kaesong. Specifically, workers received very low wages, and companies remitted wages first to the North Korean government, which in turn transferred a portion of the funds to employees. Moreover, the labour law applicable to Kaesong (drafted by the North Korean government) does not contain explicit provisions guaranteeing fundamental rights, such as the right to freedom of association and the right to non-discrimination.[399] Granting preferences to goods produced in Kaesong also would increase North Korean access to international markets (in a way, bypassing trade sanctions imposed on North Korea), thereby providing additional funds to its authoritarian regime.[400]

[397] Approximately 54 000 North Koreans were employed in Kaesong, in addition to several hundred South Koreans.

[398] BBC News, "What Is The Kaesong Industrial Complex?" February 10, 2016.

[399] North Korea: Workers' Rights at the Kaesong Industrial Complex. Human Rights Watch, 2006.

[400] Knudsen, Daniel J. and William J. Moon. "North Korea and the Politics of International Trade Law: the Kaesong Industrial Complex and WTO Rules of Origin". Yale Journal of International Law 35.1 (2010): 251, 255.

Annex IV to the Protocol on RoO established the Committee on Outward Processing Zones (OPZ) on the Korean Peninsula as a means of facilitating dialogue on this matter between the Parties. Specifically, the Committee was to identify geographic areas on the Korean Peninsula that could be designated as outward processing zones and review whether any such OPZ met the criteria established by the Committee.[401] The Committee met on an annual basis since 2012, though dialogue has ceased following the closure of Kaesong. Overall, North Korea earned KRW 616 billion (EUR 505 million) in cash from Kaesong while it was in operation.[402]

10.7. Case study on the use of tariff preferences

This case study examines the preference utilisation rates (PUR)[403] of EU and Korean exporters under the EU-Korea FTA.

The primary reason for selecting the use of tariff preferences as a case study centred on potential implementation issues related to the FTA. Specifically, preferences are not always used by exporters in practice, particularly on the EU side.

This case study incorporates the results of desk research, the public consultation, and stakeholder interviews.[404]

10.7.1. Overview of relevant FTA provisions

Chapter 2 of the EU-Korea FTA covers national treatment and market access for goods. Specifically, Article 2.5 (Elimination of customs duties) states that each Party shall eliminate its customs duties on originating goods of the other Party in accordance with its Schedule included in Annex 2-A of the agreement (more information on "originating" goods is provided in the case study on rules of origin in this report). The tariff schedules for the EU and Korea list the tariff code, product description, base rate,[405] staging category,[406] and any applicable safeguards for all originating products.

10.7.2. Preference utilisation rates under the EU-Korea FTA

Overall PURs in the EU and Korea

The table below presents the EU PURs on the Korean market and the Korean PURs on the EU market from 2012 to 2016.

[401] EU-Korea FTA Protocol on RoO, Annex IV.

[402] The Guardian, "Seoul Shuts Down Joint North-South Korea Industrial Complex". February 10, 2016.

[403] For example, the PUR of EU goods on the Korean market is given by the following ratio:

$$\frac{\text{The value of EU exports to Korea that enter Korea under the preferential tariffs}}{\text{The value of all EU exports that are eligible for the preferential tariffs}}$$

[404] For a list of interviewees, see Annex IX.

[405] For Korea, the base rates of customs duty reflect the Korean Customs Duty MFN rates of duty in effect on 6 May 2007. For the EU, the base rates of customs duty reflect the European Community's Common Customs Tariff rates of duty in effect on 6 May 2007.

[406] Staging categories refer to the equal stages in which, beginning on the date of the entry into force of the FTA, customs duties on originating goods are to be removed. For example, customs duties on originating goods provided for in the items in staging category 3 in a Party's schedule shall be removed in four equal annual stages beginning on the date this Agreement enters into force, and such goods shall thereafter be free of any customs duty.

Table 67: EU and Korean PURs under the EU-Korea FTA, 2012-2016

Year	EU PUR (%)	Korean PUR (%)
2012	50	68
2013	66	77
2014	66	81
2015	65	84
2016	71	87

Sources: Own compilation, based on the EU-Korea FTA annual reports, 2013-2016.

As shown in the table above, the overall EU PUR on the Korean market increased significantly from 2012 to 2013 (from 50 percent to 66 percent), remaining stable from 2013-2015 before increasing to 71 percent in 2016. In contrast, the overall Korean PUR on the EU market increased steadily over the course of 2012-2016 (from 68 percent to 87 percent). Moreover, the Korean PUR has been markedly higher than the EU PUR in each year since the start of the provisional application of the EU-Korea FTA. Both Parties' PURs have been reported in the annual reports on the implementation of the FTA since 2013; PURs among EU and Korean exporters were also discussed at the 2016 meeting of the Trade Committee under the EU-Korea FTA.

The relatively low EU PUR on the Korean market was mirrored in the results of the public consultation. Slightly more than half of EU company respondents to the consultation (nine respondents) have made use of the tariff preferences under the EU-Korea FTA, while five either have not or do not know.[407]

PURs across sectors in the EU and Korea

With a view to better understanding the overall EU and Korean PURs presented above, the table below displays the PURs of EU goods on the Korean market and of Korean goods on the EU market by sector, as well as the corresponding shares of total exports for each sector from July 2014 to June 2015.

[407] For results of the open public consultation, see stakeholder consultation report.

Table 68: EU and Korean PURs by sector, July 2014 to June 2015

Sector	EU PUR (%)	Share of exports to Korea (%)	Korean PUR (%)	Share of exports to EU (%)
Transport equipment	93	21	94	26
Animals and animal products	93	2	83	0.2
Animal or vegetable fats and oils	88	0.2	72	0.01
Vegetable products	82	1	67	0.1
Articles of stone, glass, ceramics	82	1	76	0.5
Plastics, rubber and articles thereof	81	3	92	8
Wood and wood products	81	2	9	0.4
Foodstuffs, beverages, tobacco	79	2	67	0.3
Products of the chemical or allied industries	69	12	83	5
Miscellaneous manufactured articles	69	1	58	1
Footwear, hats and other headgear	67	0.5	73	0.1
Textiles and textile articles	65	2	86	3
Arms and ammunition	59	0.01	78	0.01
Optical and photographic instruments	57	6	55	6
Raw hides, skins and saddlery	53	2	52	0.1
Machinery and appliances	48	30	72	35
Base metals, articles thereof	47	6	82	8
Pearls, precious metals, articles thereof	45	1	34	0.5
Mineral products	39	7	96	4
Other	-	2	-	1
Total	*65*	*100*	*84*	*100*

Sources: Korea Customs Service; European Commission (DG TRADE). Note: Data for Korean PURs correspond to January-December 2014.

The three EU sectors with the highest PURs on the Korean market were transport equipment (93 percent), live animals and animal products (93 percent), and animal or vegetable fats and oils (88 percent). Transport equipment was the sector that made up the second largest share of EU exports to Korea (21 percent), while live animals and animal products and animal or vegetable fats and oils represented 2 percent and 0.2 percent of total EU exports to Korea, respectively.

The three EU sectors with the lowest PURs on the Korean market were base metals and articles thereof (47 percent), pearls, precious metals and articles thereof (45 percent), and mineral products (39 percent). These sectors represented 6 percent, 1 percent, and 7 percent of total Korean exports to the EU, respectively. The category of machinery and appliances is also worth commenting on in this respect. This sector represented the largest share of total EU exports to Korea (30 percent), but the corresponding PUR on the Korean market was only 48 percent.

For Korea, the three sectors with the highest PURs on the EU market were mineral products (96 percent), transport equipment (94 percent) and plastics, rubber and articles

thereof (92 percent). These sectors represented 4 percent, 26 percent, and 8 percent of total Korean exports to the EU, respectively.

The three Korean sectors with the lowest PURs on the EU market were raw hides, skins and saddlery (52 percent), pearls, precious metals, and articles thereof (34 percent) and wood and wood products (9 percent). These sectors represented 0.1 percent, 0.5 percent, and 0.4 percent of total Korean exports to the EU, respectively.

PURs across EU Member States

At the EU Member State level, the use of preferences differs widely. The table below presents the sectors with the highest and lowest PURs on the Korean market for each EU Member State from July 2014-June 2015, as well as each Member State's exports to Korea as a share of total EU exports to Korea. A table containing PURs across all sectors for each Member State is presented in Annex V.

Table 69: Highest and lowest PURs by EU Member State, July 2014-June 2015

MS	Share of EU exports to Korea (%)	Total PUR (%)	Highest PUR		Lowest PUR	
			Sector	%	Sector	%
LV	0.1	91	Wood and wood products	99	Vegetable products	0
AT	2	81	Animals and animal products	100	Arms and ammunition	56
SK	0.5	80	Pearls, precious metals	100	Arms and ammunition	0
LT	0.1	79	Vegetable products	100	Base metals, articles thereof	7
SI	0.1	77	Machinery and appliances	84	Animals and animal products	0
DE	40	76	Animals and animal products	97	Pearls, precious metals	52
IE	1	74	Vegetable products	100	Pearls, precious metals	10
HU	1	73	Mineral products	100	Animal or vegetable fats and oils	0
PT	0.4	73	Mineral products	100	Optical and photographic instruments	7
RO	1	73	Wood and wood products	99	Arms and ammunition	0
EL	0.1	72	Prepared foodstuffs	88	Wood and wood products	0
CY	0.01	70	Articles of stone, glass, ceramics	100	Miscellaneous	0
CZ	1	65	Arms and ammunition	100	Animal or vegetable fats	0
SE	3	63	Animals and animal products	100	Base metals, articles thereof	32
BE	3	62	Animals and animal products	99	Arms and ammunition	0
ES	5	61	Arms and ammunition	100	Pearls, precious metals	1
NL	4	60	Animals and animal products	93	Arms and ammunition	0
BG	0.2	58	Articles of stone, glass, ceramics	97	Pearls, precious metals	0

MS	Share of EU exports to Korea (%)	Total PUR (%)	Highest PUR		Lowest PUR	
			Sector	%	Sector	%
FR	10	56	Vegetable products	95	Arms and ammunition	15
DK	2	54	Arms and ammunition	100	Mineral products	3
IT	11	54	Articles of stone, glass, ceramics	88	Pearls, precious metals	14
UK	11	54	Transportation equipment	96	Base metals, articles thereof	19
PL	1	50	Articles of stone, glass, ceramics	95	Arms and ammunition	0
FI	2	45	Animals and animal products	100	Machinery and appliances	26
EE	0.1	41	Mineral products	100	Base metals, articles thereof	1
HR	0.03	40	Base metals and articles thereof	88	Animals and animal products	0
LU	0.4	16	Prepared foodstuffs	99	Wood and wood products	0
MT	0.1	6	Articles of stone, glass, ceramics	100	Foodstuffs, beverages, tobacco	0
Total	*100*	*65*	-	-	-	-

Source: European Commission (DG TRADE).

As shown in the table above, the three EU Member States with the highest PURs on the Korean market in the period July 2014 to June 2015 were Latvia (91 percent), Austria (81 percent), and Slovakia (80 percent). The three EU Member states with the lowest PURs on the Korean market were Croatia (40 percent), Luxembourg (16 percent), and Malta (6 percent). Animals and animal products was the sector with the highest PUR within the most Member States (Austria, Belgium, Germany, Finland, the Netherlands, and Sweden), while arms and ammunition was the sector with the lowest PUR within the most Member States (Austria, Belgium, the Netherlands, Poland, Slovakia, France, and Romania).

The table also shows that the highest PURs do not correspond to the Member States with the highest shares of total EU exports to Korea. The combined exports of the three top-ranked countries (Latvia, Austria, and Slovakia) represent less than 3 percent of total EU exports to Korea.

10.7.3. Reasons for (non-)utilisation of preferences in the EU and Korea

Several reasons for (non-)utilisation of preferences under the EU-Korea FTA were identified through desk research, stakeholder interviews, and the open public consultation. These are:

- Low most favoured nation (MFN) tariffs;
- Government promotion and support for businesses;
- Regulatory changes;
- Costs vs. benefits of utilising preferences;
- Lack of fulfilment of origin criteria; and,
- Requirements for approved exporter status.

These reasons are discussed in more detail below.

Low MFN tariffs

In a 2011 study conducted by the Asian Development Bank (ADB), approximately one-third of 120 surveyed Korean firms cited low tariffs as a reason for not utilising FTAs.[408] (Theoretically, there is a lower opportunity cost of not utilising preferential tariffs in sectors where MFN tariffs are low to begin with.)

To examine this relationship in the EU context, the table below compares EU PURs against the corresponding MFN tariff rates applied by Korea in 2015 for each sector. As shown in the table, sectors for which MFN tariffs applied by Korea are higher do indeed tend to have higher PURs in the EU, with a few exceptions, e.g. transport equipment.

[408] Cheong, Inkyo and Jungran Cho. "Republic Of Korea". *Asia's Free Trade Agreements: How Is Business Responding?* Masahiro Kawai and Ganeshan Wignaraja. The Asian Development Bank and the ADB Institute with Edward Elgar Publishing, 2011. 130-158.

Table 70: EU PURs and applied Korean MFN tariffs by sector, 2015

Sector	EU PUR (%)	Average applied Korean MFN tariff (%)
Transport equipment	93	4
Live animals; animal products	93	24
Animal or vegetable fats and oils	88	40
Articles of stone, glass and ceramics	82	8
Vegetable products	82	53
Plastics, rubber and articles thereof	81	7
Wood, charcoal and cork and articles thereof	81	7
Foodstuffs, beverages, tobacco	79	76
Products of the chemical or allied industries	69	12
Miscellaneous manufactured articles	69	8
Footwear, hats and other headgear	67	10
Textiles and textile articles	65	9
Arms and ammunition	59	3
Optical and photographic instruments, etc.	57	7
Raw hides and skins, and saddlery	53	7
Machinery and appliances	48	6
Base metals and articles thereof	47	6
Pearls, precious metals and articles thereof	45	5
Mineral products	39	3

Sources: Own compilation, based on European Commission (DG TRADE) and WTO Tariff Analysis Online database. Note: tariffs were calculated as simple averages of tariff lines.

Government promotion and support for businesses

In the above-quoted ADB study, another reason firms provided for not using FTAs was a lack of information. To this end, governments have a role to play in disseminating information and assisting companies. In the interviews conducted for this case study, interviewees indicated that the Korean government devotes substantial resources to educating companies and assisting them in using the EU-Korea FTA. Specifically, the Korean government adopted a comprehensive support package in 2010 with the aim of providing the information and resources that would be most useful to businesses in utilising the FTA. The government designated the FTA Promotion and Policy Adjustment Authority (FTAPPAA) as the responsible agency in this regard; services provided included *inter alia* the dissemination of FTA information via dedicated websites,[409] seminars and workshops, the publication of guide books and brochures, the establishment of a cyber-learning system on FTAs, the introduction of FTA classes in universities, and the

[409] See for example: http://ftahub.go.kr/main/

establishment of an FTA call centre and local assistance centres.[410] The Korea Customs Service also provides free-of-charge consulting services for companies on utilising the FTA. These services come in the form of training seminars as well as one-on-one consulting sessions—KCS representatives will also travel to companies if the latter do not have the time or resources to go to a customs office.

Other interviewees in the EU also suggested that the EU PUR could be increased if more promotion and education efforts were conducted. It was stated that targeting such efforts at SMEs would be especially important, given the importance of SMEs in the EU economy. However, it should be noted that such efforts would not have an impact in cases where the costs of exporting without preferences is cheaper or less burdensome than the administrative costs of obtaining an origin certificate (e.g. for non-regular exporters/exporters with low sales volumes)..

Regulatory changes

Specifically for EU mineral products, regulatory changes in Korea could be one contributing factor to low PURs.[411] A large component of the EU minerals sector corresponds to oil.[412] Initially after the start of the provisional application of the EU-Korea FTA, Korean crude oil importers were able to take advantage of a tax loophole that allowed them to claim a three percent rebate on exported refined oil, even though the FTA had eliminated the three percent tariff on crude imports. However, in 2013, the Korean government announced the intention to close this loophole, whereby tax rebates on refined product exports would be adjusted based on the proportion of crude imports on which tariffs were not paid (i.e. higher rebates would correspond to a lower proportion of duty-free imported oil).[413] This could have acted as a disincentive for Korean refiners to import EU oil subject to the tariff preferences of the EU-Korea FTA.

Costs vs. benefits of utilising preferences

In the interviews and public consultation, costs associated with RoO were cited several times as a factor to not taking advantage of the tariff preferences of the EU-Korea FTA (see also the case study on rules of origin in section 10.6). Particularly with reference to the EU machinery and appliances sector (which had a 48 percent PUR in the period between July 2014 and June 2015), stakeholders mentioned the need to purchase third-party software for performing origin calculations, postulating that companies for which the cost of such software exceeded the benefits of duty savings would choose to forego preferential tariffs when exporting to Korea. On the other hand, companies exporting products for which origin rules are straightforward (e.g. agricultural products that were wholly obtained in the EU) would be less subject to costs associated with RoO—this could possibly contribute to the high EU PURs in sectors such as animals/animal products (93 percent) and vegetable products (82 percent).

The costs of calculating origin are also higher for EU exporters in industries where it is common to change suppliers frequently (e.g. every two months) in order to keep costs low. Given the globalised nature of EU supply chains, keeping track of EU versus non-EU suppliers when calculating origin can become a significant effort, to the point that exporters forgo utilising FTA preferences.

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[410] Cheong, Inkyo. *Korea's Policy Package for Enhancing its FTA Utilization and Implications for Korea's Policy*. 2014. ERIA Discussion Paper Series. 13.

[411] According to the annual reports of the EU-Korea FTA, the PUR for this sector went from over 90 percent between July 2013-June 2014 to 39 percent between July 2014 and June 2015.

[412] Nilsson, Lars, and Virág Forizs. "Trade Effects of the EU-Korea FTA: A Comparative Analysis of Expected and Observed Outcomes." TRADE (2016): 1-15.

[413] "Tax Implications Could Weigh on South Korean Crude Imports." Weekly Tanker Opinion (5 Apr. 2011). Poten & Partners.

Additionally, companies for which duty savings under the EU-Korea FTA exceed the costs of utilising preferences would be likelier to take advantage of the preferential tariffs. This is particularly relevant to the EU transport sector, which had a PUR of 93 percent between July 2014 and June 2015. As one interviewee in this sector commented, a reduction in tariff rates from 8 percent to 0 percent represents significant savings for producers, particularly with respect to premium vehicles.[414]

Lack of fulfilment of origin criteria

Some stakeholders also pointed out that exporters whose products do not fulfil the origin criteria of the EU-Korea FTA would not be eligible to use preferences. This was indicated by one stakeholder as a relevant problem for the machinery and appliances sector. It was also indicated as pertinent to the mining industry, specifically with respect to diamonds. It was noted that as diamonds exported from the EU to Korea are not mined in the EU, and as the majority of these diamonds undergo operations such as sorting, sieving, cleaning, and grading that do not constitute "sufficient processing" under the EU-Korea FTA, these diamonds cannot be exported under the preferential tariffs of the FTA.

Requirements for approved exporter status

Finally, several interviewees and respondents to the consultation stated that the sometimes resource- and time-intensive process of applying for approved exporter status can be a barrier to companies (especially SMEs, which have fewer resources to dedicate, both in terms of finance and personnel) using the tariff preferences of the EU-Korea FTA. (One stakeholder also commented that raising the aforementioned threshold of EUR 6 000 below which exporters are exempted from obtaining approved exporters status could help increase PURs, particularly among SMEs.)

To better understand what the application procedure entails, a table in Annex V provides details on the information and documentation required when applying for approved exporter status, as well as the application processing time and period of validity of approved exporter status across Member States, where data was available.

As shown in Annex table, the information and documentation that exporters are required to submit when applying for approved exporter status, as well as the processing time for applications, varies widely across EU Member States. While a definitive link cannot be drawn between Member States' PURs under the EU-Korea FTA and the requirements to apply for approved exporter status on the basis of the above information alone, it is worth noting that the two Member States with the highest PURs on the Korean market—Latvia and Austria—appear to have lower administrative requirements with respect to applying for approved exporter status.

10.8. Case study on the implementation of the institutional mechanisms of the TSD chapter

This case study examines how the institutional mechanisms of the Trade and Sustainable Development chapter of the EU-Korea FTA have functioned since the start of the provisional application of the EU-Korea FTA in 2011, especially with regard to the fields of labour rights and the environment.[415] It complements the detailed analysis of the

[414] While the relationship is somewhat obvious, it should also be stated that the main exports of Member States have some influence on MS PURs: if a given MS's main export is in a sector with a high PUR, that MS would also be expected to have a high overall PUR. For instance, Latvia exports a significant amount of wood—Latvia's overall 2015 PUR was 91 percent, and the EU-wide PUR for "wood, charcoal and cork and articles thereof" was 81 percent.

[415] Discussion of the implementation of the TSD chapter as a whole is presented in Annex V.

development of labour rights and the environment in Korea during the evaluation period which is provided in separate sections of this report (see sections 8 and 9), and also discusses ways in which the functioning of these mechanisms might be improved.

The topic of the implementation of the institutional mechanisms of the TSD chapter was selected as a case study for the following reasons: the institutional mechanisms of the TSD chapter are novel instruments of the new generation of EU FTAs; these mechanisms serve the involvement of civil society; and, the implementation of these mechanisms has direct relevance as a potential model for future FTAs.

This case study incorporates the results of literature and document review, the public consultation and the survey on consumers, as well as stakeholder interviews (including with six organisations represented in the EU and Korean Domestic Advisory Groups). Interviewed stakeholders included civil society organisations, trade unions, business organisations and representatives of the European Commission and the ILO.[416]

10.8.1. Objectives and institutional mechanisms of the TSD chapter

Chapter 13 of the EU-Korea FTA covers trade and sustainable development. As described in more detail in section 10.8, Chapter 13 recognises that economic development, social development, and environmental protection are interdependent components of sustainable development, and clarifies that it is not the intention "to harmonise the labour or environment standards of the Parties, but to strengthen their trade relations and cooperation in ways that promote sustainable development". In terms of scope, the chapter applies to measures adopted or maintained by the EU or Korea that affect trade-related aspects of labour and environmental issues in the context of Articles 13.1.1 and 13.1.2, except as otherwise provided in the Chapter. A footnote to the same article clarifies that "when labour is referred to in this Chapter, it includes the issues relevant to the Decent Work Agenda". While Article 13.3 recognises "the right of each Party to establish its own levels of environmental and labour protection", it also provides that "each Party shall seek to ensure that those laws and policies provide for and encourage high levels of environmental and labour protection" and "shall strive to continue to improve those laws and policies". Points of reference of this commitment are internationally recognised standards or agreements. Chapter 13 is complemented by an annex that concerns cooperation on trade and sustainable development, and establishes an indicative list of areas of information exchange and cooperation, including corporate social responsibility and accountability, trade-related aspects of climate change, biodiversity, fishing, deforestation and trade-related aspects of the ILO Decent Work Agenda. Finally, this chapter describes the institutional mechanisms that are subject to this case study.

To oversee the implementation of its provisions concerning sustainable development, Article 13.12 establishes a Committee on Trade and Sustainable Development (CTSD). This Committee is to comprise senior officials from within the EU and Korean administrations, and is to meet “as necessary” after the first year of the start of the provisional application of the agreement to oversee the implementation of Chapter 13. The Article also provides that each Party establishes a domestic advisory group (DAGs) "on sustainable development (environment and labour)", whose purpose is to advise on the implementation of the chapter. The EU and Korean DAGs are to comprise independent representative organisations of civil society that represent environment, labour and business interests, as well as other stakeholders. Article 13.13 specifies that representatives of the two DAGs are to meet annually (unless otherwise agreed) at a Civil Society Forum (CSF) to conduct a dialogue encompassing sustainable development aspects of EU-Korea trade relations.

[416] For a list of interviewees, see Annex IX.

According to Article 13.14, the parties may request government consultations regarding "any matter of mutual interest" arising under Chapter 13. If such government consultations take place, the EU and Korea should strive to arrive at a mutually satisfactory resolution. However, if further discussion is necessary, either Party can also request a meeting of the CTSD to consider the matter. The Parties also have the option of requesting that a panel of experts be convened according to Article 13.15, should government consultations fail to satisfactorily address a given issue. At the time of start of the provisional application of the EU-Korea FTA, both Parties were to have agreed upon a list of at least 15 individuals with expertise on the relevant TSD issues who are independent from the parties and organisations represented in the DAGs; at least five of these experts must be non-nationals of the EU and Korea. If there is a request to convene a panel of experts, each Party shall select one expert from the list of experts, with the two selected experts deciding on a chair who shall not be a national of either Party. This panel is to seek information from the EU and Korean government, the DAGs, or international organisations and prepare a report. The Parties must make their best efforts to implement the recommendations of the panel of experts, and such implementation is to be supervised by the CTSD.

The above described government consultations and panel of experts are the only means of dispute resolution in the context of Chapter 13, i.e. the Parties do not have recourse to the dispute settlement mechanism established in Chapter 14 of the EU-Korea FTA for TSD-related issues (Article 13.16). Chapter 13 does not specify any sanctions or penalties for violations of its provisions.

Not directly an institutional mechanism, but related to the functioning of the mechanisms are the provisions of Article 13.10, according to which the Parties commit to "reviewing, monitoring and assessing the impact of the implementation of this Agreement on sustainable development". This is to be achieved through "their respective participative processes and institutions", as well as those set up under the FTA, for instance through trade-related sustainability impact assessments.

10.8.2. Implementation of the institutional mechanisms of the TSD chapter

This section describes the implementation of the institutional mechanisms of the TSD chapter during the evaluation period, focusing on the Committee on Trade and Sustainable Development, the two Domestic Advisory Groups, the Civil Society Forum, and the other mechanisms foreseen.

Committee on Trade and Sustainable Development (CTSD)

The CTSD has met regularly (five times to date) since the provisional application of the FTA in July 2011, alternating between Brussels and Seoul. The meeting dates are presented in the table below.

Table 71: Meetings of the CTSD

Meeting	Date	Location
1	June 26, 2012	Brussels
2	September 11, 2013	Seoul
3	December 8, 2014	Brussels
4	September 9, 2015	Seoul
5	March, 2017	Brussels

Sources: Own compilation, based on the Joint Statements of the Committee on Trade and Sustainable Development (2012-2015). Note: The summary of the fifth meeting of the CTSD was not yet available at the time of publication of this report.

The Committee on Trade and Sustainable Development does not have a fixed list of members. From the EU-side, DG TRADE holds the co-chair position. On the Korean side, the co-chair position is shared by the Ministry for Employment and Labour and the Ministry of Environment. The table below presents the co-chairs of each CTSD meeting. Labour rights, the environment, and issues of corporate social responsibility (CSR) have been key discussion topics in all meetings, as is indicated in the following table, which lists the key topics discussed at each meeting. More detailed excerpts from the joint statements, which are published on the websites of the European Economic and Social Committee and DG TRADE,[417] are provided in the annex of this case study.

Table 72: Co-chairs of CTSD meetings

Year	Party	Official	Position	Organisation
2012	EU	Mr Peter Thompson	Director for Sustainable Development	DG TRADE
	Korea	Mr Sanghoon Kim	Director of the International Affairs Division	Ministry of Environment
		Mr Kyungduk An	Director of the International Cooperation Bureau	Ministry of Employment and Labor
2013	EU	Ms Monika Hencsey	Head of unit, Trade and Sustainable Development	DG TRADE
	Korea	Mr Jechul Yoo	Director General of the International Cooperation Bureau	Ministry of Environment
		Mr Keunsop Chang	Director of the International Cooperation Bureau	Ministry of Employment and Labor
2014	EU	Mr Marc Vanheukelen	Director for Sustainable Development, Economic Partnership Agreements, Agri-Food and Fisheries	DG TRADE
	Korea	Mr Heesong Cho	Director of the International Cooperation Bureau	Ministry of Environment
		Mr Hunsoo Lee	Acting Director General of the International Cooperation Bureau	Ministry of Employment and Labor
2015	EU	Ms Helena König	Director for Asia and Latin America	DG TRADE
	Korea	Mr Chun Kyoo Park	Director General of the International Cooperation Bureau	Ministry of Environment
		Mr Won Doo Lee	Director of the International Cooperation Bureau	Ministry of Employment and Labor

Sources: Own compilation, based on the Joint Statements of the Committee on Trade and Sustainable Development (2012-2015). Note: The summary of the fifth meeting of the CTSD (March 2017) was not yet available at the time of publication of this report.

Labour rights, the environment, and issues of CSR have been key discussion topics in all meetings, as is indicated in the following table, which lists the key topics discussed at

[417] See http://www.eesc.europa.eu/?i=portal.en.external-relations-international-trade-monitoring-korea-csf and http://trade.ec.europa.eu/doclib/cfm/doclib_section.cfm?sec=130.

each meeting. More detailed excerpts from the joint statements, which are published on the website of the European Economic and Social Committee,[418] are provided in the annex of this case study.

Table 73: Key topics discussed at CTSD meetings

Subject	Year	Key topics discussed
Labour	2012	▪ Emphasised the importance of Korean ratification of ILO conventions ▪ Heard updates from EU on progress made by EU MS in ratifying up-to-date ILO Conventions
	2013	▪ Heard updates from Korea on ratification of fundamental ILO conventions ▪ EU representatives encouraged Korea to closely cooperate with the ILO ▪ Heard updates from EU on progress made by EU MS in ratifying up-to-date ILO Conventions
	2014	▪ Heard presentation from ILO on developments on Korean ratification of fundamental labour conventions ▪ Heard update from Korea on recent ratification of Maritime Labour Convention ▪ Korea agreed to share intended steps towards ratification of ILO conventions before next Committee meeting ▪ Heard EU update on its contribution to the adoption of the new Protocol supplementing ILO Convention No. 29 on Forced Labour
	2015	▪ Heard presentation from ILO on developments on Korean ratification of fundamental labour conventions ▪ Heard updates from Korea on ratification of fundamental ILO conventions (Korea seriously considering ratifying ILO conventions 95 on protection of wages and 118 on equality of treatment (social security)) ▪ Heard updates from EU on progress made by EU MS in ratifying up-to-date ILO Conventions, as well as efforts towards ratification of ILO Protocol complementing ILO Convention No. 29 on Forced Labour ▪ Both sides agreed to launch project under Partnership Instrument (PI) to analyse implementation of ILO Convention 111 in the EU and Korea ▪ Korean intended steps towards ratification of ILO conventions was presented. Korea agreed to prepare list of concrete steps for next meeting.
Environment	2012	▪ Heard EU and Korean presentations on resource efficiency/green growth
	2013	▪ Heard EU and Korean updates on developments in climate change policy ▪ Discussion of liberalising trade in environmental goods ▪ Heard updates on combatting trade in illegally harvested timber
	2014	▪ Emphasised the importance of continued cooperation on emissions trading ▪ Heard updates on combatting trade in illegally harvested timber and wildlife trafficking ▪ Heard EU presentation on its emissions trading system (ETS) ▪ Discussion of various multilateral environmental agreements, including the Minamata Convention and CITES
	2015	▪ Heard Korean presentation on the Recycling Society (a key aspect of Korean environmental policy) ▪ Heard updates on combatting trade in illegally harvested timber

[418] http://www.eesc.europa.eu/?i=portal.en.external-relations-international-trade-monitoring-korea-csf

Subject	Year	Key topics discussed
		▪ Discussion of various multilateral environmental agreements, including the Minamata Convention and CITES ▪ EU informed on flagship strategy on the Circular Economy
CSR	2012	▪ Heard EU presentation and suggestions of possible joint initiatives with Korea on CSR
	2013	▪ Heard updates from both sides on initiatives to implement international guidelines on CSR
	2014	▪ Discussed possible areas of cooperation (Eco-Label/Environmental Mark)
	2015	▪ Discussed possible launch of PI project in the area of CSR

Sources: Own compilation, based on Joint Statements of the Committee on Trade and Sustainable Development (2012-2015). Note: The summary of the fifth meeting of the CTSD (March 2017) was not yet available at the time of publication of this report.

As shown in the table above, Korean ratification of fundamental ILO conventions, resource efficiency/green growth, combatting trade in illegally harvested timber, and corporate social responsibility were key themes discussed at meetings of the CTSD since 2012.

EU and Korean Domestic Advisory Groups (DAGs)

In accordance with Article 13.12.4 of the EU-Korea FTA, the EU and Korea have each established domestic advisory groups, which have met independently on a regular basis since their establishment in order to prepare for the annual Civil Society Forum (CSF), in which both DAGs meet to conduct a dialogue encompassing sustainable development aspects of EU-Korea trade relations.

On the EU side, 13 meetings of the DAG have taken place to date. The meeting dates are presented below.

Table 74: Meetings of the EU DAG

Meeting	Date	Location
1	22 May 2012	Brussels
2	11 October 2012	Brussels
3	20 February 2013	Brussels
4	5 September 2013	Brussels
5	18 December 2013	Brussels
6	13 June 2014	Brussels
7	4 September 2014	Brussels
8	5 March 2015	Brussels
9	15 July 2015	Brussels
10	24 February 2016	Brussels
11	5 October 2016	Brussels

Meeting	Date	Location
12	13 December 2016	Brussels
13	8 February 2017	Brussels

Source: http://www.eesc.europa.eu/?i=portal.en.external-relations-international-trade-monitoring-korea-dag.

On the Korean side, 19 meetings of the DAG have taken place to date. The meeting dates are presented below.

Table 75: Meetings of the Korean DAG

Meeting	Date	Location
1	12 April 2012	Seoul
2	8 June 2012	Seoul
3	11 April 2013	Seoul
4	22 August 2013	Seoul
5	18 December 2013	Seoul
6	15 May 2014	Seoul
7	27 May/2 June 2014*	Seoul
8	1 October 2014	Seoul
9	5 November 2014	Seoul
10	27 November 2014	Seoul
11	19 March 2015	Seoul
12	13 April/15 April 2015*	Seoul
13	27 May 2015	Seoul
14	14 July 2015	Seoul
15	28 August 2015	Seoul
16	20 July /29 September 2016*	Seoul
17	29 September/30 November 2016*	Seoul
18	25 January/7 February 2017*	Seoul
19	14 February 2017	Seoul

Source: Secretariat of the Korean DAG. Note: (*) denotes separate meetings of the environmental NGOs & academic institutions sub-group and the trade unions & business/employers & public interests sub-group.

The table below lists the current members of the EU and Korea DAGs.

Table 76: Members of the EU and Korean DAGs

DAG	Sector, according to member list	Organisation
EU	"Business/employers sub-group"	Eurochambres
		European Economic and Social Committee
		BusinessEurope
		European Services Forum
		European Fruit and Vegetables Trade Association
		Federation of German Industries
		Aerospace and Defence Industries Association of Europe
		European Liaison Committee for the Agricultural and Agri-Food Trade
		European Chambers of Commerce in Korea
	"Trade unions sub-group "	European Trade Union Confederation
		European Economic and Social Committee
		International Trade Union Confederation
		European Federation of Public Service Unions
	"NGO/Diverse interests sub-group "	International Federation for Human Rights
		European Economic and Social Committee
		Copa-Cogeca
		ClientEarth
Korea	"Labour sector - Business"	Korea Employers Federation
		Korea Chamber of Commerce and Industry
	"Labour sector - Trade unions"	Federation of Korea Trade Unions
		Korean Confederation of Trade Unions
	"Labour sector - NGO"	Korea Labour Institute
		Pusan National University, Law School
		Chon-buk National University, Law School
	"Environment sector - Academia"	Institute for the Environment and Civilization
		Korea Zero Waste Movement Network
		Ecomom Korea
	"Environment sector - NGO"	Seoul National University, Law School
		Chung-ang University, School of Business and Economics
		Anyang University, School of International Trade and Marketing

Source: European Economic and Social Committee, http://www.eesc.europa.eu/?i=portal.en.external-relations-international-trade-monitoring-korea-members, March 2017. Categorisation by sector is provided as in the official list of members.

Topics raised in the DAGs feed into the annual meeting of the Civil Society Forum (CSF), and are discussed in this context.

Civil Society Forum (CSF)

As indicated before, representatives of the two DAGs meet at the CSF to conduct a dialogue encompassing sustainable development aspects of EU-Korea trade relations.

Five CSF meetings have taken place to date. The meeting dates are presented in the table below.

Table 77: Meetings of the CSF

Meeting	Date	Location
1	June 27, 2012	Brussels
2	September 12-13, 2013	Seoul
3	December 9, 2014	Brussels
4	September 9-10, 2015	Seoul
5	February 20-21, 2017	Brussels

Source: http://www.eesc.europa.eu/?i=portal.en.external-relations-international-trade-monitoring-korea-csf

These meetings have thus far mostly taken place immediately after the meetings of the CTSD, in order for the CTSD to brief CSF participants on the outcome of their discussions. Beginning in 2014, representatives of the CSF also attended the CTSD meetings, so as to provide updates on their recent activities. In 2017, no preceding CTSD meeting took place.

The table below lists the key topics that were discussed at each meeting. More detailed excerpts from the conclusions of each meeting are provided in the annex of this report.

Table 78: Key topics discussed at the CSF meetings

Subject	Year	Key topics discussed
Labour	2012	▪ Ratification of fundamental ILO conventions
	2013	▪ Request for Korean government to take steps to ratify remaining fundamental ILO conventions ▪ Recommendation for Korean government to fully cooperate with ILO
	2014	▪ Held workshop with ILO on labour rights ▪ Request for Korean government to engage with employers and workers to address legislative shortcomings and take steps to ratify remaining fundamental ILO conventions
	2015	▪ Held workshop with ILO on labour rights ▪ Requested Korean government to engage with employers and workers to address legislative shortcomings and take steps to ratify remaining fundamental ILO conventions
	2017	▪ Requested Korean government to address shortcomings in implementation of ratified conventions and take steps to ratify remaining fundamental ILO conventions
Environment	2012	▪ Preliminary discussion on environmental issues and impact on trade
	2013	▪ Importance of the green economy

Subject	Year	Key topics discussed
	2014	▪ Requested the Parties to inform DAGs/CSF with information on environmental goods/services in the context of EU-Korea trade ▪ Discussed features of the EU and Korean emissions trading systems and agreed to continue discussion
	2015	▪ Encouraged further exchange of information and cooperation on climate change in the context of the EU-Korea FTA
	2017	▪ Noted the need to investigate the tragedy related to humidifier sterilisers ▪ Recommended the Korean government and the Commission consider a co-investment scheme to find solutions to decarbonisation in road infrastructure/production processes.
CSR	2012	-
	2013	-
	2014	▪ Heard EU and Korean presentations on current policies/practice in area of CSF ▪ Request for both DAGs to seek further information on best practices
	2015	▪ EU and Korean presentations on international developments in area of CSF ▪ Encouraged EU and Korean companies to include CSR practices into their operation
	2017	▪ Invited the DAGs and CTSD to consider joint EU-Korea projects and cooperation in the area of CSF

Sources: Conclusions of the Civil Society Forum under the EU-Korea FTA (2012-2017).

As shown in the table above, Korean ratification of fundamental ILO conventions, various environmental issues such as emission trading and cooperation on climate change, and corporate social responsibility were key themes discussed at meetings of the CSF since 2012.

Other institutional mechanisms

Other institutional mechanisms foreseen by Chapter 13 of the EU-Korea FTA (government consultation, panel of experts) were not activated during the evaluation period.

10.8.3. Functioning of the institutional mechanisms of the TSD chapter

Based on the information provided in the previous sub-section, and supported by the interviews conducted with representatives of the EU and Korean DAG, it can be concluded that the permanent institutional mechanisms foreseen by Chapter 13 the FTA (the CTSD, the two DAGs, and the CSF) have been implemented in line with the provisions of the agreement during the evaluation period: They have regularly met (roughly once every year for the CTSD and the CSF, with only 2016 being a year without a meeting), and have discussed a wide range of issues focusing on labour rights, environmental protection and CSR, in line with the scope of Chapter 13 and the related Annex 13.

However, this evaluation has also identified some issues that affect the functioning of the DAGs and the CSF:

- *Composition of the DAGs:* The requirement specified in Article 13.12.5 that the DAGs comprise "independent representative organisations of civil society in a balanced representation of environment, labour and business organisations as well as other relevant stakeholders" appears to be only partially fulfilled for both groups. In the case of the EU DAG, labour and business organisations are well represented, but only one organisation explicitly representing environmental interests (ClientEarth) is a member. With regard to the Korean DAG, close to half of its representatives are members of academia, rather than representatives of civil society organisations. Indeed, as can be seen from the table of members provided above, the six members categorised as NGOs are in fact representatives of five universities and the Korean Labour Institute.

- *Communication issues*: On the Korean side, the lack of simultaneous interpretation at EU CSFs was considered to make it difficult for Korean representatives to fully engage in dialogue.[419] On the EU side, the lack of contact between the two DAGs in between the annual CSFs was mentioned as a problem, as was the relatively short duration of the CSF (1.5 days), in light of the travel time required to attend.

The two non-permanent mechanisms of the TSD chapter, government consultations and the panel of experts, have not been activated so far.

At an output level, the implementation of the institutional mechanisms of Chapter 13 of the EU-Korea FTA resulted in:

- *Exchange of views and experiences* during meetings of the DAGs, CSF and CTSD, as described above covering areas outlined in Annex 13 of the EU-Korea FTA, and related published *conclusions (CSF) and joint statements (CTSD)*;

- Various *discussion papers, reports and opinions* the DAGs have produced and published since their inception on various topics:[420]

    - *Labour standards:* Opinion on labour standards (EU DAG, 2013);
    - *CSR:* Opinion on CSR (EU DAG, 2014), Presentation on CSR (Korean DAG, 2014), Information report on CSR (EU DAG, 2015);
    - *Environment:* Opinion on green growth (EU DAG, 2013), Discussion Paper on ETS (EU DAG, 2014), Presentation on ETS (Korean DAG, 2014), Discussion paper on climate change policy (EU DAG, 2015);

- *Organisation* of workshops for DAG members/stakeholders labour rights/ILO conventions and CSR:

    - *Labour rights/ILO conventions:* Workshop on the implementation of labour rights (Seoul, 2013), Workshop on labour-related aspects (Seoul, 2015), Stakeholder workshop within the framework of the Korea-EU ILO 111 Project (Seoul, 2016)
    - *CSR:* Workshop on Corporate Social Responsibility (Brussels, 2017)

- *Presentation by and discussion with the* International Labour Organisation (ILO) on the implementation of ILO Convention 111 and other developments in the framework of the CTSD (Seoul, 2015) and CSF (Seoul, 2015 & Brussels, 2017);

[419] One interviewed representative of the EU DAG commented on the lack of budget in this respect, which also impedes the ability of the EU DAG to have events/provide amenities (e.g. meals) when hosting the Korean DAG at CSFs in Brussels.

[420] http://www.eesc.europa.eu/?i=portal.en.external-relations-international-trade-monitoring-korea-csf

- *Cooperation projects* under the EU Partnership Instrument in areas outlined in Annex 13 of the EU-Korea FTA. One project concerns the implementation of ILO Convention no. 111 on the elimination of discrimination in respect of employment and occupation in Member States of the European Union (EU) and in the Republic of Korea. The project aims to identify lessons learned and best practices and, on this basis, provide a set of policy recommendations to the EU and its Member States and to the Korean government.[421] A second project aims to establish an EU-Korea Joint Platform on Low Carbon Economy and joint Partnership Agreements in Green Urban Development between EU and Korean stakeholders to enhance networking and dialogue on climate change and to stimulate uptake of low carbon urban development strategies.[422] Another project—the EU Gateway Programme—helps EU companies establish long-lasting business partnerships in Korea by facilitating business missions to Korea.[423]

These outputs focus on labour rights, the environment (mostly regarding the emissions trading system and green growth) and CSR, and thereby cover core areas as specified in the TSD chapter and the related Annex 13. In the open public consultation conducted for this evaluation, at least two-thirds of stakeholders that had an opinion in this respect assessed the EU DAG (nine out of ten respondents), Korean DAG (five out of seven respondents), and the CSF (six out of eight respondents) as having contributed moderately or very much to the implementation of the TSD chapter of the FTA by advising on relevant issues.[424] A recent ILO report concluded that implementing the institutional mechanisms (DAGs and CSF) has provided "interesting preliminary results. […] Also, the EU DAG has raised awareness of violations, and produced a critical opinion identifying areas for action to further labour rights in the Republic of Korea".[425] The institutional mechanisms of the TSD chapter therefore have contributed in line with their foreseen functions, as is recognised by stakeholders.

However, in the open public consultation and the research for this case study, several issues were identified that related to the outcomes and impacts of the institutional mechanisms under the TSD chapter:

- *Recommendations of DAGs/CSF not taken into account.* According to the open public consultation conducted for this evaluation the highest ranking problems identified concerning both the EU DAG and the CSF were "recommendations not taken into account".[426] Examples provided by civil society stakeholders included references to a lack of willingness of the Korean government to fulfil its commitments in the area of labour rights, and the reluctance of the European Commission to invoke the non-permanent mechanisms available for TSD issues (i.e. government consultations according to Article 13.14), when requested in 2014 by the EU DAG to initiate consultations with Korea on the subject of labour rights.[427]

- *Lack of progress in the area of labour rights.* As described in the detailed analysis of the development of labour rights in Korea during the evaluation period (see

[421] Development Solutions 2017, A comparative study of the implementation of ILO Convention no. 111 in the Republic of Korea and the Member States of the European Union, Draft Final Research and Analysis Report

[422] http://ec.europa.eu/dgs/fpi/documents/key-documents/A4_C_2016_2989_F1_ANNEX_EN_V2_P1_850176.pdf

[423] https://www.eu-gateway.eu/about

[424] The large majority of respondents either selected “no opinion/don’t know” or did not provide a response (see stakeholder consultation report).

[425] ILO, 2016, Assessment of labour provisions in trade and investment arrangements.

[426] Note that again the large majority of respondents either selected “no opinion/don’t know” or did not provide a response (see stakeholder consultation report).

[427] Letter by then EU Trade Commissioner Karel de Gucht to Thomas Jenkins, Chair of the EU-Korea Domestic Advisory Group, dated 20.2.2014.

section 8 of this report), no progress in this respect was made during the evaluation period, and according to trade union representatives the situation in Korea even deteriorated during the evaluation period regarding the right to peaceful assembly and association and the right to join unions. While Article 13.4 of the FTA includes the commitment to "make continued and sustained efforts towards ratifying the fundamental ILO Conventions", the FTA does not specify any timeline for the ratification of the fundamental ILO Conventions, and also does not foresee any process for defining such a timeline. In 2016, the EP's Committee on Employment and Social Affairs provided an Opinion to the Committee on International Trade, expressing its concern "at the latest reported repression of trade unions in the Republic of Korea" and called on the Commission "to initiate consultations with the Korean authorities on the reported violations of fundamental rights such as freedom of association and the failure to ensure effective recognition of the right to collective bargaining".[428] The EP's Committee on International Trade subsequently in its draft report on implementation of the EU-Korea FTA emphasised "that both Parties are obliged to uphold, promote and implement commitments on core labour rights in their laws and practices", while also welcoming "the efforts of the Civil Society Forum and of the internal advisory groups set up in accordance with the provisions set out in the chapter on trade and sustainable development".[429] A recent academic report on the impact of the TSD chapters of the EU-Korea FTA and two other EU agreements[430] with respect to labour standards "found no evidence that significant progress is being made on any labour issues with regard to the three agreements", and also did not discern "any additional 'networking' value that might plausibly lead to longer-term change."[431] However, the ILO in its recent assessment of labour provisions in trade and investment arrangements lists the following legal, institutional and political outcomes of stakeholders' involvement in its discussion of the EU-Korea FTA:[432]

- *Legal:* Ongoing legal changes to facilitate the ratification of Conventions and to implement ILO Recommendations (for example, the Trade Union and Labour Relations Adjustment Act);
- *Institutional:* Re-engagement with ILO (for example, ILO participation in the Committee on Trade and Sustainable Development and the DAGs); development of joint initiatives and technical cooperation (for example, new programmes on non-discrimination, equality and CSR);
- *Political:* Increased awareness of labour rights in the Republic of Korea; engagement of the EU and Republic of Korea's Governments through the Committee on Trade and Sustainable Development to discuss labour rights.

[428] European Parliament, Committee on Employment and Social Affairs, Opinion of 17.6.2016 of the Committee on Employment and Social Affairs for the Committee on International Trade on the implementation of the Free Trade Agreement between the European Union and the Republic of Korea (2015/2059(INI)), Rapporteur: Siôn Simon. This view was largely reiterated in a EP resolution of 18 May 2017 on the implementation of the Free Trade Agreement between the European Union and the Republic of Korea (2015/2059(INI)), noting that "progress made by Korea on the objectives enshrined in the Trade and Sustainable Development chapter is not satisfactory and that there are still cases of violation of freedom of association, including troubling examples' of imprisonment of trade union leaders, and interference in negotiations, which should rest within the autonomy of the bargaining partners".

[429] European Parliament, Committee on International Trade, Draft report of 8.11.2016 on the implementation of the Free Trade Agreement between the European Union and the Republic of Korea (2015/2059(INI)), Rapporteur: Adam Szejnfeld

[430] The other two agreements were CARIFORUM-EU Economic Partnership Agreement, and Moldova-EU Association Agreement.

[431] Harrison, J., Barbu, M., Campling, L., Richardson, B., & Smith, A. (2016). Governing Labour Standards through Free Trade Agreements: Limits of the European Union's Trade and Sustainable Development Chapters (No. ES/M009343/1).

[432] ILO, 2016, Assessment of labour provisions in trade and investment arrangements.

It can therefore be concluded that the permanent institutional mechanisms of Chapter 13 (the CTSD, the two DAGs, and the CSF) have been implemented as envisaged in the EU-Korea FTA, and have produced relevant outputs. Thereby, these institutional mechanisms have promoted dialogue between the EU and Korea concerning TSD. However, civil society stakeholders as well as the European Parliament in a recent resolution remain concerned about the lack of progress in the area of labour rights in Korea during the evaluation period.[433]

The impact of the FTA on the labour rights situation in Korea is further scrutinised in section 8 of this report, and the impact of the FTA on the environment is analysed in section 9.

10.8.4. Options for improving the functioning of the institutional mechanisms of the TSD chapter

In the course of the evaluation, a range of suggestions for possible improvements to the institutional mechanisms of the TSD chapter of the EU-Korea FTA were identified by stakeholders. They revolved around four main issues: more representative composition of DAGs/CSF; refinements to the setup of meetings; institutionalised monitoring of sustainable development impacts; and improved enforcement of FTA commitments. They are described in more detail below:

1. Regarding the composition of the DAGs, it was suggested to involve NGOs that are representative organisations of civil society rather than academics, and to include a sufficient number of representative organisations in the area of environment, as well as consumer organisations.

2. Regarding the functioning of the DAG/CSF, it was proposed to create a comprehensive mailing list of EU and Korean DAG members to facilitate contact between the meetings, to extend the length of the CSF meeting beyond 1.5 days and to ensure simultaneous (rather than consecutive) interpretation at all CSF meetings.

3. It was suggested to institutionalise monitoring of sustainable development impacts to ensure improvements in the implementation of the TSD chapter, including by conducting fact-finding missions, where necessary (examples of possible approaches provided by stakeholders included establishing a labour attaché in EU delegations, or the creation of an EU ombudsman for trade related impacts).

4. To ensure effective enforcement, an automatic triggering of the government consultation process under Article 13.14 was suggested, e.g. upon request by one of the DAGs. Also proposed was to include potential sanctions that could be imposed for violations of the TSD chapter.

5. With respect to the importance of the EU-Korea FTA as model for future FTAs of the EU, it was suggested to complement commitments with respect to fundamental principles under the TSD chapter with a clearly defined implementation process described in the agreement, consisting of identification of priorities by each government and establishing an implementation plan outlining concrete steps and a related timeline.

[433] In reflection of this concern, a letter sent by Trade Commissioner Malmström to the Korean Minister of Trade, Industry and Energy in April 2017 took note of the repeated calls for the implementation of labour rights commitments on the part of civil society organisations and the European Parliament, and stated that "concrete progress in implementing this important and integral part of the FTA is becoming urgent". (See https://ec.europa.eu/carol/index-iframe.cfm?fuseaction=download&documentId=090166e5b1aa7d84&title=CM_signed%20-%20letter%20to%20Korea%20on%20TSD%20implementation.pdf.)

It was not the aim of this (ex-post) evaluation to assess the financial and political feasibility of the specific suggestions for future changes made by stakeholders. While some of the suggestions for possible improvements could be implemented at an administrative level (e.g. the extension of the length of the CSF meeting), their implementation would depend on allocating additional financial resources for this purpose. Other suggestions would involve an amendment of the FTA (e.g. providing a clear timeframe for specific commitments), and therefore would require a re-negotiation process.

11. Conclusions and recommendations

This section presents first the overall findings of the study, structured according to the evaluation questions that concern the effectiveness, efficiency and relevance of the EU-Korea FTA, as well as its coherence with the EU-Korea Framework Agreement and with current EU trade policy. We then provide recommendations, based on the conclusions of this study.

11.1. Overall findings of the study

11.1.1. EQ1: *To what extent have the objectives as laid down in Article 1.1(2) of the EU-Korea FTA been achieved?*

The evaluation criterion *effectiveness* refers to the extent to which an intervention has reached its objectives. In the case of the EU-Korea FTA it therefore concerns the extent to which the objectives as laid down in Article 1.1(2) (a) to (h) of the EU-Korea FTA have been achieved. The article lists a total of eight objectives of the FTA as follows:

a) *To liberalise and facilitate trade in goods* between the Parties, in conformity with Article XXIV of the General Agreement on Tariffs and Trade 1994;

b) To *liberalise trade in services and investment* between the Parties, in conformity with Article V of the General Agreement on Trade in Services;

c) To *promote competition in their economies*, particularly as it relates to economic relations between the Parties;

d) To further liberalise, on a mutual basis, the *government procurement markets* of the Parties;

e) To adequately and effectively *protect intellectual property rights*;

f) To contribute, by removing barriers to trade and by developing an environment conducive to increased investment flows, to the *harmonious development and expansion of world trade*;

g) To commit, in the recognition that sustainable development is an overarching objective, to the development of international trade in such a way as *to contribute to the objective of sustainable development* and strive to ensure that this objective is integrated and reflected at every level of the Parties' trade relationship; and,

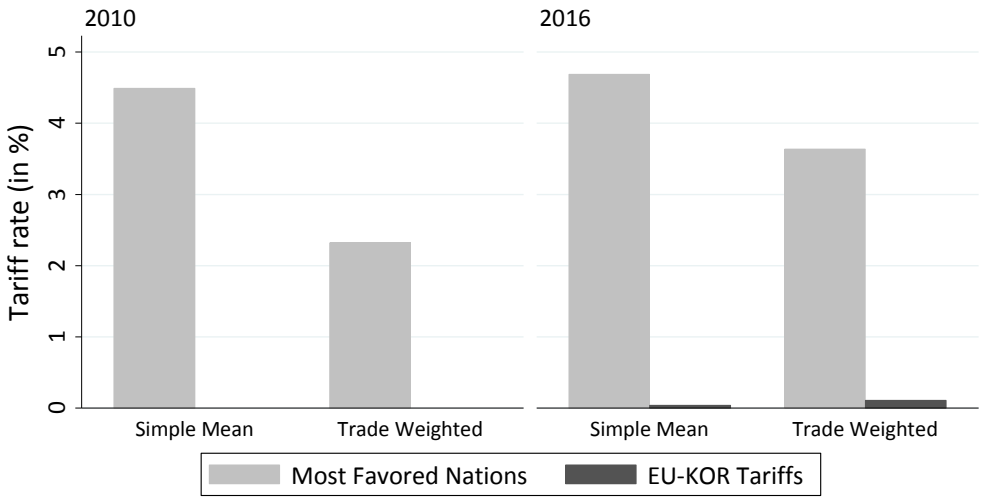
h) To *promote foreign direct investment* without lowering or reducing environmental, labour or occupational health and safety standards in the application and enforcement of environmental and labour laws of the Parties.

In the following sub-sections, we separately present the findings of the study regarding each specific objective.

Objective (a): To liberalise and facilitate trade in goods between the Parties, in conformity with Article XXIV of the General Agreement on Tariffs and Trade

In line with the commitments undertaken by the EU and Korea, tariffs on the majority of goods fell to zero immediately after the start of the provisional application of the FTA in 2011. In certain industries, tariff cuts are being gradually phased-in. The figure below displays EU tariffs that were applied to MFN countries in 2010 and to Korea and MFN countries in 2016. While in 2010 MFN tariffs applied to Korean imports, after the start of the provisional application of the FTA both the simple mean and trade-weighted tariffs imposed by the EU on Korean imports were drastically reduced to nearly zero.

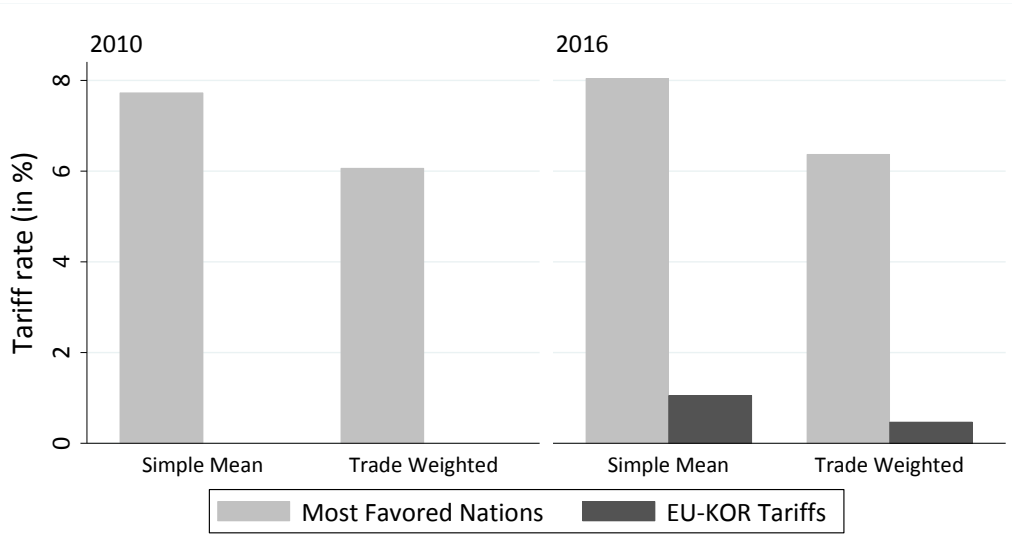
Figure 144: EU tariffs on imports, Korea vs. MFN countries



Source: Own compilation, based on TARIC (2017), COMEXT (2017). Before the provisional start of the EU-Korea FTA (in 2010), there were only MFN tariffs imposed between the EU and Korea. The EU-KOR tariffs indicated in this figure are those imposed from the EU on Korean imports in 2016 (the most recent year for which data are available). The difference between MFN tariffs (grey bars) and EU-KOR tariffs (black bars) in 2016 visualises the effectiveness of the EU-Korea FTA on tariff reduction.

The figure below plots Korean tariffs on imports from the EU. At first glance, it stands out that Korean average tariffs before the start of the provisional application of the agreement (when MFN tariffs applied) were around 35 percent higher on average than EU tariffs. For 2016, MFN tariffs are observed as unchanged while preferential tariffs under the EU-Korea FTA fell to 1 percent and less than 0.5 percent, respectively, depending on whether simple averages or trade-weighted averages are examined. Hence, the absolute tariff reduction was quite substantial in both the EU and Korea.

Figure 145: Korean tariffs on imports, EU vs. MFN countries



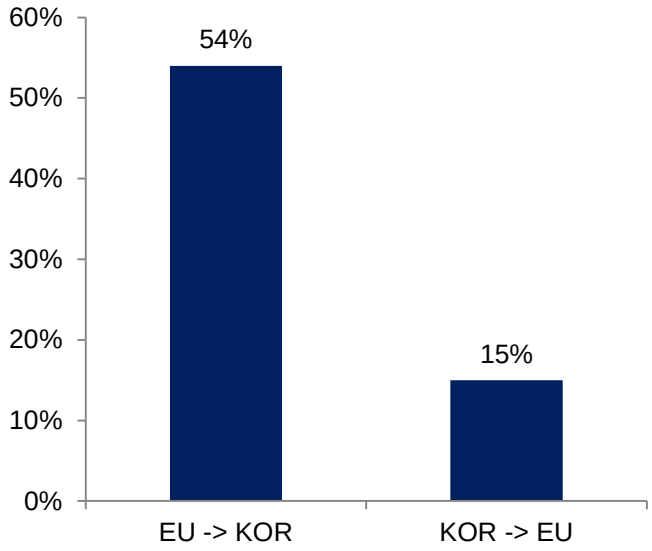
Source: Own compilation, based on TARIC (2017), COMEXT (2017). Before the provisional start of the EU-Korea FTA (in 2010), there were only MFN tariffs imposed between the EU and Korea. The EU-KOR tariffs indicated in this figure are those imposed from Korea on EU imports in 2016 (the most recent year for which data are available). The difference between MFN tariffs (grey bars) and EU-KOR tariffs (black bars) in 2016 visualises the effectiveness of the EU-Korea FTA on tariff reduction.

In parallel with this reduction in tariffs, exports of goods from the EU to Korea have increased by about 60 percent from the period before the start of the provisional application of the FTA to the period after.[434] Exports to Korea have strongly outperformed exports to other regional trade partners of the EU (Japan, Taiwan). The relative importance of Korea as an export market for EU producers has gone up from 2.0 percent to 2.5 percent after the agreement. Korean exports to the EU needed slightly more time to pick up but have then clearly outperformed EU imports from other regions.

Moreover, since the start of the provisional application of the FTA, the bilateral EU trade deficit in goods with Korea has turned into a surplus over time. Total EU exports to Korea have increased both because exporters sell higher quantities and because they sell at higher prices, signalling an upgrading of quality. A similar phenomenon can be observed for Korean exports to the EU. Both the number of products imported from Korea and the number of products exported to Korea increased significantly after 2011, suggesting gains in product availability in both the EU and Korea.

As indicated in the following figure, the econometric analysis (which identifies causal trade creation effects) showed that the EU-Korea FTA has increased EU exports to Korea on average by 54 percent and Korean exports to the EU by 15 percent between 2011 and 2014 (the last year with complete data). Note that as of the last year in our sample (2014), the agreement was not fully phased in and the economic effects have certainly not fully ramped up either. Hence, the estimated effects can be understood as lower bounds of the long-run effects.

Figure 146: Causal trade creation effects of the EU-Korea FTA (2011 to 2014), aggregate trade (goods and services)



Source: Own estimates, based on WIOD data for 2000 to 2014 (1.5 million observations). All effects are statistically significant at the 1 percent level. The estimates represent partial equilibrium effects: they do not reflect feedback effects e.g. due to changes in countries' GDPs that would also be causally related to the FTA.

The results of the sectoral analysis are presented in the following table.

[434] Averages of the periods 2006-2011 (pre FTA) vs 2011-2016 (post FTA).

Table 79: Causal trade creation effects (%) of the EU-Korea FTA (2011 to 2014), sectoral trade

ID	Sector Description	EU→KOR (%)	p-value	KOR→EU (%)	p-value
1	Crop and animal production	28.0**	0.002	33.8**	0.001
2	Forestry and logging	88.5**	0.000	55.0**	0.009
3	Fishing and aquaculture	102.4**	0.000	-6.3	0.718
4	Mining and quarrying	76.3**	0.000	44.8**	0.001
5	Manufacture of food beverages, tobacco	29.3*	0.040	18.4+	0.088
6	Manufacture of textiles, apparel, leather	8.0	0.643	16.8	0.109
7	Manufacture of wood and cork;	40.9*	0.020	35.7*	0.022
8	Manufacture of paper and paper products	9.3	0.299	31.1**	0.007
9	Printing and reproduction of recorded media	23.0*	0.022	26.0*	0.028
10	Manufacture of coke and refined petroleum	547**	0.000	130**	0.000
11	Manufacture of chemicals and chemical products	21.2+	0.074	39.4**	0.000
12	Manufacture of basic pharmaceutical products	73.8**	0.000	0.3	0.975
13	Manufacture of rubber and plastic products	23.7*	0.022	37.4**	0.000
14	Manufacture of other non-metallic minerals	53.6**	0.003	30.6*	0.021
15	Manufacture of basic metals	19.2+	0.054	32.4+	0.053
16	Manufacture of fabricated metal products	31.0**	0.001	24.2*	0.014
17	Manufacture of computer, electronic and optical	81.1**	0.000	-1.5	0.922
18	Manufacture of electrical equipment	60.5**	0.000	15.4	0.170
19	Manufacture of machinery and equipment nec.	50.4**	0.000	0.8	0.942
20	Manufacture of motor vehicles, trailers and semi-trailers	41.2**	0.000	47.0*	0.040
21	Manufacture of other transport equipment	79.3**	0.000	2.2	0.823
22	Manufacture of furniture; other manufacturing	10.3	0.265	-12.9	0.144
23	Repair and installation of machinery and equipment	-	-	-10.0	0.251
24	Electricity, gas, steam and air conditioning supply	238**	0.001	32.6*	0.035
25	Water collection, treatment and supply	385**	0.001	-54.5*	0.027
26	Sewerage; waste collection, disposal;	48.6**	0.000	3.0	0.882
27	Construction	39.4**	0.000	26.1**	0.002
28	Wholesale, repair of vehicles and motorcycles	72.5**	0.000	25.1	0.252
29	Wholesale trade, except of vehicles and motorcycles	59.5**	0.000	20.9+	0.092
30	Retail trade, except of motor vehicles and motorcycles	53.6**	0.001	26.7*	0.056
31	Land transport and transport via pipelines	73.0**	0.000	15.4	0.458
32	Water transport	22.5	0.261	28.0	0.112
33	Air transport	84.2*	0.033	32.6+	0.079
34	Warehousing and support activities for transportation	45.6**	0.001	1.9	0.862
35	Postal and courier activities	10.6	0.452	-5.2	0.835
36	Accommodation and food service activities	26.2*	0.013	17.9+	0.081
37	Publishing activities	31.4*	0.029	-9.3	0.646

38	Motion picture, video and television, sound	15.7	0.342	-17.6	0.295
39	Telecommunications	78.6**	0.000	-17.9	0.331
40	Computer programming, consultancy; information	74.9**	0.001	-5.2	0.841
41	Financial services, except insurance and pension	55.9+	0.082	10.4	0.537
42	Insurance, reinsurance and pension funding	106.3**	0.000	30.2+	0.083
43	Auxiliary to financial and insurance activities	13.2	0.744	-8.2	0.727
44	Real estate activities	-15.5	0.523	40.4*	0.032
45	Legal and accounting, management, consultancy	-27.7*	0.044	26.9*	0.022
46	Architectural, engineering, technical testing	53.3**	0.010	8.4	0.662
47	Scientific research and development	26.0*	0.029	5.2	0.594
48	Advertising and market research	-47.7+	0.061	-18.9	0.214
49	Other professional, scientific, veterinary activities	49.6**	0.024	9.2	0.271
50	Administrative and support service activities	30.9*	0.035	15.6	0.217
51	Public administration and defence	-0.2	0.988	-14.4+	0.054
52	Education	10.4	0.363	-3.3	0.772
53	Human health and social work activities	117**	0.000	6.0	0.658
54	Other service activities	42**	0.001	4.9	0.660
55	Undifferentiated goods- and services activities	-	-	-	0.000
56	Activities of extraterritorial organisations	-	-	-	-

Source: Own estimates, based on WIOD (2014) data. The coefficients are translated into percentage trade creation effects. The logarithmic coefficients can be found in Table 91. P-values below 0.10 denote statistical significance at least at the 10 percent level. Note: '.' means that no sectoral estimate could be provided due to the lack of sufficient transactions in this area. + $p < 0.10$, * $p < .05$, ** $p < .01$.

In terms of their economic importance and the size of the trade effects, several sectors stand out. First, in the area of crop and animal production, the data suggest relatively symmetric trade-creating effects ranging between 28 percent (EU exports) and 34 percent (Korean exports). In fishing and aquaculture, the trade-creating effects amount to 102 percent for the EU, while there is no evidence for higher exports from Korea to the EU. In the area of processed food, beverages, and tobacco, the situation is relatively balanced with positive effects of 29 percent on EU exports and of 18 percent on Korean exports. Trade in textiles, apparel, and leather was also stimulated, but the effects do not come out as statistically significant. This is different for the manufacture of wood and cork, where, albeit from low initial levels, exports went up by 41 percent and 36 percent, respectively. In the area of manufacturing, one observes substantial trade creation effects that tend to be stronger for the EU than for Korea. One particularly important sector is the automotive sector. Here, EU exports have increased by some 41 percent while Korean exports have grown by 47 percent. In contrast, the area of other transport equipment has seen a much more asymmetric development, with EU exports having expanded by almost 80 percent (driven mostly by aircraft), while Korean exports (mostly consisting of ships) have not grown.

Based on the results of the sectoral analysis, the following conclusions can be drawn:

1. 92 percent (49 out of 53) of the estimates of the effects of the EU-Korea FTA on EU exports to Korea are positive; 84 percent of those (41 out of 49) are statistically significant.[435] This is a remarkable result in light of the wide heterogeneity across sectors and, even more importantly, in light of the short time span for which data are available.[436]

2. 73 percent (40 out of 55) of sectoral estimates of the EU-Korea FTA's effects on Korean exports to the EU are positive, and more than half of them are statistically significant.[437] In combination with the previous finding, and consistent with the aggregate estimates from the previous section, this result confirms that the EU-Korea FTA had significantly stronger effects on EU exports to Korea than in the other direction.

3. Finally, comparison of the effects of the EU-Korea FTA for goods and services reveals that the impact of the agreement has been stronger for goods than for services. We find this result to be in line with expectations given the highly localised consumption of services[438] and the fact that services were less liberalised than goods in the agreement.

Overall, the estimates from the table above confirm the findings at the aggregate level that (i) the EU-Korea FTA has been successful in promoting bilateral trade between the member countries, and that (ii) the effects of the agreement have been stronger on EU exports to Korea.

Key findings of the evaluation are therefore that:

- After the start of the provisional application of the FTA both the simple mean and trade-weighted tariffs imposed by the EU on Korean imports were drastically reduced to nearly zero;
- Due to the EU-Korea FTA, exports to Korea have strongly outperformed exports to other regional trade partners of the EU (Japan, Taiwan). Exports increased in most industries;
- Korean exports to the EU needed slightly more time to pick up but have then clearly outperformed EU imports from other regions.
- Since the start of the provisional application of the FTA, the bilateral EU trade deficit in goods with Korea has turned into a surplus over time;
- Both the number of products imported from Korea and the number of products exported to Korea increased significantly after 2011, suggesting gains in product availability in both the EU and Korea;
- The evaluation therefore concludes that the EU-Korea FTA succeeded in liberalising and facilitating trade in goods between the Parties.

[435] It refers to the 10 percent significance level.

[436] Only two of the negative estimates are statistically significant. These estimates are for “Legal and accounting, management, consultancy” and “Advertising and market research”.

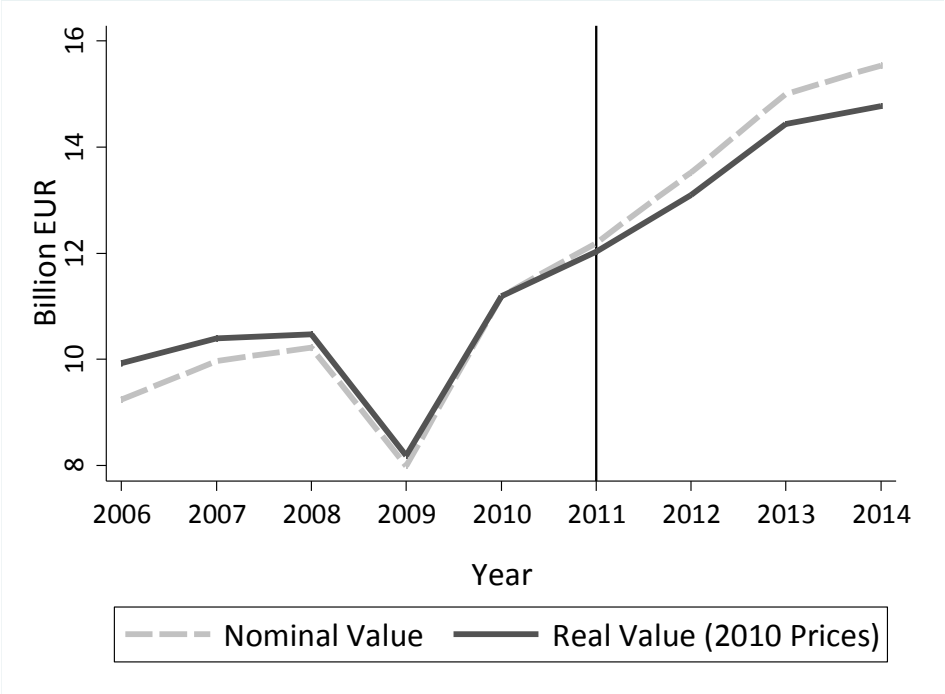
[437] Only three of the negative estimates are statistically significant. The negative and statistically significant estimates are for “Water collection, treatment and supply”, “Public administration and Defence”, and “Undifferentiated goods- and services activities”.

[438] Anderson, James E., Catherine A. Milot, and Yoto V. Yotov. "How Much Does Geography Deflect Services Trade". *International Economic Review* (2014): forthcoming; Anderson, James E. et al., “Modelling Services Trade, Trade Costs, Borders and Output,” Manuscript (2015).

Objective (b): To liberalise trade in services and investment between the Parties, in conformity with Article V of the General Agreement on Trade in Services

Trade in services between the EU and Korea was relatively underdeveloped prior to the FTA. The following figure plots the evolution of EU-Korea services trade volume since 2006. Trade in services grew moderately until 2008, dropped sharply during the financial crisis and then recovered quickly. From 2011 to 2013, trade in services increased quite rapidly, whereas the growth decelerated on the upper end of the data. In constant 2010 prices, the trade volume increased from EUR 10 billion to almost EUR 15 billion over the whole period, thereby corresponding to an increase of slightly less than 50 percent.

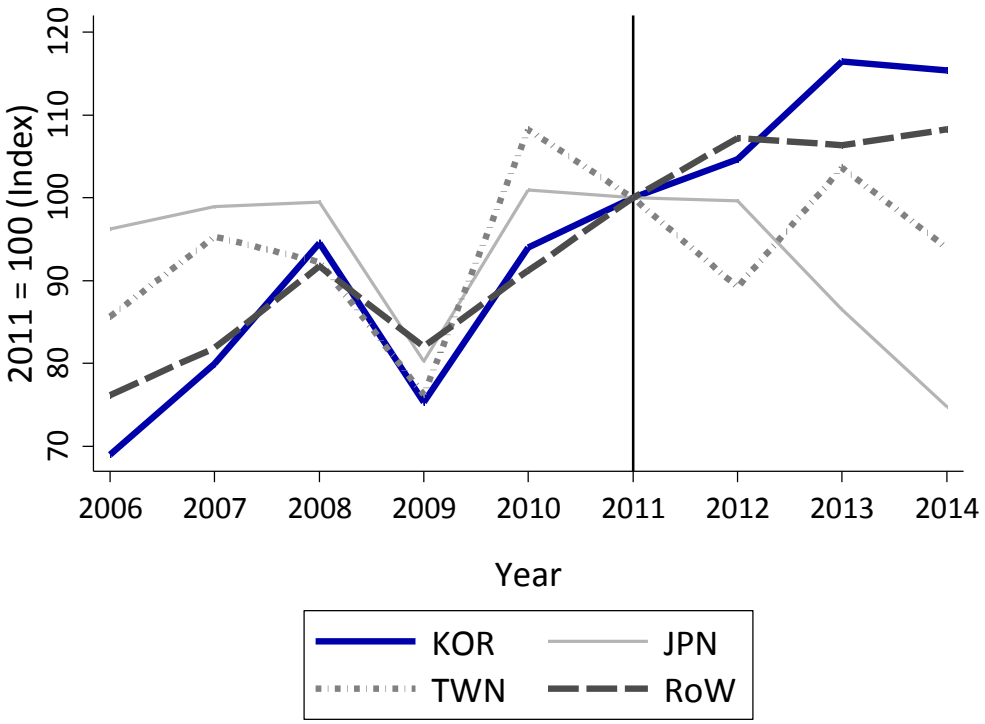
Figure 147: Services: EU-Korea trade volume (annually, EUR billion)



Sources: Own compilation, based on WIOD (2017) and OECD (2016). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

The figure below illustrates the performance of EU services exports to Korea compared to Japan, Taiwan and the rest of the world (RoW). Services exports to Korea had already increased significantly in the pre-FTA period. Compared to the initial level, services exports were more than 40 percent higher in 2011, thereby outperforming the other partner countries. With respect to the post-FTA period, the increase continued and ended at an almost 20 percent higher level in 2014. Again, exports to Korea were able to outperform services exports to Japan, Taiwan and RoW. Thus, a positive causal effect on EU services exports is attributed to the FTA.

Figure 148: EU services exports to Korea compared with other countries



Source: Own compilation, based on WIOD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

For both EU services imports and exports, financial and business services increased the most in absolute terms. Particularly for EU imports, this sector is quite dominant: it alone accounts for more than half of the total absolute increase. The second largest increase on the import side occurred for the wholesale and retail business, followed by transport and travel. Corresponding to the fact that it became the EU's second most important services export sector, growth in absolute terms of the construction business was also the second highest. Here again, transport and travel represents the number three sector in terms of absolute growth.

The UK and Germany, the two countries exporting the most to Korea, account for 40 percent of total EU services exports to Korea. However, despite annualised growth rates of 3.8 and 3.7 percent, respectively, both countries lost export shares between 2010 and 2014. This corresponds with the fact that the total EU growth rate, namely 7.1 percent, was higher than the mentioned growth rates for the two countries. Small economies, which before did not export significantly to Korea and have begun doing so after the FTA, have naturally high growth rates. Therefore, one should not over-interpret the growth rates of Slovenia (62 percent), Luxembourg (35 percent), or Estonia (30 percent). For the big EU economies, the French growth rate of yearly 13.4 percent is the most sizeable. Negative growth, although corresponding to only small absolute declines, was recorded for Austria, Bulgaria, Finland, Italy, Malta, Poland, Romania and Sweden. For 20 out of 28 countries, the growth rate of services exports to Korea was higher than services exports to other countries.

In the area of services, the econometric analysis reveals strong heterogeneity across sectors; however, for many of them, one fails to find statistically significant effects. Some effects are very large numerically (e.g., in the electricity and water sectors), but the level of trade was almost zero to start with, and still is. In these areas, the data reveal not trade of the good itself but of services relating to the provision of the good.

Specifically, there are substantial and rather symmetric trade creation effects for the construction industry: here, EU exports expanded by 39 percent while Korean exports grew by 26 percent. In retail trade, the econometric analysis yields positive effects of 54 percent and of 27 percent, respectively. Air transport services expanded even more substantially, namely by 84 percent and 33 percent, respectively. In contrast, there are no statistically significant effects of the agreement on trade in postal services or in audiovisual media. Publishing or telecommunication services exports from the EU to Korea, in contrast, have benefited from the agreement, while Korean exports have not. In the area of financial services, there are strong trade creation effects on both sides, but again, the EU seems to benefit more than Korea from the agreement. For example, in the insurance sector, EU exports have more than doubled due to the FTA; Korean exports have grown by 30 percent. The picture is more mixed in other professional services. For example, no trade creation effects of the agreement are found for the advertising sector. In the health care sector, EU exports to Korea have more than doubled (+117 percent), while Korean exports to the EU have increased by only 6 percent.

Key findings of the evaluation are therefore that:

- After the start of the provisional application of the EU-Korea FTA, EU services exports to Korea grew from EUR 7 billion to about EUR 9 billion from 2011 to 2014; imports grew even more strongly from EUR 4 billion to EUR 7 billion in the same period;
- Both the share of Korea in EU services exports and imports increased from 2011 onwards, signalling that Korea outperformed other EU trade partners after the start of the provisional application of the FTA. The same is true for the share of the EU in Korean services trade;
- The FTA therefore contributed to promoting trade in services and investment between the Parties, although heterogeneity across sectors is high and trade in services between the EU and Korea was relatively underdeveloped prior to the FTA, which needs to be taken into account when considering growth rates.

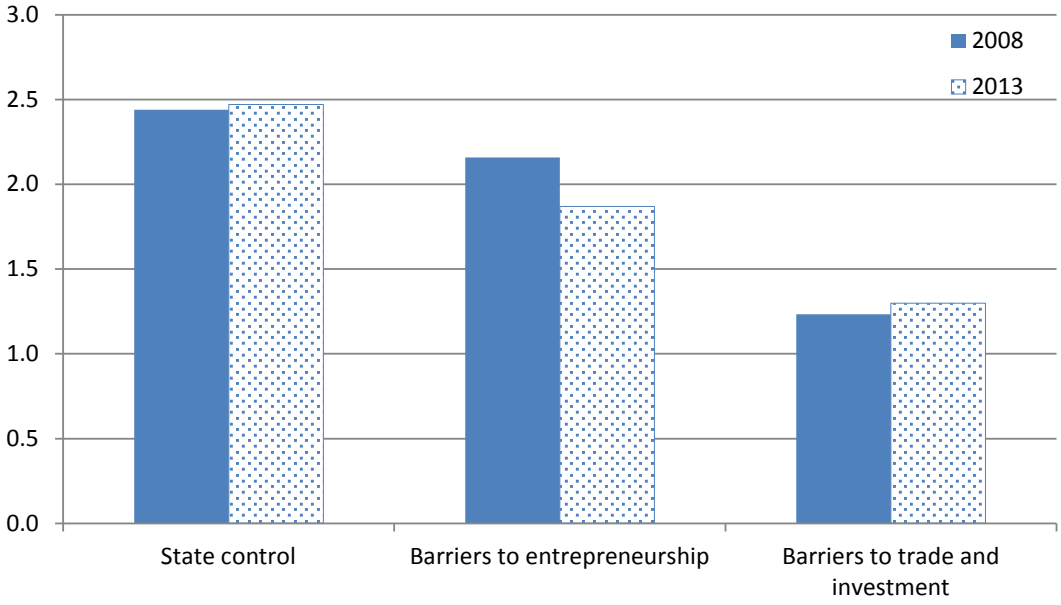
Objective (c): To promote competition in their economies, particularly as it relates to economic relations between the Parties

The OECD's Product Market Regulation (PMR) indicators measure the degree to which policies promote or inhibit competition in areas of the product market where competition is viable. To compare the competitive situation before and after the start of the provisional application of the EU-Korea FTA, we examine data for 2008 and 2013 (data for years in between was unavailable).[439]

The figure below presents Korea's scores in the composite indicators of *state control, barriers to entrepreneurship,* and *barriers to trade and investment* in 2008 and 2013. Scores can range from 0-6, with lower scores denoting more competition-friendly areas. As shown in the figure, the score for *state control* only marginally increased, from 2.44 to 2.47. *Barriers to entrepreneurship* decreased slightly, from 2.16 to 1.87. Finally, *barriers to trade and investment* increased slightly from 1.23 to 1.30.

[439] Koske, I. et al. (2015), "The 2013 update of the OECD's database on product market regulation: Policy insights for OECD and non-OECD countries", OECD Economics Department Working Papers, No. 1200, OECD Publishing, Paris. http://dx.doi.org/10.1787/5js3f5d3n2vl-en

Figure 149: PMR indicators for Korea, 2008 and 2013



Source: Own compilation, based on OECD (2017).

Considering the data presented above, Korea's competitive situation does not appear to have changed significantly following the start of the provisional application of the FTA. The Korean economy continues to be dominated by industrial conglomerates, with the four largest groups (or *chaebols*) —Samsung, Hyundai, LG and SK—accounting for about half the value of the Korean stock market. Samsung alone accounts for about one-fifth of Korean GDP. Additionally, about one-half of SMEs in Korea supply chaebol-affiliated firms. Trade agreements, such as the EU-Korea FTA, do not directly affect this situation. Therefore, the scope for promoting free and undistorted competition in the Korean economy is rather limited. This is also reflected in the results of the open public consultation conducted for this study, where some EU stakeholders noted problems concerning competition in Korea, e.g. in the area of state aid.[440] There is a lack of transparency with respect to state aid, in spite of Article 11.12 of the FTA, which states that both the EU and Korea shall report annually on the total amount, types and the sectoral distribution of subsidies which are specific and may affect international trade.

Key findings of the evaluation are therefore that:

- Considering relevant OECD's Product Market Regulation (PMR) indicators, Korea's competitive situation does not appear to have changed significantly following the start of the provisional application of the FTA;
- The EU-Korea FTA so far has shown little impact on promoting competition in the Korean economy, other than by increasing the competitive pressure on the Parties through increased trade in goods and services, as described above.

[440] For more details regarding the results of the stakeholder consultation, refer to Annex 2 of this synthesis report.

Objective (d): To further liberalise, on a mutual basis, the government procurement markets of the Parties

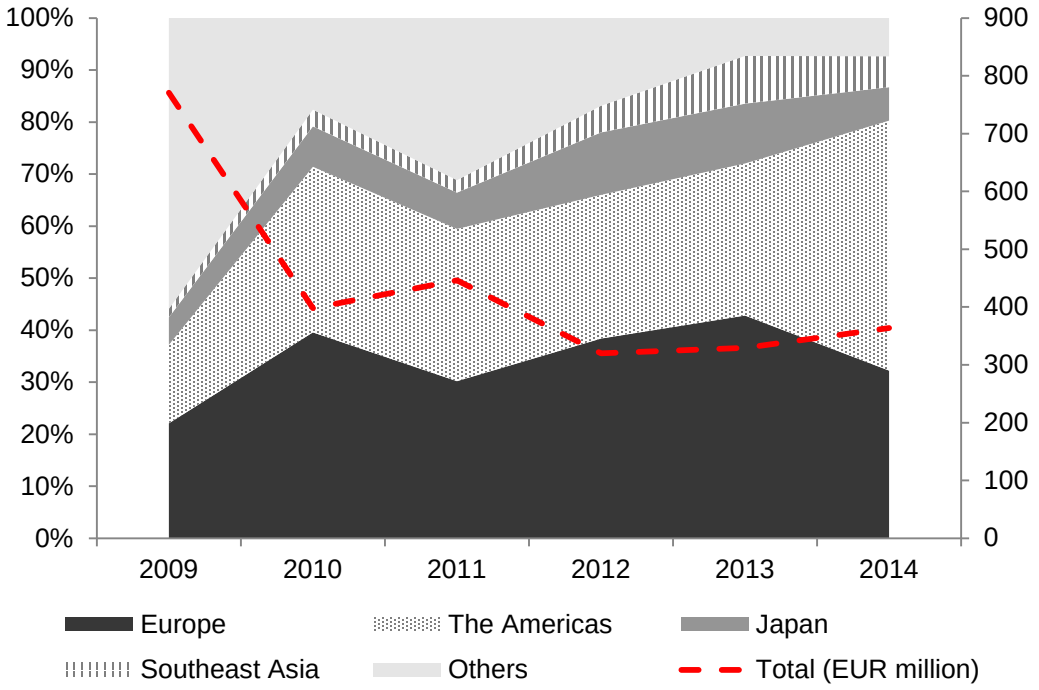
Both Korea and the EU ratified the WTO Agreement on Government Procurement (GPA) nearly 20 years ago (in 1997 and 1996, respectively) and therefore entered a common open public procurement market. The revised version of the agreement entered into force in the EU and Korea in 2014 and 2016. Government procurement in EU Member States was already regulated and liberalised in the wake of the European Single Market. In 2014, a series of new directives were agreed which have reformed the EU legal framework in this respect and their provisions are being transposed into national laws in the Member States. The package is intended to improve transparency and enforcement, and simplify procedures. Among other changes, the package reinforces rules on aggregation of below threshold procurement contracts, introduces the concept of life-cycle costing that includes environmental externalities, and applies specific rules to concessions contracts.

Despite the efforts undertaken in the GPA and in regional trade agreements such as the EU-Korea FTA, Korea's integration into the global government procurement market is very limited. While Korean government procurement of foreign sourced goods by the Office of Supply averaged 9.9 percent of the agency's purchases in the period 1991-95 (i.e. immediately prior to Korea's accession to the GPA), this figure decreased substantially over time. At the time of the start of the provisional application of the EU-Korea FTA (2011), the share of foreign supplies in the total procurement operations of the central procurement agency (the Public Procurement Service, PPS) was at 1.4 percent, and fell further to 0.9 percent as of 2015. Thus, rather than experiencing an increase in the foreign share in Korean government procurement following the multilateral government procurement agreement of the WTO and the EU-Korea FTA, the government's import share actually decreased. The recent Trade Policy Review of the WTO emphasises that this development occurred despite Korea's efforts to promote foreign supplied government procurement contracts through collective purchasing of foreign goods, the elimination of reserve deposit requirements for foreign procurement contracts, and the reduction of the documentation burden. Rather, the WTO hypothesises that foreign suppliers continue to lose ground due to the highly sophisticated and increasingly competitive domestic suppliers of manufacturing and construction services. Foreign supply of public procurement is mainly prevalent in the areas of research, transport, computer, communications and measuring equipment.

Changes in the procurement system that have increased the transparency of public procurement such as the introduction of KONEPS (Korea Online E-Procurement System), set up in 2009, have not reversed this trend towards domestic supply. KONEPS helps digitalise the procurement procedure and, through a more efficient bidding process, aims at reducing the burden to the national budget. According to a 2015 OECD assessment, KONEPS contributes substantially to the efficiency, effectiveness and integrity of public procurement in Korea, and facilitates competition by lowering barriers to entry for suppliers and other public procurement stakeholders. In contrast, the results of the open public consultation conducted for this evaluation seem to confirm the continued existence of problems such as "local content requirements" in Korean public procurement contracts.

Foreign public procurement in Korea amounts to around EUR 400 million per annum. These total foreign procurement values are graphically illustrated by the red dashed line in the figure below. It is striking that foreign procurement did not increase over time but rather stagnated at a level slightly below EUR 400 million. A possible reason could be that foreign firms operate with local subsidiaries or cooperate with Korean firms in a sub-contracting role. This, of course, is an obstacle for any statistics on foreign procurement. While the American share increased from 30 percent in 2010 to roughly 50 percent in 2014, the European share ranges between 20 and 35 percent.

Figure 150: Foreign procurement in Korea by origin, % and EUR million



Source: Own compilation, based on Public Procurement Service, Annual Report 2014. Note: The different shades of grey reflect the shares by origin region and refer to the left hand axis; the red dashed line (total foreign procurement in Korea) refers to the right hand axis (in EUR million).

Key findings of the evaluation are therefore that:

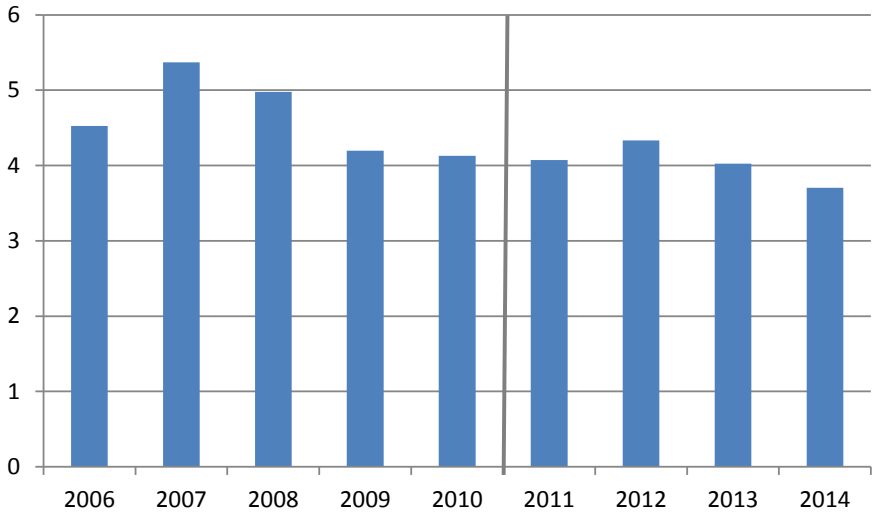
- Despite the efforts undertaken in the WTO Agreement on Government Procurement (GPA) and in regional trade agreements such as the EU-Korea FTA, Korea's integration into the global government procurement market is very limited;
- Rather than experiencing an increase in the foreign share in Korean government procurement following the multilateral government procurement agreement of the WTO and the EU-Korea FTA, the government's import share actually decreased during the evaluation period;
- The results of this evaluation do not provide any evidence for an increase in Korean procurement from EU providers due to the FTA. However, no data was available concerning the extent to which EU firms operate with local subsidiaries or cooperate with Korean firms in a sub-contracting role, and whether this activity has increased since the start of the provisional application of the FTA or not.

Objective (e): To adequately and effectively protect intellectual property rights

Similar to the EU, Korea has advanced intellectual property rights legislation in general, which has been further improved through international agreements in recent years. Since 2013, Korea formulated the goal of a "creative economy" as a policy objective. To achieve this goal, IPR play a major role and Korea extended its IPR legislation and facilitated patent regulations and access (Patent Act, Utility Model Act, Trademark Act, Design Protection Act, Unfair Competition Prevention, Trade Secret Protection Act, Act on Intellectual Property), and established an institution, the Presidential Council on Intellectual Property, to implement the legislation and monitor progress. Furthermore, Korea committed to international IPR within several treaties, for example those of the World Intellectual Property Organization (WIPO), the Hague Agreement, the Marrakesh VIP Treaty and others.

A data series concerning the protection of intellectual property in Korea before and after the start of the provisional application of the EU-Korea FTA is provided by the World Economic Forum's (WEF) annual Executive Opinion Survey, in which respondents provide a subjective assessment of the protection of intellectual property in a country on a scale of one (extremely weak) to seven (extremely strong).[441] The average score for Korea in this respect from 2006-2014 is presented in the figure below.

Figure 151: Protection of intellectual property in Korea, 2006-2014



Source: Own compilation, based on the WEF Executive Opinion Survey, 2006/2007-2014/2015. Respondents to the survey are asked the following question: "In your country, how strong is the protection of intellectual property, including anti-counterfeiting measures?"

Apart from a peak in 2007-2008, Korea's average score for the strength of intellectual property protection has stayed mostly around 4,[442] the rating in 2014/2015 of 3.7 being similar to the assessment regarding EU countries such as Poland, Italy and Hungary.[443] This lends support to the conclusion that IPR have been largely protected in Korea both before and after the start of the provisional application of the EU-Korea FTA.

Annexes 10-A and 10-B to Chapter 10 of the EU-Korea FTA list a total of 165 EU geographical indications (GIs) (e.g. Pecorino Romano, Scotch Whisky) and 63 Korean GIs (e.g. Jeju Pork, Korean Red Ginseng) as within the scope of protection of the FTA. Protection of GIs on the Korean side is safeguarded by the Korean Trademark Act, which denies application for registration of geographical indications that are the same or similar to GIs protected under multilateral or bilateral agreements. This also includes GIs covered by the EU-Korea FTA. The Trademark Act also prevents deceptive labelling and advertising, including any vague or false labelling or advertising that may mislead consumers as to the product's origin. The owner of a GI collective mark has the right to use it exclusively and prevent others from using identical or similar signs for identical goods, where it might result in confusion. Imports or exports with false origin indications or infringing GIs are prohibited (Foreign Trade Act).

According to the available evidence, the Korean government has been proactive concerning the enforcement of GI protection in Korea and has responded when the EU

[441] Klaus, Schwab. The Global Competitiveness Report 2014-2015. World Economic Forum.

[442] This assessment is supported by the results of the open public consultation conducted for this study. A large majority of business associations and companies that expressed an opinion on whether the protection of EU intellectual property rights in Korea improved since the application of the EU-Korea FTA indicated that such protection has remained the same. See Annex 2.

[443] 19 EU countries are ranked higher than 3.7.

has raised issues of non-compliance (and vice versa). However, discussions regarding expanding the list of protected GIs under the FTA are currently still ongoing, and no other GIs have yet been added to Annexes 10-A and 10-B since the start of the provisional application of the FTA.

However, some specific problems concerning intellectual property rights in Korea were identified during the evaluation, most notably concerning the public performance rights of authors, producers and performers in Korea, where retail venues smaller than 3 000 m^2 are exempted from paying royalties for public performance, among other things.

Key findings of the evaluation are therefore that:

- Similar to the EU, Korea has advanced intellectual property rights legislation in general, which has been further improved through international agreements in recent years;
- The EU-Korea FTA includes commitments relating to the protection of intellectual property rights, including geographical indications for agrifood products (GIs). No major issues concerning the initial list of geographical indications protected through the EU-Korea FTA were identified in the evaluation;
- Remaining specific problems with respect to implementation of the provisions of the FTA on protection of intellectual property include the extension of the initial list of GIs and the protection of the public performance rights of authors, producers and performers in Korea.

Objective (f): To contribute, by removing barriers to trade and by developing an environment conducive to increased investment flows, to the harmonious development and expansion of world trade

The econometric analysis allows for quantifying the magnitude of reduction of non-tariff trade costs, due to e.g. differences in technical standards, labelling requirements, double certifications, and sanitary and phytosanitary trade barriers. Estimated decreases in the costs of NTTC reductions are highlighted as changes in ad valorem tariff equivalents in the table below. Subsequently, the observed NTTC reductions are discussed in light of concrete agreements in the treaty text. Note that these NTTC reductions are observed until 2014, the last year for which data were available.

Table 80: Sectoral NTTC reduction for EU and Korean exports

Sector	NTTC reduction for Korean exports (%)	NTTC reduction for EU exports (%)
Agriculture	7.8	2.9
Automotive	5.6	2.6
Business services	5.5	0.0
Chemicals	5.5	1.2
Construction	3.2	5.4
Electronic equipment	0.0	25.3
Energy	9.2	14.6
Financial and Insurance services	1.9	7.8
Fishing	0.0	6.3
Machinery and equipment	1.5	9.3

Manufacturing	0.0	0.9
Metals	12.5	6.6
Other services	0.2	5.5
Processed food	3.1	5.1
Raw material	9.5	13.0
Telecoms	0.0	6.2
Textile	4.7	0.0
Trade	3.3	6.8
Transport	2.2	8.1
Utilities	4.0	19.1
Wood, paper and minerals	5.4	4.8

Source: GTAP, WITS, Ifo Trade Model.

As the table illustrates, the NTTC reduction for Korean and European exporters differed across sectors. More specifically:

- Within the *automotive sector*, a slightly asymmetric reduction in non-tariff trade costs can be noted, i.e. a 5.6 percent reduction for Korean exports compared to a 2.6 percent reduction for EU exports. However, the automotive industry emphasises the lack of regulatory convergence on Korea's part, pointing to the insufficient harmonisation of Korean regulations with UNECE regulations (while also acknowledging slow progress in certain areas), and related certification and testing requirements. This could explain the relatively small reduction in non-tariff trade costs for European exports.
- For the *chemicals sector* as a whole in the table above (which also encompasses *pharmaceutical products*), a slightly asymmetric reduction in non-tariff trade costs can be observed, namely a 5.5 percent reduction for Korean exports and a 1.2 percent reduction for EU exports.
- In the *electronics sector*, a highly asymmetric reduction in non-tariff trade costs in this sector is notable, namely a 25 percent reduction for EU exports compared to no change for Korean exports.
- Specifically for the *telecommunications sector* and the *financial and insurance services sector*, one expects not only general efforts of the agreement to reduce non-tariff trade costs in both sectors, but also some reduction occurring from the revised legal infrastructure in both sectors. A highly asymmetric reduction in NTTCs is observed, i.e. a zero percent reduction for Korean exports compared to a 6.2 percent reduction for EU exports in the telecommunications sector and a 1.9 percent reduction for Korean exports compared to a 7.8 percent reduction for EU exports in the financial and insurance services sector.
- Also, an asymmetric reduction in non-tariff trade costs in the *transportation sector* can be noted, namely a 2.2 percent reduction for EU exports compared to an 8.1 percent reduction for Korean exports.

These conclusions are largely in line with the results of the case studies on the automotive sector, the agricultural sector, the electronic goods sector, the environmental goods/services sector, and the postal services sector. The NTTCs that continue to affect these sectors as identified in the case studies are summarised in the following table.

Table 81: Causes of NTTCs affecting EU-Korea trade in case study sectors

Sector	Sources of non-tariff trade costs
Automotive	Insufficient harmonisation of Korean regulations with UNECE regulations
	Exclusion of petrol cars from Annex 2-C (the automotive annex to the EU-Korea FTA)
	Specific Korean requirements for vehicles and equipment, e.g. ground clearance requirements and vehicle width standards; compliance with the Korean radio act, etc.
	Specific Korean certification and testing requirements, e.g. certification of car parts, battery drop test, etc.
Agriculture	EU regionalisation system not recognised by Korea with respect to animal disease outbreaks
	Korean ban on imports of EU beef (motivated by a safeguard against BSE) still in effect; EU applications to export beef to Korea still pending since start of provisional application of FTA
	Korean sanitary requirements are not transparent for animals/animal products
	Burdensome procedure for registering production establishments for animal products
	EU not considered a single entity, which poses problems with respect to veterinary certificates for animals/animal products
	Imports of EU soft raw milk cheeses banned by Korea
	Burdensome pest risk assessment required to export EU fruits and vegetables to Korea
Electronic goods	Test reports prepared by EU laboratories must be prepared in line with Korean standards, which EU laboratories are not always familiar with
	Korean Occupational Safety and Health Agency regulations requiring third-party certification for all imported electronic, electrical and mechanical products
Environmental goods and services	Insufficient harmonisation of Korean regulations with relevant international standards (e.g. IEC standards)
Postal services	Requirement for express service providers to use a Common Express Terminal at the Incheon International Airport for x-ray and inspection, which slows clearance times

Source: Case studies on the respective sectors, based on stakeholder consultation, interviews and complementary research.

As the table illustrates, in all goods sectors other than agriculture, most NTTCs relate to the aforementioned technical barriers. Important non-tariff trade costs also remain in the SPS area, in particular for beef, but also for dairy products, fruits and vegetables.

Key findings of the evaluation are therefore that:

- The EU-Korea FTA not only eliminated tariffs, but also succeeded in the reduction of non-tariff trade costs (NTTCs), that are caused by e.g. differences in technical standards, labelling requirements, etc.;
- The NTTC reduction for Korean and European exporters differed across sectors. Even in sectors without explicit measures towards elimination of NTTCs mandated by the FTA a reduction of NTTCs can be observed;
- However, the evaluation also confirms the continued existence of specific non-tariff trade costs affecting EU-Korea trade.

These conclusions are largely in line with the Commission's recent Report on Trade and Investment Barriers,[444] which acknowledges that Korea is still ranked fifth highest in terms of the number of trade and investment barriers registered in the Market Access Database (17, on the same rank as Indonesia), while at the same time observing a "particularly positive trend" in Korea, where "only one new barrier was registered in 2016 while five barriers were eliminated".

Objective (g): To commit, in the recognition that sustainable development is an overarching objective, to the development of international trade in such a way as to contribute to the objective of sustainable development and strive to ensure that this objective is integrated and reflected at every level of the Parties' trade relationship

A key novelty of the EU-Korea FTA is Chapter 13 that covers trade and sustainable development (TSD), focusing mainly on environmental and labour protection. The chapter also provides for permanent institutional mechanisms. The evaluation considered the implementation of the TSD institutional mechanisms through a separate case study and also analysed impacts on human and labour rights and the environment, which are separately described below.

Implementation of TSD institutional mechanisms

On basis of a detailed analysis of the implementation of the TSD institutional mechanisms – the Committee for Trade and Sustainable Development (CTSD), the two domestic advisory groups (DAGs), and the civil society forum (CSF) – this evaluation concludes that these mechanisms have been implemented as envisaged in the EU-Korea FTA, and have promoted dialogue between the EU and Korea concerning TSD. They have regularly met (roughly once every year for the CTSD and the CSF, with only 2016 being a year without a meeting), and have discussed a wide range of issues focusing on labour rights, environmental protection and corporate social responsibility (CSR), in line with the scope of Chapter 13 and the related Annex 13. However, this evaluation has also identified some issues that affect the functioning of the DAGs and the CSF, which mainly refer to the composition of the DAGs. The requirement specified in Article 13.12.5 that the DAGs comprise "independent representative organisations of civil society in a balanced representation of environment, labour and business organisations as well as other relevant stakeholders" appears to be only partially fulfilled for both groups. In the case of the EU DAG, labour and business organisations are well represented, but only one organisation explicitly representing environmental interests (ClientEarth) is a member. With regard to the Korean DAG, close to half of its representatives are members of academia, rather than representatives of civil society organisations. The two non-permanent mechanisms of the TSD chapter, government consultations and the panel of experts, have not been activated so far. While the review of sustainability impacts of the FTA has so far not involved a regular monitoring process, the discussions at the DAGs/CSF covered a wide range of relevant issues, and this ex-post evaluation of the implementation of the EU-Korea FTA also responds to this commitment.

In the evaluation period, the implementation of the institutional mechanisms of Chapter 13 of the EU-Korea FTA resulted in exchange of views and experiences during DAG, CSF, and CTSD meetings; publication of discussion papers, reports and opinions; organisation of workshops; presentation by and discussion with the ILO; and cooperation projects under the EU Partnership Agreement. These outputs focus on labour rights, the environment (mostly regarding the emissions trading system and green growth) and CSR, and thereby cover core areas as specified in the TSD chapter and the related Annex

[444] http://trade.ec.europa.eu/doclib/docs/2017/june/tradoc_155642.pdf

13. The institutional mechanisms of the TSD chapter therefore have contributed in line with their foreseen functions, as is also recognised by stakeholders.[445]

Impact on human and labour rights

The EU-Korea FTA is assessed to have not changed the status quo of human and labour rights in Korea as it was when the FTA came into effect, in the sense that little change (positive or negative) relative to the 2011 situation and/or longer term trends can be observed regarding these rights. The only right for which a minor impact of the FTA can be determined is the right to food. The table below shows price changes for agrifood products in Korea due to the FTA based on the results of the CGE model, which provide a conservative estimate of relative price changes induced by the FTA.

Table 82: Price changes in agrifood products in Korea due to the implementation of the EU-Korea FTA

Sector	Price change in Korea (%)
Agriculture	-0.21
Processed food	-0.70

Source: GTAP, WITS, Ifo Trade Model.

For the product sectors presented above, the FTA resulted in a negative price change, i.e. a lower price. The largest price changes were observed for processed food products. Overall, the economic analysis therefore shows a minor reduction in the prices of food for Korean consumers due to the FTA.

Civil society stakeholders as well as the European Parliament in a recent resolution remain concerned about the lack of progress in the area of labour rights in Korea during the evaluation period. Also, Korea has not yet ratified four of the eight ILO fundamental conventions. However, it is not possible to distinguish the impact of the FTA from the pre-existing political context of the country, which was unfavourable to unions even before the application of the FTA, as several stakeholders suggested. Moreover, while Article 13.4 of the FTA includes the commitment to "make continued and sustained efforts towards ratifying the fundamental ILO Conventions", the FTA does not specify any timeline for the ratification of the Conventions, and also does not foresee any process for defining such a timeline.

Impact on the environment

Based on modelling results, the EU-Korea FTA has led to a limited, but notable reduction of global CO_2 emissions, which more than compensated any additional CO_2 emissions due to increased trade between the EU and Korea. Specifically, the CGE analysis conducted for this study indicates that due to the EU-Korea FTA, CO_2 emissions in the EU would have increased by 0.12 percent if there were no emissions trading system in place in the EU. Since the ETS covers most industrial CO_2 emissions in Europe, it most likely has prevented the realisation of these CO_2 emission changes. In Korea, emissions increased by 0.19 percent compared to the counterfactual situation of not having an FTA. However, the EU-Korea FTA leads overall to a net reduction of global emissions by 4.1 million tonnes CO_2. The global CO_2 reduction can almost be fully ascribed to just two countries that suffer from trade diversion effects, namely China and the United States, whose relatively emission-intensive exports were replaced by cleaner ones from the EU

[445] See Annex 2.

or Korea. The descriptive analysis of indicators concerning other environmental areas, such as air pollution, water quality, biodiversity, waste management and deforestation, does not indicate any observable effect of the EU-Korea FTA in these areas.

Other potential environmental effects of the EU-Korea FTA and accompanying cooperation activities identified in the course of this evaluation relate to an increased trade in environmental goods and services (with trade volume doubling from less than EUR 1 900 million in 2006 to EUR 3 800 million in 2015, mostly increasing in the post-FTA period of 2011 to 2015); an EU-funded *cooperation project on Low Carbon Action in Korea*, and *dialogue in the CTSD and CSF* concerning the EU and Korean emissions trading systems possibly fed into the practical implementation process of the Korean emissions trading system, which was launched in 2015.

Key findings of the evaluation are therefore that:

- The institutional mechanisms of the Chapter on Trade and Sustainable Development have been implemented as envisaged and have promoted dialogue on TSD between the EU and Korea;
- The EU-Korea FTA is assessed to have not changed the status quo of human and labour rights in Korea as it was when the FTA came into effect, in the sense that little change (positive or negative) relative to the 2011 situation and/or longer term trends can be observed regarding these rights;
- According to the CGE modelling, the EU-Korea FTA has led to a limited, but notable reduction of global CO_2 emissions. No other environmental impacts could be attributed to the FTA.

Objective (h): To promote foreign direct investment without lowering or reducing environmental, labour or occupational health and safety standards in the application and enforcement of environmental and labour laws of the Parties.

Foreign direct investment (FDI) is a conduit for the transfer of state-of-the-art technologies and know-how and can therefore contribute significantly to the growth performance of economies.[446] For assessing the impact of the EU-Korea FTA on foreign direct investments, it needs to be ruled out that other measures, e.g. Bilateral Investment Treaties (BITs), with similar effects, drive the results; according to the United Nations Conference on Trade and Development (UNCTAD), Korea signed its last BIT with EU Member States in 2006; this refers to the Korea-Bulgaria BIT and the Korea-BLEU (Belgium-Luxembourg Economic Union) BIT.[447] Thus, any effects observed for the post-2011 period are independent of the conclusion of BITs and can be attributed to the investment provisions of the EU-Korea FTA. These provisions include but are not limited to market access regulations. In concrete terms, these prohibit both the EU and Korea from undertaking measures such as limitations on the number of establishments of foreign firms, limitations on minimum domestic share-holdings, and limitations on total number of operations or on the total quantity of output. Moreover, the national treatment clause in combination with the most favoured nation clause expresses the willingness of both parties to significantly encourage foreign direct investments.

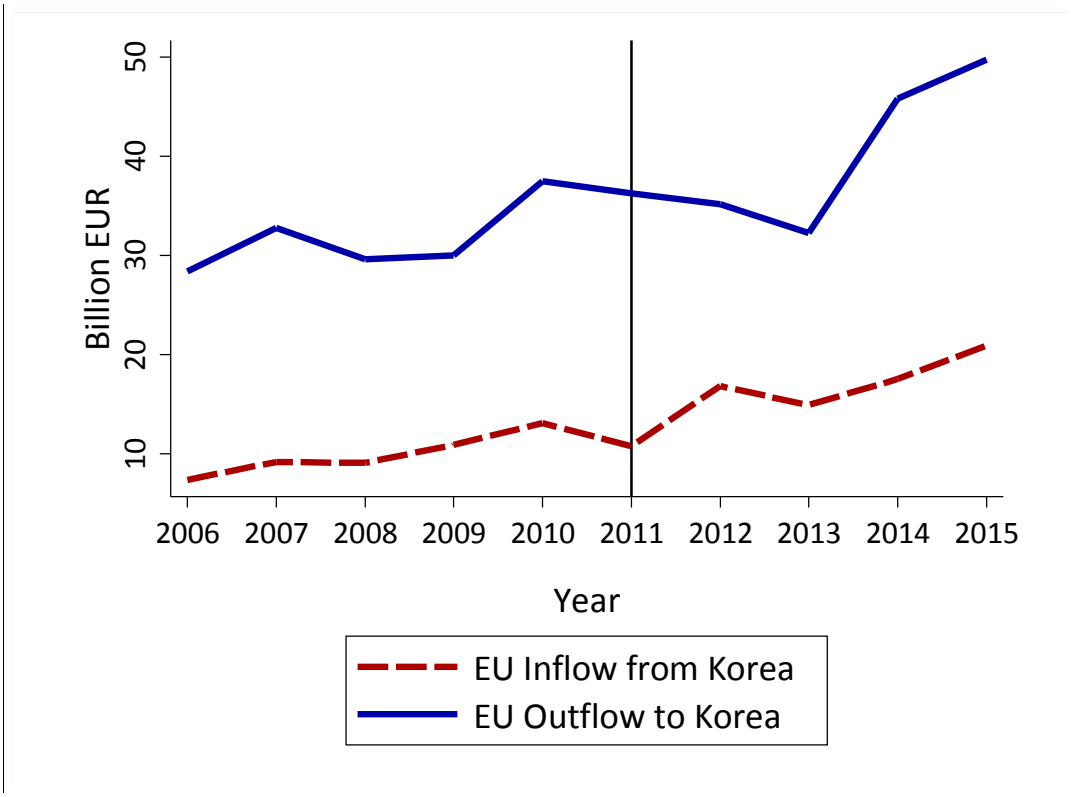
To gain a better understanding of whether that goal has been reached, Figure 46 depicts the FDI stock of EU companies in Korea (outbound FDI) and the counterpart of Korean firms in the EU (inbound FDI). While the noticeable difference in absolute values among

[446] Javorcik, Beata (2004), Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages, *The American Economic Review* 94(3): 605-627.

[447] Source: UNCTAD (2017), http://investmentpolicyhub.unctad.org/IIA/CountryBits/111#iiaInnerMenu, accessed on 08 May 2017.

the two positions is due to Korea being a relatively small economy, a closer look at the respective growth rates is of greater interest. During the pre-FTA period, the annual growth rate of the stock of EU FDI in Korea was 5 percent and for inbound stocks the figure was around 7 percent. In the post-FTA years the recorded average growth rates are higher and reach 8 percent and 19 percent, respectively. All in all, despite the fluctuations (especially for the outflows during the financial crisis), a clear positive trend is observed in the FDI stocks owned by the partner country. The increase is stronger in the post-FTA period.

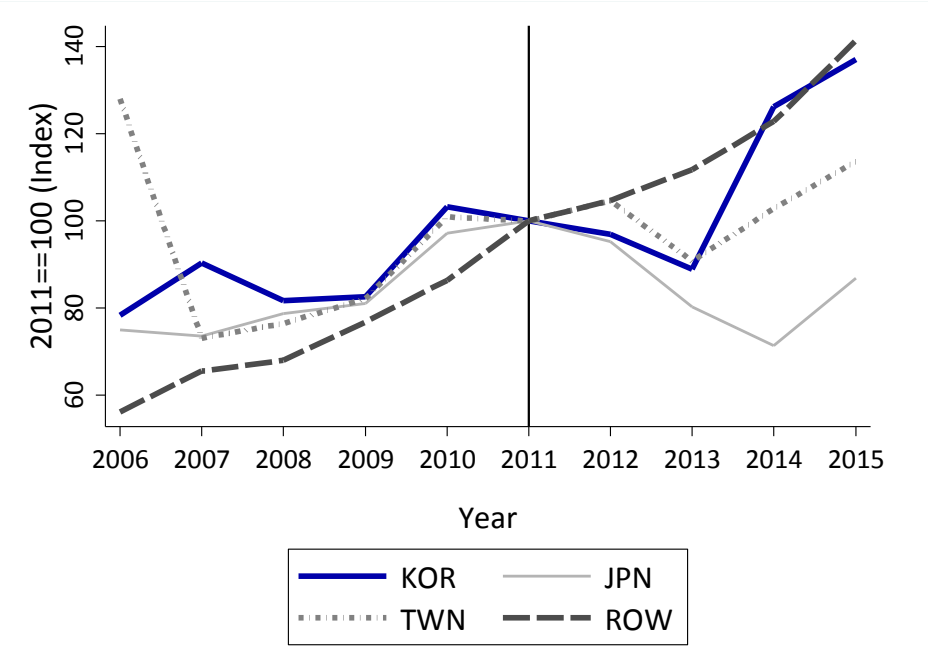
Figure 152: Stock of bilateral foreign direct investments (annually, EUR billion)



Source: Own compilation, based on Eurostat (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

The following figure compares the FDI outflow from the EU to Korea with the FDI outflows to a control group of other countries in the region. In the pre-FTA period, the growth of EU FDI to Korea was in line with that of Japan, higher than that of Taiwan and lower than other economies. In the post-FTA period, the negative years of 2011-2013 were followed by a remarkable recovery in 2014 and a moderate increase in 2015, putting FDI to Korea on the upper end of the country comparison group. From this analysis, an outperformance of EU FDI in Korea induced by the FTA in comparison to Japan and Taiwan can be identified.

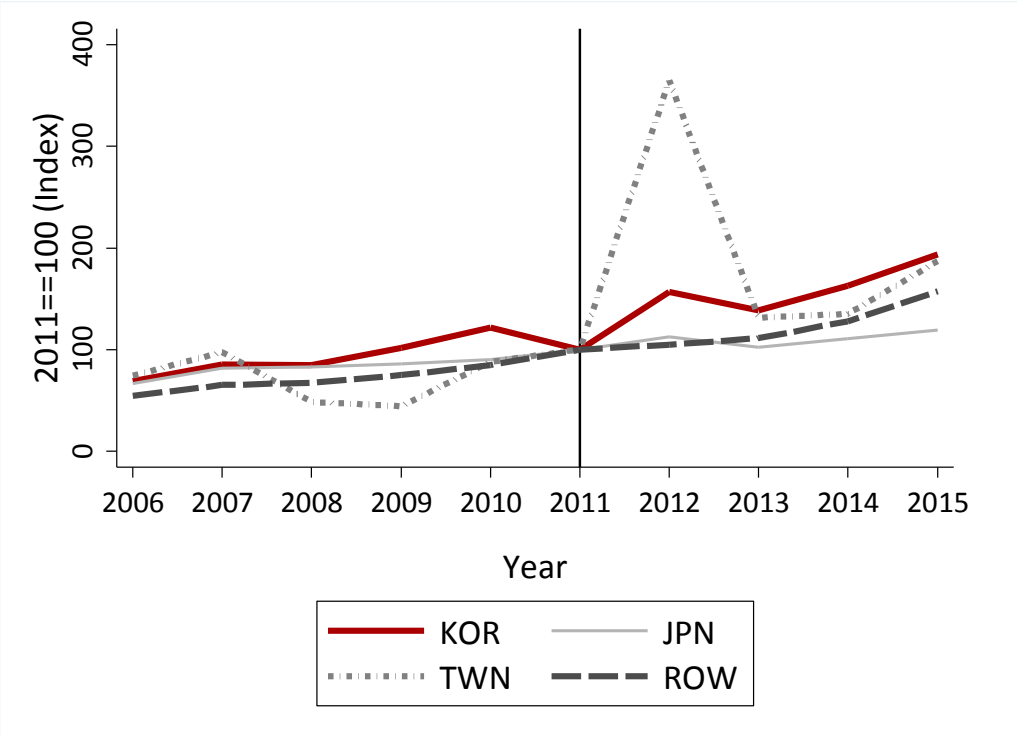
Figure 153: Stock of FDI outflow from the EU to selected countries (annually, EUR billion)



Source: Own compilation, based on Eurostat (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application 2011 is, therefore, the first "treated" year.

The figure below shows that in the first period, the growth rates of Korean-owned EU stocks were in line with those of the control group. In the post-FTA period, however, Korea clearly outperforms both Japan and RoW in terms of investment in the EU. It is noteworthy that the peak in the Taiwanese FDI position was probably caused by a large unique transaction or a measurement error, and thus not of particular interest. This one-time peak fell back to a higher level than 2011 and ends up registering a slightly worse performance than Korea in 2015. No unambiguous positive impact of the FTA on FDI inflows from Korea is supported by the data.

Figure 154: Stock of FDI inflow in the EU from selected countries (annually, EUR billion)



Source: Own compilation, based on Eurostat (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application 2011 is, therefore, the first "treated" year.

It can be concluded that a slight positive effect on FDI outflows to Korea is observable, while the respective inflows from Korea seem not to have changed drastically. FDI dynamics slightly outperform those observed for other countries in the control group in the post-FTA period. This evolution goes along with the deeper trade integration in both goods and services sectors as a result of the FTA. Hence, the data available to this evaluation indicate that the FTA seems to have positively influenced investment between Korea and EU countries. However, as FDI data are typically prone to error, this result needs to be taken cautiously.

Key findings of the evaluation are that:

- The stock of bilateral foreign direct investment (FDI) between the EU and Korea increased over time: the yearly growth rate of the stock of EU FDI in Korea went from 5 percent prior to the FTA to 8 percent thereafter; the growth rate of the stock of Korean FDI in the EU went from 7 percent to 19 percent;[448]
- The data available to this evaluation therefore indicate that the FTA seems to have positively influenced investment between Korea and EU countries. However, as FDI data are typically prone to error, this result needs to be taken cautiously;
- Due to a lack of specific data, it is not possible to come to a final conclusion regarding the impacts of EU FDI in Korea on environmental, labour or occupational health and safety standards. However, the social analysis, the human and labour rights analysis and the environmental analysis did not indicate negative impacts of the FTA.

[448] See Figure 11.

11.1.2. EQ2: *Has the EU-Korea FTA had unintended side effects, and if so, which ones?*

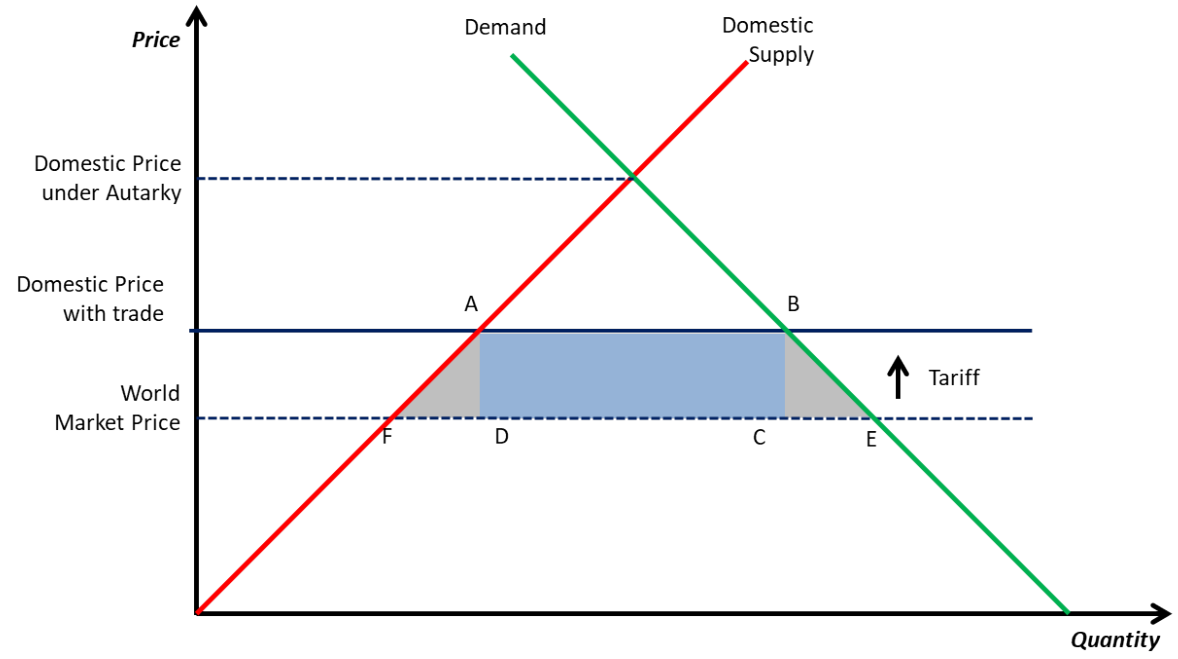
This evaluation has not identified unintended (negative) side effects of the EU-Korea FTA with respect to the economic, social, human/labour rights and environmental dimensions.

In what constitutes an unexpected (positive) side effect, the EU-Korea FTA led to a limited but notable reduction of global CO_2 emissions, which more than compensated for any additional CO_2 emissions due to increased trade between the EU and Korea (see also the previous section).

11.1.3. EQ3: *To what extent has the EU-Korea FTA been efficient with respect to achieving its objectives?*

According to economic theory, gains from trade following a tariff reduction through an FTA occur if products are now traded that were formerly (with higher tariffs) not traded. This is illustrated in the following figure, in which the world market price is lower than the domestic price under autarky. In order to protect domestic production, the government imposes a tariff rate on foreign goods, which makes them more expensive. The resulting price is given by the blue solid line. This situation is comparable to EU-Korea trade relations before the FTA. Note that the tariff rates are already relatively low (MFN tariffs).

Figure 155: Elimination of tariffs



Source: Own compilation.

If tariffs are eliminated,[449] the domestic price drops to the world market price and the government loses its tariff income (depicted by rectangle ABCD); however, consumers gain not only the former tariff revenues, but also the two triangles depicted in grey (ADF and BEC, called Harberger's triangle). Thus, the gains from trade for consumers in line with economic theory are equal to the area of the rectangle and the two mentioned triangles; the losses for the government are ABCD; on net, the gains for the whole

[449] Recall that EU tariff revenues decreased as of 2014 from roughly EUR 1.2 billion to EUR 200 million as a result of the EU-Korea FTA, thus by more than 80 percent.

economy are ADF and BEC (the grey shaded areas). Losses for the EU budget due to reduced tariff income are therefore not economic costs that materialise via the reduction of trade barriers; they are rather a redistribution of government income (tariff income) to consumers.[450] Thus, the elimination of tariffs corresponds to a tax cut.

In contrast to the elimination of tariffs, a reduction of NTTCs to trade is economically non-neutral: non-tariff trade costs, e.g. due to double certification, different product standards, differences in sanitary and phytosanitary regulation, etc. may involve a substantial waste of resources for firms that serve foreign markets. These costs translate into higher product prices and thus lower purchasing power for consumers. The NTTC reductions observed in most sectors as a consequence of the EU-Korea FTA (see Table 80 above) therefore create welfare gains.

The CGE model applied for this evaluation is specified such that it can explain differences in productivity, which are the ultimate source of trade. The results take both tariff and non-tariff trade costs into account and are therefore an adequate measure for changes in welfare. These effects are shown below in Table 83.

Table 83: Macroeconomic effects for EU Member States and Korea

Country	Observed for 2015		Contribution of EU-KOR FTA
	GDP, EUR billion	GDP, per capita, EUR	Income Change (%)
AT	340	39 400	0.03
BE	410	36 600	0.04
BG	45	6 300	0.02
CY	18	20 800	0.03
CZ	167	15 800	0.06
DE	3 033	37 100	0.05
DK	272	47 800	0.03
ES	1076	23 200	0.01
EE	20	15 400	0.03
FI	210	38 200	0.04
FR	2 181	32 800	0.03
GB	2 580	39 600	0.01
GR	176	16 200	0.02
HR	44	10 400	0.02
HU	110	11 100	0.05
IE	256	55 100	0.09
IT	1 645	27 100	0.02
LT	37	12 900	0.01
LU	51	89 900	0.01
LV	24	12 300	0.02
MT	9	21 500	0.28
NL	677	40 000	0.04

[450] Note that this is a stylised explanation that focuses on the principle but does not fully capture the complex reality of trade in goods and services between the EU and Korea. In particular, a large share of trade occurs between firms; a feature modelled in the CGE analysis, but not considered in the figure.

PL	430	11 200	0.03
PT	180	17 300	0.01
RO	160	8 100	0.05
SK	79	14 500	0.14
SV	39	18 700	0.09
SE	447	45 600	0.03
EU28	*14 714*	*28 900*	*0.03*
KOR	*1 577*	*31 157*	*0.31*

Source: Own compilation, based on GTAP 9 for the year 2011, World Economic Outlook for the year 2015, and simulations based on the Ifo Trade Model. Note: The real income change of regions is a GDP-weighted average of the country-specific real income changes in that region.

The table shows that overall, the economic gains from the agreement are symmetrically distributed in absolute values between the EU and Korea. The EU has seen an increase in GDP by about EUR 4.4 billion due to the FTA, Korea by EUR 4.9 billion (measured in 2015 prices). In relative terms, Korea experiences larger benefits due to the FTA (0.3 percent of GDP) than the EU (0.03 percent of GDP). This is not surprising, given the fact that the EU is about ten times as big a market for Korean products than Korea is for EU products.

Key findings of the evaluation are that:

- The decrease in tariff revenue for EU and Member States constitutes a redistribution of government income to consumers, and the reduction of NTTCs under the FTA leads to welfare gains due to lower product prices and thus increased purchasing power for consumers;
- While FTA implementation also causes some costs, including administrative costs for businesses (e.g. to apply for approved exporter status) and the costs of financing the institutional structure of the FTA (such as working group meetings) for the EU, both EU Member States and Korea experienced on balance notable gains in welfare due to the FTA: the EU has seen an increase in GDP by about EUR 4.4 billion due to the FTA, Korea by EUR 4.9 billion. In the EU, all Member States benefit from the agreement with some of the smaller countries benefiting the most;

However, some inefficiencies have been identified by the evaluation, which include the effects of the direct transport clause for certain industries and the administrative burdens in some countries for applying for approved exporter status, as well as the existence of certain NTTCs that continue to affect EU-Korea trade (for more details, see below, EQ5).

11.1.4. EQ4: *To what extent has the EU-Korea FTA been coherent with the EU-Korea Framework Agreement and with current EU trade policy?*

The EU-Korea Framework Agreement was signed on 10 May 2010 and entered into force on 1 June 2014, replacing the original 1996 agreement. Unlike its predecessor, the 2010 agreement no longer focuses on trade cooperation, as the latter topic has been addressed by the EU-Korea FTA. The agreement is broad in scope and calls for cooperation in a wide range of areas. It also creates an institutional framework within which the cooperation takes place.

There are several ways in which the Framework Agreement is linked to the EU-Korea FTA. Article 9 of the FA on trade and investment explicitly refers to the "agreement establishing a free trade area" (the EU-Korea FTA) as a "specific agreement giving effect to the trade provisions of" the Framework Agreement. It refers to Article 43 of the Framework Agreement, which provides that both Parties can adopt “specific agreements in any area of cooperation falling within its scope”—the FTA being one such agreement.

The same Article stipulates that such specific agreements shall be "an integral part of the overall bilateral relations" and shall form "part of a common institutional framework". The Framework Agreement establishes a Joint Committee "to facilitate the implementation and to further the general aims of this Agreement as well as to maintain overall coherence in the relations and to ensure the proper functioning of other agreement between the Parties" (Article 44(2)).[451] In this aim of creating overall coherence in the relations, it again links to the FTA, which provides for a comprehensive institutional framework on its own.[452] However, there is no overlap regarding tasks or responsibilities of the institutions established under the FTA and the Framework Agreement. Based on a review of the agreements, and the results of the stakeholder interviews, the evaluation did not identify any overlaps or contradictions concerning other aspects of the two agreements.

In addition to the EU-Korea FTA and the Framework Agreement, the EU and Korea also signed the Agreement Concerning Cooperation on Anti-competitive Activities in 2009. In the competition chapter of the EU-Korea FTA, the Parties agreed to prohibit and sanction certain practices and transactions involving goods or services which distort competition and trade between them. The FTA includes provisions laying down the main principles and obligations undertaken by the Parties to ensure free and undistorted competition, including obligations to cooperate. In contrast the Agreement Concerning Cooperation on Anti-competitive Activities regulates the specific terms on which the EU and Korea cooperate on anti-trust matters. As such, the two texts complement each other, rather than overlap (as is the case with the provisions of the Framework Agreement in this respect), and are in general coherent with each other.

Key findings of the evaluation are that:

- The EU-Korea Framework Agreement is linked to the EU-Korea FTA, without there being overlaps or contradictions between the agreements. The FTA is also coherent with the Agreement Concerning Cooperation on Anti-competitive Activities;
- The FTA is also in general coherent with EU trade policy. However, the FTA predates the 2015 “Trade for all” strategy and certain commitments made therein go beyond the provisions of the FTA.

11.1.5. EQ5: *To what extent are the provisions of the EU-Korea FTA relevant for addressing current trade issues faced by the EU and Korea*?

The provisions of the EU-Korea FTA reflect the eight specific objectives of the agreement laid down in Article 1.1(2) (a) to (h) of the EU-Korea FTA, which are listed above in the context of presenting conclusions regarding the effectiveness of the agreement (EQ1). According to the results of this evaluation, these objectives adequately reflect current needs, and continue to be relevant for addressing current issues related to trade faced by the EU and Korea. In detail, these current trade issues are:

i. *Problems due to the continued existence of non-tariff trade costs* (NTTC) that affect EU exporters (relevant objective (f), removing barriers to trade). These NTTCs mostly relate to standardisation, conformity assessment and labelling requirements, or certain sanitary and phytosanitary measures that affect trade in

[451] While trade-related issues can appear on the agenda of the Joint Committee, the Joint Committee would not take decisions on these matters.

[452] Note that the original text of the Framework Agreement did not define the rules of procedure or role of the Joint Committee, though in May 2016 rules of procedure were adopted (see http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016D0845&from=en.)

agrifood products with Korea. More specifically, causes of NTTCs identified in the case study sectors include:

- *Automotive sector*: Insufficient harmonisation of Korean regulations with UNECE regulations; exclusion of petrol cars from Annex 2-C; specific Korean requirements for vehicles and equipment (e.g. ground clearance requirements and vehicle width standards, compliance with the Korean Radio Act); specific Korean certification and testing requirements (e.g. certification of car parts, battery drop test);
- *Agrifood sector:* EU regionalisation system not recognised by Korea with respect to animal disease outbreaks; Korean ban on imports of EU beef still in effect; Korean sanitary requirements not transparent for animals/animal products; burdensome procedure for registering production establishments for animal products; EU not considered a single entity, which poses problems with respect to veterinary certificates for animals/animal products; imports of EU soft raw milk cheeses banned by Korea; burdensome pest risk assessment required to export EU fruits and vegetables to Korea;
- *Electronic goods sector:* Test reports prepared by EU laboratories must be prepared in line with Korean standards; Korean Occupational Safety and Health Agency regulations requiring third-party certification for imported electronic, electrical and mechanical products;
- *Environmental goods and services:* Insufficient harmonisation of Korean regulations with relevant international standards (e.g. IEC standards);
- *Postal services:* Requirement for express service providers to use a Common Express Terminal at the Incheon International Airport for x-ray and inspection, which slows clearance times.

ii. *Administrative burdens related to the approved exporter status*, as the application process for this status and the required documentation varies across Member States and can reportedly be time- and resource-consuming (relevant objective (a), liberalising and facilitating trade in goods);

iii. *Problems related to the direct transport rule*, which is considered to be burdensome for some industries (relevant objective (a), liberalising and facilitating trade in goods);

iv. *Issues related to the use of tariff preferences:* In spite of recent growth, EU preference utilisation rates (PURs) continue to be lower than Korean PURs (relevant objective (a), liberalising and facilitating trade in goods). Reasons identified by this evaluation are as follows:

- *Low MFN tariffs:* Low MFN tariffs can be a reason for not utilising FTAs, as there is a lower opportunity cost of not utilising preferential tariffs in sectors where MFN tariffs are low to begin with;
- *Government promotion and support for businesses:* The Korean government devotes substantial resources to educating companies and assisting them in using the EU-Korea FTA, contributing to the comparatively higher PURs;
- *Costs vs. benefits of utilising preferences:* Rules of Origin may lead companies in certain sectors to not taking advantage of tariff preferences, due to the need to purchase third-party software for performing origin calculations; the costs of calculating origin for companies that frequently change suppliers may also exceed the benefits of using preferences;

- *Requirements for approved exporter status:* Applying for approved exporter status may be resource- and time-intensive. Information and documentation that exporters are required to submit when applying for approved exporter status, as well as the processing time for applications, varies widely across EU Member States; and,

- *Lack of fulfilment of origin criteria:* Exporters whose products do not fulfil the origin criteria of the EU-Korea FTA are not eligible to use preferences, which can be a problem e.g. in the machinery and appliances sector, or other sectors (e.g. diamonds exported from the EU to Korea are not mined in the EU).

v. *Issues regarding the protection of EU intellectual property rights in Korea*, notably the protection of the public performance rights of authors, producers and performers in Korea and the extension of the initial list of GIs (relevant objective (e), adequately and effectively protecting intellectual property rights);

vi. *Other issues relating to the scope of the EU-Korea FTA,* notably the lack of inclusion of truck-tractors in the UNECE equivalence tables of the automotive annex (2-C) of the FTA, and the exclusion of certain sectors from the liberalisation of service markets (relevant objectives (a), liberalising and facilitating trade in goods, and (b), liberalising trade in services and investment);

vii. *Concerns regarding the lack of progress in Korea with respect to fundamental labour rights* (relevant objective (h), contributing to the objective of sustainable development).

During the evaluation period, relevant trade issues have been discussed in the committees and working groups created under the FTA, which functioned as intended (helping, e.g. to facilitate bilateral dialogue on regulatory issues and potential NTTCs, such as in the case of the chemicals sector), and in several instances solutions have been found to address specific trade problems.

Key findings of the evaluation are therefore that:

- The eight specific objectives of the EU-Korea FTA adequately reflect current needs and continue to be relevant for addressing current issues related to trade faced by the EU and Korea;
- FTA provisions in conjunction with the institutional framework created by the FTA also continue to be relevant for addressing these issues.

11.2. Recommendations

This section presents recommendations derived from the results of the evaluation of the implementation of the EU-Korea FTA. As concluded in the previous analysis, the EU-Korea FTA has been effective in liberalising and facilitating trade in goods between the Parties to the agreement, with exports of goods from the EU to Korea having increased by about 60 percent from the period before the start of the provisional application of the FTA to the period after. Due to the FTA, exports to Korea have strongly outperformed exports to other regional trade partners of the EU. Korean exports to the EU needed slightly more time to pick up but have then clearly outperformed EU imports from other regions. Also EU services exports to Korea grew considerably, as did service imports from Korea. In addition to the substantial trade creation effects the agreement has generated, it has boosted bilateral foreign direct investments and led (through trade diversion effects) to a limited, but notable reduction of global CO_2 emissions, which more than compensated for any additional CO_2 emissions due to increased trade between the EU and Korea. No unintended (negative) side effects of the EU-Korea FTA with respect to the economic, social, human and labour rights, and environmental dimensions were identified. While objectives and related provisions of the FTA continue to be relevant, and

major changes to the FTA are not recommended in light of the results of the evaluation, certain issues have been identified which could be addressed through improved implementation and (where needed) limited amendments to the FTA.

The recommendations below concern the following issues:

- Non-tariff trade costs;
- Administrative burdens;
- Scope of the EU-Korea FTA;
- Trade and Sustainable Development chapter;
- Trade statistics; and,
- Longer term effects of the EU-Korea FTA.

11.2.1. Non-tariff trade costs

The EU-Korea FTA went further than any previous EU agreement in lifting trade barriers. While certain provisions of the FTA are in line with previous bilateral free trade agreements (e.g. concerning tariff reduction), other aspects of the EU-Korea FTA break new ground, such as the specific annexes on electronic goods, motor vehicles and parts, pharmaceutical products and medical devices, and chemicals, which present detailed sector-specific provisions. As a result, the EU-Korea FTA not only eliminated tariffs, but also succeeded in the reduction of non-tariff trade costs for Korean and European exporters. However, certain non-tariff measures related to standardisation, conformity assessment, labelling, and certain sanitary and phytosanitary measures still affect EU-Korea trade. Efforts to address existing non-tariff trade costs as well as emerging issues should thus continue and be re-enforced.

11.2.2. Administrative burdens

Free trade agreements such as the EU-Korea FTA require rules of origin (RoO) that define under which conditions a good is considered to originate from a Party to the agreement so that it can benefit from preferential treatment. Complying with rules of origin may lead to administrative costs,[453] which are typically more burdensome for SMEs than for large companies. Administrative burdens, such as those related to obtaining approved exporter status, may contribute to EU preference utilisation rates that continue to be lower than Korean PURs. It is therefore recommended to reduce administrative burdens related to RoO (including the issue of the direct transport provision that is considered by some sectors to be burdensome) under the EU-Korea FTA.

11.2.3. Scope of the EU-Korea FTA

Certain limitations in the scope of the EU-Korea FTA limit its potential. These include, among others, the exclusion of some services sectors from the provisions concerning cross-border supply of services (e.g. audio-visual services and air transport services) and the lack of inclusion of truck-tractors in the UNECE equivalence tables of the automotive annex of the FTA. These limitations in scope are recommended to be scrutinised when negotiating possible amendments to the agreement.

[453] Conconi et al. 2016; Krishna and A. O. Krueger 1995

11.2.4. Trade and Sustainable Development chapter

While the institutional mechanisms of the TSD chapter have been implemented as envisaged and have promoted dialogue on TSD between the EU and Korea, civil society stakeholders as well as the European Parliament remain concerned about the lack of progress in the area of labour rights in Korea. Moreover, while in the FTA the EU and Korea clearly "reaffirm their commitments to promoting the development of international trade in such a way as to contribute to the objective of sustainable development" and both sides "will strive to ensure that this objective is integrated and reflected at every level of their trade relationship", there is less clarity concerning the practical implications of the commitments made in the TSD chapter. It is therefore recommended that both the EU and Korea commit to developing a TSD work programme according to their own priorities, and regularly report on its implementation and the outcomes achieved to create a process of accountability. Based on the results of the evaluation, we also recommend ensuring a balanced representation of civil society organisations in both the EU and Korea Domestic Advisory Group, and including representatives of other relevant groups, such as civil society organisations that represent consumer interests.

11.2.5. Trade statistics

In certain areas, trade statistics used for the evaluation of the EU-Korea FTA have proven to be insufficient or limited, especially regarding services and trade activities of small- and medium-sized enterprises. Also, many databases offer only incomplete country or product samples. Inconsistent reporting of certain variables in specific countries makes detailed analysis even more challenging, particularly because a sound evaluation of a bilateral agreement such as the EU-Korea FTA requires information on global trade relations at a very detailed level. Furthermore, frequent changes in the definition of variables and differing methodologies of various statistical databases complicate empirical assessment. Details concerning the issues identified during the evaluation are presented in Annex XII. We therefore recommend improving collection and presentation of relevant data, including by addressing the above-listed issues, to facilitate in-depth analysis of causal effects of EU trade agreements in the future.

11.2.6. Longer term effects of the EU-Korea FTA

The present study covers only a limited period of time after the start of the provisional application of the agreement in July 2011. For many products, the agreement specifies phase-in schedules for tariff reductions. Horizontal provisions may take time to fully develop their effects. The same is true for the spread of information, e.g., related to procurement markets. Finally, some variables such as investment stocks accumulate only gradually over time. It is therefore possible that the present analysis underestimates the effects of the FTA, as stressed at several points in this report. We therefore recommend a follow-up evaluation after a period of several years when the full effects of the FTA are observable. It would then also be possible to compare the longer term effects of the EU-Korea FTA with the effects of other 'new generation' FTAs concluded by the EU (such as CETA) or with the effects of FTAs concluded by Korea with third countries (such as the agreement with the US, KORUS).

Annex I: Overview of the EU-Korea FTA

Table 84: Summary of FTA chapters and novelty aspects

Chapter	Summary	Novelty aspects
1. Objectives and General Definitions	▪ Objectives of the agreement and definitions of the parties	-
2. National Treatment and Market Access for Goods	▪ Customs duties on most agricultural/industrial goods removed by the 5th year of the tariff elimination schedule ▪ Some highly sensitive agricultural/fishery products have longer transition periods for the elimination of duties ▪ Establishes Committee on Trade in Goods	-
3. Trade Remedies	▪ Introduces a bilateral safeguard clause that allows either party to temporarily reintroduce WTO tariffs in the situation that an increase in imports would imply serious injury ▪ Establishes a working group on trade remedies	-
4. Technical Barriers to Trade (TBT)	▪ Parties are to cooperate on standards and regulatory issues, establishing dialogues between regulators when needed ▪ Establishes coordination mechanism on TBT matters	FTA obligations for both parties go beyond WTO TBT Agreement
5. Sanitary and Phytosanitary (SPS) Measures	▪ Facilitates trade in animals/animal products and plants/plant products while maintaining a high level of human, animal and plant health ▪ Introduces measures on cooperation regarding animal welfare ▪ Introduces provisions related to early information exchange ▪ Establishes that the general import requirements of a Party shall apply to the entire territory of the other Party ▪ Establishes closer cooperation on the determination of disease-free areas for animal diseases and plant pests ▪ Establishes Committee on SPS Measures	FTA obligations for both parties go beyond WTO SPS Agreement
6. Customs and Trade Facilitation	▪ Enhances cooperation in customs and customs-related matters via inter alia harmonising documentation/data requirements and improving security of shipments ▪ Establishes trade facilitation provisions regarding appeal procedures and rules for publication of customs legislation ▪ Establishes a Customs Committee	FTA obligations for both parties go beyond WTO obligations on customs/trade facilitation (particularly on enforceability)
7. Trade in Services, Establishment and E-Commerce	▪ Constitutes the most ambitious services FTA concluded thus far by the EU, with a broad range of services included ▪ Includes provisions on the liberalisation of investment	Provisions go beyond other FTAs in terms of sector coverage and the extent of

Chapter	Summary	Novelty aspects
	▪ Establishes Committee on Trade in Services, Establishment and Electronic Commerce	market access commitments
8. Payments and Capital Movements	▪ Includes provisions on free capital movement such that the FTA functions smoothly	-
9. Government Procurement	▪ Expands procurement opportunities for EU suppliers to Korean public works concessions and BOT contracts	BOT contracts were not covered by the WTO Government Procurement Agreement
10. Intellectual Property	▪ Detailed protections offered for, inter alia, copyrights, patents, trademarks, designs, and geographical indications from both Parties ▪ Details enforcement procedures to be implied in case of infringement of IPR	Designs have only recently become an important IP right and were not covered by the WTO's TRIPS
11. Competition	▪ Commits parties to maintaining effective competition laws and strong competition authorities ▪ Parties must remedy or remove trade distortions resulting from subsidies; Parties must report the amount, type, and sectoral distribution of all subsidies on an annual basis	First EU FTA to include the provisions on subsidies as included in section B of this chapter
12. Transparency	▪ Establishes provisions to set up an efficient and predictable regulatory environment, e.g. commitments allowing interested individuals to comment on proposed new regulatory measures	-
13. Trade and Sustainable Development	▪ Commitment to implement ILO conventions, multilateral environmental agreements to which both sides are party ▪ Creates civil society domestic advisory groups on both sides ▪ Establishes Committee on Trade and Sustainable Development	Breaks ground in linking trade and sustainable development (specifically, labour and environmental standards)
14. Dispute Settlement	▪ Establishes dispute mechanism similar to that of the WTO involving consultation, arbitration	-
15. Institutional, General and Final Provisions	▪ Establishes a Trade Committee, specialised committees, and working groups	-
Annex: Consumer Electronics	▪ Emphasises utilising international standards to minimise duplicative requirements ▪ Eliminates third-party certification for a number of products following a three year transition period, thereby reducing cost and complexity for EU producers ▪ Korea maintains the ability to enforce third-party certification for a list of 53 products if it can prove the absence of such certification poses a risk to human health and safety	First FTA to include specific sectoral annexes on non-tariff measures
Annex: Motor Vehicles	▪ Requires Korea to recognise international standards as equivalent to Korean domestic core safety standards	

Chapter	Summary	Novelty aspects
	▪ Stipulates that the Parties shall not introduce any new regulatory measures that nullify or impair market access benefits accruing to the other Party for the sector	
Annex: Pharmaceutical Products and Medical Devices	▪ Introduces rules regarding transparency regarding decisions on prices at which drugs are reimbursed ▪ Enacts possibility to have pricing decisions reviewed by a court ▪ Facilitates regulatory cooperation via a working group	
Annex: Chemicals	▪ Emphasises transparency with respect to laws/regulations on chemicals ▪ Introduces the "Good Laboratory Practice and Test Guidelines" in order to facilitate a harmonised approach to chemical assessment/management ▪ Establishes working group on chemicals	
Protocol: Rules of Origin	▪ Defines "originating products", territorial requirements, etc.	-
Protocol: Mutual Administrative Assistance in Customs Matters	▪ Establishes legal framework for mutual assistance between the EU and Korean authorities on investigations regarding customs irregularities/fraud	-
Protocol: Cultural Cooperation	▪ Establishes framework for policy dialogue on culture and audio-visual issues ▪ Creates committee on cultural cooperation	-

Sources: Own compilation, based on the EU-Korea FTA

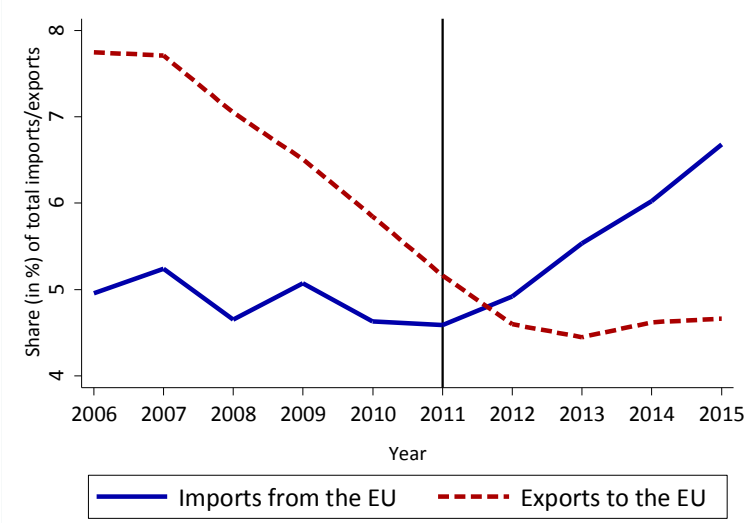
Annex II: Additional data and information regarding the economic analysis

This Annex is structured in three sections:

1. Complementary data on the evolution of trade in goods between the EU and Korea
2. Evolution of trade in services between the EU and Korea
3. Econometric analysis – technical annex

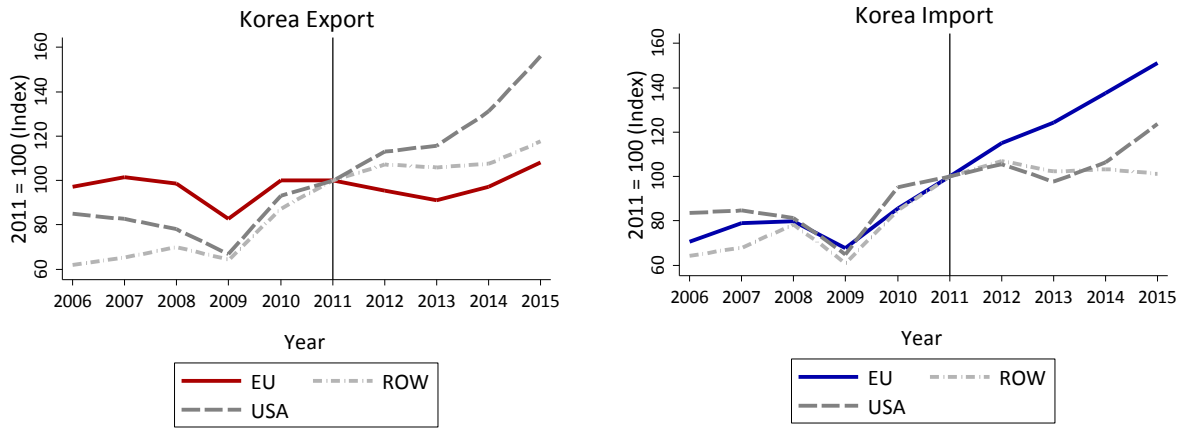
1. Complementary data on the evolution of trade in goods between the EU and Korea

Figure 156: Share of Korean exports to and imports from the EU (% of total)



Source: Own compilation based on COMEXT (2017).

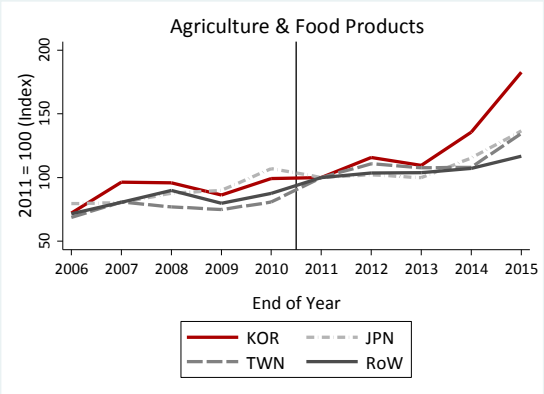
Figure 157: Diff-in-diff approach: Korean perspective, trade in goods

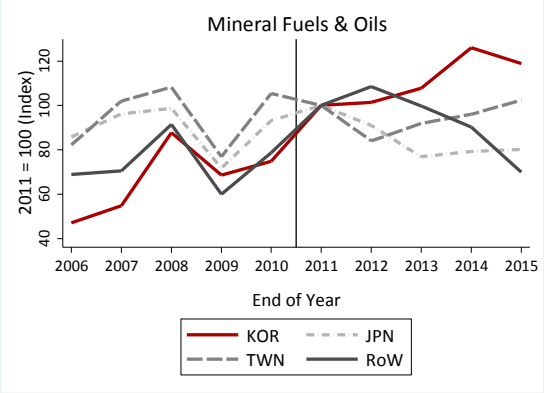


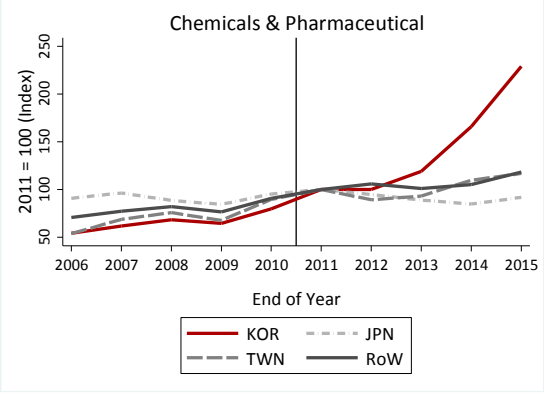
Source: Own compilation, based on COMEXT (2017).

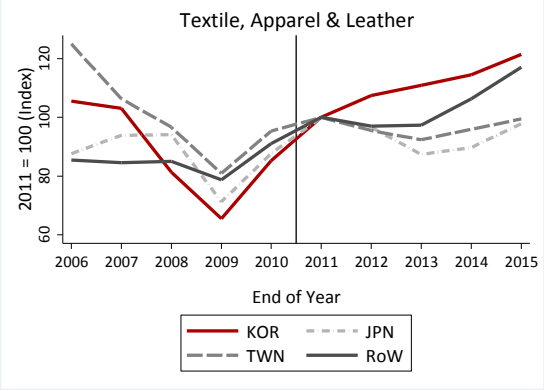
Figure 158: Sectoral EU trade in goods in comparison to selected countries

EU Imports per Sector

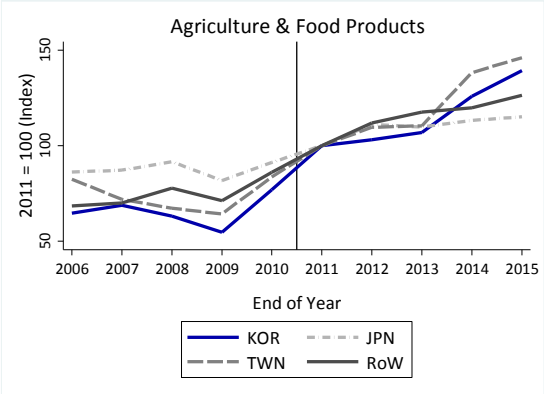


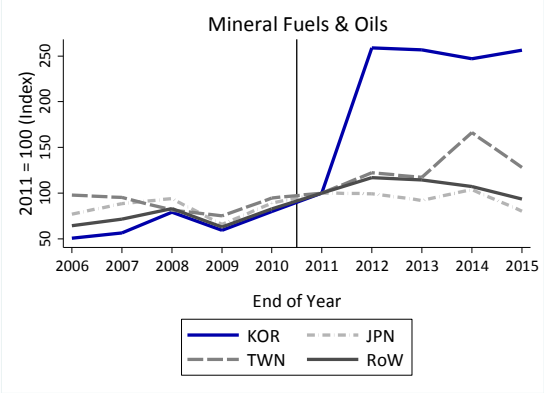


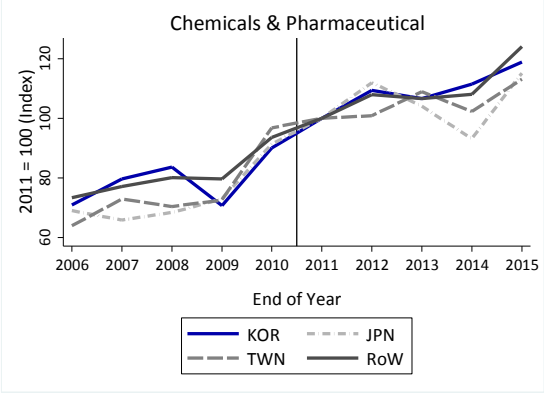


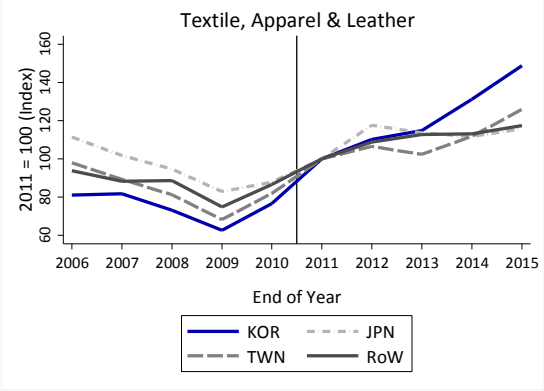


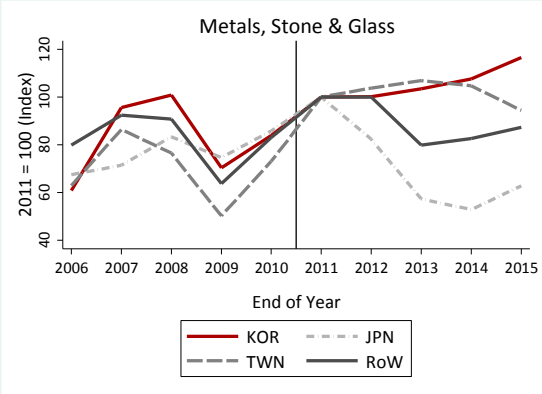
EU Exports per Sector










Metals, Stone & Glass
2011 = 100 (Index)
40
60
80
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2006
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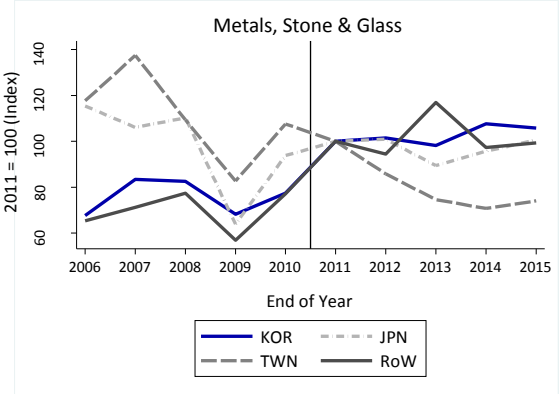
2014
2015
End of Year
KOR
JPN
TWN
RoW


Metals, Stone & Glass
2011 = 100 (Index)
60
80
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End of Year
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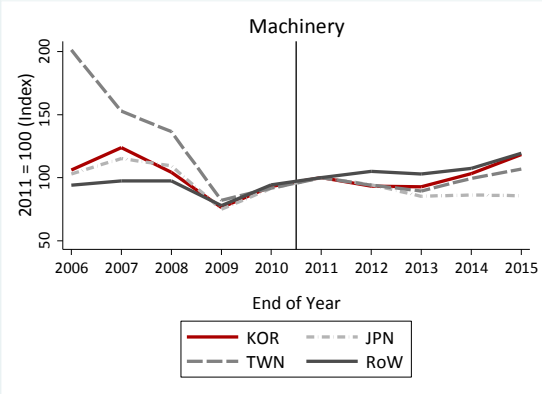
JPN
TWN
RoW


Machinery
2011 = 100 (Index)
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End of Year
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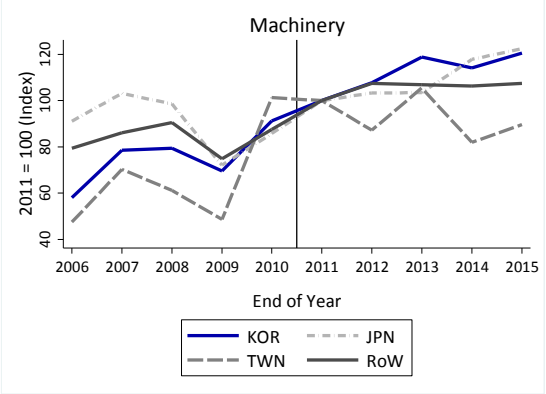
TWN
RoW


Machinery
2011 = 100 (Index)
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120
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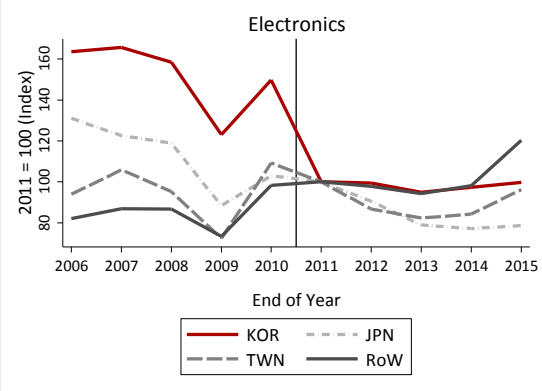
2015
End of Year
KOR
JPN
TWN
RoW


Electronics
2011 = 100 (Index)
80
100
120
140
160
2006
2007
2008
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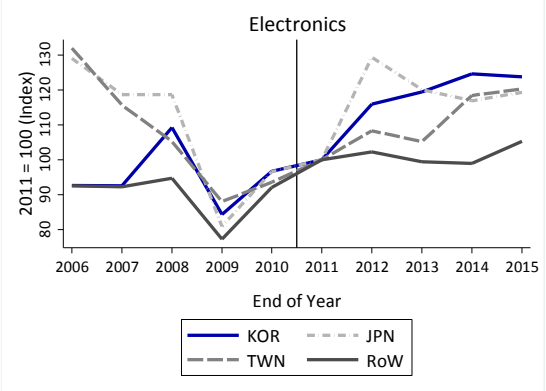
2014
2015
End of Year
KOR
JPN
TWN
RoW


Electronics
2011 = 100 (Index)
80
90
100
110
120
130
2006
2007
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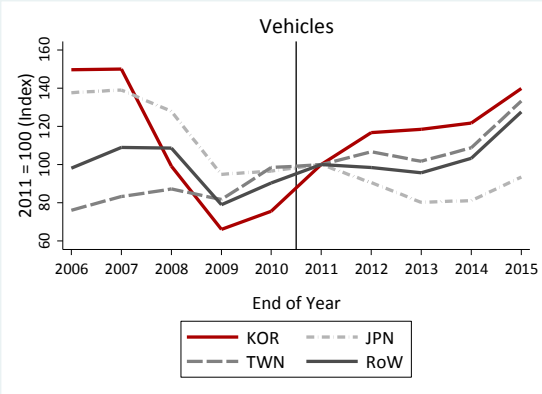
2011
2012
2013
2014
2015
End of Year
KOR
JPN
TWN
RoW


Vehicles
2011 = 100 (Index)
60
80
100
120
140
160
2006
2007
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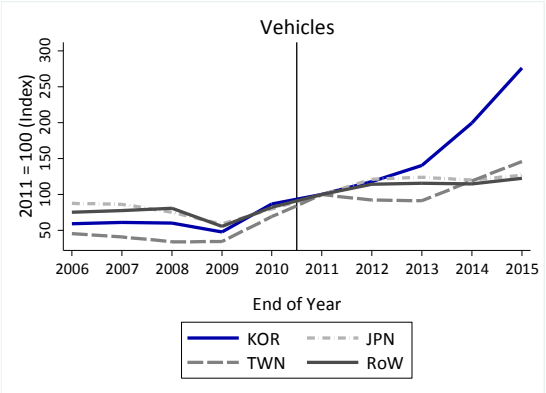
2014
2015
End of Year
KOR
JPN
TWN
RoW


Vehicles
2011 = 100 (Index)
50
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150
200
250
300
2006
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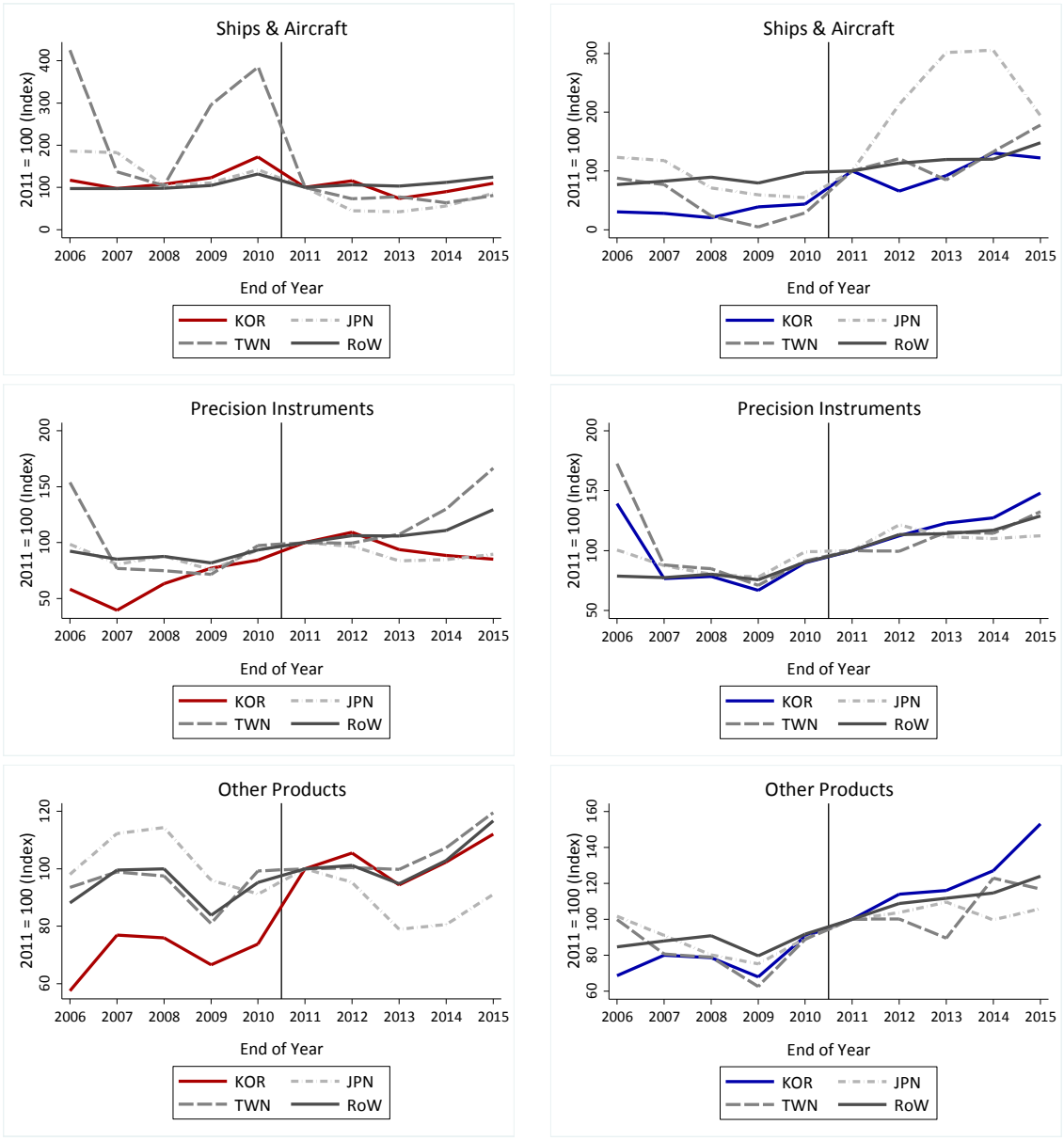
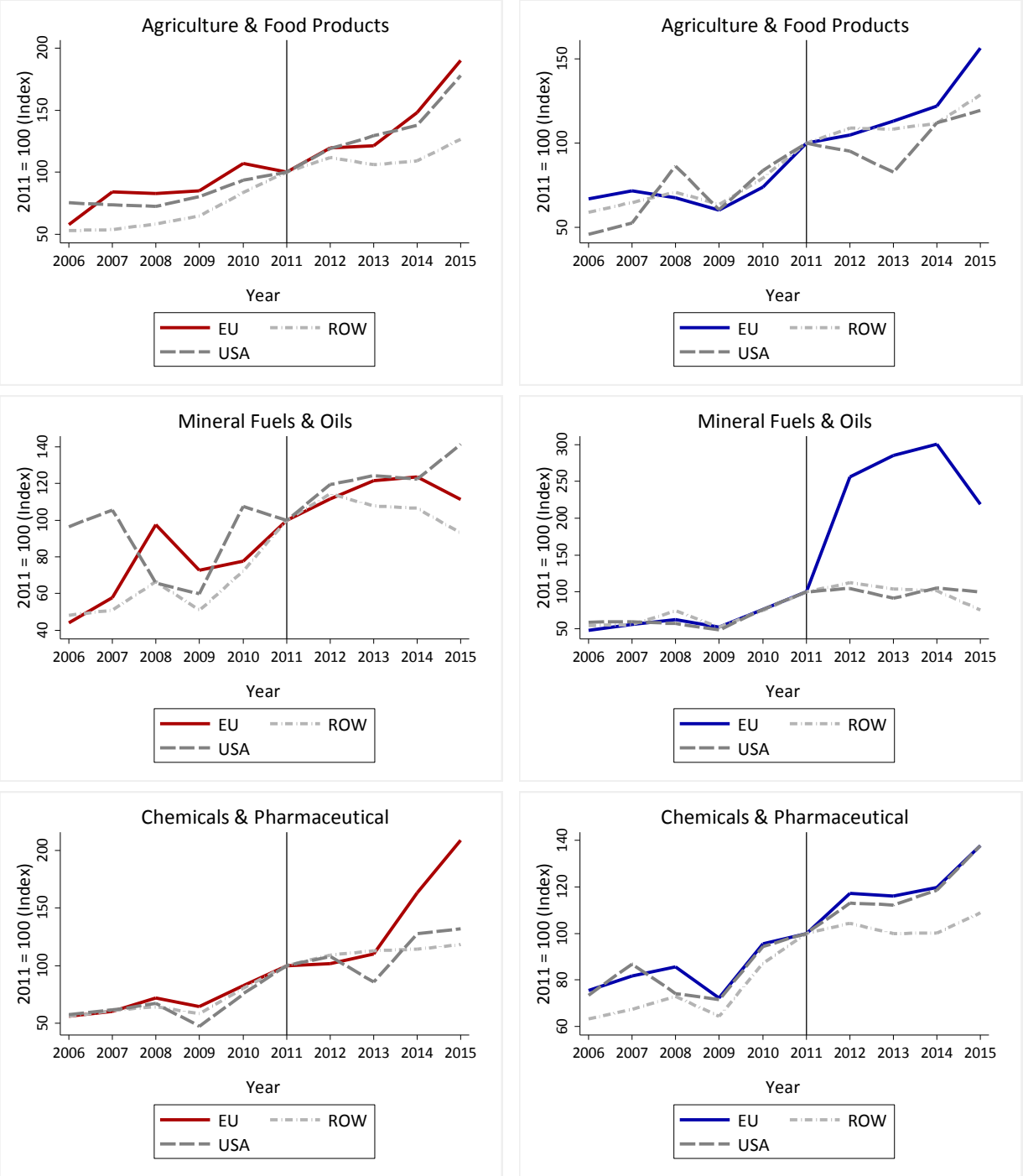
2015
End of Year
KOR
JPN
TWN
RoW

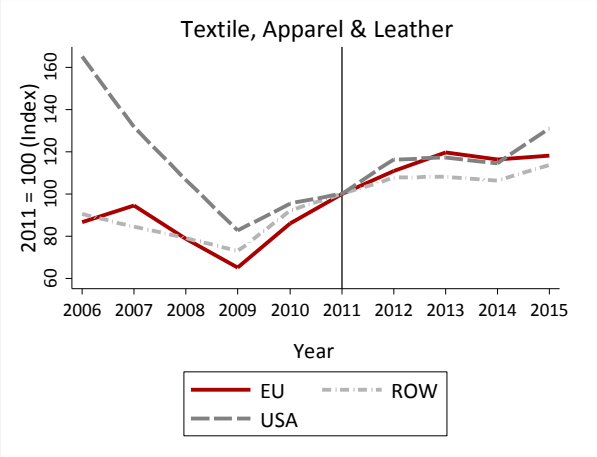


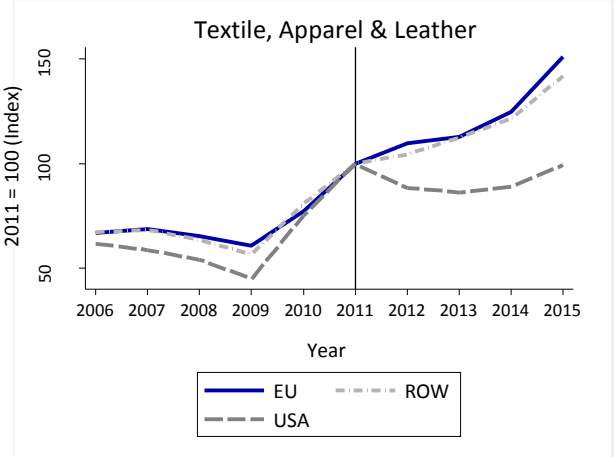
Source: Own compilation, based on COMEXT (2017).

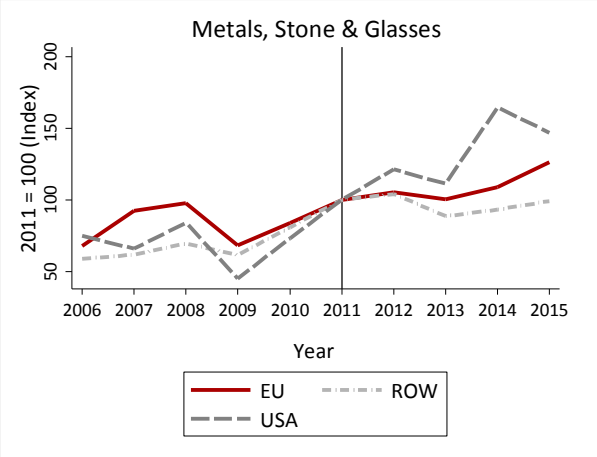
Figure 159: Sectoral Korean trade in goods in comparison to selected countries

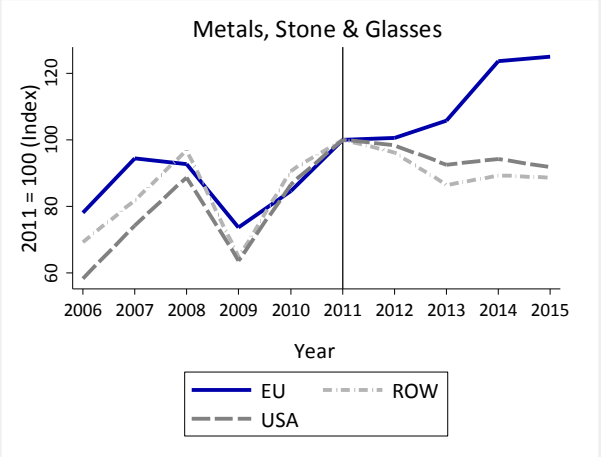
Korean Exports per Sector **Korean Imports per Sector**

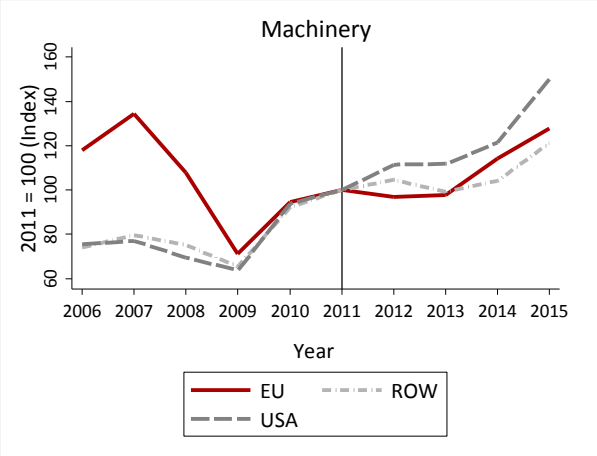


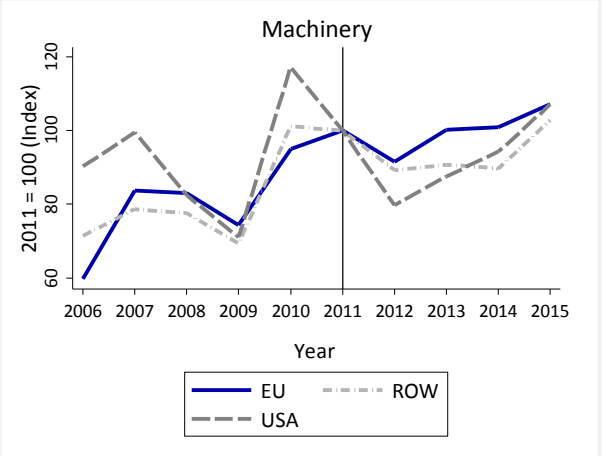

Textile, Apparel & Leather
2011 = 100 (Index)
60
80
100
120
140
160
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

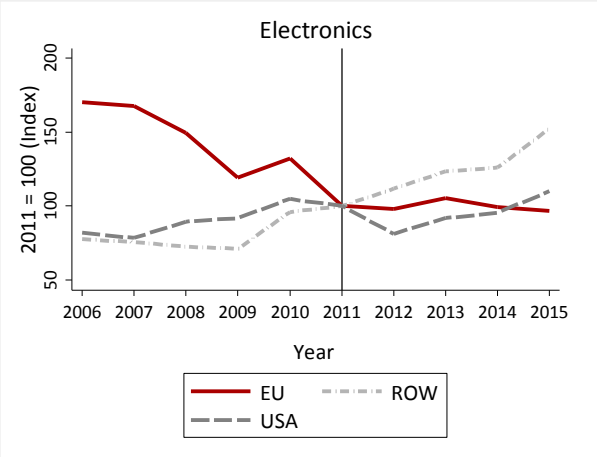

Textile, Apparel & Leather
2011 = 100 (Index)
50
100
150
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

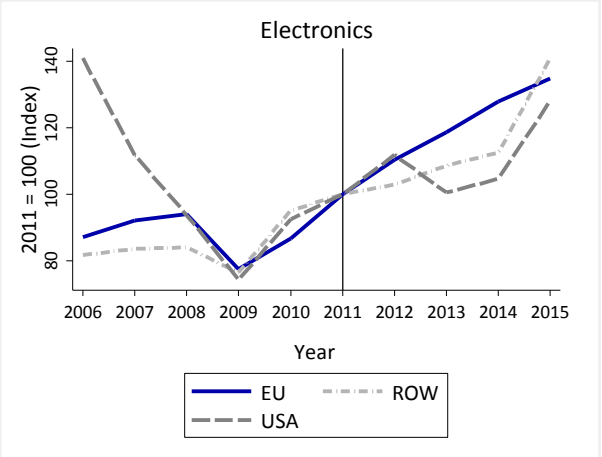

Metals, Stone & Glasses
2011 = 100 (Index)
50
100
150
200
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

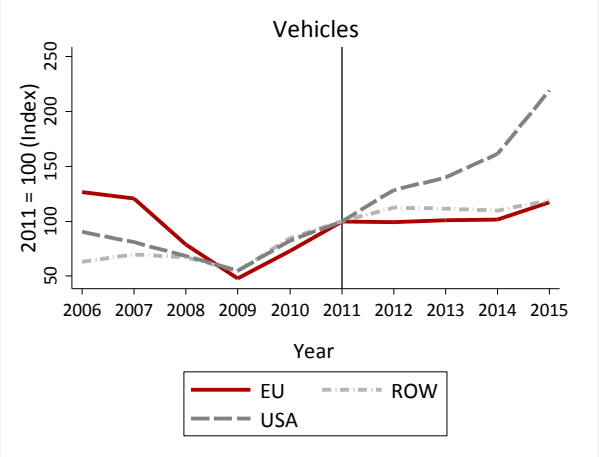

Metals, Stone & Glasses
2011 = 100 (Index)
60
80
100
120
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

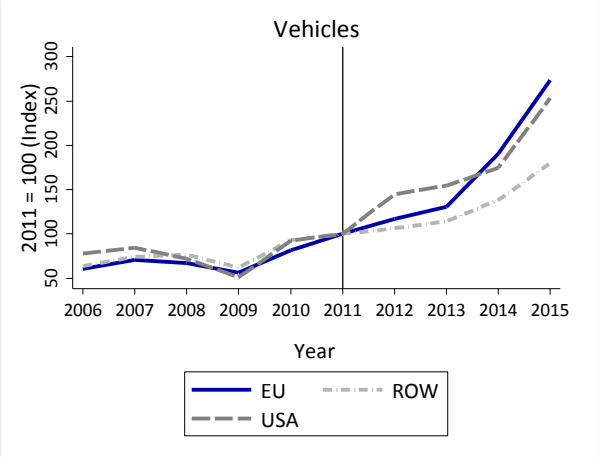

Machinery
2011 = 100 (Index)
60
80
100
120
140
160
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

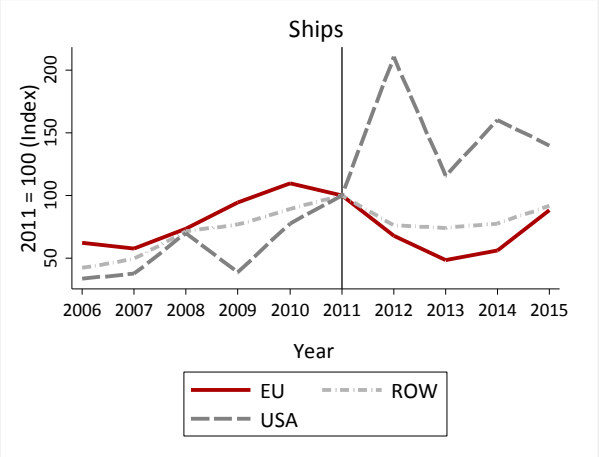

Machinery
2011 = 100 (Index)
60
80
100
120
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

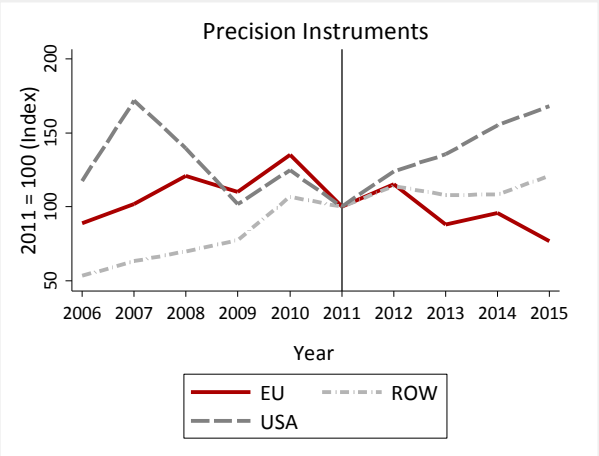

Electronics
2011 = 100 (Index)
50
100
150
200
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

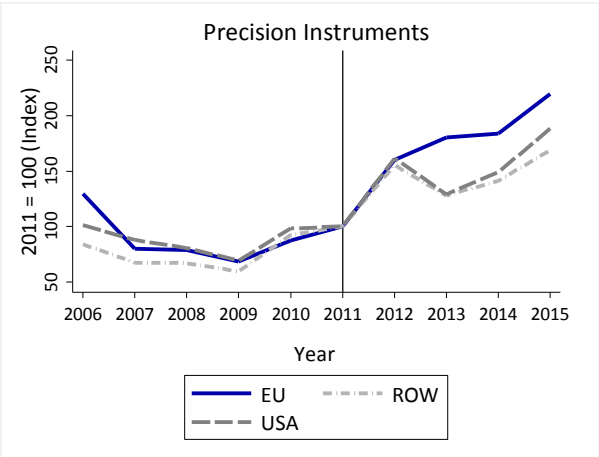

Electronics
2011 = 100 (Index)
80
100
120
140
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
Year
EU
ROW
USA

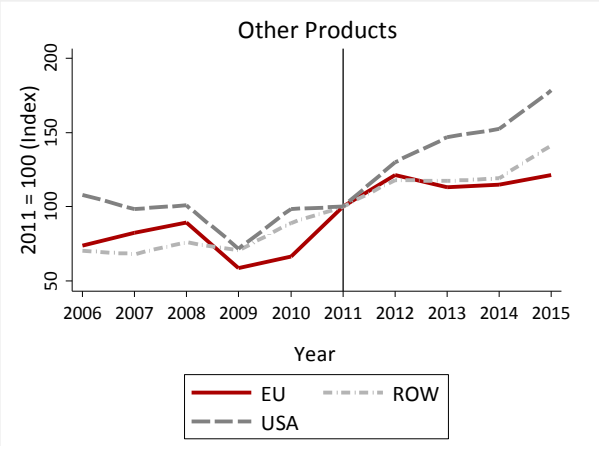


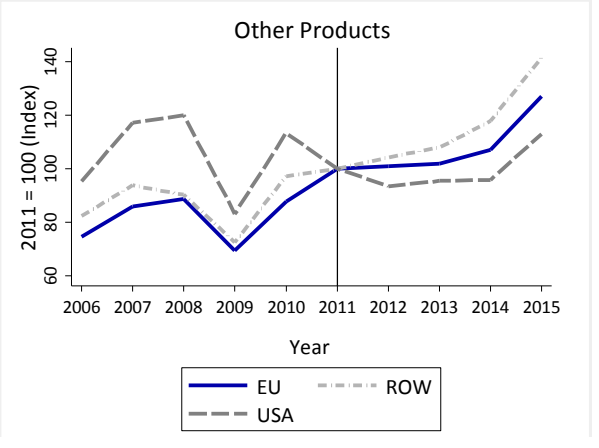












Source: Own compilation, based on COMEXT (2017).

Table 85: Bottom-50 EU export goods lagging behind

HS8 product code	Product description	Export volume 2011 (EUR million)	Export Volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (%)
85177090	PARTS OF TELEPHONE SETS, TELEPHONES FOR CELLULAR NETWORKS OR FOR OTHER WIRELESS NETWORKS AND OF OTHER APPARATUS FOR THE TRANSMISSION OR RECEPTION OF VOICE, IMAGES OR OTHER DATA, N.E.S. (EXCL. AERIALS AND AERIAL REFLECTORS OF ALL KINDS AND PARTS SUITABLE FOR USE WITH AERIALS OR AERIAL REFLECTORS)	127.3	20.6	-106.7	-83.8
85149000	PARTS OF ELECTRIC INDUSTRIAL OR LABORATORY FURNACES AND OVENS, INCL. INDUCTION OR DIELECTRIC HEATING EQUIPMENT, N.E.S.	112.1	24.8	-87.3	-77.9
2032990	FROZEN MEAT OF NON-DOMESTIC SWINE (EXCL. CARCASES AND HALF-CARCASES AND HAMS, SHOULDERS AND CUTS THEREOF, WITH BONE IN)	68.1	25.4	-42.7	-62.7
4021019	MILK AND CREAM IN SOLID FORMS, OF A FAT CONTENT BY WEIGHT OF <= 1,5%, UNSWEETENED, IN IMMEDIATE PACKINGS OF > 2,5 KG	55.7	16.9	-38.7	-69.6
85414090	PHOTOSENSITIVE SEMICONDUCTOR DEVICES, INCL. PHOTOVOLTAIC CELLS	48.6	10.7	-37.9	-78.0
85141080	INDUSTRIAL AND LABORATORY FURNACES AND OVENS, RESISTANCE HEATED (OTHER THAN FOR THE MANUFACTURE OF SEMICONDUCTOR DEVICES ON SEMICONDUCTOR WAFERS)	47.6	11.5	-36.1	-75.8
85171200	TELEPHONES FOR CELLULAR NETWORKS "MOBILE TELEPHONES" OR FOR OTHER WIRELESS NETWORKS	37.0	5.8	-31.2	-84.4
85423110	ELECTRONIC INTEGRATED CIRCUITS AS PROCESSORS AND CONTROLLERS, WHETHER OR NOT COMBINED WITH MEMORIES, CONVERTERS, LOGIC CIRCUITS, AMPLIFIERS, CLOCK AND TIMING CIRCUITS, OR OTHER CIRCUITS IN THE FORM OF MULTICHIP INTEGRATED CIRCUITS CONSISTING OF TWO OR MORE INTERCONNECTED MONOLITHIC INTEGRATED CIRCUITS AS SPECIFIED IN NOTE 8 (B) (3) TO CHAPTER 85	33.9	6.5	-27.4	-80.9
87085035	DRIVE-AXLES WITH DIFFERENTIAL, WHETHER OR NOT PROVIDED WITH	30.0	7.1	-22.9	-76.3

HS8 product code	Product description	Export volume 2011 (EUR million)	Export Volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (%)
	OTHER TRANSMISSION COMPONENTS, AND NON-DRIVING AXLES, FOR TRACTORS, MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS, MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, MOTOR VEHICLES FOR THE TRANSPORT OF GOODS AND SPECIAL PURPOSE MOTOR VEHICLES (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING 8708.50.20)				
87089910	PARTS AND ACCESSORIES FOR THE INDUSTRIAL ASSEMBLY OF: PEDESTRIAN-CONTROLLED TRACTORS; MOTOR CARS AND VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS; VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION IGNITION INTERNAL COMBUSTION PISTON ENGINES =< 2500 CC OR WITH SPARK-IGNITION INTERNAL PISTON ENGINES =< 2800 CC; SPECIAL PURPOSE MOTOR VEHICLES OF HEADING 8705 N.E.S	27.6	6.1	-21.6	-78.1
22083071	SCOTCH WHISKY, IN CONTAINERS HOLDING <= 2 L (OTHER THAN SINGLE MALT, BLENDED MALT, SINGLE GRAIN AND BLENDED GRAIN WHISKY)	147.5	126.5	-21.0	-14.3
87083099	BRAKES AND SERVO-BRAKES AND THEIR PARTS, FOR TRACTORS, MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS, MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, MOTOR VEHICLES FOR THE TRANSPORT OF GOODS AND SPECIAL PURPOSE MOTOR VEHICLES, N.E.S. (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING 8708.30.10 AND FOR DISC BRAKES)	38.1	17.4	-20.7	-54.3
85402080	IMAGE CONVERTERS AND INTENSIFIERS AND OTHER PHOTO CATHODE TUBES (EXCL. TELEVISION CAMERA TUBES AND CATHODE RAY TELEVISION PICTURE TUBES, INCL. VIDEO MONITOR CATHODE RAY TUBES)	21.1	2.0	-19.1	-90.6

HS8 product code	Product description	Export volume 2011 (EUR million)	Export Volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (%)
85299092	PARTS SUITABLE FOR USE SOLELY OR PRINCIPALLY WITH TELEVISION CAMERAS, RECEPTION APPARATUS FOR RADIO-BROADCASTING OR TELEVISION, AND MONITORS AND PROJECTORS, N.E.S. (EXCL. AERIALS, CABINETS AND CASINGS, ELECTRONIC ASSEMBLIES AND PARTS FOR MONITORS AND PROJECTORS OF A KIND SOLELY OR PRINCIPALLY USED IN AN AUTOMATIC DATA-PROCESSING MACHINE)	40.6	24.0	-16.6	-40.9
21011100	EXTRACTS, ESSENCES AND CONCENTRATES, OF COFFEE	22.8	6.5	-16.3	-71.6
85359000	ELECTRICAL APPARATUS FOR SWITCHING OR PROTECTING ELECTRICAL CIRCUITS, OR FOR MAKING CONNECTIONS TO OR IN ELECTRICAL CIRCUITS, FOR A VOLTAGE > 1.000 V (EXCL. FUSES, AUTOMATIC CIRCUIT BREAKERS, ISOLATING SWITCHES, MAKE-AND-BREAK SWITCHES, LIGHTNING ARRESTERS, VOLTAGE LIMITERS, SURGE SUPPRESSORS AND CONTROL DESKS, CABINETS, PANELS ETC. OF HEADING 8537)	65.3	50.7	-14.6	-22.4
85269120	RADIO NAVIGATIONAL RECEIVERS (EXCL. RADAR APPARATUS)	19.8	5.5	-14.3	-72.3
85049099	PARTS OF STATIC CONVERTERS, N.E.S. (EXCL. ELECTRONIC ASSEMBLIES OF A KIND USED WITH TELECOMMUNICATION APPARATUS, AUTOMATIC DATA-PROCESSING MACHINES AND UNITS THEREOF)	30.2	16.0	-14.2	-47.0
85415000	SEMICONDUCTOR DEVICES, N.E.S.	14.4	3.3	-11.1	-77.1
85016400	AC GENERATORS "ALTERNATORS", OF AN OUTPUT > 750 KVA	32.4	21.4	-11.0	-33.9
87087099	ROAD WHEELS AND PARTS AND ACCESSORIES THEREOF, FOR TRACTORS, MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS, MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, MOTOR VEHICLES FOR THE TRANSPORT OF GOODS AND SPECIAL PURPOSE MOTOR VEHICLES, N.E.S. (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING	14.6	3.7	-10.9	-74.5

HS8 product code	Product description	Export volume 2011 (EUR million)	Export Volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (%)
	8708.70.10, THOSE OF ALUMINIUM AND WHEEL CENTRES IN STAR FORM, CAST IN ONE PIECE, OF IRON OR STEEL)				
85049018	PARTS OF TRANSFORMERS AND INDUCTORS, N.E.S. (EXCL. ELECTRONIC ASSEMBLIES OF INDUCTORS OF A KIND USED WITH TELECOMMUNICATION APPARATUS AND FOR POWER SUPPLIES FOR AUTOMATIC DATA-PROCESSING MACHINES AND UNITS THEREOF, AND FERRITE CORES)	23.8	14.0	-9.9	-41.5
87169090	PARTS OF TRAILERS, SEMI-TRAILERS AND OTHER VEHICLES NOT MECHANICALLY PROPELLED, N.E.S. (EXCL. CHASSIS, BODIES AND AXLES)	13.8	4.3	-9.5	-68.6
85446090	ELECTRIC CONDUCTORS FOR A VOLTAGE > 1.000 V, INSULATED, NOT WITH COPPER CONDUCTORS, N.E.S.	12.9	3.5	-9.4	-72.8
85432000	SIGNAL GENERATORS, ELECTRICAL	17.3	8.0	-9.2	-53.5
85433000	MACHINES AND APPARATUS FOR ELECTROPLATING, ELECTROLYSIS OR ELECTROPHORESIS	17.3	8.5	-8.8	-50.9
18062030	CHOCOLATE AND OTHER FOOD PREPARATIONS CONTAINING COCOA, IN BLOCKS, SLABS OR BARS WEIGHING > 2 KG OR IN LIQUID, PASTE, POWDER, GRANULAR OR OTHER BULK FORM, IN CONTAINERS OR IMMEDIATE PACKINGS OF A CONTENT > 2 KG, CONTAINING A COMBINED WEIGHT OF >= 25% BUT < 31% OF COCOA BUTTER AND MILKFAT (EXCL. COCOA POWDER)	10.3	1.6	-8.7	-84.5
87083010	BRAKES AND SERVO-BRAKES AND THEIR PARTS, FOR THE INDUSTRIAL ASSEMBLY OF: PEDESTRIAN-CONTROLLED TRACTORS, MOTOR CARS AND VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" <= 2500 CMÂ³ OR WITH SPARK-IGNITION INTERNAL PISTON ENGINE <= 2800 CMÂ³, SPECIAL PURPOSE MOTOR VEHICLES OF HEADING 8705, N.E.S.	9.7	1.6	-8.2	-84.0
87089435	STEERING WHEELS, COLUMNS AND	20.4	12.3	-8.1	-39.5

HS8 product code	Product description	Export volume 2011 (EUR million)	Export Volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (%)
	BOXES, FOR TRACTORS, MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS, MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, MOTOR VEHICLES FOR THE TRANSPORT OF GOODS AND SPECIAL PURPOSE MOTOR VEHICLES (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING 8708.94.20)				
87089310	CLUTCHES AND PARTS THEREOF, FOR THE INDUSTRIAL ASSEMBLY OF: PEDESTRIAN-CONTROLLED TRACTORS, MOTOR CARS AND VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" <= 2500 CMÂ³ OR WITH SPARK-IGNITION INTERNAL PISTON ENGINE <= 2800 CMÂ³, SPECIAL PURPOSE MOTOR VEHICLES OF HEADING 8705, N.E.S.	9.1	1.1	-8.0	-87.5
87088035	SUSPENSION SHOCK-ABSORBERS FOR TRACTORS, MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS, MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, MOTOR VEHICLES FOR THE TRANSPORT OF GOODS AND SPECIAL PURPOSE MOTOR VEHICLES (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING 8708.80.20)	20.2	12.4	-7.8	-38.5
85413000	THYRISTORS, DIACS AND TRIACS (EXCL. PHOTOSENSITIVE SEMICONDUCTOR DEVICES)	12.6	4.9	-7.8	-61.3
85446010	ELECTRIC CONDUCTORS FOR A VOLTAGE > 1.000 V, INSULATED, WITH COPPER CONDUCTORS, N.E.S.	11.8	4.3	-7.5	-63.6
6029050	LIVE OUTDOOR PLANTS, INCL. THEIR ROOTS (EXCL. BULBS, TUBERS, TUBEROUS ROOTS, CORMS, CROWNS AND RHIZOMES, INCL. CHICORY PLANTS AND ROOTS, UNROOTED CUTTINGS, SLIPS, RHODODENDRONS, AZALEAS, ROSES, MUSHROOM	7.7	0.4	-7.3	-95.4

HS8 product code	Product description	Export volume 2011 (EUR million)	Export Volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (%)
	SPAWN, PINEAPPLE PLANTS, VEGETABLE AND STRAWBERRY PLANTS, TREES, SHRUBS AND BUSHES)				
87082190	SAFETY SEAT BELTS FOR MOTOR VEHICLES (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING 8708.21.10)	10.4	3.1	-7.2	-69.7
85011099	DC MOTORS OF AN OUTPUT <= 37,5 W	27.9	20.7	-7.2	-25.7
22071000	UNDENATURED ETHYL ALCOHOL, OF ACTUAL ALCOHOLIC STRENGTH OF >= 80%	7.4	0.6	-6.8	-91.8
85429000	PARTS OF ELECTRONIC INTEGRATED CIRCUITS, N.E.S.	7.5	0.7	-6.7	-90.1
85042300	LIQUID DIELECTRIC TRANSFORMERS, HAVING A POWER HANDLING CAPACITY > 10.000 KVA	11.9	5.7	-6.2	-52.2
4049021	PRODUCTS CONSISTING OF NATURAL MILK CONSTITUENTS, NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER, OF A FAT CONTENT, BY WEIGHT, OF <= 1,5%, N.E.S.	50.9	44.8	-6.0	-11.9
24011060	SUN-CURED ORIENTAL TYPE TOBACCO, UNSTEMMED OR UNSTRIPPED	9.9	4.0	-5.9	-60.0
85364110	RELAYS FOR A VOLTAGE <= 60 V, FOR A CURRENT <= 2 A	6.6	0.9	-5.7	-86.3
85015350	AC TRACTION MOTORS, MULTI-PHASE, OF AN OUTPUT > 75 KW	8.1	2.5	-5.6	-69.7
85451100	ELECTRODES OF GRAPHITE OR OTHER CARBON, FOR ELECTRIC FURNACES	16.8	11.5	-5.3	-31.6
85372099	BOARDS, CABINETS AND SIMILAR COMBINATIONS OF APPARATUS FOR ELECTRIC CONTROL OR THE DISTRIBUTION OF ELECTRICITY, FOR A VOLTAGE > 72,5 KV	7.9	2.8	-5.0	-63.9
22083079	SCOTCH WHISKY, IN CONTAINERS HOLDING > 2 L (OTHER THAN SINGLE MALT, BLENDED MALT, SINGLE GRAIN AND BLENDED GRAIN WHISKY)	8.3	3.5	-4.8	-57.7
85176100	BASE STATIONS OF APPARATUS FOR THE TRANSMISSION OR RECEPTION OF VOICE, IMAGES OR OTHER DATA	6.4	2.0	-4.4	-68.1
85369001	PREFABRICATED ELEMENTS FOR ELECTRICAL CIRCUITS, FOR A VOLTAGE OF <= 1.000 V	5.8	1.6	-4.2	-71.6
85444210	ELECTRIC CONDUCTORS OF A KIND	4.9	0.7	-4.1	-84.7

HS8 product code	Product description	Export volume 2011 (EUR million)	Export Volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (%)
	USED FOR TELECOMMUNICATIONS, FOR A VOLTAGE <= 1.000 V, INSULATED, FITTED WITH CONNECTORS, N.E.S.				
85255000	TRANSMISSION APPARATUS FOR RADIO-BROADCASTING OR TELEVISION, NOT INCORPORATING RECEPTION APPARATUS	6.6	2.6	-4.0	-60.4

Source: Own compilation, based on COMEXT (2017).

Table 86: Bottom-50 EU import goods lagging behind

HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
85414090	PHOTOSENSITIVE SEMICONDUCTOR DEVICES, INCL. PHOTOVOLTAIC CELLS	608.0	95.6	-512.4	-84.3
85177090	PARTS OF TELEPHONE SETS, TELEPHONES FOR CELLULAR NETWORKS OR FOR OTHER WIRELESS NETWORKS AND OF OTHER APPARATUS FOR THE TRANSMISSION OR RECEPTION OF VOICE, IMAGES OR OTHER DATA, N.E.S. (EXCL. AERIALS AND AERIAL REFLECTORS OF ALL KINDS AND PARTS SUITABLE FOR USE WITH AERIALS OR AERIAL REFLECTORS)	487.3	108.0	-379.3	-77.8
85299092	PARTS SUITABLE FOR USE SOLELY OR PRINCIPALLY WITH TELEVISION CAMERAS, RECEPTION APPARATUS FOR RADIO-BROADCASTING OR TELEVISION, AND MONITORS AND PROJECTORS, N.E.S. (EXCL. AERIALS, CABINETS AND CASINGS, ELECTRONIC ASSEMBLIES AND PARTS FOR MONITORS AND PROJECTORS OF A KIND SOLELY OR PRINCIPALLY USED IN AN AUTOMATIC DATA-PROCESSING MACHINE)	1390.0	1106.2	-283.8	-20.4
85171200	TELEPHONES FOR CELLULAR NETWORKS "MOBILE TELEPHONES" OR FOR OTHER WIRELESS NETWORKS	1407.9	1145.9	-262.0	-18.6
85299065	ELECTRONIC ASSEMBLIES SUITABLE FOR USE SOLELY OR PRINCIPALLY WITH TRANSMISSION AND RECEPTION APPARATUS FOR RADIO-BROADCASTING OR TELEVISION, TELEVISION CAMERAS, DIGITAL	206.3	55.5	-150.8	-73.1

HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
	CAMERAS, VIDEO CAMERA RECORDERS, RADAR APPARATUS, RADIO NAVIGATIONAL AID APPARATUS OR RADIO REMOTE CONTROL APPARATUS, MONITORS AND PROJECTORS, N.E.S.				
85414010	LIGHT-EMITTING DIODES, INCL. LASER DIODES	149.9	63.9	-86.0	-57.4
87033319	MOTOR CARS AND OTHER MOTOR VEHICLES, PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, INCL. STATION WAGONS, WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" OF A CYLINDER CAPACITY > 2.500 CMÂ³, NEW (EXCL. MOTOR CARAVANS AND VEHICLES SPECIALLY DESIGNED FOR TRAVELLING ON SNOW AND OTHER SPECIAL PURPOSE VEHICLES OF SUBHEADING 8703.10)	98.9	16.6	-82.4	-83.3
85423231	ELECTRONIC INTEGRATED CIRCUITS AS DYNAMIC RANDOM-ACCESS MEMORIES "D-RAMS", WITH A STORAGE CAPACITY OF <= 512 MBIT (EXCL. IN THE FORM OF MULTICHIP INTEGRATED CIRCUITS)	84.9	10.7	-74.2	-87.4
87082910	PARTS AND ACCESSORIES FOR THE INDUSTRIAL ASSEMBLY OF BODIES OF: PEDESTRIAN-CONTROLLED TRACTORS, MOTOR CARS AND VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" <= 2500 CMÂ³ OR SPARK-IGNITION INTERNAL PISTON ENGINE <= 2800 CMÂ³; SPECIAL PURPOSE MOTOR VEHICLES OF NO 8705 (EXCL. BUMPERS AND SAFETY SEAT BELTS)	132.5	72.1	-60.4	-45.6
87032319	MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF 1 TO 9 PERSONS, INCL. STATION WAGONS AND RACING CARS, WITH SPARK-IGNITION INTERNAL COMBUSTION RECIPROCATING PISTON ENGINE, OF A CYLINDER CAPACITY > 1.500 CMÂ³ BUT <= 3.000 CMÂ³, NEW (EXCL. THOSE OF SUBHEADING 8703 10 AND MOTOR	574.1	529.1	-45.0	-7.8

HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
	CARAVANS)				
85423261	ELECTRONIC INTEGRATED CIRCUITS AS ELECTRICALLY ERASABLE, PROGRAMMABLE READ-ONLY MEMORIES "FLASH EÂ²PROMS", WITH A STORAGE CAPACITY OF <= 512 MBIT (EXCL. IN THE FORM OF MULTICHIP INTEGRATED CIRCUITS)	47.9	4.4	-43.5	-90.7
85023920	TURBOGENERATORS	36.5	0.0	-36.5	-99.9
85423269	ELECTRONIC INTEGRATED CIRCUITS AS ELECTRICALLY ERASABLE, PROGRAMMABLE READ-ONLY MEMORIES "FLASH EÂ²PROMS", WITH A STORAGE CAPACITY OF > 512 MBIT (EXCL. IN THE FORM OF MULTICHIP INTEGRATED CIRCUITS)	76.5	42.0	-34.5	-45.1
85287119	VIDEO TUNERS (EXCL. ELECTRONIC ASSEMBLIES FOR INCORPORATION INTO AUTOMATIC DATA-PROCESSING MACHINES AND APPARATUS WITH A MICROPROCESSOR-BASED DEVICE INCORPORATING A MODEM FOR GAINING ACCESS TO THE INTERNET AND HAVING A FUNCTION OF INTERACTIVE INFORMATION EXCHANGE CAPABLE OF RECEIVING TELEVISION SIGNALS "SET-TOP BOXES WITH COMMUNICATION FUNCTION")	32.0	3.5	-28.5	-89.0
85340090	PRINTED CIRCUITS CONSISTING OF CONDUCTOR ELEMENTS, CONTACTS AND OTHER PASSIVE ELEMENTS (EXCL. THOSE WITH PASSIVE AND ACTIVE ELEMENTS)	37.7	11.6	-26.1	-69.2
85081900	VACUUM CLEANERS, INCL. DRY CLEANERS AND WET VACUUM CLEANERS, WITH SELF-CONTAINED ELECTRIC MOTOR (EXCL. OF A POWER <= 1Â 500Â W AND HAVING A DUST BAG OR OTHER RECEPTACLE CAPACITY <= 20 L)	23.4	0.2	-23.2	-99.1
85415000	SEMICONDUCTOR DEVICES, N.E.S.	23.1	2.0	-21.1	-91.2
85219000	VIDEO RECORDING OR REPRODUCING APPARATUS, WHETHER OR NOT INCORPORATING A VIDEO TUNER (EXCL. MAGNETIC TAPE-TYPE AND VIDEO CAMERA RECORDERS)	33.4	15.0	-18.4	-55.0
87085020	DRIVE-AXLES WITH DIFFERENTIAL, WHETHER OR NOT PROVIDED WITH OTHER TRANSMISSION COMPONENTS,	70.7	52.6	-18.1	-25.6

HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
	AND NON-DRIVING AXLES, AND PARTS THEREOF, FOR THE INDUSTRIAL ASSEMBLY OF: PEDESTRIAN-CONTROLLED TRACTORS, MOTOR CARS AND VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" <= 2500 CMÂ³ OR WITH SPARK-IGNITION INTERNAL PISTON ENGINE <= 2800 CMÂ³, SPECIAL PURPOSE MOTOR VEHICLES OF HEADING 8705, N.E.S				
85119000	PARTS OF ELECTRICAL IGNITION OR STARTING EQUIPMENT, GENERATORS, ETC. OF HEADING 8511, N.E.S.	37.3	19.8	-17.5	-47.0
85393900	DISCHARGE LAMPS (EXCL. FLOURESCENT, HOT CATHODE LAMPS, MERCURY OR SODIUM VAPOUR LAMPS, METAL HALIDE LAMPS AND ULTRAVIOLET LAMPS)	18.9	1.9	-17.0	-89.9
85369010	CONNECTIONS AND CONTACT ELEMENTS, FOR WIRE AND CABLES, FOR A VOLTAGE OF <= 1.000 V (EXCL. PLUGS, SOCKETS AND PREFABRICATED ELEMENTS)	25.7	9.3	-16.5	-64.0
87088020	SUSPENSION SYSTEMS AND PARTS THEREOF, INCL. SHOCK-ABSORBERS, FOR THE INDUSTRIAL ASSEMBLY OF: MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" OF A CYLINDER CAPACITY <= 2.500 CMÂ³ OR WITH SPARK-IGNITION INTERNAL PISTON ENGINE OF A CYLINDER CAPACITY <= 2.800 CMÂ³ AND SPECIAL PURPOSE MOTOR VEHICLES OF HEADING 8705, N.E.S	28.2	13.1	-15.2	-53.7
85258019	TELEVISION CAMERAS (EXCL. THOSE WITH 3 OR MORE CAMERA TUBES AND VIDEO RECORDERS)	94.0	79.6	-14.4	-15.3
85444920	CONDUCTORS, ELECTRIC, FOR A VOLTAGE <= 80 V, INSULATED, NOT FITTED WITH CONNECTORS, OF A KIND USED FOR TELECOMMUNICATIONS,	21.3	7.5	-13.8	-64.9

HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
	N.E.S.				
85444999	ELECTRIC CONDUCTORS FOR A VOLTAGE 1.000 V, INSULATED, NOT FITTED WITH CONNECTORS, N.E.S. (EXCL. WINDING WIRE, COAXIAL CONDUCTORS, WIRING SETS FOR VEHICLES, AIRCRAFT OR SHIPS, AND WIRE AND CABLES WITH INDIVIDUAL CONDUCTOR WIRES OF A DIAMETER > 0,51 MM)	17.0	3.6	-13.4	-79.0
85472000	INSULATING FITTINGS FOR ELECTRICAL PURPOSES, OF PLASTICS	23.3	10.6	-12.8	-54.7
85044088	INVERTERS HAVING POWER HANDLING CAPACITY > 7,5 KVA (EXCL. OF A KIND USED WITH TELECOMMUNICATION APPARATUS, AUTOMATIC DATA-PROCESSING MACHINES AND UNITS THEREOF)	18.3	5.6	-12.7	-69.4
85081100	VACUUM CLEANERS, INCL. DRY CLEANERS AND WET VACUUM CLEANERS, WITH SELF-CONTAINED ELECTRIC MOTOR, POWER <= 1Â 500Â W AND HAVING A DUST BAG OR OTHER RECEPTACLE CAPACITY <= 20 L	30.6	18.0	-12.6	-41.2
85447000	OPTICAL FIBRE CABLES MADE UP OF INDIVIDUALLY SHEATHED FIBRES, WHETHER OR NOT CONTAINING ELECTRIC CONDUCTORS OR FITTED WITH CONNECTORS	38.5	26.2	-12.3	-31.9
3034212	FROZEN YELLOWFIN TUNAS "THUNNUS ALBACARES" FOR INDUSTRIAL MANUFACTURE OF PRODUCTS OF 1604, WHOLE, WEIGHING > 10 KG EACH	22.7	10.5	-12.2	-53.8
87084020	GEAR BOXES AND PARTS THEREOF, FOR THE INDUSTRIAL ASSEMBLY OF: PEDESTRIAN-CONTROLLED TRACTORS, MOTOR CARS AND VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" OF A CYLINDER CAPACITY <= 2500 CMÂ³ OR WITH SPARK-IGNITION INTERNAL PISTON ENGINE OF A CYLINDER CAPACITY <= 2800 CMÂ³, SPECIAL PURPOSE MOTOR VEHICLES OF	140.9	129.4	-11.5	-8.1

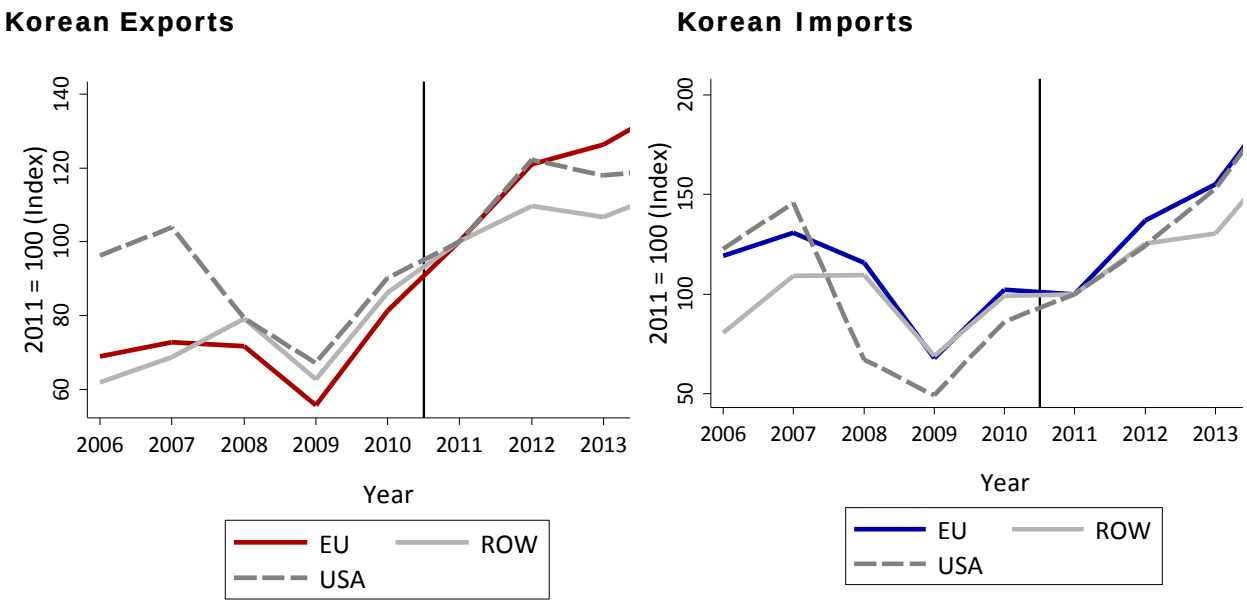
HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
	HEADING 8705, N.E.S				
87089420	STEERING WHEELS, STEERING COLUMNS AND STEERING BOXES, AND PARTS THEREOF, FOR THE INDUSTRIAL ASSEMBLY OF: MOTOR CARS AND VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, VEHICLES FOR THE TRANSPORT OF GOODS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" <= 2500 CMÂ³ OR WITH SPARK-IGNITION INTERNAL PISTON ENGINE <= 2800 CMÂ³, SPECIAL PURPOSE MOTOR VEHICLES OF HEADING 8705, N.E.S	93.6	82.3	-11.3	-12.1
87032410	MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, INCL. STATION WAGONS AND RACING CARS, WITH SPARK-IGNITION INTERNAL COMBUSTION RECIPROCATING PISTON ENGINE OF A CYLINDER CAPACITY > 3.000 CMÂ³, NEW (EXCL. VEHICLES FOR THE TRANSPORT OF PERSONS ON SNOW AND OTHER SPECIALLY DESIGNED VEHICLES OF SUBHEADING 8703.10)	15.0	7.3	-7.7	-51.2
85049011	FERRITE CORES FOR TRANSFORMERS AND INDUCTORS	9.2	1.6	-7.6	-82.9
85312040	INDICATOR PANELS WITH MATRIX LIQUID CRYSTAL DEVICES "LCD", ACTIVE (EXCL. THOSE OF A KIND USED FOR MOTOR VEHICLES, CYCLES OR TRAFFIC SIGNALLING)	13.4	5.8	-7.5	-56.5
85258030	DIGITAL CAMERAS	16.0	8.5	-7.4	-46.6
85044084	INVERTERS HAVING POWER HANDLING CAPACITY <= 7,5 KVA (EXCL. OF A KIND USED WITH TELECOMMUNICATION APPARATUS, AUTOMATIC DATA-PROCESSING MACHINES AND UNITS THEREOF)	18.9	11.7	-7.2	-38.2
85366930	PLUGS AND SOCKETS FOR A VOLTAGE OF <= 1.000 V, FOR PRINTED CIRCUITS	15.0	7.9	-7.1	-47.2
85021380	GENERATING SETS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" OF AN OUTPUT > 2.000 KVA	11.8	4.9	-6.9	-58.3

HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
85287220	RECEPTION APPARATUS FOR TELEVISION, COLOUR, INCORPORATING A VIDEO RECORDER OR REPRODUCER	10.0	3.6	-6.3	-63.5
87089591	SAFETY AIRBAGS WITH INFLATOR SYSTEM AND PARTS THEREOF, OF CLOSED-DIE FORGED STEEL, FOR TRACTORS, MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS, MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, MOTOR VEHICLES FOR THE TRANSPORT OF GOODS AND SPECIAL PURPOSE MOTOR VEHICLES, N.E.S. (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING 8708.95.10)	9.9	3.6	-6.3	-63.5
85182995	LOUDSPEAKERS, WITHOUT ENCLOSURE (EXCL. THOSE HAVING A FREQUENCY RANGE OF 300 HZ TO 3,4 KHZ, OF A DIAMETER <= 50 MM, OF A KIND USED FOR TELECOMMUNICATIONS)	13.8	7.8	-6.0	-43.3
85489090	ELECTRICAL PARTS OF MACHINERY OR APPARATUS, NOT SPECIFIED OR INCLUDED ELSEWHERE IN CHAPTER 85	11.2	5.3	-5.9	-52.7
85423990	ELECTRONIC INTEGRATED CIRCUITS (EXCL. IN THE FORM OF MULTICHIP INTEGRATED CIRCUITS AND SUCH AS PROCESSORS, CONTROLLERS, MEMORIES AND AMPLIFIERS)	870.5	865.0	-5.5	-0.6
85021340	GENERATING SETS WITH COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINE "DIESEL OR SEMI-DIESEL ENGINE" OF AN OUTPUT > 750 KVA BUT <= 2.000 KVA	8.4	3.2	-5.2	-61.7
85299097	PARTS SUITABLE FOR USE SOLELY OR PRINCIPALLY WITH TRANSMISSION APPARATUS NOT INCORPORATING RECEPTION APPARATUS FOR RADIO-BROADCASTING OR TELEVISION, VIDEO CAMERA RECORDERS, RADAR APPARATUS, RADIO NAVIGATIONAL AID APPARATUS AND REMOTE CONTROL APPARATUS, N.E.S. (EXCL. ASSEMBLIES AND SUB-ASSEMBLIES, PARTS FOR DIGITAL CAMERAS, AERIALS AND AERIAL REFLECTORS, AND ELECTRONIC ASSEMBLIES)	21.8	16.7	-5.1	-23.4
85051990	PERMANENT MAGNETS AND ARTICLES INTENDED TO BECOME PERMANENT	5.4	0.3	-5.1	-94.8

HS8 product code	Product description	Import volume 2011(EUR million)	Import volume 2015 (EUR million)	Absolute loss (EUR million)	Relative loss (in %)
	MAGNETS AFTER MAGNETIZATION, OF MATERIALS OTHER THAN METAL OR AGGLOMERATED FERRITE				
85419000	PARTS OF DIODES, TRANSISTORS AND SIMILAR SEMICONDUCTOR DEVICES; PHOTOSENSITIVE SEMICONDUCTOR DEVICES, LIGHT EMITTING DIODES AND MOUNTED PIEZOELECTRIC CRYSTALS, N.E.S.	5.6	0.5	-5.1	-91.7
87089599	SAFETY AIRBAGS WITH INFLATOR SYSTEM AND PARTS THEREOF, FOR TRACTORS, MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS, MOTOR CARS AND OTHER MOTOR VEHICLES PRINCIPALLY DESIGNED FOR THE TRANSPORT OF PERSONS, MOTOR VEHICLES FOR THE TRANSPORT OF GOODS AND SPECIAL PURPOSE MOTOR VEHICLES, N.E.S. (EXCL. THOSE FOR THE INDUSTRIAL ASSEMBLY OF CERTAIN MOTOR VEHICLES OF SUBHEADING 8708.95.10 AND OF CLOSED-DIE FORGED STEEL)	22.0	16.9	-5.0	-22.8

Source: Own compilation, based on COMEXT (2017).

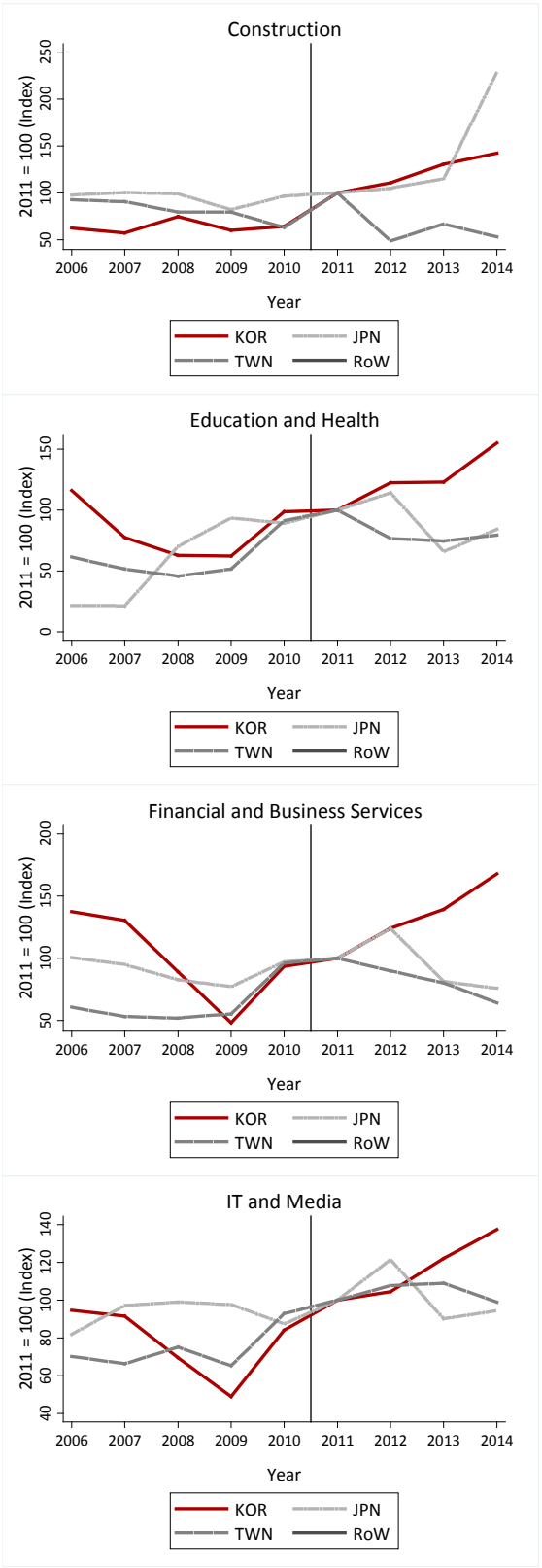
Figure 160: Diff-in-diff approach: Korean perspective, trade in services



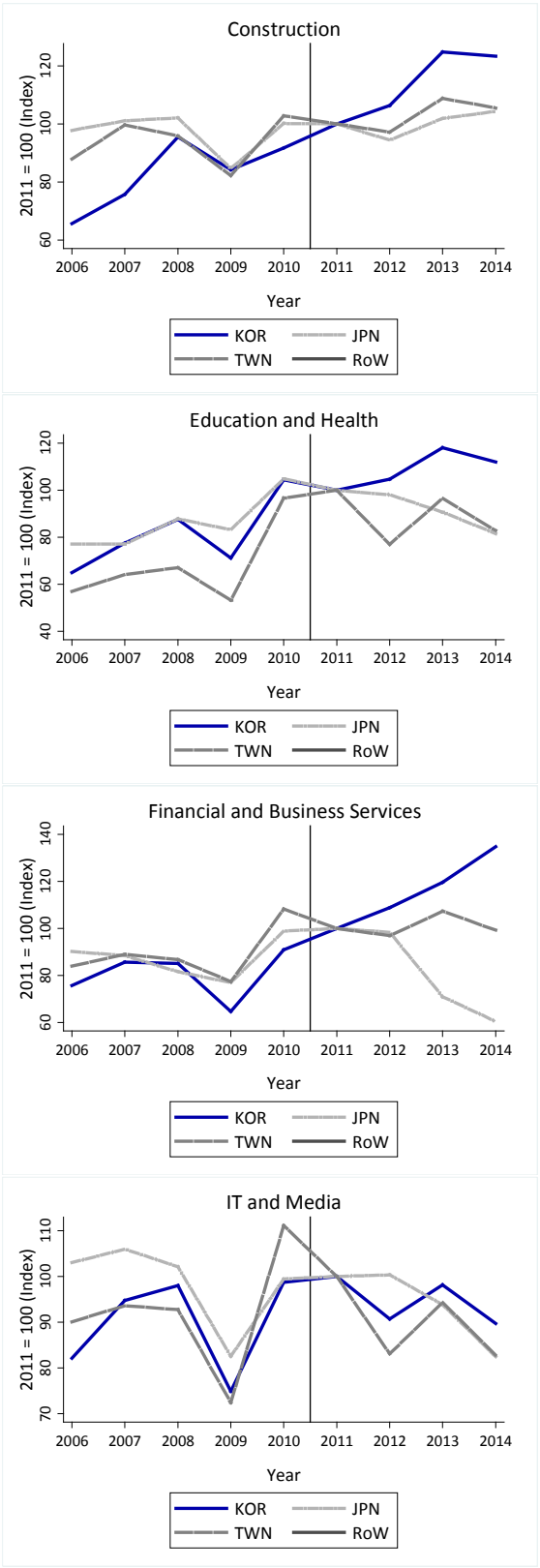
Source: Own compilation, based on WIOD (2014).

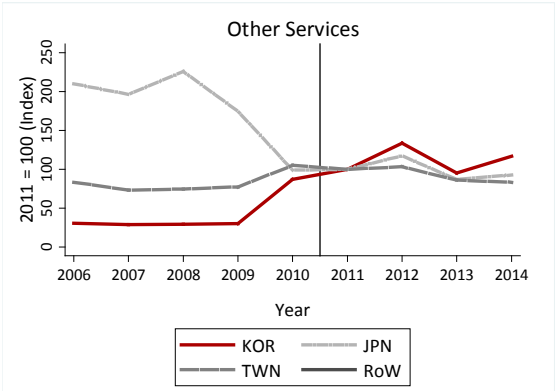
Figure 161: Sectoral EU service trade in comparison to selected countries

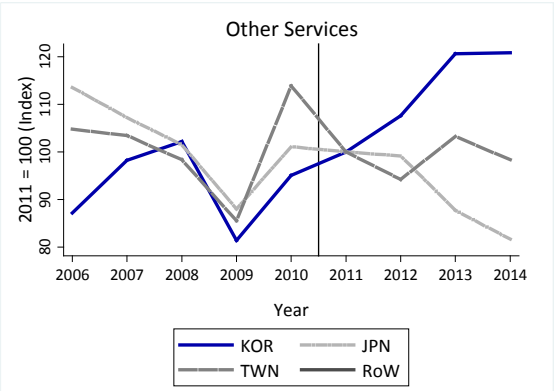
EU Imports

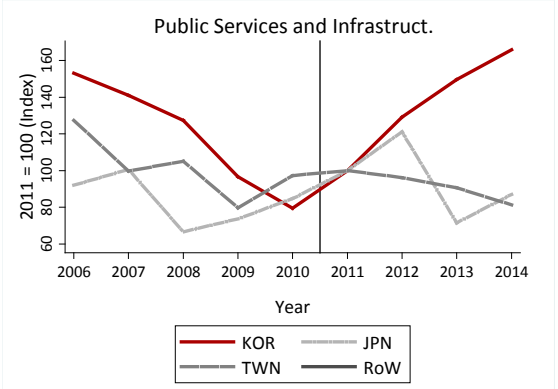


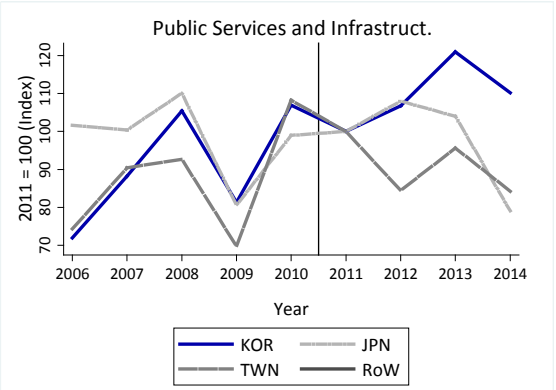
EU Exports

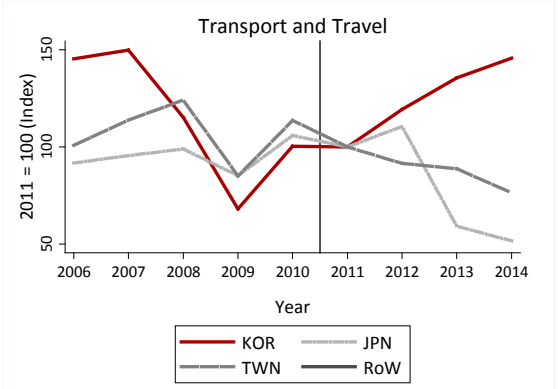


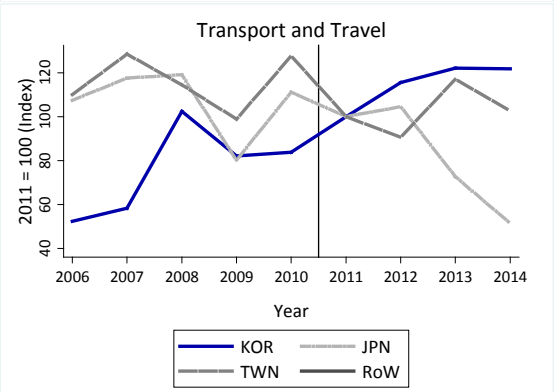


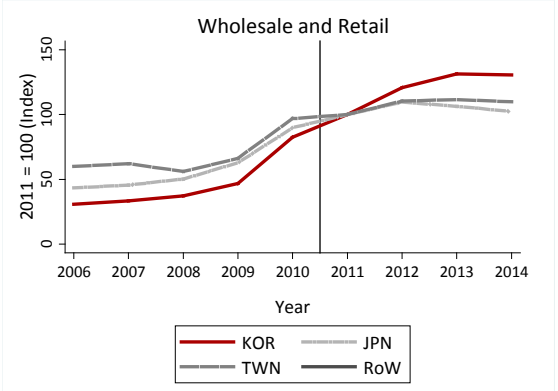






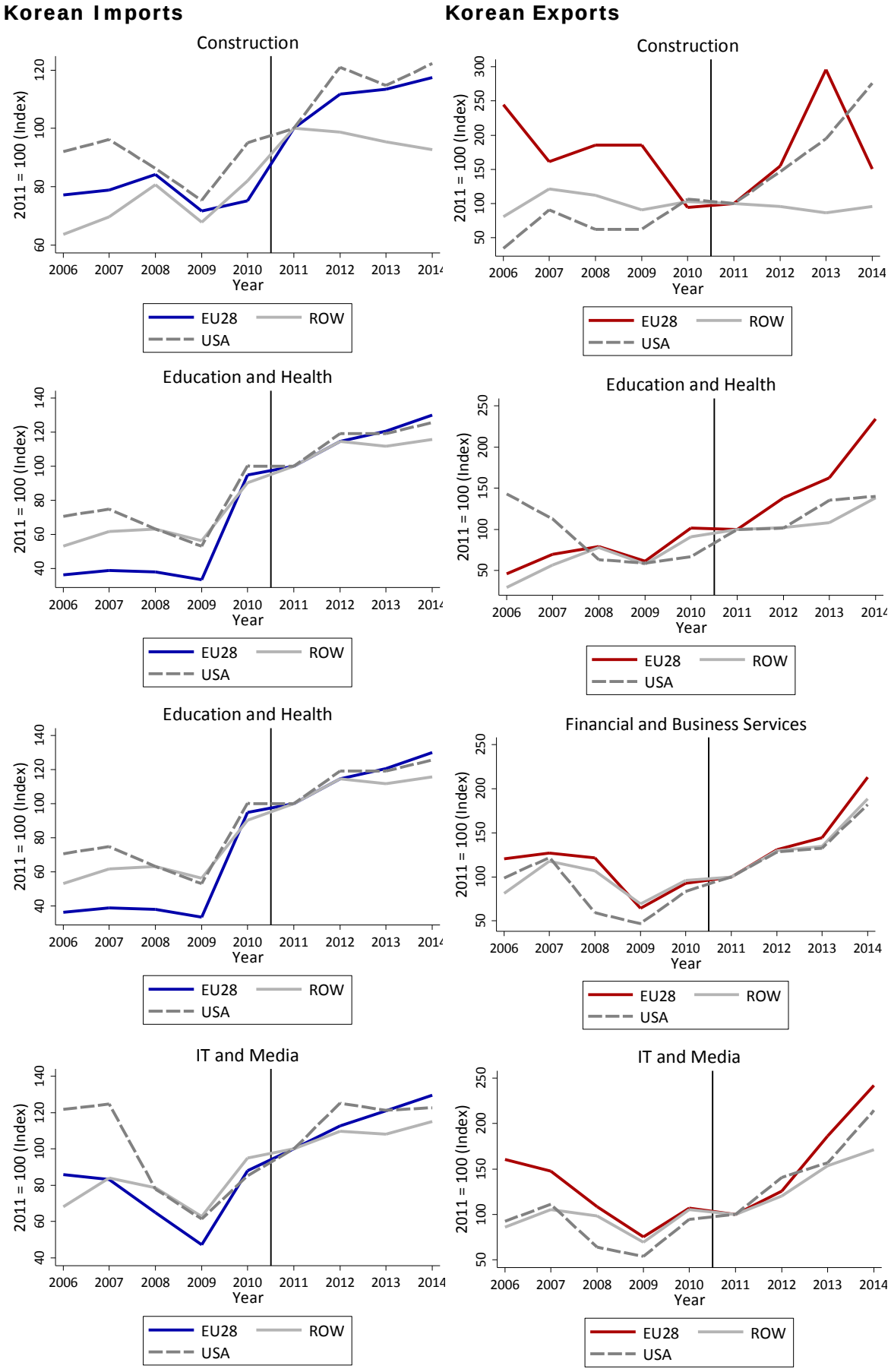


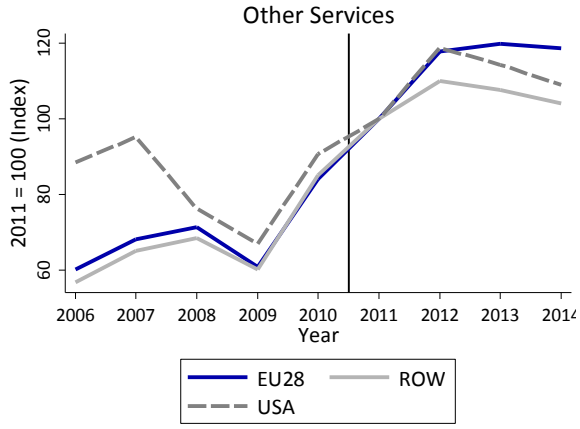


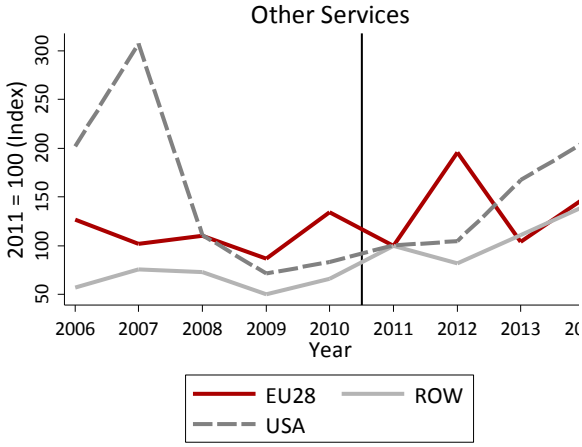


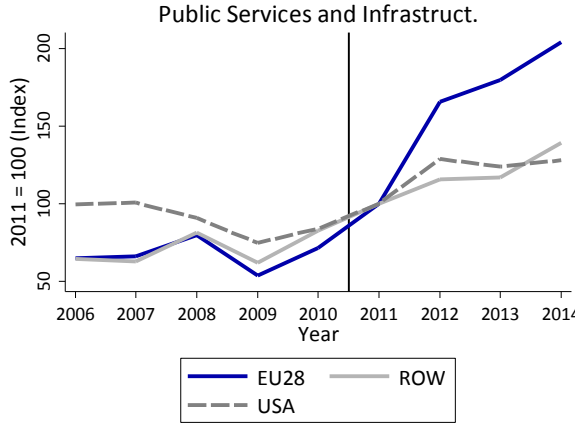
Source: Own compilation, based on WIOD (2017).

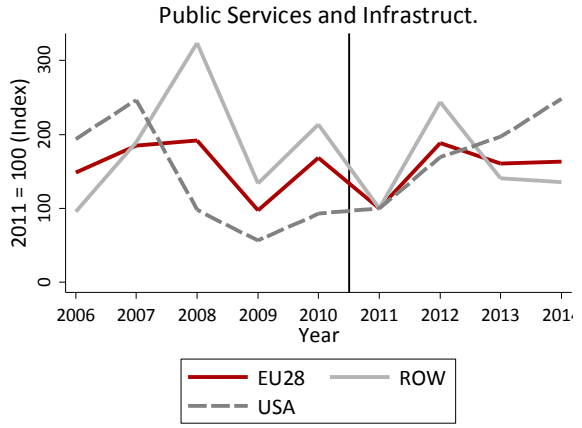
Figure 162: Sectoral Korean service trade in comparison to selected countries

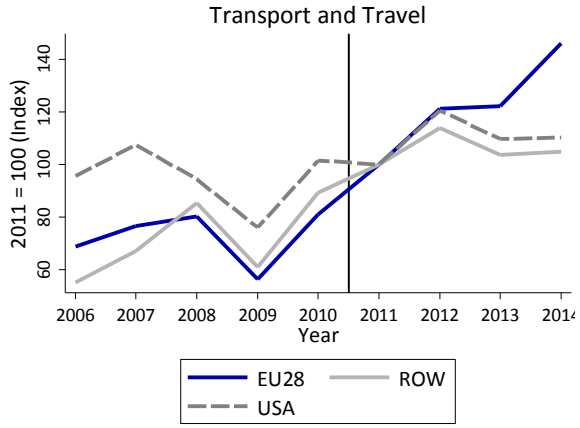


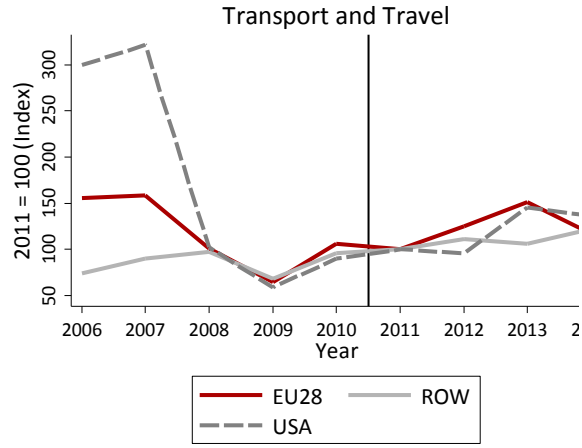


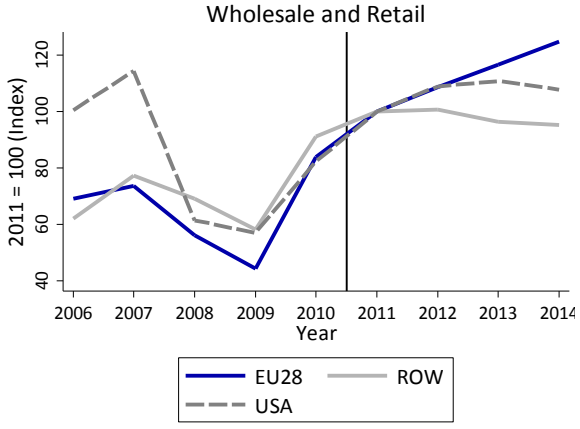


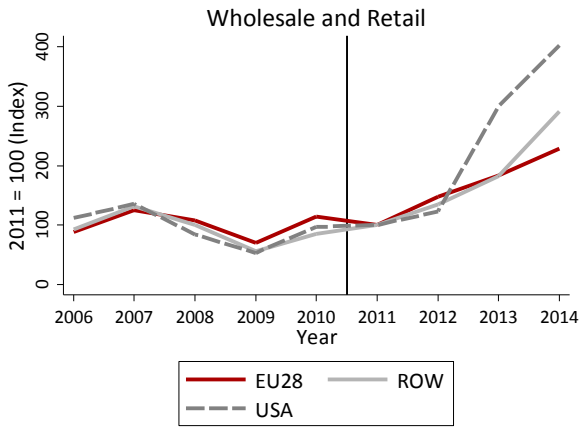










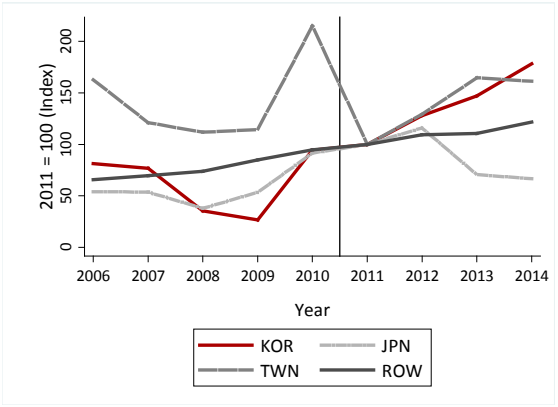


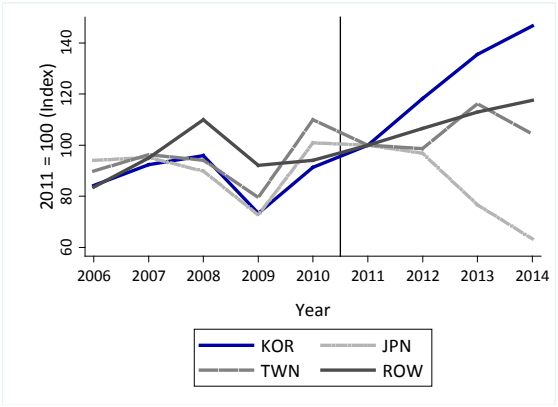
Source: Own compilation, based on WIOD (2017).

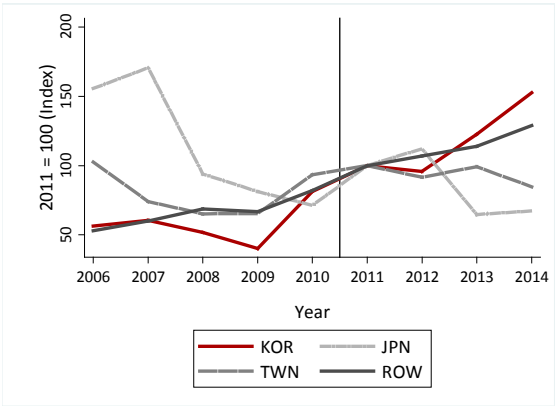
2. Evolution of trade in services between the EU and Korea

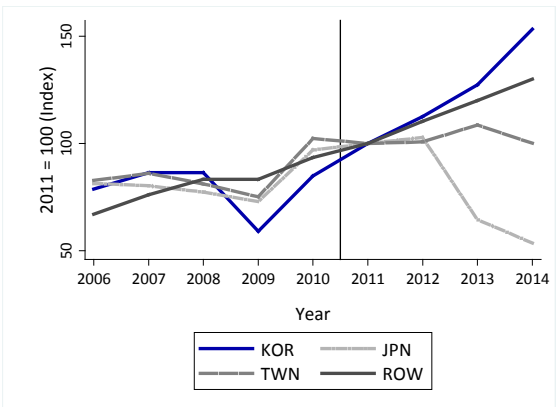
Table 87: Most important services 2014 - financial and business services

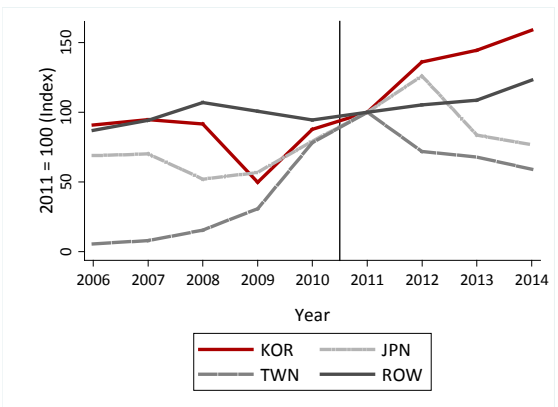
Imports			Exports		
Service code	Mio EUR	Share in Sector (%)	Service code	Mio EUR	Share in Sector (%)
49	1 075	35.6	50	430	26
48	477	15.8	45	235	14.2
46	345	11.4	46	220	13.3











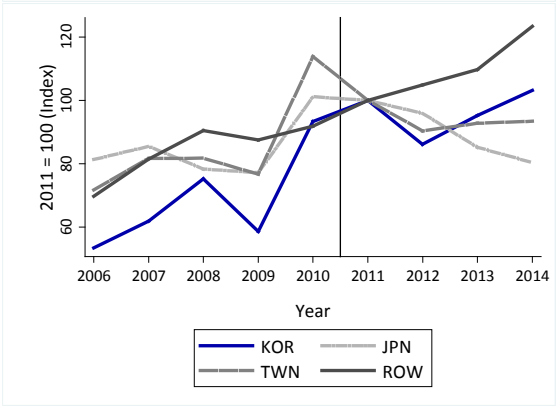
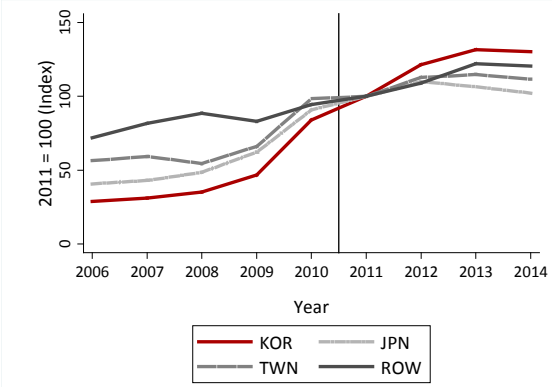
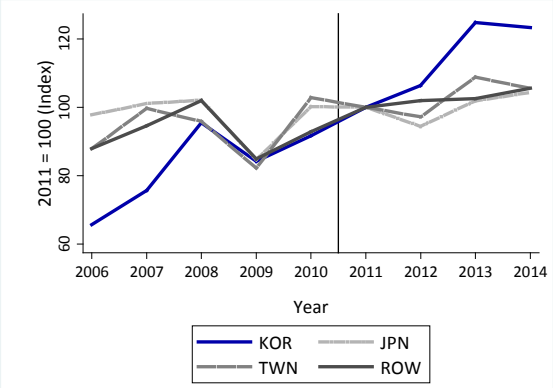
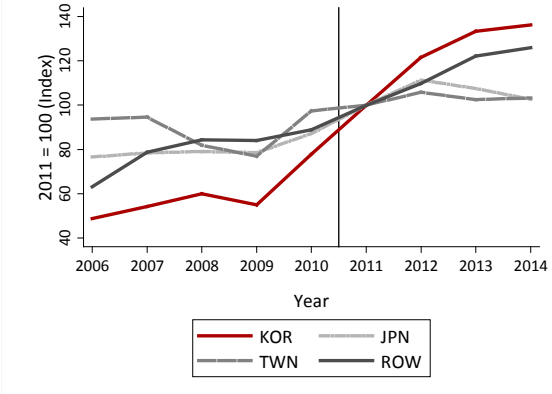


Table 88: Most important services 2014 – wholesale & retail and construction

Imports Wholesale & Retail			Exports Construction		
Service code	Mio EUR	Share in Sector (%)	Service code	Mio EUR	Share in Sector (%)
29	2 131	81.6	27	1458	100
30	287	11	-	-	-
28	195	7.4	-	-	-







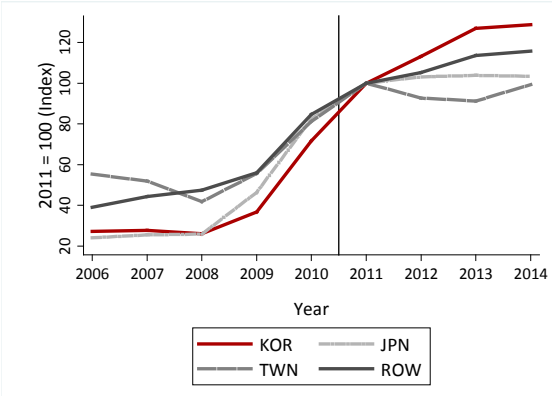
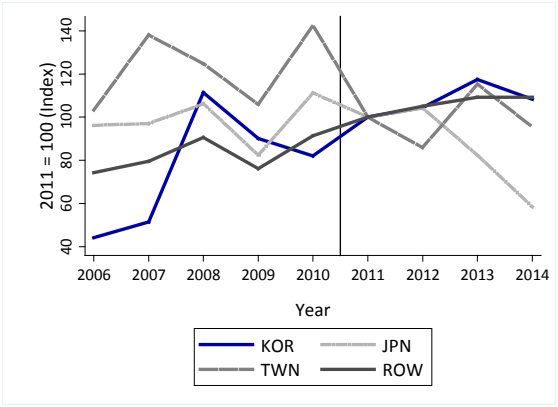
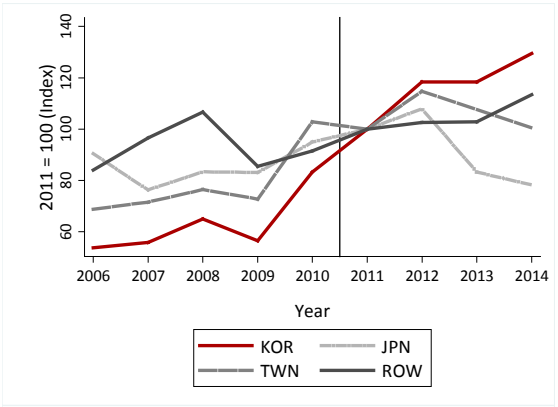
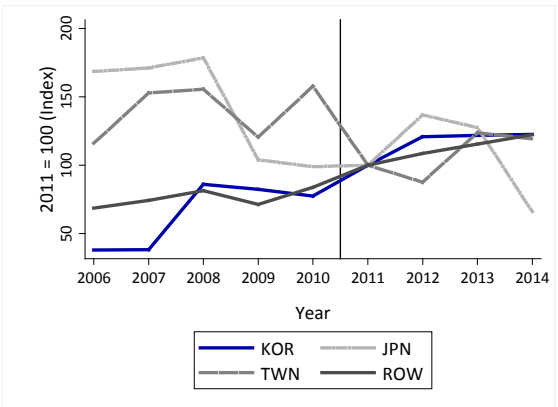


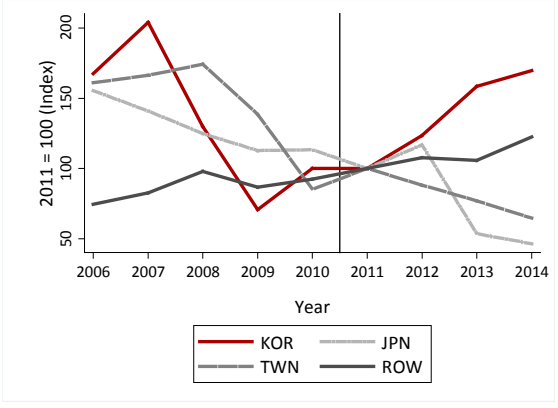
Table 89: Most important services 2014 - transport and travel

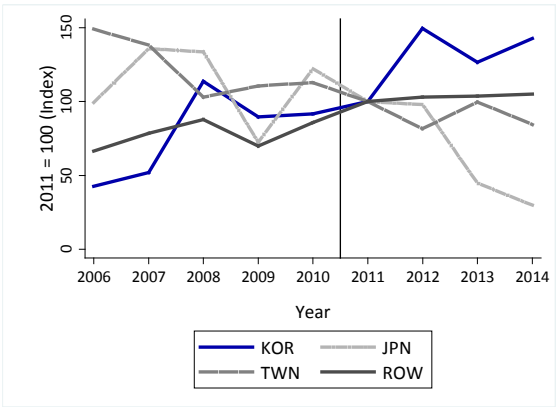
Imports			Exports		
Product code	Mio EUR	Share in Sector (%)	Product code	Mio EUR	Share in Sector (%)
34	166	34.9	31	386	34
31	155	32.5	33	241	21.2
33	117	24.6	32	169	14.9











3. Econometric analysis – technical annex

Technical Annex to the partial equilibrium analysis

For the main estimation of aggregate effects of the EU-Korea FTA, we use the latest version of the WIOD trade data, and equations similar to those applied in Aichele, Felbermayr, and Heiland (2016) for use in the Ifo Trade Model. We make sure to incorporate the latest developments in the empirical gravity literature as summarised by Yotov, Piermartini, Monteiro, and Larch (2016).

The main specification uses a panel database over the period 2000-2014. The use of panel data is necessary for at least two reasons: (i) from an econometric perspective, it improves efficiency; and (ii) it enables us to address at least two important econometric challenges with structural gravity estimations. First, we are able to comprehensively treat time-invariant trade costs.[454] Second, following Baier and Bergstrand (2007), we are able to treat potential endogeneity of the policy variables of interest.

The sample for the main estimation includes all 56 sectors in our sample (i.e., goods and services trade). Estimation efficiency and more close resemblance to the specification that is used to obtain the sectoral estimates, which are the main objective of the project, are the main reasons for estimating the effects with all sectors. As described below, we follow gravity theory to properly define the set of fixed effects that are needed for the estimations. In the sensitivity analysis we also obtain aggregate estimates after collapsing the 56 sectors into a single aggregate.

Informed by the sectoral[455] and by the panel gravity literature,[456] we estimate the main specification with exporter-sector-time and importer-sector-time fixed effects in order to account for the unobservable multilateral resistance terms highlighted by Anderson and van Wincoop (2003). These fixed effects also absorb all other observable and unobservable characteristics on the importer and on the exporter side.

Following the recommendations of Santos Silva and Tenreyro (2006) to account for heteroscedasticity and to take into account the information that is contained in the zero trade flows,[457] we use the PPML estimator in order to obtain our main estimates. In the sensitivity analysis we also obtain OLS estimates.

In order to take advantage of all the information contained in our data, we estimate the main specification with data for all years in the sample. This is important because we only have four post-agreement years in the data, namely 2011, 2012, 2013, and 2014. In the sensitivity analysis, we also experiment with two-year interval data and we allow for phasing-in effects of the EU-Korea FTA.

An important advantage of the WIOD dataset is that it includes intra-national trade flows. This enables us to follow Anderson and Yotov (2016) and to include *intra-national* trade flows when estimating structural gravity models. As discussed and demonstrated in Dai, Yotov, and Zylkin (2014),[458] the inclusion of intra-national trade flows enables us to

[454] Agnosteva et al. 2014; Egger and Nigai, 2014.

[455] Caliendo and Parro, 2015; Anderson and Yotov, 2016; Costinot, Arnaud, Dave Donaldson, and Ivana Komunjer. "What Goods Do Countries Trade? A Quantitative Exploration of Ricardo's Ideas". The Review of Economic Studies 79.2 (2011): 581-608.

[456] Olivero, María Pía, and Yoto V. Yotov. "Dynamic Gravity: Endogenous Country Size and Asset Accumulation". Canadian Journal of Economics 45.1 (2012): 64-92.; Anderson et al., 2015; Eaton et al., 2016.

[457] Santos Silva, J. Manuel Caravana, and Silvana Tenreyro. "The Log of Gravity". Review of Economics and Statistics 88.4 (2006): 641-658.

[458] Dai, Mian Economics Letters 122.2 (2014): 321-325., Yoto V. Yotov, and Thomas Zylkin. "On The Trade-Diversion Effects of Free Trade Agreements". Economics Letters 122.2 (2014): 321-325.

capture the fact that regional trade agreements (RTAs) generate additional trade among member countries at the expense of domestic sales.

Bergstrand, Larch, and Yotov (2015) argue that the RTA estimates from panel gravity specifications may be biased upward because they may capture the effects of globalisation.[459] In order to address this issue, our main specification follows Bergstrand, Larch, and Yotov (2015) and introduces yearly dummy variables for international borders for each year in our sample. Perfect collinearity requires one of the border dummies to be dropped. Our choice is the border dummy for 2000, which is the first year in the sample. Thus, all other border estimates should be interpreted as relative to the border impact in 2000.

Baier, Yotov, and Zylkin (2016) demonstrate that the effects of FTAs can be asymmetric. Following Baier, Yotov, and Zylkin (2016), we allow for the effects of the EU-Korea FTA to be different for EU exports to Korea ($EU \rightarrow KOR$) and for Korean exports to the European Union ($KOR \rightarrow EU$). In addition, we also allow the pair fixed effects to be directional.

Finally, in addition to accounting for the specific effects of the EU-Korea FTA, which are of primary interest here, the main estimate also controls for the presence of any other regional trade agreement that may have impacted trade between the countries in our sample during the period of investigation. In the robustness checks, we allow for differential effects of the RTAs depending on their type and we also study the implications of not controlling for RTAs other than the EU-Korea one.

The following box describes the gravity equation used for the main estimation.

Estimated gravity equation

Taking all of the above considerations into account, we specify the following econometric model as our main estimating equation:

$$\boldsymbol{X_{ij,t}^{k} = \exp[\eta_1 EU\_KOR_{ij,t} + \eta_2 KOR\_EU_{ij,t} + \eta_3 RTA_{ij,t} + \pi_{i,t}^{k} + \chi_{j,t}^{k} + \mu_{ij}^{k}] + \epsilon_{ij,t}^{k}} \quad (1)$$

Here, $X_{ij,t}^{k}$ denotes the nominal bilateral trade flows from exporter i to importer j in class k at time t, which also include intra-national trade flows. $EU\_KOR_{ij,t}$ is an indicator variable that is equal to one for exports from EU to Korea for the years after 2010, and it is equal to zero otherwise. Similarly, $KOR\_EU_{ij,t}$ is a dummy variable that takes a value of one for Korea's exports to EU after 2010, and it is equal to zero otherwise. $RTA_{ij,t}$ is an indicator for the presence of any other regional trade agreement. Finally, $\pi_{i,t}^{k}$, $\chi_{j,t}^{k}$, and μ_{ij}^{k} are exporter-sector-time, importer-sector-time, and directional sector-pair fixed effects, respectively. $\pi_{i,t}^{k}$ and $\chi_{j,t}^{k}$ will control perfectly for the theoretical multilateral resistances and for all other observable and unobservable variables at the exporter-sector-time and the importer-sector-time dimensions. μ_{ij}^{k} will absorb all time-invariant trade costs by allowing them to vary by sector and in each direction of trade. In addition, adding μ_{ij}^{k} is equivalent to implementing the average treatment effect methods to account for endogeneity of regional trade agreements following Baier and Bergstrand (2007).

In order to obtain the main estimation, specification (1) is estimated with a Maximum Likelihood (PPML) estimator.

Robustness checks

The results of the robustness checks are presented in the remaining columns of the following two tables. They are separately discussed in the order of their presentation in the table.

[459] Bergstrand, Jeffrey H., Mario Larch, and Yoto V. Yotov. "Economic Integration Agreements, Border Effects, And Distance Elasticities In The Gravity Equation". European Economic Review 78 (2015): 307-327.

Table 90: Estimates of the aggregate trade effects of the EU-Korea FTA, Part I

	(1) MAIN	(2) OLS	(3) TYPE	(4) NORTA	(5) ROW1	(6) NOROW
EU → KOR	**0.42**	**0.42**	**0.43**	**0.42**	**0.42**	**0.36**
	(0.04)**	(0.03)**	(0.04)**	(0.04)**	(0.04)**	(0.04)**
KOR → EU	**0.13**	**0.17**	**0.14**	**0.13**	**0.13**	**0.12**
	(0.04)**	(0.02)**	(0.04)**	(0.04)**	(0.04)**	(0.04)**
Other Regional Trade Agreements	0.02	0.20			0.022	-0.01
	(0.02)	(0.01)**			(0.02)	(0.02)
Economic Integration Agreements			0.07			
			(0.02)**			
Free Trade Agreements			-0.07			
			(0.02)**			
Customs Unions			0.28			
			(0.02)**			
GSP-type Agreements			0.22			
			(0.05)**			

Source: Own estimation, based on WIOD (2017) data. Note: Standard errors in parentheses, + p < 0.10, * p < .05, ** p < .01. Number of observations: 1,515,818. All regressions include a full set of yearly dummy variables for international borders for each year in our sample.

Agreement Types ($TYPE$). Column (3) of the table above presents the specification that we have illustrated in the main text. We allow for the effects of all other RTAs that entered into force during the period of investigation to vary by type of agreement. Two main results stand out: first, we do obtain heterogeneity across agreements by type. The estimates for three of the four types of agreements are positive and significant, as expected. The negative estimate on FTA is likely to be of small relevance because we have very few new FTAs in our sample, and it is the creation of agreements rather than their sheer existence which drives the estimates. Second, and more important for our purposes, we find that the estimates of the effects of the EU-Korea FTA are virtually unchanged in each direction as compared to the main estimates from column (1).

Main Estimate (MAIN). Column (1) presents the most parsimonious model based on the PPML strategy.

OLS Estimates (OLS). We start our robustness checks in column (2) of the table above, where we use the OLS estimator instead of PPML estimator used for the main estimation. The main difference between the OLS and the PPML estimates is that the OLS estimator delivers a significant estimate of the effects of the other Regional Trade Agreements in our sample. More important for our purposes, comparisons between the estimates of the effects of the EU-Korea FTA from columns (1) and (2) suggest that they are not statistically different from each other, even though the OLS estimates of the effects on the Korean exports to the EU are a bit larger as compared to their counterparts from column (1).

No RTAs ($NORTA$). In the next check, we do not control for the presence of any other RTAs. The new estimates of the effects of the EU-Korea FTA in each direction, which we report in column (4) of the table above are virtually identical to the corresponding results from the main specification in column (1) of the table above Given the purpose of this evaluation, this result is even more important than our previous experiment of allowing for heterogeneous RTA estimates.

Rest-of-World Aggregate ($ROW1$). A potentially important feature of the WIOD data, for estimation purposes and especially for general equilibrium analysis, is that it includes a rest of the world (RoW) aggregate region for which we do not have RTA data. A possible

issue with the RoW region is the treatment of the RTA variable from specification (1). In order to obtain the main estimates from column (1) of the table above, we set the values for all observations of the RTA variable that involve RoW to be equal to zero. In order to check the robustness of our results to the treatment of RoW in our analysis, we consider two polar cases. First, in column (5) of the previous table, we set all RTA observations with RoW as an importer or as an exporter to be equal to one. The idea is that each country in our sample has an agreement with at least one country from the RoW region. The estimates from column (5) are identical to those from column (1). This is not surprising because with all RoW observations for RTA being equal to one or to zero, those are absorbed by the pair fixed effects.

No RoW Aggregate ($NOROW$). In the next experiment, we drop the observations for RoW completely from the sample. This is a potentially important check since countries may trade a lot with the RoW region and trade with this region may be important in defining the reference group for the identification of the agreement effects in our analysis. The estimates from column (6) are qualitatively identical and, even though they are a bit smaller, they are not statistically different from the corresponding estimates from column (1). In sum, this experiment and the previous one demonstrate that the treatment of RoW does not affect our findings.

Table 91: Causal trade creation effects of the EU-Korea FTA (2011 to 2014), sectoral trade

ID	Sector Description	EU→ KOR	p-value	KOR→ EU	p-value
1	Crop and animal production	0.247**	0.002	0.291**	0.001
2	Forestry and logging	0.634**	0.000	0.438**	0.009
3	Fishing and aquaculture	0.705**	0.000	-0.065	0.718
4	Mining and quarrying	0.567**	0.000	0.370**	0.001
5	Manufacture of food beverages, tobacco	0.257*	0.040	0.169+	0.088
6	Manufacture of textiles, apparel, leather	0.077	0.643	0.155	0.109
7	Manufacture of wood and cork;	0.343*	0.020	0.305*	0.022
8	Manufacture of paper and paper products	0.089	0.299	0.271**	0.007
9	Printing and reproduction of recorded media	0.207*	0.022	0.231*	0.028
10	Manufacture of coke and refined petroleum	1.867**	0.000	0.834**	0.000
11	Manufacture of chemicals and chemical products	0.192+	0.074	0.332**	0.000
12	Manufacture of basic pharmaceutical products	0.553**	0.000	0.003	0.975
13	Manufacture of rubber and plastic products	0.213*	0.022	0.318**	0.000
14	Manufacture of other non-metallic minerals	0.429**	0.003	0.267*	0.021
15	Manufacture of basic metals	0.176+	0.054	0.281+	0.053
16	Manufacture of fabricated metal products	0.270**	0.001	0.217*	0.014
17	Manufacture of computer, electronic and optical	0.594**	0.000	-0.015	0.922
18	Manufacture of electrical equipment	0.473**	0.000	0.143	0.170
19	Manufacture of machinery and equipment nec.	0.408**	0.000	0.008	0.942
20	Manufacture of motor vehicles, trailers and semi-trailers	0.345**	0.000	0.385*	0.040
21	Manufacture of other transport equipment	0.584**	0.000	0.022	0.823
22	Manufacture of furniture; other manufacturing	0.098	0.265	-0.138	0.144
23	Repair and installation of machinery and equipment	.	.	-0.105	0.251
24	Electricity, gas, steam and air conditioning supply	1.219**	0.001	0.282*	0.035

25	Water collection, treatment and supply	1.578**	0.001	-0.788*	0.027
26	Sewerage; waste collection, disposal;	0.396**	0.000	0.030	0.882
27	Construction	0.332**	0.000	0.232**	0.002
28	Wholesale, repair of vehicles and motorcycles	0.545**	0.000	0.224	0.252
29	Wholesale trade, except of vehicles and motorcycles	0.467**	0.000	0.190+	0.092
30	Retail trade, except of motor vehicles and motorcycles	0.429**	0.001	0.237+	0.056
31	Land transport and transport via pipelines	0.548**	0.000	0.143	0.458
32	Water transport	0.203	0.261	0.247	0.112
33	Air transport	0.611*	0.033	0.282+	0.079
34	Warehousing and support activities for transportation	0.376**	0.001	0.019	0.862
35	Postal and courier activities	0.101	0.452	-0.053	0.835
36	Accommodation and food service activities	0.233*	0.013	0.165+	0.081
37	Publishing activities	0.273*	0.029	-0.098	0.646
38	Motion picture, video and television, sound	0.146	0.342	-0.193	0.295
39	Telecommunications	0.580**	0.000	-0.197	0.331
40	Computer programming, consultancy; information	0.559**	0.001	-0.053	0.841
41	Financial services, except insurance and pension	0.444+	0.082	0.099	0.537
42	Insurance, reinsurance and pension funding	0.724**	0.000	0.264+	0.083
43	Auxiliary to financial and insurance activities	0.124	0.744	-0.086	0.727
44	Real estate activities	-0.169	0.523	0.339*	0.032
45	Legal and accounting, management, consultancy	-0.324*	0.044	0.238*	0.022
46	Architectural, engineering, technical testing	0.427*	0.010	0.081	0.662
47	Scientific research and development	0.231*	0.029	0.051	0.594
48	Advertising and market research	-0.649+	0.061	-0.210	0.214
49	Other professional, scientific, veterinary activities	0.403*	0.024	0.088	0.271
50	Administrative and support service activities	0.269*	0.035	0.145	0.217
51	Public administration and defence	-0.002	0.988	-0.156+	0.054
52	Education	0.099*	0.363	-0.034	0.772
53	Human health and social work activities	0.775**	0.000	0.058	0.658
54	Other service activities	0.351**	0.001	0.048	0.660
55	Undifferentiated goods- and services activities	-	-	-1.472**	0.000
56	Activities of extraterritorial organisations	-	-	-	-

Source: Own estimates, based on WIOD (2017) data. The coefficients are taken from the log-linearized model. P-values below 0.10 denote statistical significance at least at the 10 percent level. Note: '.' means that no sectoral estimate could be provided due to the lack of sufficient transactions in this area. + $p < 0.10$, * $p < .05$, ** $p < .01$

The results of the second set of robustness checks are presented in the following table:

Table 92: Estimates of the aggregate trade effects of the EU-Korea FTA, Part II

	(7) BLNCD	(8) IMRTS	(9) AGGR	(10) NO2011	(11) INTRVL	(12) PHSING
EU → KOR	**0.38**	**0.38**	**0.34**	**0.43**	**0.45**	**0.37**
	(0.04)**	(0.07)**	(0.06)**	(0.05)**	(0.05)**	(0.04)**
KOR → EU	**0.07**	**0.14**	**0.14**	**0.13**	**0.10**	**0.11**
	(0.03)*	(0.08)+	(0.09)	(0.04)**	(0.05)*	(0.04)**
Other Regional Trade Agreements	0.06	0.02	0.03	0.02	0.02	0.02
	(0.02)**	(0.04)	(0.06)	(0.02)	(0.02)	(0.02)
EU_KOR_13_14						0.10
						(0.02)**
KOR_EU_13_14						0.05
						(0.03)
N	*808 652*	*1 489 269*	*29 040*	*1 515 818*	*808 480*	*1 515 818*

Source: Own estimation, based on WIOD (2017) data. Note: Standard errors in parentheses, + $p < 0.10$, * $p < .05$, ** $p < .01$. Number of observations: 1,515,818. All regressions include a full set of yearly dummy variables for international borders for each year in our sample.

Using Balanced Data (*BLNCD*). The estimates from column (7) of Table 92 are obtained with balanced data over the period 2007-2014. The idea is to have equal number of years before and after the start of the provisional application of the EU-Korea FTA. A potential problem with this specification is that the control period covers the period of the financial crises. Nevertheless, the estimates from column (7) are qualitatively identical to those from column (1). Specifically, we find that the EU-Korea FTA promoted trade between the Parties in each direction. The magnitude of the estimate of the effects of the agreement on EU exports to Korea is also not statistically different as compared to the corresponding index from column (1). However, the estimate of the effects on Korean exports to the EU has dropped by half. The special control period (i.e. the financial crisis) may be the reason for this result.

Using Imports Instead of Exports (*IMRTS*). The WIOD data can be aggregated over sectors to total trade flows by exports or by imports. In column (8) of Table 92, we replace the trade flow variable based on exports, which was the basis for our analysis so far, with the alternative variable based on imports. The estimates from column (8) are not statistically different as compared to the main results from column (1). The main difference is that the estimate of the coefficient on Korean exports to the EU is only marginally statistically significant.

Aggregate Data (*AGGR*). The estimates so far were obtained with data pooled over sectors with proper fixed effects treatment. In our next experiment, see results in column (9) of Table 92, we collapse all sectoral data into an aggregate (single-sector) dataset. The estimates of the key variables of interest preserve their signs. However, the estimate on EU exports to Korea is a bit smaller in magnitude and, while the estimate on Korean exports to the EU is readily comparable to its counterpart from column (1) in terms of magnitude, it is no longer statistically significant. These results are consistent with the discussion from Anderson and Yotov (2010) for possible aggregation bias in gravity estimations and suggest that estimations pooled across sectors might be better to avoid aggregation biases.[460] Furthermore, the loss of significance for the EU-Korea exports supports our argument for efficiency gains when we employ all sectors.

[460] Anderson, James E, and Yoto V Yotov. "The Changing Incidence of Geography." *American Economic Review* 100.5 (2010): 2157-2186.

The Year of Entry into Force (*NO*2011). The EU-Korea FTA was signed in the middle of 2011 (July 1), and in all estimations so far we have treated this year as the first post-agreement year. While we believe that this treatment is more appropriate, the estimates from column (10) of Table 92 are obtained by treating 2011 as the last pre-agreement year. The estimates of the effects of the EU-Korea FTA from column (10) are very similar to the baseline numbers from column (1).

Using Interval Data (*INTRVL*). Cheng and Wall (2005) criticise gravity estimations with data pooled over consecutive years.[461] Yotov, Piermartini, Moneiro, and Larch (2016) recommend the use of interval data instead. The estimates in this robustness check, reported in column (11) of Table 92, are obtained with data for the years 2000, 2002, 2004, 2006, 2008, 2010, 2012, and 2014. The main result is that the estimates of the effects of the EU-Korea FTA are not statistically different as compared to the baseline estimates from column (1). Notably, the estimate of the effects on the agreement on Korean exports to the EU is a bit smaller in magnitude and has lost some of its statistical significance. Loss in efficiency due to the smaller sample size is a natural explanation for this result.

Phasing-in Effects (*PHSNG*). We conclude the robustness checks by allowing for phasing-in effects of the EU-Korea FTA. The broad motivation for this check is that the agreement may have had non-monotonic effects. Specifically, it may have taken time to trigger more trade and/or its impact could have been initially strong and vanished early. In order to perform this robustness check, we create two additional dummy variables, which take a value of one for EU exports to Korea in 2013 and 2014 (*EU_KOR*_13_14), and a value of one for Korean exports to EU in 2013 and 2014 (*KOR_EU*_13_14). Thus, by construction, the estimates of these variables should be interpreted as deviations from the corresponding main EU-Korea covariates. The estimates from column (12) of Table 92 reveal that the EU-Korea FTA had stable positive effects on Korean exports to the EU during the period 2011-2014, while the impact of the agreement on EU exports to Korea has actually increased over time. In combination, these results suggest that the agreement was still effective in 2013 and 2014 in each direction of trade, and that it may have even stronger implications for Korean exports in the future.

[461] Wall, Howard J., and I-Hui Cheng. "Controlling For Heterogeneity in Gravity Models of Trade". *Federal Reserve Bank of St. Louis Review* 87.1 (2005).

Sectoral estimates

Table 93: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	1	2	3	4	5	6	7
RTA	-0.048	0.031	-0.011	-0.199	-0.088	0.043	-0.032
	(0.065)	(0.129)	(0.167)	(0.159)	(0.046)$^{+}$	(0.100)	(0.151)
EU_KOR	0.247	0.634	0.705	0.567	0.257	0.077	0.343
	(0.080)**	(0.119)**	(0.169)**	(0.117)**	(0.125)*	(0.167)	(0.147)*
KOR_EU	0.291	0.438	-0.065	0.370	0.169	0.155	0.305
	(0.091)**	(0.167)**	(0.180)	(0.113)**	(0.099)$^{+}$	(0.097)	(0.133)*
BRDR_2001	0.004	-0.020	0.002	-0.066	-0.004	0.032	-0.031
	(0.010)	(0.011)$^{+}$	(0.011)	(0.017)**	(0.010)	(0.011)**	(0.007)**
BRDR_2002	0.031	0.002	0.028	0.015	0.005	0.077	-0.040
	(0.015)*	(0.024)	(0.018)	(0.018)	(0.012)	(0.017)**	(0.010)**
BRDR_2003	0.075	0.020	0.050	0.079	0.031	0.062	-0.038
	(0.020)**	(0.028)	(0.029)$^{+}$	(0.025)**	(0.017)$^{+}$	(0.024)**	(0.016)*
BRDR_2004	0.121	0.048	0.094	0.135	0.051	0.133	-0.005
	(0.024)**	(0.031)	(0.031)**	(0.027)**	(0.018)**	(0.027)**	(0.017)
BRDR_2005	0.138	0.029	0.101	0.153	0.061	0.085	-0.007
	(0.022)**	(0.035)	(0.036)**	(0.029)**	(0.018)**	(0.026)**	(0.023)
BRDR_2006	0.160	0.052	0.141	0.179	0.092	0.081	-0.009
	(0.023)**	(0.038)	(0.035)**	(0.032)**	(0.019)**	(0.028)**	(0.030)
BRDR_2007	0.213	0.058	0.175	0.182	0.143	0.053	-0.026
	(0.023)**	(0.047)	(0.042)**	(0.035)**	(0.020)**	(0.030)$^{+}$	(0.040)
BRDR_2008	0.282	0.056	0.215	0.238	0.203	0.052	-0.069
	(0.022)**	(0.043)	(0.044)**	(0.044)**	(0.022)**	(0.031)$^{+}$	(0.045)
BRDR_2009	0.137	-0.123	0.033	0.069	0.093	-0.112	-0.253
	(0.023)**	(0.052)*	(0.035)	(0.040)$^{+}$	(0.024)**	(0.051)*	(0.040)**
BRDR_2010	0.216	-0.024	0.093	0.120	0.177	0.048	-0.094
	(0.027)**	(0.059)	(0.045)*	(0.058)*	(0.027)**	(0.049)	(0.046)*
BRDR_2011	0.298	0.038	0.168	0.174	0.250	0.121	-0.057
	(0.027)**	(0.068)	(0.045)**	(0.068)**	(0.027)**	(0.051)*	(0.049)
BRDR_2012	0.289	-0.007	0.140	0.167	0.243	0.041	-0.104
	(0.034)**	(0.063)	(0.044)**	(0.068)*	(0.031)**	(0.058)	(0.048)*
BRDR_2013	0.236	-0.009	0.090	0.173	0.194	0.025	-0.087
	(0.033)**	(0.067)	(0.048)$^{+}$	(0.073)*	(0.028)**	(0.068)	(0.047)$^{+}$
BRDR_2014	0.226	0.011	0.085	0.126	0.196	0.025	-0.047
	(0.034)**	(0.074)	(0.048)$^{+}$	(0.081)	(0.030)**	(0.072)	(0.053)
N	*29 040*	*27 720*	*27 720*	*29 040*	*29 040*	*29 040*	*29 040*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 94: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	8	9	10	11	12	13	14
RTA	-0.034	-0.009	-0.545	-0.081	0.078	0.014	-0.053
	(0.063)	(0.072)	(0.147)**	(0.075)	(0.099)	(0.058)	(0.089)
EU_KOR	0.089	0.207	1.867	0.192	0.553	0.213	0.429
	(0.085)	(0.090)*	(0.472)**	(0.107)+	(0.100)**	(0.093)*	(0.145)**
KOR_EU	0.271	0.231	0.834	0.332	0.003	0.318	0.267
	(0.101)**	(0.105)*	(0.185)**	(0.090)**	(0.107)	(0.081)**	(0.115)*
BRDR_2001	-0.025	-0.030	-0.087	-0.022	0.051	-0.014	-0.043
	(0.007)**	(0.008)**	(0.056)	(0.011)*	(0.018)**	(0.006)*	(0.013)**
BRDR_2002	-0.020	-0.018	-0.023	0.003	0.072	0.012	-0.012
	(0.009)*	(0.013)	(0.052)	(0.015)	(0.019)**	(0.012)	(0.017)
BRDR_2003	-0.018	-0.010	-0.009	0.054	0.068	0.037	0.007
	(0.013)	(0.015)	(0.057)	(0.016)**	(0.024)**	(0.017)*	(0.020)
BRDR_2004	0.020	0.009	0.063	0.124	0.143	0.105	0.053
	(0.014)	(0.016)	(0.074)	(0.020)**	(0.022)**	(0.021)**	(0.024)*
BRDR_2005	0.017	0.009	0.109	0.136	0.110	0.128	0.061
	(0.016)	(0.017)	(0.065)+	(0.022)**	(0.028)**	(0.023)**	(0.024)**
BRDR_2006	0.024	0.025	0.135	0.169	0.150	0.166	0.100
	(0.019)	(0.018)	(0.071)+	(0.025)**	(0.034)**	(0.025)**	(0.026)**
BRDR_2007	0.034	0.051	0.119	0.187	0.172	0.191	0.119
	(0.024)	(0.021)*	(0.058)*	(0.026)**	(0.041)**	(0.026)**	(0.027)**
BRDR_2008	0.042	0.070	0.180	0.234	0.211	0.196	0.140
	(0.026)	(0.021)**	(0.084)*	(0.025)**	(0.034)**	(0.023)**	(0.031)**
BRDR_2009	-0.066	0.015	-0.005	0.128	0.214	0.098	-0.005
	(0.026)*	(0.026)	(0.076)	(0.028)**	(0.037)**	(0.024)**	(0.029)
BRDR_2010	0.049	0.115	0.035	0.251	0.327	0.232	0.079
	(0.032)	(0.029)**	(0.089)	(0.033)**	(0.040)**	(0.026)**	(0.036)*
BRDR_2011	0.091	0.162	0.123	0.315	0.389	0.295	0.126
	(0.034)**	(0.029)**	(0.096)	(0.034)**	(0.044)**	(0.025)**	(0.036)**
BRDR_2012	0.075	0.148	0.152	0.298	0.389	0.268	0.145
	(0.036)*	(0.030)**	(0.095)	(0.036)**	(0.051)**	(0.026)**	(0.036)**
BRDR_2013	0.093	0.151	0.167	0.289	0.356	0.265	0.140
	(0.036)**	(0.030)**	(0.076)*	(0.034)**	(0.050)**	(0.027)**	(0.036)**
BRDR_2014	0.104	0.156	0.170	0.283	0.383	0.275	0.128
	(0.039)**	(0.030)**	(0.083)*	(0.033)**	(0.052)**	(0.027)**	(0.036)**
N	*29 040*	*28 380*	*28 160*	*29 040*	*27 720*	*29 040*	*29 040*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 95: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1) 15	(2) 16	(3) 17	(4) 18	(5) 19	(6) 20	(7) 21
RTA	-0.100	0.141	0.274	0.151	0.171	0.114	0.235
	(0.100)	(0.052)**	(0.097)**	(0.055)**	(0.054)**	(0.089)	(0.067)**
EU_KOR	0.176	0.270	0.594	0.473	0.408	0.345	0.584
	(0.092)+	(0.080)**	(0.150)**	(0.087)**	(0.076)**	(0.088)**	(0.100)**
KOR_EU	0.281	0.217	-0.015	0.143	0.008	0.385	0.022
	(0.145)+	(0.088)*	(0.152)	(0.104)	(0.107)	(0.187)*	(0.097)
BRDR_2001	-0.060	-0.037	-0.108	-0.029	-0.026	-0.022	0.007
	(0.013)**	(0.009)**	(0.022)**	(0.008)**	(0.009)**	(0.008)**	(0.017)
BRDR_2002	-0.036	-0.029	-0.102	-0.013	-0.019	-0.007	-0.040
	(0.017)*	(0.011)*	(0.031)**	(0.014)	(0.013)	(0.011)	(0.023)+
BRDR_2003	-0.004	-0.013	-0.077	0.017	0.006	0.022	-0.088
	(0.022)	(0.015)	(0.044)+	(0.021)	(0.019)	(0.016)	(0.031)**
BRDR_2004	0.093	0.070	-0.057	0.090	0.063	0.075	-0.020
	(0.028)**	(0.017)**	(0.047)	(0.024)**	(0.021)**	(0.020)**	(0.031)
BRDR_2005	0.096	0.074	-0.152	0.079	0.080	0.093	0.024
	(0.024)**	(0.017)**	(0.053)**	(0.024)**	(0.022)**	(0.024)**	(0.035)
BRDR_2006	0.191	0.170	-0.083	0.146	0.135	0.120	0.057
	(0.025)**	(0.016)**	(0.057)	(0.026)**	(0.024)**	(0.024)**	(0.039)
BRDR_2007	0.237	0.191	-0.080	0.175	0.173	0.159	0.057
	(0.027)**	(0.019)**	(0.071)	(0.029)**	(0.029)**	(0.028)**	(0.036)
BRDR_2008	0.250	0.206	-0.107	0.153	0.168	0.154	0.049
	(0.032)**	(0.020)**	(0.072)	(0.028)**	(0.029)**	(0.032)**	(0.046)
BRDR_2009	0.051	0.039	-0.216	0.061	0.064	0.016	-0.008
	(0.032)	(0.021)+	(0.065)**	(0.028)*	(0.030)*	(0.036)	(0.041)
BRDR_2010	0.160	0.165	-0.123	0.193	0.198	0.161	0.019
	(0.036)**	(0.022)**	(0.065)+	(0.030)**	(0.033)**	(0.037)**	(0.045)
BRDR_2011	0.241	0.236	-0.121	0.235	0.239	0.220	0.104
	(0.038)**	(0.027)**	(0.067)+	(0.034)**	(0.035)**	(0.038)**	(0.048)*
BRDR_2012	0.219	0.203	-0.166	0.216	0.228	0.220	0.090
	(0.042)**	(0.032)**	(0.069)*	(0.042)**	(0.038)**	(0.038)**	(0.053)+
BRDR_2013	0.217	0.193	-0.135	0.230	0.228	0.236	0.092
	(0.043)**	(0.040)**	(0.070)+	(0.043)**	(0.041)**	(0.042)**	(0.057)
BRDR_2014	0.211	0.185	-0.164	0.196	0.209	0.230	0.118
	(0.041)**	(0.031)**	(0.075)*	(0.032)**	(0.035)**	(0.041)**	(0.054)*
N	*29 040*	*28 380*	*29 040*	*28 380*	*29 040*	*29 040*	*28 380*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 96: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1) 22	(2) 23	(3) 24	(4) 25	(5) 26	(6) 27	(7) 28
RTA	0.088	0.191	-0.272	-0.200	0.341	0.119	0.028
	(0.038)*	(0.083)*	(0.134)*	(0.312)	(0.110)**	(0.055)*	(0.078)
EU_KOR	0.098		1.219	1.578	0.396	0.332	0.545
	(0.088)		(0.354)**	(0.497)**	(0.108)**	(0.080)**	(0.126)**
KOR_EU	-0.138	-0.105	0.282	-0.788	0.030	0.232	0.224
	(0.094)	(0.092)	(0.134)*	(0.356)*	(0.200)	(0.075)**	(0.196)
BRDR_2001	-0.024	-0.006	-0.092	-0.046	-0.005	-0.031	-0.039
	(0.007)**	(0.015)	(0.022)**	(0.016)**	(0.014)	(0.007)**	(0.010)**
BRDR_2002	-0.002	-0.019	-0.029	-0.027	-0.018	-0.013	-0.034
	(0.013)	(0.013)	(0.025)	(0.018)	(0.027)	(0.010)	(0.011)**
BRDR_2003	-0.005	-0.002	-0.136	0.022	0.007	0.000	-0.034
	(0.017)	(0.015)	(0.033)**	(0.018)	(0.033)	(0.014)	(0.015)*
BRDR_2004	0.059	0.036	-0.143	0.064	0.044	0.039	-0.004
	(0.019)**	(0.014)**	(0.036)**	(0.022)**	(0.037)	(0.015)*	(0.017)
BRDR_2005	0.055	0.065	-0.178	0.052	0.048	0.041	0.017
	(0.023)*	(0.016)**	(0.038)**	(0.022)*	(0.043)	(0.016)*	(0.020)
BRDR_2006	0.071	0.113	-0.182	0.097	0.109	0.060	0.003
	(0.024)**	(0.018)**	(0.043)**	(0.027)**	(0.045)*	(0.018)**	(0.021)
BRDR_2007	0.074	0.138	-0.215	0.123	0.168	0.068	0.027
	(0.030)*	(0.020)**	(0.044)**	(0.029)**	(0.047)**	(0.021)**	(0.023)
BRDR_2008	0.083	0.124	-0.125	0.246	0.173	0.075	0.037
	(0.034)*	(0.021)**	(0.046)**	(0.054)**	(0.041)**	(0.023)**	(0.024)
BRDR_2009	-0.007	0.042	-0.301	0.089	0.008	-0.065	-0.071
	(0.035)	(0.023)+	(0.046)**	(0.045)+	(0.040)	(0.022)**	(0.025)**
BRDR_2010	0.135	0.152	-0.310	0.138	0.038	0.031	0.008
	(0.042)**	(0.025)**	(0.052)**	(0.065)*	(0.046)	(0.026)	(0.025)
BRDR_2011	0.183	0.172	-0.254	0.133	0.088	0.085	0.051
	(0.041)**	(0.026)**	(0.055)**	(0.071)+	(0.045)*	(0.029)**	(0.027)+
BRDR_2012	0.121	0.154	-0.231	0.167	0.109	0.093	0.050
	(0.037)**	(0.023)**	(0.058)**	(0.068)*	(0.047)*	(0.032)**	(0.029)+
BRDR_2013	0.138	0.183	-0.249	0.161	0.122	0.104	0.082
	(0.041)**	(0.026)**	(0.058)**	(0.072)*	(0.049)*	(0.035)**	(0.031)**
BRDR_2014	0.146	0.207	-0.265	0.130	0.127	0.074	0.103
	(0.041)**	(0.024)**	(0.059)**	(0.071)+	(0.053)*	(0.030)*	(0.031)**
N	*29 040*	*22 440*	*29 040*	*27 720*	*25 740*	*29 040*	*28 380*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 97: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	29	30	31	32	33	34	35
RTA	0.035	0.110	-0.041	-0.432	-0.151	0.051	0.003
	(0.075)	(0.067)	(0.112)	(0.142)**	(0.119)	(0.089)	(0.107)
EU_KOR	0.467	0.429	0.548	0.203	0.611	0.376	0.101
	(0.119)**	(0.123)**	(0.138)**	(0.181)	(0.287)*	(0.110)**	(0.135)
KOR_EU	0.190	0.237	0.143	0.247	0.282	0.019	-0.053
	(0.113)+	(0.124)+	(0.193)	(0.155)	(0.160)+	(0.110)	(0.256)
BRDR_2001	-0.039	-0.042	-0.051	-0.013	-0.054	-0.046	-0.033
	(0.009)**	(0.009)**	(0.010)**	(0.023)	(0.013)**	(0.010)**	(0.012)**
BRDR_2002	-0.016	-0.029	-0.021	-0.005	-0.025	-0.023	-0.012
	(0.014)	(0.013)*	(0.013)+	(0.043)	(0.015)+	(0.015)	(0.016)
BRDR_2003	-0.016	-0.028	0.015	0.066	-0.032	-0.020	0.020
	(0.016)	(0.014)*	(0.015)	(0.049)	(0.020)	(0.017)	(0.020)
BRDR_2004	0.019	-0.003	0.079	0.138	0.020	0.018	0.080
	(0.017)	(0.014)	(0.020)**	(0.047)**	(0.021)	(0.017)	(0.020)**
BRDR_2005	0.008	-0.001	0.125	0.145	0.088	0.023	0.119
	(0.018)	(0.016)	(0.022)**	(0.049)**	(0.028)**	(0.018)	(0.021)**
BRDR_2006	0.035	0.030	0.191	0.218	0.142	0.050	0.172
	(0.020)+	(0.017)+	(0.028)**	(0.050)**	(0.031)**	(0.019)*	(0.025)**
BRDR_2007	0.083	0.071	0.218	0.246	0.169	0.081	0.210
	(0.023)**	(0.021)**	(0.032)**	(0.050)**	(0.032)**	(0.021)**	(0.030)**
BRDR_2008	0.115	0.092	0.283	0.279	0.226	0.128	0.215
	(0.022)**	(0.021)**	(0.030)**	(0.051)**	(0.035)**	(0.022)**	(0.026)**
BRDR_2009	-0.009	-0.037	0.072	0.122	0.098	0.004	0.091
	(0.024)	(0.021)+	(0.024)**	(0.048)*	(0.027)**	(0.023)	(0.027)**
BRDR_2010	0.065	0.015	0.133	0.224	0.173	0.086	0.117
	(0.025)**	(0.026)	(0.031)**	(0.046)**	(0.038)**	(0.028)**	(0.029)**
BRDR_2011	0.086	0.038	0.201	0.254	0.266	0.135	0.198
	(0.027)**	(0.027)	(0.029)**	(0.049)**	(0.041)**	(0.028)**	(0.031)**
BRDR_2012	0.074	0.032	0.208	0.264	0.278	0.149	0.233
	(0.028)**	(0.028)	(0.035)**	(0.051)**	(0.049)**	(0.029)**	(0.032)**
BRDR_2013	0.079	0.035	0.193	0.197	0.245	0.151	0.203
	(0.030)**	(0.029)	(0.037)**	(0.055)**	(0.052)**	(0.030)**	(0.033)**
BRDR_2014	0.077	0.040	0.179	0.178	0.227	0.156	0.196
	(0.032)*	(0.031)	(0.037)**	(0.057)**	(0.052)**	(0.032)**	(0.034)**
N	*29 040*	*29 040*	*29 040*	*29 040*	*29 040*	*29 040*	*25 740*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 98: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	36	37	38	39	40	41	42
RTA	-0.009	0.009	0.097	0.265	0.220	0.099	0.086
	(0.069)	(0.060)	(0.072)	(0.098)**	(0.095)*	(0.168)	(0.138)
EU_KOR	0.233	0.273	0.146	0.580	0.559	0.444	0.724
	(0.094)*	(0.125)*	(0.154)	(0.143)**	(0.175)**	(0.255)+	(0.170)**
KOR_EU	0.165	-0.098	-0.193	-0.197	-0.053	0.099	0.264
	(0.094)+	(0.214)	(0.185)	(0.202)	(0.266)	(0.160)	(0.152)+
BRDR_2001	-0.013	-0.038	-0.020	-0.060	-0.036	-0.053	0.023
	(0.008)+	(0.015)**	(0.014)	(0.012)**	(0.015)*	(0.014)**	(0.022)
BRDR_2002	-0.003	0.015	-0.014	-0.064	-0.026	-0.038	0.095
	(0.012)	(0.027)	(0.022)	(0.017)**	(0.018)	(0.023)	(0.033)**
BRDR_2003	0.009	0.024	-0.022	-0.051	-0.024	-0.038	0.127
	(0.015)	(0.026)	(0.021)	(0.021)*	(0.028)	(0.021)+	(0.040)**
BRDR_2004	0.049	0.050	0.021	-0.003	-0.014	0.021	0.134
	(0.017)**	(0.027)+	(0.021)	(0.024)	(0.032)	(0.025)	(0.055)*
BRDR_2005	0.033	0.070	0.008	-0.026	-0.094	0.013	0.034
	(0.018)+	(0.029)*	(0.023)	(0.030)	(0.036)**	(0.026)	(0.057)
BRDR_2006	0.056	0.071	0.034	0.013	-0.048	0.073	0.131
	(0.018)**	(0.028)*	(0.026)	(0.028)	(0.034)	(0.029)*	(0.065)*
BRDR_2007	0.110	0.122	0.075	0.041	0.031	0.148	0.133
	(0.021)**	(0.034)**	(0.029)**	(0.028)	(0.040)	(0.029)**	(0.080)+
BRDR_2008	0.166	0.116	0.049	0.011	0.051	0.167	0.151
	(0.021)**	(0.034)**	(0.028)+	(0.028)	(0.036)	(0.035)**	(0.093)
BRDR_2009	0.037	0.088	0.060	-0.077	-0.012	0.019	0.233
	(0.019)*	(0.042)*	(0.038)	(0.028)**	(0.037)	(0.036)	(0.095)*
BRDR_2010	0.099	0.063	0.097	0.004	0.067	0.053	0.299
	(0.020)**	(0.040)	(0.033)**	(0.034)	(0.046)	(0.042)	(0.108)**
BRDR_2011	0.158	0.050	0.130	-0.003	0.045	0.066	0.205
	(0.023)**	(0.036)	(0.033)**	(0.037)	(0.050)	(0.045)	(0.100)*
BRDR_2012	0.158	0.054	0.118	-0.018	0.069	0.076	0.166
	(0.026)**	(0.039)	(0.036)**	(0.037)	(0.054)	(0.044)+	(0.089)+
BRDR_2013	0.122	0.094	0.206	0.037	0.124	0.092	0.117
	(0.023)**	(0.040)*	(0.044)**	(0.043)	(0.057)*	(0.045)*	(0.074)
BRDR_2014	0.111	0.075	0.193	0.018	0.146	0.102	0.067
	(0.025)**	(0.040)+	(0.043)**	(0.044)	(0.063)*	(0.047)*	(0.083)
N	*29 040*	*26 400*	*25 740*	*29 040*	*28 380*	*29 040*	*27 720*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 99: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1) 43	(2) 44	(3) 45	(4) 46	(5) 47	(6) 48	(7) 49
RTA	0.222	-0.093	0.118	0.242	0.105	-0.028	0.092
	(0.061)**	(0.117)	(0.108)	(0.061)**	(0.077)	(0.119)	(0.095)
EU_KOR	0.124	-0.169	-0.324	0.427	0.231	-0.649	0.403
	(0.379)	(0.265)	(0.160)*	(0.166)*	(0.106)*	(0.346)+	(0.179)*
KOR_EU	-0.086	0.339	0.238	0.081	0.051	-0.210	0.088
	(0.245)	(0.158)*	(0.104)*	(0.187)	(0.096)	(0.169)	(0.080)
BRDR_2001	0.021	-0.023	-0.009	0.018	0.017	0.015	-0.018
	(0.020)	(0.014)+	(0.011)	(0.010)+	(0.009)+	(0.013)	(0.017)
BRDR_2002	0.051	-0.024	0.018	0.032	0.064	0.008	-0.001
	(0.027)+	(0.015)	(0.021)	(0.017)+	(0.018)**	(0.018)	(0.017)
BRDR_2003	0.013	-0.026	-0.002	0.026	0.049	0.027	0.063
	(0.031)	(0.017)	(0.026)	(0.016)	(0.018)**	(0.021)	(0.019)**
BRDR_2004	0.072	0.016	0.007	0.052	0.055	0.044	0.119
	(0.032)*	(0.020)	(0.028)	(0.020)**	(0.021)*	(0.023)+	(0.022)**
BRDR_2005	0.079	0.019	-0.035	0.048	0.035	0.070	0.080
	(0.042)+	(0.020)	(0.034)	(0.022)*	(0.027)	(0.021)**	(0.029)**
BRDR_2006	0.080	0.063	0.001	0.070	0.076	0.083	0.148
	(0.045)+	(0.022)**	(0.033)	(0.021)**	(0.027)**	(0.029)**	(0.031)**
BRDR_2007	0.113	0.093	0.040	0.088	0.137	0.084	0.195
	(0.049)*	(0.027)**	(0.034)	(0.025)**	(0.028)**	(0.028)**	(0.037)**
BRDR_2008	0.125	0.070	0.070	0.111	0.151	0.123	0.186
	(0.052)*	(0.024)**	(0.026)**	(0.026)**	(0.024)**	(0.034)**	(0.030)**
BRDR_2009	0.130	-0.075	-0.001	0.049	0.107	0.092	0.068
	(0.045)**	(0.025)**	(0.033)	(0.028)+	(0.024)**	(0.037)*	(0.030)*
BRDR_2010	0.154	-0.109	0.059	0.087	0.133	0.136	0.094
	(0.059)**	(0.030)**	(0.032)+	(0.039)*	(0.032)**	(0.044)**	(0.038)*
BRDR_2011	0.264	-0.065	0.086	0.097	0.151	0.195	0.115
	(0.058)**	(0.031)*	(0.035)*	(0.036)**	(0.034)**	(0.044)**	(0.041)**
BRDR_2012	0.282	-0.055	0.082	0.088	0.125	0.207	0.103
	(0.059)**	(0.033)+	(0.038)*	(0.037)*	(0.034)**	(0.043)**	(0.042)*
BRDR_2013	0.285	-0.038	0.109	0.119	0.178	0.217	0.067
	(0.070)**	(0.034)	(0.043)*	(0.039)**	(0.033)**	(0.047)**	(0.049)
BRDR_2014	0.314	-0.055	0.115	0.149	0.139	0.239	0.058
	(0.066)**	(0.037)	(0.046)*	(0.042)**	(0.040)**	(0.051)**	(0.043)
N	*23 584*	*28 380*	*27 060*	*24 420*	*26 312*	*22 440*	*25 740*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 100: Sectoral estimates of the effects of the EU-Korea FTA, WIOD

	(1)	(2)	(3)	(4)	(5)	(6)
	50	51	52	53	54	55
RTA	0.020	0.076	-0.058	0.234	0.051	-0.011
	(0.087)	(0.087)	(0.076)	(0.075)**	(0.120)	(0.053)
EU_KOR	0.269	-0.002	0.099	0.775	0.351	
	(0.128)*	(0.118)	(0.109)	(0.105)**	(0.103)**	
KOR_EU	0.145	-0.156	-0.034	0.058	0.048	-1.472
	(0.117)	(0.081)+	(0.118)	(0.131)	(0.109)	(0.102)**
BRDR_2001	0.001	-0.031	-0.041	0.004	-0.029	-0.156
	(0.010)	(0.012)**	(0.009)**	(0.009)	(0.009)**	(0.047)**
BRDR_2002	0.029	-0.031	-0.022	0.031	-0.003	-0.239
	(0.013)*	(0.016)+	(0.019)	(0.010)**	(0.019)	(0.031)**
BRDR_2003	0.024	-0.017	-0.003	0.012	0.001	-0.283
	(0.015)+	(0.019)	(0.021)	(0.013)	(0.019)	(0.052)**
BRDR_2004	0.049	0.024	0.031	0.066	0.040	-0.284
	(0.015)**	(0.018)	(0.024)	(0.018)**	(0.019)*	(0.046)**
BRDR_2005	0.056	0.029	0.024	0.059	0.019	-0.301
	(0.016)**	(0.018)	(0.021)	(0.022)**	(0.018)	(0.068)**
BRDR_2006	0.079	0.045	0.068	0.099	0.053	-0.276
	(0.018)**	(0.018)*	(0.026)**	(0.023)**	(0.018)**	(0.056)**
BRDR_2007	0.096	0.072	0.136	0.121	0.088	-0.259
	(0.017)**	(0.021)**	(0.032)**	(0.029)**	(0.020)**	(0.072)**
BRDR_2008	0.118	0.111	0.168	0.137	0.103	-0.245
	(0.018)**	(0.021)**	(0.031)**	(0.029)**	(0.019)**	(0.106)*
BRDR_2009	0.030	-0.014	0.048	0.098	-0.016	-0.392
	(0.023)	(0.023)	(0.028)+	(0.027)**	(0.020)	(0.147)**
BRDR_2010	0.078	0.012	0.131	0.186	0.057	-0.220
	(0.033)*	(0.030)	(0.033)**	(0.028)**	(0.023)*	(0.128)+
BRDR_2011	0.109	0.051	0.166	0.206	0.103	-0.153
	(0.034)**	(0.030)+	(0.036)**	(0.029)**	(0.025)**	(0.124)
BRDR_2012	0.118	0.041	0.155	0.202	0.103	-0.094
	(0.036)**	(0.033)	(0.033)**	(0.031)**	(0.025)**	(0.121)
BRDR_2013	0.131	0.053	0.147	0.184	0.094	-0.101
	(0.036)**	(0.036)	(0.032)**	(0.034)**	(0.027)**	(0.152)
BRDR_2014	0.142	0.047	0.144	0.176	0.094	-0.093
	(0.039)**	(0.037)	(0.034)**	(0.034)**	(0.026)**	(0.123)
N	*29 040*	*28 380*	*29 040*	*29 040*	*29 040*	*2 922*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 101: Sectoral estimates of the effects of the EU-Korea FTA, GTAP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	1	2	3	4	5	6	7	8
RTA	-0.049	0.031	-0.011	-0.199	-0.088	0.043	-0.032	-0.028
	(0.065)	(0.129)	(0.167)	(0.159)	(0.046)$^{+}$	(0.100)	(0.151)	(0.048)
EU_KOR	0.247	0.634	0.705	0.567	0.257	0.077	0.343	0.139
	(0.080)**	(0.119)**	(0.169)**	(0.117)**	(0.125)*	(0.167)	(0.147)*	(0.082)$^{+}$
KOR_EU	0.291	0.438	-0.065	0.370	0.169	0.155	0.305	0.132
	(0.091)**	(0.167)**	(0.180)	(0.113)**	(0.099)$^{+}$	(0.097)	(0.133)*	(0.103)
BRDR_2001	0.004	-0.020	0.002	-0.066	-0.004	0.032	-0.031	-0.034
	(0.010)	(0.011)$^{+}$	(0.011)	(0.017)**	(0.010)	(0.011)**	(0.007)**	(0.007)**
BRDR_2002	0.031	0.002	0.028	0.015	0.005	0.077	-0.040	-0.015
	(0.015)*	(0.024)	(0.018)	(0.018)	(0.012)	(0.017)**	(0.010)**	(0.010)
BRDR_2003	0.075	0.020	0.050	0.079	0.031	0.062	-0.038	-0.005
	(0.020)**	(0.028)	(0.029)$^{+}$	(0.025)**	(0.017)$^{+}$	(0.024)**	(0.016)*	(0.012)
BRDR_2004	0.121	0.048	0.094	0.135	0.051	0.133	-0.005	0.025
	(0.024)**	(0.031)	(0.031)**	(0.027)**	(0.018)**	(0.027)**	(0.017)	(0.012)*
BRDR_2005	0.138	0.029	0.101	0.153	0.061	0.085	-0.007	0.030
	(0.022)**	(0.035)	(0.036)**	(0.029)**	(0.018)**	(0.026)**	(0.023)	(0.013)*
BRDR_2006	0.160	0.052	0.141	0.179	0.092	0.081	-0.009	0.033
	(0.023)**	(0.038)	(0.035)**	(0.032)**	(0.019)**	(0.028)**	(0.030)	(0.015)*
BRDR_2007	0.213	0.058	0.175	0.182	0.143	0.053	-0.026	0.062
	(0.023)**	(0.047)	(0.042)**	(0.035)**	(0.020)**	(0.030)$^{+}$	(0.040)	(0.019)**
BRDR_2008	0.282	0.056	0.215	0.238	0.203	0.052	-0.069	0.067
	(0.022)**	(0.043)	(0.044)**	(0.044)**	(0.022)**	(0.031)$^{+}$	(0.045)	(0.020)**
BRDR_2009	0.137	-0.123	0.033	0.069	0.093	-0.112	-0.253	-0.026
	(0.023)**	(0.052)*	(0.035)	(0.040)$^{+}$	(0.024)**	(0.051)*	(0.040)**	(0.022)
BRDR_2010	0.216	-0.024	0.093	0.120	0.177	0.048	-0.094	0.077
	(0.027)**	(0.059)	(0.045)*	(0.058)*	(0.027)**	(0.049)	(0.046)*	(0.025)**
BRDR_2011	0.298	0.038	0.168	0.174	0.250	0.121	-0.057	0.113
	(0.027)**	(0.068)	(0.045)**	(0.068)**	(0.027)**	(0.051)*	(0.049)	(0.026)**
BRDR_2012	0.289	-0.007	0.140	0.167	0.243	0.041	-0.104	0.105
	(0.034)**	(0.063)	(0.044)**	(0.068)*	(0.031)**	(0.058)	(0.048)*	(0.027)**
BRDR_2013	0.236	-0.009	0.090	0.173	0.194	0.025	-0.087	0.119
	(0.033)**	(0.067)	(0.048)$^{+}$	(0.073)*	(0.028)**	(0.068)	(0.047)$^{+}$	(0.027)**
BRDR_2014	0.226	0.011	0.085	0.126	0.196	0.025	-0.047	0.128
	(0.034)**	(0.074)	(0.048)$^{+}$	(0.081)	(0.030)**	(0.072)	(0.053)	(0.030)**
N	*29 040*	*27 720*	*27 720*	*29 040*	*29 040*	*29 040*	*29 040*	*29 040*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 102: Sectoral estimates of the effects of the EU-Korea FTA, GTAP

	(1) 9	(2) 10	(3) 11	(4) 12	(5) 13	(6) 14	(7) 15	(8) 16
RTA	-0.545	-0.030	-0.053	-0.100	0.141	0.113	0.235	0.274
	(0.147)**	(0.067)	(0.089)	(0.100)	(0.052)**	(0.089)	(0.067)**	(0.097)**
EU_KOR	1.867	0.250	0.429	0.176	0.270	0.345	0.584	0.594
	(0.472)**	(0.090)**	(0.145)**	(0.092)+	(0.080)**	(0.088)**	(0.100)**	(0.150)**
KOR_EU	0.834	0.291	0.267	0.281	0.217	0.385	0.022	-0.015
	(0.185)**	(0.078)**	(0.115)*	(0.145)+	(0.088)*	(0.187)*	(0.097)	(0.152)
BRDR_2001	-0.087	-0.008	-0.043	-0.060	-0.037	-0.022	0.007	-0.108
	(0.056)	(0.009)	(0.013)**	(0.013)**	(0.009)**	(0.008)**	(0.017)	(0.022)**
BRDR_2002	-0.023	0.016	-0.012	-0.036	-0.029	-0.007	-0.040	-0.102
	(0.052)	(0.012)	(0.017)	(0.017)*	(0.011)*	(0.011)	(0.023)+	(0.031)**
BRDR_2003	-0.009	0.050	0.007	-0.004	-0.013	0.022	-0.088	-0.077
	(0.057)	(0.014)**	(0.020)	(0.022)	(0.015)	(0.016)	(0.031)**	(0.044)+
BRDR_2004	0.063	0.123	0.053	0.093	0.070	0.075	-0.020	-0.057
	(0.074)	(0.018)**	(0.024)*	(0.028)**	(0.017)**	(0.020)**	(0.031)	(0.047)
BRDR_2005	0.109	0.131	0.061	0.096	0.074	0.093	0.024	-0.152
	(0.065)+	(0.020)**	(0.024)**	(0.024)**	(0.017)**	(0.024)**	(0.035)	(0.053)**
BRDR_2006	0.135	0.167	0.100	0.191	0.170	0.120	0.057	-0.083
	(0.071)+	(0.023)**	(0.026)**	(0.025)**	(0.016)**	(0.024)**	(0.039)	(0.057)
BRDR_2007	0.119	0.187	0.119	0.237	0.191	0.159	0.057	-0.080
	(0.058)*	(0.024)**	(0.027)**	(0.027)**	(0.019)**	(0.028)**	(0.036)	(0.071)
BRDR_2008	0.180	0.224	0.140	0.250	0.206	0.154	0.049	-0.107
	(0.084)*	(0.022)**	(0.031)**	(0.032)**	(0.020)**	(0.032)**	(0.046)	(0.072)
BRDR_2009	-0.005	0.133	-0.005	0.051	0.039	0.016	-0.008	-0.216
	(0.076)	(0.024)**	(0.029)	(0.032)	(0.021)+	(0.036)	(0.041)	(0.065)**
BRDR_2010	0.035	0.258	0.079	0.160	0.165	0.161	0.019	-0.123
	(0.089)	(0.028)**	(0.036)*	(0.036)**	(0.022)**	(0.037)**	(0.045)	(0.065)+
BRDR_2011	0.123	0.320	0.126	0.241	0.236	0.220	0.104	-0.121
	(0.096)	(0.029)**	(0.036)**	(0.038)**	(0.027)**	(0.038)**	(0.048)*	(0.067)+
BRDR_2012	0.152	0.300	0.145	0.219	0.203	0.220	0.090	-0.166
	(0.095)	(0.031)**	(0.036)**	(0.042)**	(0.032)**	(0.038)**	(0.053)+	(0.069)*
BRDR_2013	0.167	0.288	0.140	0.217	0.193	0.236	0.092	-0.135
	(0.076)*	(0.029)**	(0.036)**	(0.043)**	(0.040)**	(0.042)**	(0.057)	(0.070)+
BRDR_2014	0.170	0.289	0.128	0.211	0.185	0.230	0.118	-0.164
	(0.083)*	(0.029)**	(0.036)**	(0.041)**	(0.031)**	(0.041)**	(0.054)*	(0.075)*
N	*28 160*	*29 040*	*29 040*	*29 040*	*28 380*	*29 040*	*28 380*	*29 040*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 103: Sectoral estimates of the effects of the EU-Korea FTA, GTAP

	(1) 17	(2) 18	(3) 19	(4) 20	(5) 21	(6) 22	(7) 23	(8) 24
RTA	0.162	0.088	-0.272	-0.200	0.118	0.016	-0.025	-0.432
	(0.051)**	(0.038)*	(0.134)*	(0.312)	(0.055)*	(0.069)	(0.097)	(0.142)**
EU_KOR	0.445	0.098	1.219	1.578	0.332	0.418	0.508	0.203
	(0.074)**	(0.088)	(0.354)**	(0.497)**	(0.079)**	(0.102)**	(0.103)**	(0.181)
KOR_EU	0.063	-0.138	0.282	-0.788	0.196	0.198	0.110	0.247
	(0.107)	(0.094)	(0.134)*	(0.356)*	(0.072)**	(0.100)*	(0.153)	(0.155)
BRDR_2001	-0.029	-0.024	-0.093	-0.046	-0.030	-0.039	-0.053	-0.013
	(0.008)**	(0.007)**	(0.022)**	(0.016)**	(0.007)**	(0.007)**	(0.009)**	(0.023)
BRDR_2002	-0.019	-0.002	-0.029	-0.027	-0.016	-0.024	-0.026	-0.005
	(0.012)	(0.013)	(0.025)	(0.018)	(0.009)+	(0.010)*	(0.012)*	(0.043)
BRDR_2003	0.007	-0.005	-0.136	0.022	-0.002	-0.023	0.002	0.066
	(0.019)	(0.017)	(0.033)**	(0.018)	(0.013)	(0.012)+	(0.015)	(0.049)
BRDR_2004	0.071	0.059	-0.143	0.064	0.037	0.006	0.059	0.138
	(0.021)**	(0.019)**	(0.036)**	(0.022)**	(0.015)*	(0.013)	(0.018)**	(0.047)**
BRDR_2005	0.076	0.055	-0.178	0.052	0.040	-0.006	0.095	0.145
	(0.022)**	(0.023)*	(0.038)**	(0.022)*	(0.015)**	(0.014)	(0.019)**	(0.049)**
BRDR_2006	0.135	0.071	-0.182	0.097	0.060	0.017	0.149	0.218
	(0.024)**	(0.024)**	(0.043)**	(0.027)**	(0.018)**	(0.015)	(0.024)**	(0.050)**
BRDR_2007	0.170	0.074	-0.215	0.123	0.070	0.064	0.176	0.246
	(0.028)**	(0.030)*	(0.044)**	(0.029)**	(0.021)**	(0.019)**	(0.027)**	(0.050)**
BRDR_2008	0.158	0.083	-0.125	0.245	0.075	0.095	0.234	0.279
	(0.028)**	(0.034)*	(0.046)**	(0.054)**	(0.022)**	(0.018)**	(0.026)**	(0.051)**
BRDR_2009	0.059	-0.007	-0.301	0.089	-0.061	-0.033	0.047	0.122
	(0.028)*	(0.035)	(0.046)**	(0.045)+	(0.021)**	(0.018)+	(0.021)*	(0.048)*
BRDR_2010	0.194	0.135	-0.310	0.138	0.036	0.041	0.114	0.224
	(0.031)**	(0.042)**	(0.052)**	(0.065)*	(0.025)	(0.020)*	(0.027)**	(0.046)**
BRDR_2011	0.233	0.183	-0.254	0.133	0.087	0.078	0.176	0.254
	(0.034)**	(0.041)**	(0.055)**	(0.071)+	(0.028)**	(0.021)**	(0.026)**	(0.049)**
BRDR_2012	0.218	0.121	-0.231	0.167	0.092	0.071	0.184	0.264
	(0.038)**	(0.037)**	(0.058)**	(0.068)*	(0.031)**	(0.023)**	(0.030)**	(0.051)**
BRDR_2013	0.224	0.138	-0.249	0.161	0.105	0.071	0.173	0.197
	(0.040)**	(0.041)**	(0.058)**	(0.072)*	(0.034)**	(0.024)**	(0.032)**	(0.055)**
BRDR_2014	0.199	0.146	-0.265	0.130	0.076	0.070	0.164	0.178
	(0.033)**	(0.041)**	(0.059)**	(0.071)+	(0.029)**	(0.026)**	(0.033)**	(0.057)**
N	*29 040*	*29 040*	*29 040*	*27 720*	*29 040*	*29 040*	*29 040*	*29 040*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 104: Sectoral estimates of the effects of the EU-Korea FTA, GTAP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	25	26	27	28	29	30	31
RTA	-0.151	0.166	0.145	0.086	-0.093	0.066	0.134
	(0.119)	(0.101)	(0.143)	(0.138)	(0.117)	(0.091)	(0.077)$^{+}$
EU_KOR	0.611	0.380	0.403	0.724	-0.169	0.306	0.438
	(0.287)*	(0.144)**	(0.282)	(0.170)**	(0.265)	(0.106)**	(0.071)**
KOR_EU	0.282	-0.274	0.054	0.264	0.339	0.111	-0.064
	(0.160)$^{+}$	(0.213)	(0.175)	(0.152)$^{+}$	(0.158)*	(0.079)	(0.084)
BRDR_2001	-0.054	-0.029	-0.056	0.023	-0.023	-0.011	-0.021
	(0.013)**	(0.014)*	(0.013)**	(0.022)	(0.014)$^{+}$	(0.007)	(0.008)**
BRDR_2002	-0.025	-0.023	-0.046	0.095	-0.024	0.017	-0.010
	(0.015)$^{+}$	(0.018)	(0.021)*	(0.033)**	(0.015)	(0.012)	(0.011)
BRDR_2003	-0.032	-0.015	-0.057	0.127	-0.026	0.015	-0.002
	(0.020)	(0.022)	(0.022)*	(0.040)**	(0.017)	(0.014)	(0.013)
BRDR_2004	0.020	0.030	-0.001	0.134	0.016	0.046	0.045
	(0.021)	(0.026)	(0.024)	(0.055)*	(0.020)	(0.015)**	(0.015)**
BRDR_2005	0.088	0.001	-0.007	0.034	0.019	0.029	0.041
	(0.028)**	(0.031)	(0.027)	(0.057)	(0.020)	(0.018)	(0.016)**
BRDR_2006	0.142	0.042	0.045	0.131	0.063	0.062	0.077
	(0.031)**	(0.029)	(0.028)	(0.065)*	(0.022)**	(0.018)**	(0.016)**
BRDR_2007	0.169	0.088	0.119	0.133	0.093	0.094	0.112
	(0.032)**	(0.030)**	(0.028)**	(0.080)$^{+}$	(0.027)**	(0.019)**	(0.020)**
BRDR_2008	0.226	0.086	0.132	0.151	0.070	0.115	0.141
	(0.035)**	(0.032)**	(0.033)**	(0.093)	(0.024)**	(0.017)**	(0.019)**
BRDR_2009	0.098	0.022	0.020	0.233	-0.075	0.021	0.048
	(0.027)**	(0.036)	(0.031)	(0.095)*	(0.025)**	(0.018)	(0.018)**
BRDR_2010	0.173	0.094	0.063	0.299	-0.109	0.076	0.108
	(0.038)**	(0.042)*	(0.037)$^{+}$	(0.108)**	(0.030)**	(0.022)**	(0.022)**
BRDR_2011	0.266	0.101	0.093	0.205	-0.065	0.104	0.141
	(0.041)**	(0.047)*	(0.039)*	(0.100)*	(0.031)*	(0.024)**	(0.023)**
BRDR_2012	0.278	0.107	0.098	0.166	-0.055	0.101	0.131
	(0.049)**	(0.050)*	(0.039)*	(0.089)$^{+}$	(0.033)$^{+}$	(0.024)**	(0.025)**
BRDR_2013	0.245	0.168	0.113	0.117	-0.038	0.112	0.131
	(0.052)**	(0.054)**	(0.040)**	(0.074)	(0.034)	(0.026)**	(0.028)**
BRDR_2014	0.227	0.168	0.116	0.067	-0.055	0.114	0.123
	(0.052)**	(0.058)**	(0.043)**	(0.083)	(0.037)	(0.028)**	(0.030)**
N	*29 040*	*29 040*	*29 040*	*27 720*	*28 380*	*29 040*	*29 040*

Note: Standard errors in parentheses, $p < 0.10$, * $p < .05$, ** $p < .01$

Table 105: GTAP sector description

Aggregated Sectors	GTAP Sectors
Agriculture	Paddy rice
	Wheat
	Cereal grains nec
	Vegetables, fruit, nuts
	Oil seeds
	Sugar cane, sugar beet
	Plant-based fibres
	Crops nec
	Cattle, sheep, goats, horses
	Raw milk
	Animal products nec
	Meat: cattle, sheep, goats, horses
	Meat products nec
	Vegetable oils and fats
	Dairy products
	Processed rice
	Sugar
Automotive	Motor vehicles and parts
Business services	Business services nec
Chemicals	Chemical, rubber, plastic prods
Construction	Construction
Electronic equipment	Electronic equipment
Energy	Coal
	Oil
	Gas
	Petroleum, coal products
Financial and Insurance services	Financial services nec
	Insurance
Fishing	Fishing
Machinery and equipment	Transport equipment nec
	Machinery and equipment nec
Manufacturing	Manufactures nec
Metals	Ferrous metals
	Metals nec
	Metal products
Other services	Recreation and other services
	PubAdmin/Defence/Health/Education
	Dwellings
Processed food	Beverages and tobacco products

Aggregated Sectors	GTAP Sectors
	Food products nec
Raw material	Forestry
	Minerals nec
Telecoms	Communication
Textile	Wool, silk-worm cocoons
	Textiles
	Wearing apparel
	Leather products
Trade	Trade
Transport	Transport nec
	Sea transport
	Air transport
Utilities	Electricity
	Gas manufacture, distribution
	Water
Wood paper and minerals	Wood products
	Paper products, publishing
	Mineral products nec

Source: Ifo Trade Model.

Table 106: WIOD classification and concordance with GTAP

WIOD Code	WIOD Sector Description	WIOD ID	GTAP Code	GTAP ID
A01	Crop and animal production	1	1	1
A02	Forestry and logging	2	13	2
A03	Fishing and aquaculture	3	14	3
B	Mining and quarrying	4	15	4
C10-C12	Manufacture of food beverages, tobacco	5	19	5
C13-C15	Manufacture of textiles, apparel, leather	6	27	6
C16	Manufacture of wood and cork;	7	30	7
C17	Manufacture of paper and paper products	8	31	8
C18	Printing and reproduction of recorded media	9	31	8
C19	Manufacture of coke and refined petroleum	10	32	9
C20	Manufacture of chemicals and chemical products	11	33	10
C21	Manufacture of basic pharmaceutical products	12	33	10
C22	Manufacture of rubber and plastic products	13	33	10
C23	Manufacture of other non-metallic minerals	14	34	11
C24	Manufacture of basic metals	15	35	12
C25	Manufacture of fabricated metal products	16	37	13
C26	Manufacture of computer, electronic and optical	17	40	16
C27	Manufacture of electrical equipment	18	41	17
C28	Manufacture of machinery and equipment nec	19	41	17
C29	Manufacture of motor vehicles, trailers and semi-	20	38	14
C30	Manufacture of other transport equipment	21	39	15
C31_C32	Manufacture of furniture; other manufacturing	22	42	18
C33	Repair and installation of machinery and equipment	23	46	21
D35	Electricity, gas, steam and air conditioning supply	24	43	19
E36	Water collection, treatment and supply	25	45	20
E37-E39	Sewerage; waste collection, disposal;	26	56	31
F	Construction	27	46	21
G45	Wholesale, repair of vehicles and motorcycles	28	47	22
G46	Wholesale trade, except of vehicles and motorcycles	29	47	22
G47	Retail trade, except of motor vehicles and motorcycles	30	47	22
H49	Land transport and transport via pipelines	31	48	23
H50	Water transport	32	49	24
H51	Air transport	33	50	25
H52	Warehousing and support activities for transportation	34	48	23
H53	Postal and courier activities	35	51	26
I	Accommodation and food service activities	36	47	22
J58	Publishing activities	37	31	8
J59_J60	Motion picture, video and television, sound	38	51	26
J61	Telecommunications	39	51	26

J62_J63	Computer programming, consultancy; information	40	51	26
K64	Financial services, except insurance and pension	41	52	27
K65	Insurance, reinsurance and pension funding	42	53	28
K66	Auxiliary to financial and insurance activities	43	52	27
L68	Real estate activities	44	54	29
M69_M70	Legal and accounting, management, consultancy	45	55	30
M71	Architectural, engineering, technical testing	46	55	30
M72	Scientific research and development	47	55	30
M73	Advertising and market research	48	55	30
M74_M75	Other professional, scientific, veterinary activities	49	55	30
N	Administrative and support service activities	50	55	30
O84	Public administration and defence	51	56	31
P85	Education	52	56	31
Q	Human health and social work activities	53	56	31
R_S	Other service activities	54	55	30
T	Undifferentiated goods- and services activities	55	55	30
U	Activities of extraterritorial organisations	56	56	31

Source: Ifo Institute.

Sectoral estimates according to the GTAP classification

The estimates in the previous table are obtained from the WIOD data without change in classification or aggregation. However, for the subsequent GE analysis, we need the different sectoral break-down used by the GTAP data set. The estimates presented in the table below are obtained from the same econometric specification as used in column (1) of the first table in this section, with the only difference being that the sectors have been aggregated such that they match the GTAP classification. For this use, a concordance table mapping the WIOD sector classification to the one used in GTAP was constructed and used.

Table 107: Sectoral estimates of the effects of the EU-Korea FTA, GTAP

ID	Sector Description	EU→KOR	p-value	KOR→EU	p-value
1	Agricultural products	0.247**	0.002	0.291**	0.001
2	Forestry	0.634**	0.000	0.438**	0.009
3	Fishing	0.705**	0.000	-0.065	0.718
4	Coal, oil, gas, minerals	0.567**	0.000	0.370**	0.001
5	Processed food	0.257*	0.040	0.169+	0.088
6	Textiles, wearing apparel, leather products	0.077	0.643	0.155	0.109
7	Wood products	0.343*	0.020	0.305*	0.022
8	Paper products, publishing	0.139+	0.090	0.132	0.198
9	Petroleum, coal products	1.867**	0.000	0.834**	0.000
10	Chemical, rubber, plastic prods	0.250**	0.005	0.291**	0.000
11	Mineral products nec	0.429**	0.003	0.267*	0.021
12	Metals	0.176+	0.054	0.281+	0.053
13	Metal Products	0.270**	0.001	0.217*	0.014
14	Motor vehicles and parts	0.345**	0.000	0.385*	0.040
15	Transport equipment nec	0.584**	0.000	0.022	0.823
16	Electronic equipment	0.594**	0.000	-0.015	0.922
17	Machinery and equipment nec	0.445**	0.000	0.063	0.556
18	Manufactures nec	0.098	0.265	-0.138	0.144
19	Electricity	1.219**	0.001	0.282*	0.035
20	Water, gas manufacture/distribution	1.578**	0.001	-0.788*	0.027
21	Construction	0.332**	0.000	0.196**	0.007
22	Trade	0.418**	0.000	0.198*	0.048
23	Transport nec	0.508**	0.000	0.110	0.471
24	Sea transport	0.203	0.261	0.247	0.112
25	Air transport	0.611*	0.033	0.282+	0.079
26	Communication	0.380**	0.008	-0.274	0.199
27	Financial services nec	0.403	0.154	0.054	0.755
28	Insurance	0.724**	0.000	0.264+	0.083
29	Business services nec	-0.169	0.523	0.339*	0.032
30	Recreation and other services	0.306**	0.004	0.111	0.162
31	PubAdmin/Defence/Health/Education	0.438**	0.000	-0.064	0.451

Source: Own econometric estimates, based on WIOD (2017) data matched to GTAP sectors. P-values below 0.10 denote statistical significance at least at the 10 percent level. See table 84 for the concordance of sectors applied in the general equilibrium model. + $p < 0.10$, * $p < .05$, ** $p < .01$

Overall, the estimates from the table above are comparable to the corresponding estimates from the prior table, but we also observe some differences. Several findings stand out:

1. There are 30 positive estimates and only one negative estimate of the effects of the agreement on EU exports to Korea in Table 107. This estimate is not statistically significant. Furthermore, 26 of the positive estimates for the EU exports to Korea are statistically significant.

2. There are 25 positive estimates and only six negative estimates of the effects of the agreement on Korean exports to the EU. The negative estimates are small in magnitude and only one of them is statistically significant.[462] In contrast, more than two-thirds of the positive estimates are statistically significant.

3. Once again, we find that the impact of the EU-Korea FTA has been stronger for goods then for services for both EU exports to Korea and for Korean exports to EU. As stated above, we view this result as expected and we explain it with the highly localised consumption of services.[463]

Overall, these results confirm that the EU-Korea FTA had positive effects in most sectors for both the EU and Korea. The effects on EU exports are stronger both in terms of magnitude and in terms of sectoral coverage. The variation in the estimates of the impact of the EU-Korea FTA is largely in line with expectations.

Additional comments on the Ifo Trade Model

As described in section 5.5, dynamic reasons for growth induced by trade include, for instance, pro-competitive gains (when lower trade costs trigger entry of competitors, thereby reducing the monopoly power of incumbent firms), or gains from the exploitation of economies of scale (when production is associated with fixed costs), or an endogenous adjustment of sectoral productivities due to the differential effects of trade on productive versus unproductive firms. All these effects tend to increase the gains from trade.[464] However, adding more detail makes it more and more difficult to come up with a reasonable numerical implementation of the model and opens the door to arbitrary choices.

Moreover, the static nature of the model means that trade is assumed to have no impact on the incentives for research and development, the adoption of more advanced technology, the diffusion of techniques, or investment into human capital. These dynamic gains from trade are potentially much bigger than the static ones highlighted in the Ricardian model.[465] However, as with alternative CGE modelling approaches considering employment effects, there is not one single, universally accepted theoretical framework which could be readily implemented empirically. Therefore, for this evaluation we consider the static Ricardian model to be the most appropriate choice.

[462] "Water collection, treatment and supply".

[463] See also Anderson et al., 2014 and Anderson et al., 2015.

[464] See Costinot and Rodriguez-Clare, 2014.

[465] See Ravikumar, B., and Ana-Maria Santacreu. *Capital Accumulation and the Gains from Trade*. Federal Reserve Bank of St. Louis, 2017. Working Paper 2017—005A.

Annex III: Additional information on regulatory changes

Table 108: Amendments to trade-related legislation in Korea since 2012

Subject	Legislation	Content of the amendment	Date*
Customs procedures	Customs Act	▪ Several revisions to the Customs Act, including: ▪ If the Commissioner of the Korea Customs Service or the head of a customs house deems it necessary to conduct an on-site investigation in consideration of characteristics of the relevant person subject to investigation, he/she may conduct an on-site investigation prior to a documentary investigation [a)]	2015
	Act on Special Cases of the Customs Act for the Implementation of Free Trade Agreements	▪ Where an exporter or producer who has completed and submitted the documents evidencing the origin of a good provides notification of an error regarding the origin of the good pursuant to the former part of Article 11 (1) of the Act, he/she shall draw up a written notification of revision ▪ Where the Commissioner of the Korea Customs Service or the head of a customs house conducts an investigation necessary for verifying the origin of any exported good or whether the application of conventional tariffs is appropriate pursuant to Article 13 (2) of the Act, he/she shall conduct a documentary investigation: Provided, That he/she may conduct an additional on-site investigation if it is necessary to directly verify the authenticity, accuracy, etc. of documents evidencing the origin because the result of a documentary investigation reveals that it is impracticable to verify such matters only by such a documentary investigation [b)]	2015
	Act on Special Cases Concerning the Refund of Customs Duties et cetera levied on Raw Materials for Export	▪ If an applicant for refund is liable to pay any of the following customs duties, etc. to a customs office, the head of the customs office may appropriate the refund money determined for the following amounts in the following order; and shall pay the remainder after such appropriation to the relevant applicant … ▪ The head of a customs office shall appropriate the refund money determined for the amount provided for in paragraph (4) 2, upon a request from the applicant for refund. In such cases, the amount of customs duties payable shall be deemed paid on the date the applicant for refund files a request for such appropriation [c)]	2016
General import and export procedures	Foreign Trade Act	▪ Several revisions to the Foreign Trade Act, including: ▪ When a company designated as a specialized trading company fails to satisfy the criteria for designation, the Minister of Trade, Industry and Energy may revoke the designation [d)]	2014
Standards and technical requirements	Framework Act on National Standards	▪ Matters pertaining to the certification of quality management systems and the management and operation of the certification system shall be governed by the Quality Control and Safety Management of Industrial Products Act [e)]	2016
Sanitary and phytosanitary requirements	Food Sanitation Act	▪ Several revisions to the Food Sanitation Act, including: ▪ Where a person who manufactures, processes or sells foods intends to implement food traceability, he/she may register the relevant foods with the Minister of Food and Drug Safety, satisfying the standards for registration prescribed by the Prime Ministerial Decree: Provided that, persons prescribed by the Prime Ministerial Decree, such as manufacturers and processors of baby food and	2015

Subject	Legislation	Content of the amendment	Date*
		food sellers with more than a certain amount of sales and more than a certain store space, shall register relevant foods with the Minister of Food and Drug Safety [f)]	
	Act on the Prevention of Contagious Animal Diseases	▪ Several revisions to the Act on the Prevention of Contagious Animal Diseases, including: ▪ Even after the Minister of Agriculture, Food and Rural Affairs cancelled the designation of an importation banned area with regard to designated objects subject to quarantine under paragraph (1) 1 or lifted an importation ban under subparagraph 3 of the same paragraph, where deemed necessary due to modification of international standards, changes in livestock health control systems in an exporting country, etc., the Minister may analyse importation risk again [g)]	2017
	Plant Protection Act	▪ Provisions regarding disqualification of persons from registering an export-import timber heat treatment business ▪ Provisions regarding penal provisions for violation of the Act [h)]	2015
Government procurement	Government Procurement Act	▪ Where the head of an end-user institution intends to pay the price in advance under Article 26 of the Management of the National Funds Act and Article 35 of the Local Accounting Act, he/she may make an advance payment to the Administrator of the Public Procurement Service [i)]	2016
Zones	Special Act on Designation and Management of Free Economic Zones	▪ A foreigner or a juristic person under the Commercial Act established by a foreigner with the purpose of medical practice, which meets all of the following requirements, may open a foreign medical institution in a free economic zone after obtaining permission from the Minister of Health and Welfare. In such cases, the types of such foreign medical institutions shall be a general hospital, hospital, dental hospital, or sanatorium under Article 3 (2) 3 of the Medical Service Act [j)]	2016
Tax and incentives	Framework Act on National Taxes	▪ Several revisions to the Framework Act on National Taxes, including: ▪ Where the head of a tax office submits a written opinion, the Commissioner of the National Tax Service shall immediately send the relevant written opinion to a person who has made a request for an examination [k)]	2015
	Special Tax Treatment Control Act	▪ Introduction of new tax credit to support youth job creation ▪ Introduction of R&D tax credit for core technologies and strategic growth industries [l)]	2015
	Income Tax Act	▪ No additional payments on the refund of national taxes under Article 52 of the Framework Act on National Taxes, additional dues on the local tax refund under Article 62 of the Framework Act on Local Taxes, and interest on the refund of erroneous payments, shall be included in the total income when calculating the amount of income generated during the relevant taxable period [m)]	2016
	Corporate Tax Act	▪ Several revisions to the Corporate Tax Act, including: ▪ Where any person pays a foreign corporation the amount of domestic source income provided for in subparagraphs 1, 2, and 4 through 10 of Article 93 (excluding any resident or non-resident who pays the amount of income provided for in subparagraph 7 of Article 93) which is not substantially related to the domestic place of business of the foreign corporation or does not revert to the domestic place of business of the foreign corporation (including an amount paid to a foreign corporation with no domestic place of business), he/she shall withhold, as the corporate tax, the	2016

Subject	Legislation	Content of the amendment	Date*
		following amounts from the income of the relevant foreign corporation for each business year, and pay it at the tax office having jurisdiction over the place of tax payment, etc., as prescribed by Presidential Decree, by the tenth day of the month following the month in which the date of withholding falls, notwithstanding Article 97: Provided, That the same shall not apply to income provided for in subparagraph 5 of Article 93, which is taxable as domestic source business income under the applicable tax treaty [n)]	
	Inheritance Tax and Gift Tax Act	▪ Several revisions to the Inheritance Tax and Gift Tax Act, e.g. concerning provisions on property subject to gift tax and obligations to pay gift tax [o)]	2016
	Value Added Tax Act	▪ Several revisions to the Value Added Tax Act, including: ▪ Where a small or medium business owner or middle-standing business owner who meets the requirements prescribed by Presidential Decree (hereafter referred to as "small or medium business owner or middle-standing business owner" in this Article), such as the ratio of exports to sales, files in advance an application for deferred payment of value-added tax on the importation of raw materials and other goods prescribed by Presidential Decree that are used to manufacture and process articles, the head of the competent customs house may defer the payment of value-added tax on the importation of those goods [p)]	2016
	Individual Consumption Tax Act	▪ Article 54 of the Local Tax Act shall apply mutatis mutandis to the grounds for exempting tobacco from the individual consumption tax [q)]	2016
	Traffic, Energy and Environment Tax Act	▪ The traffic, energy, and environment tax may be collected from a person who sells or stores for the purpose of selling fake petroleum products under subparagraph 10 of Article 2 of the Petroleum and Petroleum Substitute Fuel Business Act [r)]	2015
	Act on Special Rural Development Tax	▪ Amendments to provisions regarding cases in which the special rural development tax shall not be levied [s)]	2016
	Education Tax Act	▪ Several revisions to the Education Tax Act, including: ▪ If the amount of tax as so reported in accordance with Article 9 (1) is not paid, or not paid in full, and the head of the competent tax office has determined, corrected, or re-corrected the amount of tax not yet paid in accordance with paragraph (1), he/she shall collect the amount of such tax to be additionally paid without delay [t)]	2016
	Securities Transaction Tax Act	▪ Several revisions to the Securities Transaction Tax Act, e.g. on taxable object and persons subject to the securities transaction tax [u)]	2015
Competition policy/price controls	Monopoly Regulation and Fair Trade Act (MRFTA)	▪ Several revisions to the MRFTA, including: ▪ Where a judicial claim is made, bankruptcy procedures commence, seizure or provisional seizure, or provisional disposition occurs within six months in any case falling under the proviso to paragraph (4), the prescription shall be deemed interrupted by the initial application for mediation of a dispute [v)]	2016

Subject	Legislation	Content of the amendment	Date*
State-owned enterprises, privatisation, and state trading	Act on the Improvement of Managerial Structure and Privatization of Public Enterprises	▪ Even in a case where stock certificates issued by a designated corporation have not been listed on the stock market prescribed by Presidential Decree, the provisions of Articles 191-13 and 191-14 of the Securities and Exchange Act shall apply mutatis mutandis to the exercise of minority shareholders' rights and proposals of shareholders [w)]	2013
Intellectual property rights protection	Utility Model Act	▪ Articles 126, 128, 128-2 and 130 through 132 of the Patent Act shall apply mutatis mutandis to the protection of the owners of utility model rights [x)]	2016
	Patent Act	▪ Several revisions to the Patent Act, including: ▪ A patentee or exclusive licensee may claim compensation for a loss inflicted by a person who has intentionally or negligently infringed the patent or exclusive license [y)]	2016
	Trademark Act	▪ Main changes relate to non-use cancelations and un-registrable trademarks ▪ E.g. any person can file a non-use cancelation action; requirement to file identical or similar trademark application one year after another person's prior registered mark has been extinguished has been removed [z)]	2016
	Copyright Act	▪ List of persons who shall not be eligible to obtain a license to engage in a copyright trust service or copyright agency or brokerage service or report it [a1)]	2017
Agriculture	Framework Act on Agriculture, Rural Community and Food Industry	▪ Where incorrect information on agricultural products and food is made public by media outlets etc., the State shall endeavour to provide correct information [b1)]	2017
Energy and natural resources	Energy Act	▪ List of persons that the head of a related central administrative agency may cause to conduct energy technology development activities, in order to efficiently promote energy technology development [c1)]	2016
Financial services	Electronic Financial Transactions Act	▪ Where a person falling under paragraph (3) 1 registers pursuant to Article 28 and continues to exceed the standard defined by the Financial Services Commission under paragraph (3) 1 for at least two consecutive quarters, he/she shall report the relevant details to the Financial Services Commission, and shall satisfy the requirements for capital under paragraph (3) 2 within the period set by the Financial Services Commission [d1)]	2016
	Use and Protection of Credit Information Act	▪ Several revisions of the Use and Protection of Credit Information Act, e.g. provisions on enhancement of protection of personal credit information and data subject [e1)]	2015
Telecommunications	Framework Act on Telecommunications	▪ Several revisions of the Framework Act on Telecommunications, e.g. provisions on supervision of telecommunications and establishment of basic telecommunications plans [f1)]	2013
Transportation	Marine Transportation Act	▪ Any person who has assumed charge of all facilities and equipment of marine passenger transportation services pursuant to any of the following procedures shall therewith succeed to the rights and duties accompanying the relevant license: Auction under the Civil Execution Act; Realization under the Debtor Rehabilitation and Bankruptcy Act; Sale of seized property under	2016

Subject	Legislation	Content of the amendment	Date*
		the National Tax Collection Act, the Customs Act, or the Local Tax Act; Other procedures equivalent to those provided for in subparagraphs 1 through 3 [g1)]	
Foreign Investment	Foreign Investment Promotion Act	▪ List of persons who shall be members of the Foreign Investment Committee [h1)]	2017

Sources: WTO, Trade Policy Review WT/TPR/S/346 (16-4723), 2016. Content of the amendment based on: a) Customs Act, b) Act on Special Cases of the Customs Act for the Implementation of Free Trade Agreements, c) Act on Special Cases Concerning the Refund of Customs Duties et cetera levied on Raw Materials for Export, d) Foreign Trade Act, e) Framework Act on National Standards, f) Food Sanitation Act, g) Act on the Prevention of Contagious Animal Diseases, h) Plant Protection Act, i) Government Procurement Act, j) Special Act on Designation and Management of Free Economic Zones, k) Framework Act on National Taxes, l) PWC, m) Income Tax Act, n) Corporate Tax Act, o) Inheritance Tax and Gift Tax Act, p) Value Added Tax Act, q) Individual Consumption Tax Act, r) Traffic, Energy and Environment Tax Act, s) Act on Special Rural Development Tax, t) Education Tax Act, u) Securities Transaction Tax Act, v) Monopoly Regulation and Fair Trade Act, w) Act on the Improvement of Managerial Structure and Privatization of Public Enterprises, x) Utility Model Act, y) Patent Act, z) International Trademark Association, a1) Copyright Act, b1) Framework Act on Agriculture, Rural Community and Food Industry, c1) Energy Act, d1) Electronic Financial Transactions Act, e1) Yoon & Yang LLC, f1) Framework Act on Telecommunications, g1) Marine Transportation Act, h1) Foreign Investment Promotion Act. Note: *Date of last amendment

Analysis of regulatory changes on subsidy-related issues in the context of Chapter 11 of the EU-Korea FTA

This section deepens the analysis of Chapter 11 of the EU-Korea FTA, which mainly deals with competition law. For this purpose, answers to the following three key questions are provided below:

- *Which government institutions and ministries are responsible for the "subsidy" in Korea?*
- *What (possibly promised) regulatory changes related to the aforementioned "subsidy" (in Chapter 11 of the EU-Korea FTA) has Korea recently made to remove distortions of competition in the context of competition law, for example, or in other ways, so that the free movement of goods can be better guaranteed?*
- *What are the conditions, preferences and procedures required for the provision of subsidies in Korea? A case study on the "2016 Corporate Vitality Enhancement Act".*

Subsidies

Which government institutions and ministries are responsible for the "subsidy" in Korea?

Chapter 11 of the EU-Korea Free Trade Agreement emphasises the importance and necessity of applying the relevant competition laws in order to better guarantee free and undistorted competition between the EU and Korea. Chapter 11 consists of two sections: Competition and Subsidies. Competition law in Korea refers to the Monopoly Regulation and Fair Trade Act (MRFTA) and its implementing regulations and amendments.[466]

The Korea Fair Trade Commission (KFTC), which is responsible for enforcement of the aforementioned MRFTA, is currently carrying out the following activities, which include among others:

(1) Remedying or ending unfair activities by public enterprises with monopoly power, unfair trades between large and small and medium-sized enterprises in the distribution, agency, and subcontract areas, and practices that limit the growth of IT and other new growth industries;

(2) Preventing the misuse of small and medium-sized venture businesses' technologies and ideas, clearing obstacles to innovation such as unfair adhesion contracts regarding intellectual property, loosening regulations to stimulate innovation and invigorate M&As, and preventing abuse of patents by non-practicing entities;

(3) Preventing consumer harm due to collusion in public bids and areas affecting people's livelihood, strengthening consumer protection in electronic commerce, and modifying adhesion contracts that are unfair to the customer,

(4) Strengthening international cooperation efforts by negotiating FTAs and conducting bilateral consultations with major foreign competition authorities (in the United States, the EU, China and Japan) to reduce competition law-related risks that Korean businesses face abroad and to protect Korean consumers. It also focused on uncovering and remedying international cartels in the parts and materials markets, which rely heavily on imports, etc.[467]

[466] Source: EU-Korea FTA, Article 11.2.

[467] Source: Korea Fair Trade Commission (KFTC 2016), *2015 Annual Report*, Seoul, available at http://www.ftc.go.kr/eng/bbs.do?command=getList&type_cd=53&pageId=0301

In other words, the KFTC is explicitly responsible for "competition" issues, and especially those related to Article 11.4 ("*Public enterprises and enterprises entrusted with special rights or exclusive rights"*) and Article 11.5 ("*State monopolies"*), in addition to other general matters such as the implementation of competition law (Article 11.3), the cooperation of competition authorities aimed at, among others, enhancing competition law enforcement (Article 11.6), etc. as mentioned in Section A (Competition) in Chapter 11 of the EU-Korea Free Trade Agreement.

However, the MRFTA does not explicitly address any rules and regulations related to subsidies and/or state aid, which are relevant to Article 11.11 ("*Prohibited subsidies*") in Section B (Subsidies) of the EU-Korea FTA.[468]

The "subsidy" has traditionally been acknowledged as an industrial policy measure in Korea. Looking at Korea's history of industrial and economic development, this measure has been popularly applied in order to not only stimulate import subsidisation and export promotion, but also to modernise the industrial structure. Apart from a wide range of product-oriented subsidies (which also include energy subsidies, agricultural subsidies, et cetera), massive "subsidies" have also recently been awarded for firms' activities related to research and technological development, as well as innovation activities aimed at enhancing Korean firms' international competitiveness. The "subsidies" have also been made available for the purpose of revitalising some of Korea's ailing industries like shipbuilding and steelmaking, which have been suffering from oversupply. In this context, such subsidies aim to eliminate these firms' excess capacity, while improving productivity at the same time.[469]

As the organisation and task distribution structure of Korean Ministry of Trade, Industry and Energy (MoTIE) in the box below clearly shows, this ministry is competent and also responsible for "subsidy"-related matters for key Korean industries and services, which include among others: metal manufacturing and chemicals; textiles and ceramics; mining; machinery, robotics and defence; automobile and aerospace; shipbuilding; electronics; logistics and distribution; and, energy. In these fields, this ministry generally develops the country's industrial policy and also plays a central role in the enforcement of "subsidy"-related issues. In addition, the MoTIE has played a crucial role in Korea's international trade affairs, as well as FTA policy issues including planning and implementation.

Organisational structure of MoTIE and distribution of tasks [470]

Minister of Trade, Industry and Energy

1st Vice Minister for Industry and Technology

Office of Planning and Coordination

Director General for Policy Planning

- Director for Planning and Finance
- Director for Organization and Management Innovation
- Director for Regulatory Reform and Legal Affairs
- Director for Information Management
- Director for Information Security
- Director General for Emergence Planning and Safety

[468] For further information confer to: Harrison, J. (ed. 2013), *The European Union and South Korea: the Legal Framework for Strengthening Trade, Economic and Political Relations*, Edinburgh: Edinburgh University Press.

[469] See the Corporate Vitality Enhancement Act of 2016 below.

[470] http://english.motie.go.kr/?cat=51#

- Director for Industrial Disaster and Safety Management

Office of International Trade and Investment

International Trade Policy Bureau

- International Trade Policy Division
- International Trade Promotion Division
- Trade Advancement Division
- Export and Import Division
- Export Control Policy Division

Cross-Border Investment Policy Bureau

- Foreign Investment Policy Division
- Foreign Investment Promotion Division
- Overseas Investment Division

Domestic Support in FTAs Bureau

- General Planning Division
- Public Relations and Cooperation Division
- Domestic Support Policy Division
- FTA Utilization Division

Office of Industrial Policy

Industrial Policy Bureau

- Industrial Policy Division
- Industrial Human Resources Division
- Corporate Partnership Division
- Climate Change and Industrial Environment Division

Regional Economic Policy Bureau

- Regional Economic Policy Division
- Regional Industrial Promotion Division
- Industrial Complex Division

Industrial Technology Policy Bureau

- Industrial Technology Policy Division
- Industrial Technology Development Division
- Industrial Technology Market Division
- Energy Technology Division

Office of Industrial Creativity and Innovation

Industrial Innovation Policy Bureau

- Industrial Creativity Policy division
- Design Industry Division
- Distribution and Logistics Division
- Bio- and Nano-technology Division

Materials and Components Industries Bureau

- Materials and Components Policy Division
- Electronic Parts and Materials Division
- Metals and Chemicals Division
- Textile, Apparel and Ceramic Division

System Industry Bureau

- Machinery, Robotics and Defence Division
- Automobile and Aerospace Division
- Shipbuilding and Plant Industry Division
- Electronics and Electrical Division

2nd Vice Minister of Trade and Energy

Bureau of Trade Policy

- Trade Policy Division
- World Trade Organization Division
- Multilateral Trade Cooperation Division
- American Division
- Europe Division

Bureau of Trade Cooperation (with Deputy Director General)

- Trade Cooperation Division
- Northeast Asia Division
- Asia Division
- The Middle East and Africa Division

Office of FTA Negotiations

Bureau of FTA Policy

- FTA Policy Planning Division
- FTA Negotiation Coordination Division
- FTA Implementation Division
- Trade Dispute Settlement Division

Bureau of FTA Negotiations

- FTA Goods Division
- FTA Services and Investment Division
- FTA Trade Rules Division

Bureau of East Asia FTA

- East Asia FTA Negotiation Division

Office of Energy and Resources

Bureau of Energy and Resources Policy

- Energy and Resources Policy Division
- Energy Safety Division
- Resources Development Strategy Division
- New and Renewable Energy Division

Bureau of Energy Industry Policy

- Petroleum Division
- Gas Division
- Electric Power Division
- Smart Grid and Electricity Market Division
- Coal Division

Bureau of Nuclear Power Industry Policy

- Nuclear Power Industry Policy Division
- Nuclear Power Industry Management Division
- Nuclear Plant Export Promotion Division
- Nuclear Power and Environment Division

Energy Efficiency and Climate Change Bureau

- Energy Efficiency and New Industry Policy Division
- Energy-Related New Energy Division
- Energy Efficiency Management Division

It should also be borne in mind that there are other ministries and different types of government authorities that are also responsible for industrial policy-making (again including the matters related to "subsidies" and other types of financial support) and the enforcement of "subsidy"-relevant laws and regulations for specific products. The table below shows some examples of such authorities comparable to the MoTIE classified according to different products and services.

Table 109: Industrial policy ministries in Korea

Ministries and other authorities	Specific industries and services
Ministry of Agriculture, Food and Rural Affairs (MAFRA)	Foods and other agricultural products
Ministry of Science, ICT and Future Planning (MSIP)	Telecommunication
Ministry of Land, Infrastructure and Transport (MoLIT)	Construction, real estate and transportation
Ministry of Culture, Sport and Tourism (MCST)	Hotels, restaurants, culture, entertainment and sport
Ministry of Education (MoE)	Education-oriented services
Ministry of Health and Welfare (MoHW)	Health-oriented and welfare business
Korea Financial Services Commission (FSC)	Banking and insurance

Source: www.law.go.kr.

"Subsidy"-related regulatory changes

What (possibly promised) regulatory changes related to the aforementioned "subsidy" (in Chapter 11 of the EU-Korea FTA) has Korea recently made to remove distortions of competition in the context of competition law, for example, or in other ways, so that the free movement of goods can be better guaranteed?

According to the results of our desk research and the consultation of Korean experts, no regulatory changes related to the aforementioned "subsidy" have been made.[471]

Access to the CVEA

What are the conditions, preferences and procedures required for the provision of subsidies in Korea? A case study on the "2016 Corporate Vitality Enhancement Act".

The "Corporate Vitality Enhancement Act (CVEA)",[472] which took effect in August 2016 and which will remain effective for a limited period of three years, primarily aims to

[471] This opinion is shared by a number of Korean experts. In particular we thank Prof Dr. Mikyung Yun of the Catholic University of Korea; Prof Dr. Hwang Lee of Korea University; and Dr. Yeo-Cheon Jeong and Dr. Hyo-Young Lee of the Korea Institute for Economic Policy (KIEP) for correspondence and helpful discussions regarding this matter.

revitalise Korea's industries, which have been suffering from oversupply. According to Article 2(4) of the CVEA, the term "oversupply" is characterised as a situation in which the business environment is anticipated to continuously deteriorate due to overproduction and/or demand reduction in the market of the relevant industry, which, in turn, leads to decreases in the operating profit ratio and the slowdown of relative price change compared to cost development. In other words, this law is designed to support firms in ailing sectors, including shipbuilding and steel production, which attempt to eliminate the prevailing excess capacity and, at the same time, to enhance productivity. Those firms, for which "restructuring plans" are approved by the MOTIE and other competent ministries and public authorities listed in the table above,[473] will benefit from various types of regulatory relief (see below). This Act also provides the tax breaks, financial aid and R&D supports required not only to carry out the approved firms' restructuring process, but also to ensure and improve SMEs' innovation activities and employment stability. This practice is directly related to the "prohibited subsidies" rules and cases prescribed in Article 11.11 of the EU-Korea Free Trade Agreement ("Chapter 11"). Taking the CVEA as an example, this chapter demonstrates the conditions, preferences and procedures required and applied to the provision of subsidies in Korea.

Application and approval of corporate restructuring plans

According to Article 9 of the CVEA, the "restructuring plan" of a company to be evaluated should contain: (1) corporate restructuring requirements and the promotion contents of restructuring project; (2) goals to be achieved via corporate restructuring within the planned restructuring period,[474] expressed in terms of increased productivity and financial soundness; (3) information showing the aforementioned "oversupply" situation of the industry; (4) the total amount of funds required for restructuring and the method of its procurement; (5) government support required for corporate restructuring; and (6) employment and investment plans based on corporate reorganisation.

The approved company is obliged to produce regular reports on the implementation process of its restructuring plan, as well as its achievements to the competent government authority, which can ask for rectifications and modifications (Article 11 of the CVEA).

A cancellation of the approved corporate restructuring plan can occur, for example: (1) if it has been approved for modification in a false or otherwise fraudulent manner; (2) upon identification that such a plan aims to transfer the ownership stakes of owner families to their next generations, strengthening control power over the governance structure by specially related parties, and the provision of unfair profits to affiliates of large business groups subject to 'cross-shareholding limitations';[475] (3) if the business reorganisation is not carried out without due cause within the planned period; (4) in the case of failure to comply with the reporting duty and also with the request for correction of Article 11 without justifiable grounds, etc. (Article 13 of the CVEA). In the emergence of such types of later cancellation the government should ask companies to repay the entirety (or part of) of the sum of monetary benefits (mentioned in Articles 27-30) they received (i.e. also tax benefits), as stated in Article 14 of the CVEA.

Key benefits for approved companies

[472] "기업 활력 제고를 위한 특별법" in Korean, available at http://www.law.go.kr/%EB%B2%95%EB%A0%B9/%EA%B8%B0%EC%97%85%ED%99%9C%EB%A0%A5%EC%A0%9C%EA%B3%A0%EB%A5%BC%EC%9C%84%ED%95%9C%ED%8A%B9%EB%B3%84%EB%B2%95/(14030,20160212).

[473] Yet a final approval by the individual competent government authorities takes place after the additional evaluation process made by the so-called "Deliberation Committee" established at the MoTIE.

[474] This period should not be longer than three years.

[475] "상호출자제한기업집단" in Korean.

(a) Benefits provided by the CVEA compared to the Commercial Code

The CVEA makes corporate restructuring procedures more convenient in terms of relaxing the requirements of a small-scale merger, spin-off/merger and simplified merger, for which an approval of the general shareholders meeting may be substituted by that of the board of directors.[476] Such substitution is also allowed in the case of small-scale spin-offs worth less than 10 percent of total assets (Article 15 of the CVEA).

In the case of a merger, a spinoff/merger, a comprehensive stock swap or transfer or a business transfer, the following periods are reduced from two weeks to seven days: (i) the notice period for convening a general shareholders meeting; (ii) the starting date of the period during which the relevant documentation such as a merger agreement needs to be displayed at the headquarters; and (iii) the closing date/record date of closing the shareholders registry (Article 18 of the CVEA). Furthermore, the creditor objection period is reduced from one month or more to ten days or more; and the creditor protection procedures can be omitted for an approved firm, if it submits a bank guarantee or an insurance policy covering its liabilities (Article 19 of the CVEA).[477]

(b) Benefits provided by the CVEA compared to the MRFTA

The following MRFTA restrictions and rules may be exempted for three years in accordance with the approved corporate restructuring plan, if the approved company is:

- A holding company that meets the 200 percent debt ratio limitation, the shareholding ratio in its subsidiaries is ≥40 percent, and the shareholding ratio in non-affiliate companies is ≤5 percent;
- A subsidiary of a holding company for which the shareholding ratio in its subsidiaries is ≥40 percent; or,
- A subsidiary of a holding company's subsidiary: the shareholding share of 100 percent in affiliate companies[478] (Articles 21, 22 and 23 of the CVEA).[479]

Moreover, the requirement for a company classified as a large business group subject to 'cross-shareholding limitations' to dispose of any shares it holds in its affiliates (acquired via, for example, a merger) within six months (Article 9 of the MRFTA) is extended to one year following the date of acquisition or possession of applicable shares (Article 24 of the CVEA).

(c) Tax benefits and financial support

According to Articles 27 and 28 of the CVEA, the central (and local) government may provide tax breaks, as well as financial support to an approved company, which are necessary for corporate restructuring. The *tax advantages* are mainly provided in the context of the Special Taxation Restriction Act[480] (see Articles 121-26 to 121-31): apart from the deferred taxation on capital gains from stock swaps between companies, the Act features various special taxation rules, for example, regarding (1) capital gains from the transfer of duplicate assets in a merger; (2) the assumption/repayment of a subsidiary's

[476] For example, in the case of a small-scale merger, this type of substitution can be applied when the number of shares issued as a result of the merger amounts to ≤ 20% of the total number of shares issued by merged companies, compared to the normal case of <10% in the Commercial Code (see Article 16 and 17 of the CVEA).

[477] See also Yulchon News Alert (2016), *The "Special Act on Revitalizing Companies" (the so-called "One-Shot Act"), aimed at enhancing the competitiveness of industries and vitality of companies, to take effect in August 2016*, February 2016, https://www.yulchon.com/mail/201602/corp/yulchon_corp_newsletter_20160216.pdf.

[478] Yet the holding share should be 50 percent or more for three years (Article 23 of the CVEA).

[479] See also MoTIE (2016), *기업활력제고를위한특별법 설명자료*, Seoul, available at www.economy.go.kr/fileDownLoad.do?seq=11007.

[480] "조세특례제한법" in Korean.

financial debts; (3) the sale of assets to repay financial debts; (4) a shareholder's provision of assets without consideration; and (5) gains from exemption of debts. These provisions mainly reduce a company's corporate income tax by granting the benefit of taxation deferrals for a certain period (typically three years) on gains that it may receive from asset transfers or debt exemptions in accordance with its restructuring plan.[481]

Moreover, if necessary, *financial aid* may also be provided by the central and local governments to an approved company in order to support (a) investment activity and rationalisation of the production process aimed at improving productivity; (b) new establishment, movement and expansion of factory; and (3) management innovation launching new products and services (Article 28 of the CVEA).[482]

Besides the central and local governments may also:

- Provide R&D benefits to stimulate an approved company's innovation activity (Article 29 of the CVEA);
- Financially support the approved SMEs in the fields of (a) domestic and foreign market entrance and the creation of sales network; (b) provision of necessary business information; (c) training and qualification of skilled manpower; and (d) management, technology and accounting consulting (Article 30 of CVEA); and,
- Implement the promotion measures specific to an approved company in the areas of achievement of a smooth employment adjustment and guaranteeing its employees' job safety and stability, as well as providing external and internal vocational training for employees, etc. (Article 31 of the CVEA).

[481] See http://www.oneshot.or.kr/sub/support/tax_system_fund.asp; and Yulchon News Alert (2016).

[482] Yet such financial support is not granted to the approved company, which falls under a large business group subject to cross-shareholding limitations when it submits its corporate restructuring plan (or modified plan) to the competent authorities (Article 28(3) of the CVEA).

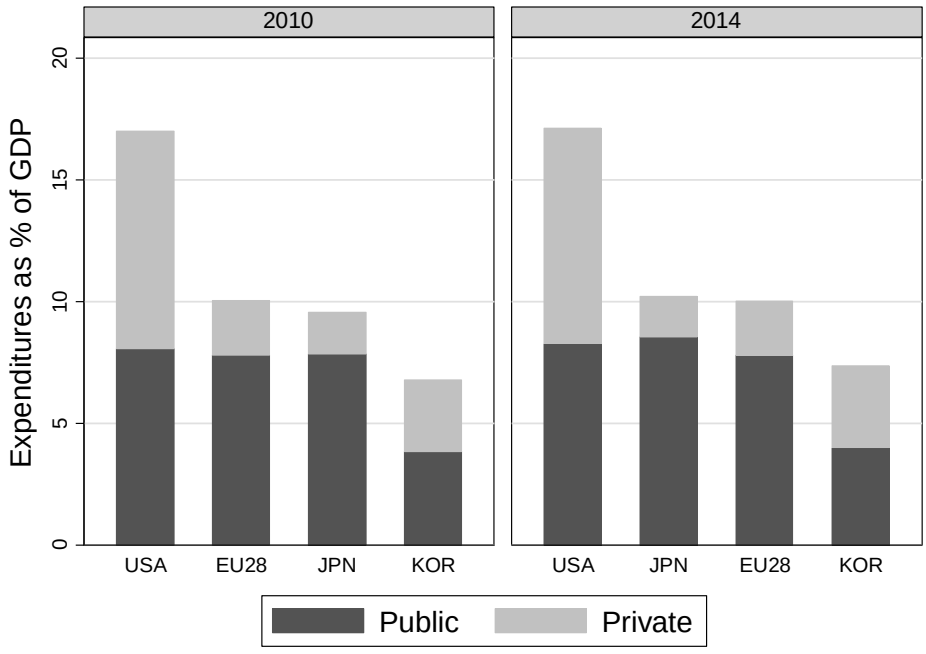
Annex IV: Additional data for the social analysis (section 7)

The effects of the EU-Korea FTA on health expenditures

The comparison of pre- and post-tax wage incomes shown above indicates only the fact that redistribution occurs. Since redistribution is typically not an end in itself, it is also necessary to assess the intended purpose of redistribution. Therefore, a look towards broad public goods like the health system reveals tendencies of a society with respect to the status of the social security system. Health expenditures are a good proxy for overall social security benefits for two reasons, since they are (1) relevant in terms of size and (2), fiscal and private spending can easily be substituted. Hence, if governments reduce their effort in providing health services, we should observe increasing private spending.

Figure 163 below illustrates graphically the composition of health expenditures for the selected countries scaled by GDP in 2010 and 2014, thus before and after the start of the provisional application of the FTA. Total health expenditures are the sum of public and private spending. Compared to 2010, the level of total expenditures has increased in all 4 economies, but to a negligible extent. For Korea, which has the lowest level of health spending, this increase was also quite moderate, consisting of less than 0.5 percentage points, and resulted from increased private spending. Overall, we do not see any compositional changes in total spending, meaning that governments have not reduced their expenditures in the health sector between 2010 and 2014.

Figure 163: Public and private health expenditures in selected countries



Source: Own compilation, based on World Bank (2017).

Annex V: Additional data for the case studies (section 10)

1. Case study on the automotive sector

The table below presents further details on specific non-tariff trade costs affecting EU automotive exports to Korea.

Table 110: Overview of specific non-tariff trade costs affecting EU automotive exports to Korea

Issue	Description	Current status
Vehicle mass certification	▪ Under UNECE regulation 83, vehicle mass is calculated by weighing a given vehicle and subtracting the weight of any optional equipment (i.e. vehicle mass is equivalent to standard vehicle mass). ▪ Korea does not recognise this regulation, and instead views vehicle mass as the actual mass of a given vehicle (i.e. standard mass plus any fitted optional equipment). ▪ This definition of vehicle mass has the potential of changing the inertia class of any given vehicle and could necessitate specific engine calibrations.	Issue raised by industry.
Ground clearance requirements	▪ Korea requires that the ground clearance of a vehicle in the unloaded state between the ground and the parts other than the ground interface shall be greater than 120 mm (a requirement which does not exist in the EU or the US). ▪ This requirement creates uncertainty for producers, as numerous variables can have an impact on the determination of ground clearance.	Issue raised by industry.
Vehicle width standards	▪ Under current Korean regulations, a vehicle's width cannot exceed 2.5 metres, with some exceptions. As EU buses (and some trucks) are produced with a width of 2.55 or 2.6 metres, they cannot be exported to Korea, due to the difference of 5-10 centimetres. No exception is granted to EU buses and trucks, although certain vehicles (e.g. pull-trucks and double-decker buses) that exceed the 2.5 metre width limit are already used in Korea.	The topic has been discussed at the meetings of the Working Group on Motor Vehicles and Parts.
Axle load of vehicles	▪ Under current Korean regulations, the axle load of vehicles is limited to a maximum of 10 tonnes per axle, regardless of whether they are drive or non-drive axles. However, this limit is considered to be unnecessarily low for vehicles that utilise dual wheel tires (versus single wheel tires), for which loading capacity is dispersed dually.	Issue raised by industry.
Exclusion of truck tractors Annex 2-C [a)]	▪ Truck tractors (HS code 870120) were mistakenly left out of Annex 2-C of the FTA. However, truck tractors were never subsequently added in spite of frequent requests from the EU automotive industry. As a result, some EU truck manufacturers had to undertake recall efforts in order to retroactively satisfy Korean requirements (e.g. for seatbelt anchorage) that were thought to have been recognised by Korea, had they been included in the Annex as planned. Moreover, specific solutions for Korea need to be developed for all future exports to this market. ▪ However, Korea accepts the equivalent UNECE requirements for all other HS codes (including all other types of commercial vehicles) in the automotive annex.	The EU has put forth the request for a future amendment of Annex 2-C to include truck tractors.
Radio Act	▪ All devices and parts of a vehicle that use radar, Bluetooth or other wireless functionalities must also fulfil	Issue raised by industry.

Issue	Description	Current status
	the Korean radio act.	
Allocation of radar frequencies	▪ Radar-based driver assistance systems cannot be introduced in the Korean market, because necessary frequency bands (77 – 81 GHz) have not yet been delicensed.	Issue raised by industry.
Battery drop test	▪ EU producers are required by Korean authorities to perform a battery test by which a car battery is dropped from a height of 4.9 meters—a test that is considered to be not relevant to 'real world' crash situations.	Issue raised by industry.
Emissions and noise certification	▪ Emission and noise certifications for truck and bus engines issued in the EU are not accepted as they are in Korea. Additional test results and technical data are requested by the Korean Ministry of Environment.	Issue raised by industry.
Natural gas vehicle homologation.	▪ All gas supply-related devices and parts must fulfil Korean safety standard documentation which is more related to US standards, while the European standard of documentation is not accepted as it is. Additional documentation must be delivered, and test results and technical data are requested.	Issue raised by industry.
Sunroofs [b)]	▪ Methodology used by Korea to test sunroofs may be arguable with reference to UNECE Reg. 43 and GTR 6.	Issue raised by industry.
Self-certification compliance checks	▪ Korean authorities re-evaluate the self-certification system by buying and testing vehicles. For this reason, more data and information than available is requested from EU type approval. There is no common understanding of UNECE regulations regarding consequences in case a failure during testing occurs.	Issue raised by industry.
Car parts certification scheme [c)]	▪ In 2013, Korea implemented a new certification scheme for 13 categories of car parts; the scope of this scheme was also expanded in 2016 and 2017. Parts within these categories now require a KC marking in order to be exported to Korea. This is a significant burden for EU exporters (both car and car part producers), as once parts arrive in Korea, they must be unpacked, marked and packed again, which requires extra facilities and personnel. ▪ This certification scheme is viewed by EU auto manufacturers as unnecessary, as car parts made in the EU already receive a marking showing compliance with UNECE regulations.	The EU has approached the Korean government on this issue and a compromise regarding placing the KC marking on the packaging of the product instead of the product itself was proposed; Korea recently announced that placing the marking on packaging could be considered in extraordinary circumstances.
Documentation of defects and repair history	▪ According to Korean regulation, vehicle manufacturer or seller shall notify buyers of any defect or repair history occurred after the date on which a vehicle is released from the plant (the production date) but prior to delivery. ▪ This reporting requirement is considered to discriminate against automotive importers, as local manufacturing sites are co-located with the pre-delivery inspection (PDI) facility and as such, vehicles are unlikely to require any reportable reconditioning. However, imported vehicles routinely undergo some kind of reconditioning that would require reporting under this law.	Issue raised by industry.

Source: Civic Consulting, based on stakeholder interviews with EU automotive industry and annual reports on the Implementation of the EU-Korea FTA; DG TRADE Market Access Database (http://madb.europa.eu/madb/barriers_result.htm?isSps=false&countries=KR&sectors=7). Notes: a) Barrier ID 11081 in Market Access Database. B) Barrier ID 10164 in Market Access Database. C) Barrier ID 11082 in Market Access Database.

2. Case study on rules of origin

The table below presents key provisions of articles in the Protocol on RoO of the EU-Korea FTA.

Table 111: Key provisions of articles of the Protocol on RoO

Article	Text
2 – Originating products	For the purpose of a preferential tariff treatment the following products shall be considered as originating in a Party: **(a)** products wholly obtained in a Party within the meaning of Article 4; **(b)** products obtained in a Party incorporating materials which have not been wholly obtained there, provided that such materials have undergone sufficient working or processing in the Party concerned within the meaning of Article 5; or **(c)** products obtained in a Party exclusively from materials that qualify as originating pursuant to this Protocol.
4 – Wholly obtained products	**1.** For the purposes of Article 2(a), the following shall be considered as wholly obtained in a Party: **(a)** mineral products extracted from the soil or from the seabed in the territory of a Party; **(b)** vegetable products grown and harvested there; **(c)** live animals born and raised there; **(d)** products from live animals raised there; [...]
5 – Sufficiently worked or processed products	**1.** For the purposes of Article 2(b), products which are not wholly obtained are considered to be sufficiently worked or processed when the conditions set out in the list in Annex II or Annex II(a) are fulfilled. Those conditions indicate, for all products covered by this Agreement, the working or processing which must be carried out on non-originating materials used in manufacturing and apply only in relation to such materials.
6 – Insufficient working or processing	**1.** Without prejudice to paragraph 2, the following operations shall be considered to be insufficient working or processing to confer the status of originating products whether or not the requirements of Article 5 are satisfied: **(a)** preserving operations to ensure that the products remain in good condition during transport and storage; **(b)** change of packaging, breaking-up and assembly of packages; **(c)** washing, cleaning, removal of dust, oxide, oil, paint or other coverings; **(d)** ironing or pressing of textiles; [...]
13 – Direct transport	**1.** The preferential treatment provided for under this Agreement applies only to products, satisfying the requirements of this Protocol, which are transported directly between the Parties. However, products constituting one single consignment may be transported through other territories with, should the occasion arise, trans-shipment or temporary warehousing in such territories, provided that they are not released for free circulation in the country of transit or warehousing and do not undergo operations other than unloading, reloading or any operation designed to preserve them in good condition. **2.** Evidence that the conditions set out in paragraph 1 have been fulfilled shall be supplied to the customs authority, in accordance with the procedures applicable in the importing Party, by the production of: [...]
14 – Drawback of, or exemption from, customs duties	**1.** After five years from the entry into force of this Agreement, upon the request of either Party, the Parties shall jointly review their duty drawback and inward processing schemes. One year after entry into force, and subsequently on a yearly basis, the Parties shall exchange available information on a reciprocal basis on the operation of their duty drawback and inward processing schemes, as well as detailed

Article	Text
	statistics as follows: [...] **2.** At any time after the initiation of the above review, a Party may request consultations with the other Party with a view to discussing possible limitations on duty drawback and inward processing schemes for a particular product in case there is evidence of a change in sourcing patterns since the entry into force of this Agreement which may have a negative effect on competition for domestic producers of like or directly competitive products in the requesting Party. [...]
15 – Proof of origin: general requirements	**1.** Products originating in the EU Party shall, on importation into Korea and products originating in Korea shall, on importation into the EU Party benefit from preferential tariff treatment of this Agreement on the basis of a declaration, subsequently referred to as the 'origin declaration', given by the exporter on an invoice, a delivery note or any other commercial document which describes the products concerned in sufficient detail to enable them to be identified. The texts of the origin declarations appear in Annex III. **2.** Notwithstanding paragraph 1, originating products within the meaning of this Protocol shall, in the cases specified in Article 21, benefit from preferential tariff treatment of this Agreement without it being necessary to submit any of the documents referred to in paragraph 1.
16 – Conditions for making out an origin declaration	**1.** An origin declaration as referred to in Article 15.1 of this Protocol may be made out: **(a)** by an approved exporter within the meaning of Article 17; or **(b)** by any exporter for any consignment consisting of one or more packages containing originating products whose total value does not exceed 6 000 euros. **2.** Without prejudice to paragraph 3, an origin declaration may be made out if the products concerned can be considered as products originating in the EU Party or in Korea and fulfil the other requirements of this Protocol. **3.** The exporter making out an origin declaration shall be prepared to submit at any time, at the request of the customs authorities of the exporting Party, all appropriate documents proving the originating status of the products concerned including statements from the suppliers or producers in accordance with domestic legislation as well as the fulfilment of the other requirements of this Protocol. **4.** An origin declaration shall be made out by the exporter by typing, stamping or printing on the invoice, the delivery note or another commercial document, the text which appears in Annex III, using one of the linguistic versions set out in that Annex and in accordance with the legislation of the exporting Party. If the declaration is handwritten, it shall be written in ink in capital characters. **5.** Origin declarations shall bear the original signature of the exporter in manuscript. However, an approved exporter within the meaning of Article 17 shall not be required to sign such declarations provided that he gives the customs authorities of the exporting Party a written undertaking that he accepts full responsibility for any origin declaration which identifies him as if it had been signed in manuscript by him. **6.** An origin declaration may be made out by the exporter when the products to which it relates are exported, or after exportation on condition that it is presented in the importing Party no longer than two years or the period specified in the legislation of the importing Party after the importation of the products to which it relates.
17 – Approved exporter	**1.** The customs authorities of the exporting Party may authorise any exporter, (hereinafter referred to as 'approved exporter'), who exports products under this Agreement to make out origin declarations irrespective of the value of the products concerned in accordance with appropriate conditions in the respective laws and regulations of the exporting Party. An exporter seeking such authorisation must offer to the satisfaction of the customs authorities all guarantees necessary to verify the originating status of the products as well as the fulfilment of the other requirements of this Protocol. **2.** The customs authorities may grant the status of approved exporter subject to any conditions which they consider appropriate. **3.** The customs authorities shall grant to the approved exporter a customs

Article	Text
	authorisation number which shall appear on the origin declaration. **4.** The customs authorities shall monitor the use of the authorisation by the approved exporter. **5.** The customs authorities may withdraw the authorisation at any time. They shall do so where the approved exporter no longer offers the guarantees referred to in paragraph 1, no longer fulfils the conditions referred to in paragraph 2 or otherwise makes an incorrect use of the authorisation.
27 – Verification of proofs of origin	**1.** In order to ensure the proper application of this Protocol, the Parties shall assist each other, through the customs authorities, in checking the authenticity of the proofs of origin and the correctness of the information given in these documents. **2.** Subsequent verifications of proofs of origin shall be carried out at random or whenever the customs authorities of the importing Party have reasonable doubts as to the authenticity of such documents, the originating status of the products concerned or the fulfilment of the other requirements of this Protocol. **3.** For the purposes of implementing the provisions of paragraph 1, the customs authorities of the importing Party shall return the proofs of origin or a copy of these documents, to the customs authorities of the exporting Party giving, where appropriate, the reasons for the enquiry. Any documents and information obtained suggesting that the information given on proof of origin is incorrect shall be forwarded in support of the request for verification. **4.** The verification shall be carried out by the customs authorities of the exporting Party. For this purpose, they shall have the right to call for any evidence and to carry out any inspection of the exporter's accounts or any other check considered appropriate. [...]
28 – Dispute settlement	**1.** Where disputes arise in relation to the verification procedures of Article 27 which cannot be settled between the customs authorities requesting verification and the customs authorities responsible for carrying out this verification or where they raise a question as to the interpretation of this Protocol, they shall be submitted to the Customs Committee. **2.** In all cases the settlement of disputes between the importer and the competent authorities of the importing Party shall be under the legislation of the said Party.
Annex IV – Committee on OPZ on the Korean Peninsula	**1.** Recognising the Republic of Korea's constitutional mandate and security interests, and both Parties' commitment to promoting peace and prosperity on the Korean Peninsula, and the importance of intra-Korean economic cooperation toward that goal, a Committee on Outward Processing Zones on the Korean Peninsula is established pursuant to Article 15.2.1 (Specialised Committees). The Committee shall review whether the conditions on the Korean Peninsula are appropriate for further economic development through the establishment and development of outward processing zones. **2.** The Committee shall be comprised of officials of the Parties. The Committee shall meet on the first anniversary of the entry into force of this Agreement and at least once annually thereafter, or at any time as mutually agreed. **3.** The Committee shall identify geographic areas that may be designated outward processing zones. The Committee shall determine whether any such outward processing zone has met the criteria established by the Committee. The Committee shall also establish a maximum threshold for the value of the total input of the originating final good that may be added within the geographic area of the outward processing zone.

Source: Own compilation, based on the EU-Korea FTA, Protocol on RoO.

3. Case study on the use of tariff preferences

The table below presents the preference utilisation rates for each EU Member state by sector for July 2014-July 2015.

Table 112: EU Member State PURs by sector (%), July 2014-June 2015

MS	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	*Tot-al*
AT	100	89	90	94	56	69	91	66	78	94	57	96	63	68	72	98	70	56	88	*81*
BE	99	89	92	87	6	89	89	60	33	81	64	91	94	34	32	98	53	0	94	*62*
BG	27	94	54	79	46	79	85	18	59	61	47	97	0.02	3	75	70	68	-	90	*58*
CY	99	0	-	94	0	22	97	0.4	-	5	0	100	-	-	99	0	0	-	0	*70*
CZ	96	100	0	98	99	72	91	80	69	58	97	91	98	55	59	54	75	100	72	*65*
DE	97	74	58	55	83	66	84	83	85	81	78	85	52	67	59	96	62	78	63	*76*
DK	98	100	15	95	3	97	59	95	92	78	35	80	92	20	35	82	56	100	94	*54*
EE	92	98	-	100	100	93	40	98	87	31	27	38	92	1	28	81	4	-	25	*41*
EL	82	27	36	88	64	73	57	81	0	41	23	78	61	18	29	69	8	-	59	*72*
ES	91	82	95	90	15	63	87	33	66	66	85	85	1	29	59	97	56	100	77	*61*
FI	100	100	100	97	48	85	66	99	57	94	65	44	62	65	26	97	82	100	60	*45*
FR	84	95	84	88	31	75	84	28	54	68	80	69	21	58	39	85	40	15	69	*56*
HR	0	40	0	40	0	12	80	16	4	28	45	74	-	88	58	17	27	-	65	*40*
HU	94	68	0	44	100	66	54	83	81	48	88	92	35	77	61	96	50	-	84	*73*
IE	97	100	100	91	100	77	66	37	100	30	59	14	10	56	76	22	54	-	84	*74*
IT	69	73	86	84	52	66	75	62	81	62	60	88	14	31	40	83	62	49	79	*54*

MS	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	*Tot-al*
LT	82	100	-	10	85	22	93	23	88	92	36	35	65	7	90	73	65	-	31	*79*
LU	-	-	-	99	0.1	59	67	1	0	85	0	12	0	75	84	0.1	85	-	6	*16*
LV	71	0	-	10	93	65	34	66	99	76	97	96	86	33	65	37	81	-	4	*91*
MT	3	-	-	0	0	81	98	-	-	2	-	100	-	0	23	13	0.1	-	100	*6*
NL	93	92	82	87	38	88	72	32	59	87	90	86	44	32	30	92	32	0	78	*60*
PL	92	72	0	62	64	53	80	90	77	44	55	95	1	29	38	84	55	0	36	*50*
PT	87	81	67	89	100	70	94	47	94	71	78	83	78	70	33	69	7	-	69	*73*
RO	0	0	0	24	-	90	75	43	99	44	81	59	2	81	90	20	53	0	66	*73*
SE	100	48	96	72	96	76	66	58	82	87	32	56	98	32	56	96	43	-	76	*63*
SI	0	17	0	70	-	71	80	51	42	72	14	48	0	77	84	71	39	-	74	*77*
SK	98	29	-	70	94	97	93	22	97	58	86	36	100	8	72	94	37	0	76	*80*
UK	93	66	70	79	54	45	77	64	40	57	57	67	82	19	25	96	66	39	20	*54*
Total	*93*	*82*	*88*	*79*	*39*	*69*	*81*	*53*	*81*	*65*	*67*	*82*	*45*	*47*	*48*	*93*	*57*	*59*	*69*	*65*

Source: European Commission (DG TRADE). Note: Sectors are represented by numbers in header rows as follows: 1=live animals; animal products; 2=vegetable products; 3=animal or vegetable fats and oils; 4=foodstuffs, beverages, tobacco; 5=mineral products; 6=products of the chemical or allied industries; 7=plastics, rubber and articles thereof; 8=raw hides, skins, and saddlery; 9=wood, charcoal and cork and articles thereof; 10=pulp of wood, paper and paperboard; 11=textiles and textile articles; 12=footwear, hats and other headgear; 13=articles of stone, glass and ceramics; 14=pearls, precious metals and articles thereof; 15=base metals and articles thereof; 16=machinery and appliances; 17=transport equipment; 18=optical and photographic instruments; 19=arms and ammunition; 20=miscellaneous manufactured articles.

Table 113: Information required to apply for approved exporter status across MS

MS	Information/documentation required	Processing time (max)	Period of validity
AT [a)]	▪ Name and address of company ▪ Name, date of birth and company position of company contacts	n.a.	Unlimited
BE [b)]	▪ Name and contact information for company contacts ▪ Name and contact information for person responsible for customs-matters and description of their activities ▪ Description of accounting system ▪ Location where main accounts are held ▪ Description of goods and tariff headings ▪ Expected quantity of shipments/average number per week ▪ Daily hours for carrying out customs formalities ▪ Estimated total customs value ▪ Relevant customs authorities and contact information ▪ Description of regulations/measures goods are subject to ▪ Description of transport methods ▪ Description of measures for proper preservation of relevant documents and stamps ▪ Extracts from central criminal records of applicant ▪ Copy of the Constitutive Act of the company ▪ Copies of AEO certificate/entry in register of customs authorities (if applicable)	30 days for notification of incomplete application	n.a.
BG [c)]	▪ Name and address of company ▪ Name, date of birth and company position of company contacts ▪ EORI number ▪ Description of main economic activities ▪ AEO number ▪ Information on premises that will receive goods (premises must be approved by customs authorities) ▪ Description of goods and tariff headings ▪ Expected quantity of shipments ▪ Hours that will be spent on customs formalities for incoming goods ▪ Description of accounting system ▪ Relevant customs authorities and contact information	3 months	n.a.
CY [d)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ EORI number ▪ Address of location where relevant origin documents are kept ▪ Address of manufacturing/storage units ▪ Description of goods and tariff headings ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.)	n.a.	n.a.
CZ [e)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ ICO number ▪ Expected quantity of monthly shipments ▪ Description of goods	n.a.	n.a.
DE [f)]	▪ Name and address of company ▪ Name and contact information for company contacts	n.a.	n.a.

MS	Information/documentation required	Processing time (max)	Period of validity
	▪ Address of location where relevant origin documents are kept ▪ AEO number ▪ EORI number ▪ Expected monthly quantity of shipments ▪ Current extract from commercial register ▪ Organisational statement		
DK [g)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ CVR/SE number ▪ Description of goods and tariff headings ▪ Expected yearly quantity of shipments and destinations ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.)	n.a.	n.a.
EE [h)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ EORI and registration number ▪ Description of goods and tariff headings ▪ Destination countries ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.)	120 days	n.a.
EL [i)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ Description of export activities ▪ Frequency of transactions ▪ Financial status ▪ Description of goods and tariff headings ▪ Description of means of transport to destination country ▪ Relevant customs authorities and contact information	3 months	Unlimited
ES [j)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ Name of individual with authority to make request (and supporting documentation) ▪ Fiscal identification number (NIF) and EORI number ▪ National Classification of Economic Activities (CNAE) code ▪ Description of goods and tariff headings ▪ Description of accounting system ▪ Name, NIF, EORI and nationality of suppliers ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.)	n.a.	n.a.
FI [k)]	▪ Name and address of company (and branch offices, if any) ▪ Name and contact information for company contacts ▪ EORI and registration number ▪ Description of export activities ▪ Description of origin of goods/inputs (e.g. purchase and delivery countries) ▪ Description of goods and tariff headings ▪ Destination countries ▪ Description of how rules of origin expertise is ensured (including contingency, e.g. if company contact responsible for RoO changes) ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.), including origin calculations for an example product (for manufacturers only) ▪ Description of accounting system	n.a.	n.a.

MS	Information/documentation required	Processing time (max)	Period of validity
	▪ Description of how documentation will be made available for inspection		
FR [l)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ EORI and SIRET number ▪ Description of goods and tariff headings ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ Production and export sites for products	120 days	Unlimited
HR [m)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ Description of goods and tariff headings ▪ Destination countries (including possible future destinations) ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ All other authorisations (e.g. AEO) ▪ Copy of company registration	30 days	Unlimited or with a time limit (varies)
HU [n)]	▪ Name and contact information for company contacts ▪ Location where accounts are held (if multiple locations) ▪ Statement that demonstrates regular export activities ▪ Documentary evidence of registration system used for providing proof of originating status ▪ Correspondence/contracts that are evidence of future exports in the framework of the trade agreement	n.a.	n.a.
IE [o)]	▪ Name and address of company ▪ Name and contact information for company contacts ▪ VAT number ▪ Description of goods and tariff headings ▪ *Customs official will conduct visit of premises to examine origin criteria upon receipt of application containing above information*	n.a.	n.a.
IT [p)]	▪ Name of company ▪ Name and date of birth of applicant, copy of valid ID ▪ *Customs official will conduct an audit to assess compliance with origin criteria upon receipt of application containing above information*	n.a.	n.a.
LT [q)]	▪ Name, code and address of company (and all partner companies) ▪ Name and contact information for company contacts ▪ Description of goods and tariff headings ▪ Estimated annual volume and value of exports	n.a.	n.a.
LU	n.a.	n.a.	n.a.
LV [r)]	▪ Application form ▪ Description of goods and tariff headings ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ *State Revenue Service may conduct inspection of production facility*	30 days	n.a.
MT	n.a.	n.a.	n.a.

MS	Information/documentation required	Processing time (max)	Period of validity
NL [s)]	▪ Name and address of company (including locations in other MS) ▪ Name and contact information for company contacts ▪ EORI/Chamber of Commerce registration numbers ▪ Destination countries ▪ Description of goods and tariff headings ▪ Description of accounting system ▪ Location where accounts are held ▪ "Indicate any other information that is important" ▪ Recent extract from Commercial Register	n.a.	n.a.
PL [t)]	▪ Name and contact information for company contacts ▪ EORI number ▪ Destination countries ▪ Description of goods and tariff headings ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ Expected monthly quantity of shipments ▪ Country of shipment dispatch	n.a.	Unlimited
PT [u)]	▪ Name of company and contacts ▪ Description of goods and tariff headings ▪ Expected frequency of exports ▪ Addresses of all production facilities ▪ Destination countries ▪ Customs office through which goods are exported ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ Customs procedure applicable to manufacturing (e.g. inward processing)	n.a.	n.a.
RO [v)]	▪ Name and address of company (including branches) ▪ Name and contact information for company contacts ▪ Proof of company incorporation ▪ Certificate of registration from trade register ▪ Correspondence/contracts that are evidence of future exports in the framework of the trade agreement ▪ Quantity, value and monthly frequency of exports in past 12 months and copies of relevant export documents ▪ Description of goods and tariff headings ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ Description of manufacturing process ▪ Cost structure of final products ▪ Description of all inputs used (quantity, value, origin, tariff code) and copies of relevant import documents ▪ Destination countries	30 days	Unlimited
SE [w)]	▪ Name and address of company (including branches) ▪ Name and contact information for company contacts ▪ Name of person responsible for customs activities ▪ Procedure for verifying origin of goods ▪ Details on production facilities ▪ Departure points for exports ▪ Destination countries ▪ Current means of providing customers with certificates of origin ▪ Frequency of exports	n.a.	Unlimited

MS	Information/documentation required	Processing time (max)	Period of validity
	▪ Description of goods and tariff headings ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.)		
SI [x)]	▪ Name, position and contact information of company contacts ▪ Tax number ▪ Quantity of monthly exports in past 6 months ▪ Destination countries ▪ Description of goods and tariff headings ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ Statement of payment of customs duties for non-originating materials	2 months	n.a.
SK	n.a.	n.a.	n.a.
UK [y)]	▪ Name and contact information for company contacts ▪ EORI number ▪ Description of goods and tariff headings ▪ Expected yearly quantity and value of consignments ▪ Demonstration of origin (suppliers' declarations, description of processing, raw materials, etc.) ▪ All previous and current authorisations	30 days	n.a.

Sources: Own compilation, based on publicly available information on the websites of a) Austrian Federal Ministry of Finance b) Belgian Customs. C) Bulgarian Customs Administration. D) Cyprus Customs and Excise Department. E) Customs Administration of the Czech Republic. F) German Customs. G) Danish Ministry of Taxation. H) Estonian Tax and Customs Board. I) Greek Official Gazette. J) Spanish Tax Agency. K) Finnish Customs. L) French Ministry for the Economy and Finance. M) Croatia Customs Administration. N) Hungarian Gazette. O) Irish Tax and Customs. P) Italian Customs Agency. Q) Lithuanian Legislation Register. R) Latvian Cabinet of Ministers Regulation No. 507. S) Dutch Customs.t) Polish Ministry of Finance. U) Portuguese Ministry of Finance. V) Romanian National Agency for Fiscal Administration. W) Swedish Customs. X) Slovenian Ministry of Finance. Y) HM Revenue and Customs. Note: "n.a." denotes that information could not be identified on the website of relevant institutions, such as customs authorities.

4. Case study on the implementation of the institutional mechanisms of the TSD chapter

4.1. Effects of the implementation of the trade and sustainable development chapter

4.1.1. Objectives and scope of the TSD chapter

Chapter 13 of the EU-Korea FTA covers trade and sustainable development. Under Article 13.1.1, "the Parties reaffirm their commitments to promoting the development of international trade in such a way as to contribute to the objective of sustainable development and will strive to ensure that this objective is integrated and reflected at every level of their trade relationship". Article 13.1.2 recognises that economic development, social development, and environmental protection are interdependent components of sustainable development, and Article 13.1.3 clarifies that it is not the intention "to harmonise the labour or environment standards of the Parties, but to strengthen their trade relations and cooperation in ways that promote sustainable development".

In terms of scope, Chapter 13 applies to measures adopted or maintained by the EU or Korea that affect trade-related aspects of labour and environmental issues in the context

of Articles 13.1.1 and 13.1.2, except as otherwise provided in the Chapter. A footnote to the same article clarifies that "when labour is referred to in this Chapter, it includes the issues relevant to the Decent Work Agenda". While Article 13.3 recognises "the right of each Party to establish its own levels of environmental and labour protection", it also provides that "each Party shall seek to ensure that those laws and policies provide for and encourage high levels of environmental and labour protection" and "shall strive to continue to improve those laws and policies". Points of reference of this commitment are internationally recognised standards or agreements referred to in the subsequent Articles 13.4 and 13.5, which relate to multilateral labour standards and agreements (Article 13.4) and multilateral environmental agreements (Article 13.5). A final area specifically listed is trade favouring sustainable development (e.g. trade in environmental goods and services and trade in "goods that are the subject of schemes such as fair and ethical trade and those involving corporate social responsibility and accountability", Article 13.6). The Parties also commit to "upholding levels of protection in the application and enforcement of laws, regulations or standards" (Article 13.7.). Chapter 13 also describes institutional mechanisms that are subject to a separate case study (see section 10.8below). These institutional mechanisms consist of the following elements:

- A *Committee on Trade and Sustainable Development (CTSD)*, comprising senior officials from within the EU and Korean administrations;
- Two *Domestic Advisory Groups (DAG)* of independent representative organisations of civil society that represent environment, labour and business interests, as well as other stakeholders (for the EU and Korea);
- A *Civil Society Forum (CSF)*, in which the two DAGs meet on an annual basis to conduct a dialogue encompassing sustainable development aspects of EU-Korea trade relations;
- *Government consultations* regarding any matter of mutual interest arising under Chapter 13. If such government consultations take place, the EU and Korea should strive to arrive at a mutually satisfactory resolution. However, if further discussion is necessary, either Party can also request a meeting of the CTSD to consider the matter (as recourse to the dispute settlement mechanism established in Chapter 14 of the EU-Korea FTA is not possible for TSD-related issues); and,
- A *panel of experts* to be convened should government consultations fail to satisfactorily address a given issue.

Not directly an institutional mechanism, but related to the functioning of the mechanisms is the commitment of the Parties in Article 13.10 to "reviewing, monitoring and assessing the impact of the implementation of this Agreement on sustainable development". This is to be achieved through "their respective participative processes and institutions", as well as those set up under the FTA, for instance through trade-related sustainability impact assessments.

The Annex to Chapter 13 concerns cooperation on trade and sustainable development, and establishes an indicative list of areas of cooperation “in order to promote the achievement of the objectives of Chapter 13 and to assist in the fulfilment of their obligations pursuant to it”. These include areas for exchange of information/views (e.g. “exchange of views on the trade impact of environmental regulations, norms and standards”) and areas of cooperation (e.g. “cooperation with a view to promoting the ratification of fundamental and other ILO Conventions and multilateral environmental agreements with an impact on trade”). Specific areas highlighted include corporate social responsibility and accountability, trade-related aspects of climate change, biodiversity, fishing, deforestation and trade-related aspects of the ILO Decent Work Agenda.

4.1.2. Functioning of the institutional mechanisms of the TSD chapter

During the evaluation period, the institutional mechanisms were implemented as envisaged in the EU-Korea FTA. Based on the information provided in our case study, and supported by the interviews conducted with representatives of the EU and Korean DAG, it can be concluded that the permanent institutional mechanisms foreseen by Chapter 13 the FTA (the CTSD, the two DAGs, and the CSF) have been implemented in line with the provisions of the agreement. They have regularly met (roughly once every year for the CTSD and the CSF, with only 2016 being a year without a meeting), and have discussed a wide range of issues focusing on labour rights, environmental protection and CSR, in line with the scope of Chapter 13 and the related Annex 13. However, this evaluation has also identified some issues that affect the functioning of the DAGs and the CSF, which mainly refer to the composition of the DAGs. The requirement specified in Article 13.12.5 that the DAGs comprise “independent representative organisations of civil society in a balanced representation of environment, labour and business organisations as well as other relevant stakeholders" appears to be only partially fulfilled for both groups. In the case of the EU DAG, labour and business organisations are well represented, but only one organisation explicitly representing environmental interests (ClientEarth) is a member. With regard to the Korean DAG, close to half of its representatives are members of academia, rather than representatives of civil society organisations. The two non-permanent mechanisms of the TSD chapter, government consultations and the panel of experts, have not been activated so far.

In the evaluation period, the implementation of the institutional mechanisms of Chapter 13 of the EU-Korea FTA resulted in exchange of views and experiences during DAG, CSF, CTSD meetings; publication of discussion papers, reports and opinions; organisation of workshops; presentation by and discussion with the ILO; and cooperation projects under the EU Partnership Agreement. These *outputs* focus on labour rights, the environment (mostly regarding the emissions trading system and green growth) and CSR, and thereby cover core areas as specified in the TSD chapter and the related Annex 13. In the open public consultation conducted for this evaluation, at least two-thirds of stakeholders that had an opinion in this respect assessed the EU DAG (nine out of ten respondents), Korean DAG (five out of seven respondents), and the CSF (six out of eight respondents) as having contributed moderately or very much to the implementation of the TSD chapter of the FTA by advising on relevant issues.[483] The institutional mechanisms of the TSD chapter therefore have contributed in line with their foreseen functions, as is recognised by stakeholders.

In the open public consultation and the research for the related case study, several issues were identified that related to the *outcomes and impacts* of the institutional mechanisms under the TSD chapter: according to the open public consultation conducted for this evaluation, the highest ranking problems identified concerning both the EU DAG and the CSF were "recommendations not taken into account"(cited four and five times, respectively).[484] Examples provided by civil society stakeholders included references to a lack of willingness of the Korean government to fulfil its commitments in the area of labour rights, and the reluctance of the European Commission to invoke the non-permanent mechanisms available for TSD issues (i.e. government consultations according to Article 13.14). Stakeholders also expressed concern regarding the lack of progress in the area of labour rights (see below), as did the EP's Committee on Employment and Social Affairs in an opinion provided to the Committee on International Trade. In the opinion, the Committee expressed its concern "at the latest reported

[483] The large majority of respondents either selected “no opinion/don’t know” or did not provide a response (see stakeholder consultation report).

[484] Note that again the large majority of respondents either selected “no opinion/don’t know” or did not provide a response (see stakeholder consultation report).

repression of trade unions in the Republic of Korea" and called on the Commission "to initiate consultations with the Korean authorities on the reported violations of fundamental rights such as freedom of association and the failure to ensure effective recognition of the right to collective bargaining".[485] However, the ILO in its recent assessment of labour provisions in trade and investment arrangements lists the following legal, institutional and political outcomes of stakeholders' involvement in its discussion of the EU-Korea FTA:[486]

- *Legal:* Ongoing legal changes to facilitate the ratification of Conventions and to implement ILO Recommendations (for example, the Trade Union and Labour Relations Adjustment Act);
- *Institutional:* Re-engagement with ILO (for example, ILO participation in the Committee on Trade and Sustainable Development and the DAGs); development of joint initiatives and technical cooperation (for example, new programmes on non-discrimination, equality and CSR);
- *Political:* Increased awareness of labour rights in the Republic of Korea; engagement of the EU and Republic of Korea's Governments through the Committee on Trade and Sustainable Development to discuss labour rights.

In light of the developments outlined above, and given the growing interest in labour and environmental provisions in trade agreements in general, in July 2017 the Commission sent a non-paper on trade and sustainable development in EU trade agreements to the European Parliament and Council, with the intention of contributing to a discussion on whether the current TSD chapters are meeting expectations, and possible options on improving their implementation. Specifically, the following two options were put forward:

- *Option 1: A more assertive partnership on TSD.* This option would involve an upgraded partnership for enhanced coordination and joint actions with Member States, the European Parliament, international organisations and trade partners. It would also include a more assertive use of the TSD dispute settlement mechanism.
- *Option 2: A model with sanctions.* This option would entail a dispute settlement mechanism including government-to-government consultations, a panel procedure and the publication of a public report (all of which are currently envisaged in the EU-Korea FTA), and would introduce the possibility to apply sanctions in case of non-compliance impacting trade or investment between the Parties. Sanctions could take the form of withdrawal of trade concessions (as practiced in the US) or fines (as practiced in Canada).[487]

See also the recommendations of this evaluation (section 11.2).

4.1.3. Effects of the implementation of the TSD chapter on labour rights

The human and labour rights analysis presented in section 8 of this report assesses the impacts of the EU-Korea FTA on the following rights: freedom from discrimination; right to peaceful assembly and association; right to join trade unions; right to just and favourable conditions of work; right to rest and leisure; right to food. The analysis mainly

[485] European Parliament, Committee on Employment and Social Affairs, Opinion of 17.6.2016 of the Committee on Employment and Social Affairs for the Committee on International Trade on the implementation of the Free Trade Agreement between the European Union and the Republic of Korea (2015/2059(INI)), Rapporteur: Siôn Simon.

[486] ILO, 2016, Assessment of labour provisions in trade and investment arrangements.

[487] See http://trade.ec.europa.eu/doclib/docs/2017/july/tradoc_155686.pdf.

focuses on Korea, as the EU-Korea FTA has had a significantly larger economic impact on Korea relative to the EU, which implies more significant effects on human rights, for example via changes in wages, consumption and employment. Moreover, literature review and stakeholder interviews indicated concerns regarding fundamental labour rights violations in Korea. In the human rights analysis, the EU-Korea FTA is assessed to have not changed the status quo of human and labour rights in Korea as they were when the FTA came into effect, in the sense that little change (positive or negative) over the 2011 situation and/or longer term trends can be observed regarding these rights, with the only exception being the right to food. Following the evidence from the economic analysis, food prices have decreased to a minor extent as a direct result of the FTA.

4.1.4. Effects of the implementation of the TSD chapter on the environment

Section 9 of this report provides a comprehensive analysis of the environmental effects of the EU-Korea FTA during the evaluation period. The CGE analysis conducted for this study indicates that due to the EU-Korea FTA, CO_2 emissions in the EU would have increased by 0.12 percent if there were no emissions trading system in place in the EU. Since the ETS covers most industrial CO_2 emissions in Europe, it most likely has prevented the realisation of these CO_2 emission changes. In Korea, emissions increase by 0.19 percent compared to the counterfactual situation of not having an FTA. However, the EU-Korea FTA leads overall to a net reduction of global emissions by 4.1 million tonnes CO_2. The global CO_2 reduction can almost be fully ascribed to only two countries that suffer from trade diversion effects, namely China and the United States, whose relatively emission-intensive exports were replaced by cleaner ones from the EU or Korea.[488] The descriptive analysis of indicators concerning other environmental areas, such as air pollution, water quality, biodiversity, waste management and deforestation does not indicate any observable effect of the EU-Korea FTA in these areas.

Other potential environmental effects of the EU-Korea FTA and accompanying cooperation activities identified in the course of this evaluation relate to:

- *Increased trade in environmental goods and services*, with trade volume doubling from less than EUR 1 900 million in 2006 to EUR 3 800 million in 2015, with the increase occurring mostly in the post-FTA period of 2011 to 2015. However, due to the diverse range of products falling under this category (see the case study on environmental goods and services in section 10.4), and a lack of relevant, more specific data, related potential benefits (such as emission control, use of renewable energy, increased efficiency in energy production and use, etc.) cannot be quantified.
- An EU-funded *cooperation project on Low Carbon Action in Korea* to establish an EU-Korea Joint Platform on Low Carbon Economy and joint Partnership Agreements in Green Urban Development between EU and Korean stakeholders, aiming to enhance networking and dialogue on climate change and to stimulate uptake of low carbon urban development strategies.[489] However, this project was only launched in 2016.
- Korea introduced an emissions trading system based on the ETS Act dating from 2012. In 2014, *dialogue in the CTSD and CSF* concerning the EU and Korean emissions trading systems possibly fed into the practical implementation process of the Korean ETS, which was launched in 2015.

[488] These aggregated estimates include higher emissions of EU and Korea as well and these are, due to mentioned effect of the EU ETS, overestimated. The Korean ETS was only launched in 2015. Its phase-in with free allocation of emission allowances takes 3 years. (See section 9.)

[489] http://ec.europa.eu/dgs/fpi/documents/key-documents/A4_C_2016_2989_F1_ANNEX_EN_V2_P1_850176.pdf

While it can be argued that the noted effects are mostly not directly related to the implementation of the TSD chapter, but rather due to e.g. trade diversion effects of the FTA, they are relevant to consider in this context, as they contribute to the benefits of the agreement in terms of sustainable development.

It can therefore be concluded that during the evaluation period, the EU-Korea FTA has led to a limited, but notable reduction of global CO_2 emissions, which more than compensated for any additional CO_2 emissions due to increased trade between the EU and Korea. Trade in environmental goods and services has increased, and institutionalised dialogue under the TSD chapter as well as an EU-funded cooperation project have supported or will in the future support Korean climate policies.

4.2. Other additional data

The table below presents the text of key articles in Chapter 13 of the EU-Korea FTA.

Table 114: Key articles of Chapter 13 of the EU-Korea FTA

Article	Text
13.10 – Review of sustainability impacts	The Parties commit to reviewing, monitoring and assessing the impact of the implementation of this Agreement on sustainable development, including the promotion of decent work, through their respective participative processes and institutions, as well as those set up under this Agreement, for instance through trade-related sustainability impact assessments.
13.12 – Institutional mechanism	**1.** Each Party shall designate an office within its administration which shall serve as a contact point with the other Party for the purpose of implementing this Chapter. **2.** The Committee on Trade and Sustainable Development established pursuant to Article 15.2.1 (Specialised Committees) shall comprise senior officials from within the administrations of the Parties. **3.** The Committee shall meet within the first year of the entry into force of this Agreement, and thereafter as necessary, to oversee the implementation of this Chapter, including cooperative activities undertaken under Annex 13. **4.** Each Party shall establish a Domestic Advisory Group(s) on sustainable development (environment and labour) with the task of advising on the implementation of this Chapter. **5.** The Domestic Advisory Group(s) comprise(s) independent representative organisations of civil society in a balanced representation of environment, labour and business organisations as well as other relevant stakeholders.
13.13 – Civil society dialogue mechanism	**1.** Members of Domestic Advisory Group(s) of each Party will meet at a Civil Society Forum in order to conduct a dialogue encompassing sustainable development aspects of trade relations between the Parties. The Civil Society Forum will meet once a year unless otherwise agreed by the Parties. The Parties shall agree by decision of the Committee on Trade and Sustainable Development on the operation of the Civil Society Forum no later than one year after the entry into force of this Agreement. **2.** The Domestic Advisory Group(s) will select the representatives from its members in a balanced representation of relevant stakeholders as set out in Article 13.12.5. **3.** The Parties can present an update on the implementation of this Chapter to the Civil Society Forum. The views, opinions or findings of the Civil Society Forum can be submitted to the Parties directly or through the Domestic Advisory Group(s).
13.14 – Government consultations	**1.** A Party may request consultations with the other Party regarding any matter of mutual interest arising under this Chapter, including the communications of the Domestic Advisory Group(s) referred to in Article 13.12, by delivering a written request to the contact point of the other Party. Consultations shall commence promptly after a

Article	Text
	Party delivers a request for consultations. **2.** The Parties shall make every attempt to arrive at a mutually satisfactory resolution of the matter. The Parties shall ensure that the resolution reflects the activities of the ILO or relevant multilateral environmental organisations or bodies so as to promote greater cooperation and coherence between the work of the Parties and these organisations. Where relevant, subject to the agreement of the Parties, they can seek advice of these organisations or bodies. **3.** If a Party considers that the matter needs further discussion, that Party may request that the Committee on Trade and Sustainable Development be convened to consider the matter by delivering a written request to the contact point of the other Party. The Committee shall convene promptly and endeavour to agree on a resolution of the matter. The resolution of the Committee shall be made public unless the Committee otherwise decides. **4.** The Committee may seek the advice of either or both Domestic Advisory Group(s) and each Party may seek the advice of its own Domestic Advisory Group(s). A Domestic Advisory Group of a Party may also submit communications on its own initiative to that Party or to the Committee.
13.15 – Panel of experts	**1.** Unless the Parties otherwise agree, a Party may, 90 days after the delivery of a request for consultations under Article 13.14.1, request that a Panel of Experts be convened to examine the matter that has not been satisfactorily addressed through government consultations. The Parties can make submissions to the Panel of Experts. The Panel of Experts should seek information and advice from either Party, the Domestic Advisory Group(s) or international organisations as set out in Article 13.14, as it deems appropriate. The Panel of Experts shall be convened within two months of a Party's request. **2.** The Panel of Experts that is selected in accordance with the procedures set out in paragraph 3, shall provide its expertise in implementing this Chapter. Unless the Parties otherwise agree, the Panel of Experts shall, within 90 days of the last expert being selected, present to the Parties a report. The Parties shall make their best efforts to accommodate advice or recommendations of the Panel of Experts on the implementation of this Chapter. The implementation of the recommendations of the Panel of Experts shall be monitored by the Committee on Trade and Sustainable Development. The report of the Panel of Experts shall be made available to the Domestic Advisory Group(s) of the Parties. As regards confidential information, the principles in Annex 14-B (Rules of Procedure for Arbitration) apply. **3.** Upon the entry into force of this Agreement, the Parties shall agree on a list of at least 15 persons with expertise on the issues covered by this Chapter, of whom at least five shall be non-nationals of either Party who will serve as chair of the Panel of Experts. The experts shall be independent of, and not be affiliated with or take instructions from, either Party or organisations represented in the Domestic Advisory Group(s). Each Party shall select one expert from the list of experts within 30 days of the receipt of the request for the establishment of a Panel of Experts. If a Party fails to select its expert within such period, the other Party shall select from the list of experts a national of the Party that has failed to select an expert. The two selected experts shall decide on the chair who shall not be a national of either Party.
13.16 – Dispute settlement	For any matter arising under this Chapter, the Parties shall only have recourse to the procedures provided for in Articles 13.14 and 13.15.

Source: EU-Korea FTA, Chapter 13: Trade and Sustainable Development.

The table below presents detailed excerpts from the joint statements of each CTSD meeting

Table 115: Excerpts from published joint statements of CTSD meetings, 2012-2015

Subject	Meeting	Topics	EU/Korea	Details	Outcome
Labour rights	2012	▪ Ratification of ILO Conventions	Korea	▪ "The Korean side updated on the ILO Conventions it has ratified so far, and recognised the importance of continuing to work towards ratification of other ILO Conventions, overcoming existing obstacles."	▪ Korea recognised the importance of continuing to work towards ratification of other ILO Conventions
	2013	▪ Ratification of ILO Conventions	Korea, EU	▪ "Korea and the EU exchanged views on each side's labour policies, including ratification of the ILO conventions and current labour market policies in the aftermath of the recent economic crisis. With regard to the ILO conventions, Korea informed about the recent discussion at the National Assembly on the ratification of ILO fundamental conventions and Domestic Workers Convention (C189), the status of the ratification of Maritime Labour Convention (MLC) and the government's efforts to ratify more ILO conventions." ▪ "In respect to the above, the EU also noted that close cooperation with the ILO has proven instrumental in its Member States efforts in ratification and implementation of ILO conventions and encourages Korea and the ILO to engage in a regular technical dialogue in this respect. Korea informed that Korea and the ILO have been and will be in close cooperation."	▪ Korea informed that Korea and the ILO have been and will be in close cooperation
	2014	▪ Ratification of ILO Conventions	Korea	▪ "Regarding ILO Conventions, Korea informed that it had recently ratified the Maritime Labour Convention. Korea also informed that the government would continue to have dialogues with the ILO and make other additional efforts to ratify more Conventions. Korea explained its recent policy efforts to achieve a 70% employment rate and progress that has been made. The Parties agreed to share, before the next TSD Committee meeting, texts setting out progress to date and further intended steps toward ratification of ILO fundamental and other up-to-date conventions, and exchange the information with the CSF."	▪ Korea also informed that the government would continue to have dialogues with the ILO and make other additional efforts to ratify more Conventions
	2015	▪ Ratification of ILO Conventions	Korea, EU	▪ "The labour policy segment was introduced by a presentation of the International Labour Organisation (ILO) on developments regarding the implementation of ILO Convention 111 and lessons learned from ways to overcome obstacles to	▪ Korea agreed to share with the TSD Committee and the

Subject	Meeting	Topics	EU/Korea	Details	Outcome
				compliance." ▪ "Regarding ILO Conventions, Korea informed that for further ratification of ILO conventions, the Korean government is working with researchers to examine if there is any conformity between unratified conventions and Korean domestic systems. Among the unratified conventions, the government is seriously considering ratification of the Protection of Wages Convention (C95), the Equality of Treatment (Social Security) Convention (C118), which have a relatively high degree of conformity with Korean laws." ▪ "In order to further the parties' commitments in the field of labour under the FTA, and building on the ILO's presentation, the Parties agreed to launch a project under the Partnership Instrument to look into the implementation of ILO Convention 111 on Non-Discrimination, with the aim of better understanding the state of play of implementation in Korea and EU Member States, and identifying obstacles, lessons learned and best practices in order to enhance compliance. The Parties agreed to prepare terms of reference with the aim of launching the project in a short-term period." ▪ "As regards efforts towards ratifying the remaining fundamental ILO Conventions, Korea outlined changes made to the Trade Union and Labour Relations Adjustment Act in order to reflect ILO recommendations. Moreover Korea agreed to share with the TSD Committee and the CSF before its next meeting, texts setting out additional intended concrete steps towards removing remaining obstacles for ratification of the core ILO Conventions."	CSF before its next meeting, texts setting out additional intended concrete steps towards removing remaining obstacles for ratification of the core ILO Conventions
Environment	2012	▪ Green growth ▪ ETS	Korea, EU	▪ "The EU presented its Resource efficiency strategy, and recalled that implementation of provisions dealing with environmental issues in the chapter will be important to contribute to the common objective of green growth. Korea presented its Low Carbon Green Growth policies including establishment of a presidential committee for green growth, set the target of renewable energy for 2030 and of Greenhouse gas reduction for 2020, and the introduction of target management system, ETS and Green Card, and proposed to begin initial steps for cooperation on Eco-labelling between EU and Korea."	▪ Korea proposed to begin initial steps for cooperation on Eco-labelling between EU and Korea
	2013	▪ Environmental/ CC policy ▪ Environmental goods ▪ Illegal logging	Korea, EU	▪ "Korea and the EU updated each other on their recent respective developments in regard to environment policies, including on climate change, in particular in relation to emissions trading schemes and Sustainable Consumption and Production (SCP) initiatives. The Committee also discussed the issue of liberalisation of environmental goods and the various fora in which this is	▪ Both sides agreed to continue its exchanges in respect of climate change and

Subject	Meeting	Topics	EU/Korea	Details	Outcome
				discussed. In addition, the EU outlined its recent initiatives to combat illegal logging and associated trade, in particular the EU Timber Regulation, and the Korean side responded by updating on its latest developments in this area. The EU side offered to continue to dialogue in respect to trade in timber. Both sides agreed to continue its exchanges in respect of climate change and environmental policies."	environmental policies
	2014	▪ ETS ▪ Green growth ▪ Multilateral Environmental Agreements	Korea, EU	▪ "The environment segment opened with an EU presentation on the emissions trading system (ETS), the flagship of the EU climate policy. The EU presented how emerging carbon markets in Europe and East Asia could also be an interesting business opportunity. Korea also updated on recent developments of the Korean ETS since last September, which will be enforced from 2015. The parties agreed to work further on the preparation of an EU-Korea ETS cooperation project under the Partnership Instrument to share experience on the EU's regulatory approach both with the public and the private sector which is to be launched by end 2015 and run for three years." ▪ "Korea introduced main environmental policies in the area of Creative Economy of Korea, such as construction of environment-friendly energy towns, nurturing of upcycling industries and enactment of the Act on the promotion of resource circulating society." ▪ "The Committee then discussed a number of key Multilateral Environmental Agreements, notably the Minamata Convention and CITES, and exchanged information on wildlife trafficking and on illegal logging."	▪ The parties agreed to work further on the preparation of an EU-Korea ETS cooperation project under the Partnership Instrument
	2015	▪ Circular economy ▪ Illegal logging ▪ Multilateral Environmental Agreements	Korea, EU	▪ "The environment segment opened with a Korea presentation on the Recycling Society, the flagship of the Korean environmental policy. Korea updated on recent developments of the 'Act on Promotion of Transition to Resource Circulating Society', which will be enforced from 2017. The EU took note of the developments in Korea and informed about the EU's new flagship strategy on the Circular Economy which is due for adoption by the end of 2015." ▪ "This was followed by a discussion on Illegal Logging. The EU informed about the joint collaboration projects with key consumer and producer countries in Asia and expressed openness to establish cooperation with Korea with a view to identifying best approaches to halt importation and trading of illegally harvested timber and derived products. Korea stated that a legislative proposal addressing trade in illegally harvested timber and timber products is under development. Both sides agreed to exchange experience in the light of those ongoing developments." ▪ "The Committee then discussed a number of key Multilateral Environmental	▪ The parties agreed to exchange experiences regarding combatting illegal logging

Subject	Meeting	Topics	EU/Korea	Details	Outcome
				Agreements, notably the Minamata Convention. On the Minamata Convention on mercury, both the EU and Korea are signatories and in the process of ratification, following which this could be an interesting area for cooperation in the implementation phase."	
CSR	2012	▪ Internationally agreed principles /guidelines	Korea, EU	▪ "On CSR, the EU updated on the CSR agenda it adopted at the end of 2011. It presented initiatives within the EU and at the international level, notably with regard to internationally agreed principles and guidelines. It also provided information on the different channels for dialogue with stakeholders on CSR issues, including through its DAG. The EU highlighted its interest in working together with partner countries, and suggested possible joint initiatives with Korea for further discussion."	▪ The EU suggested possible joint initiatives with Korea
	2013	▪ Internationally agreed principles /guidelines	Korea, EU	▪ "For the agenda item of cooperation under Annex 13 of the Agreement, Korea and the EU discussed recent initiatives aiming at implementation of the international guidelines and principles in the area of Corporate Social Responsibility (CSR). The Korean side informed about the recent initiatives for raising awareness for CSR, such as implementing ISO 26000. The EU side informed about recent initiatives covering the UN Guiding Principles on Business and Human rights, as well as recent legislative initiatives related to transparency, as well as to social and environmental aspects in public procurement."	-
	2014	▪ Internationally agreed principles /guidelines	Korea, EU	▪ "The Parties also discussed implementation of the international guidelines and principles in the area of Corporate Social Responsibility (CSR) and agreed to pursue talks on this matter in the future. The EU suggested further discussion on the operation of EU and Korean companies bilaterally and in third countries, the role of OECD National Contact Points in this respect, and the possibility for the Parties to work together to ensure that their companies observe the international CSR principles and guidelines to which both Parties subscribe. In this respect, the Committee encouraged the CSF to provide further advice on such matters."	▪ The parties agreed to pursue further talks on CSR in the future
	2015	▪ PI project	Korea, EU	▪ "The Parties also discussed their commitment to responsible business conduct and the possible launch of a project under the Partnership Instrument in the field of Corporate Social Responsibility. The EU and Korea agreed that further exchanges were needed. They stated their intention to reach an agreement on a project in the field of Corporate Social Responsibility at the 5th meeting of the CTSD and agreed to be in touch to this end."	▪ The parties agreed to reach agreement on a PI project on CSR at the next CTSD meeting

Sources: Joint Statements of the EU-Korea TSD Committee (2012-2015)

The table below presents detailed excerpts from the published conclusions of each CSF meeting.

Table 116: Excerpts from conclusions of CSF meetings, 2012-2015

Subject	Meeting	Topics	EU/Korea	Details	Outcome
Labour	2012	▪ Ratification and implementation of fundamental ILO conventions	Korea	▪ "CSF members exchanged views on the ratification and implementation of fundamental ILO conventions and agreed that despite progress, there were still some problems regarding compliance with international standards in Korea. As requested by the Trade and Sustainable Development Committee, they agreed to look at this issue in depth during the next DAG and CSF meetings, in the context of procedures provided for in chapter 13. The possibility of organising a seminar on this specific topic in conjunction with the next CSF meeting was agreed upon."	▪ The DAGs agreed to examine the issue in depth in the next DAG/CSF meetings
	2013	▪ Ratification and implementation of fundamental ILO conventions	Korea, EU	▪ "On the issue of fundamental rights at work, the CSF asks the Korean government to take the necessary measures and remove hindrances to enable the ratification of the remaining ILO Fundamental Conventions." ▪ "The CSF is of the view that full cooperation with the ILO will assist the progress towards the development of the necessary conditions for the ratification of the remaining four ILO Fundamental Conventions by Korea." ▪ "The CSF urges both Korea and EU Member States to ensure full implementation of the ILO Fundamental Conventions which have already been ratified. The CSF requests to be informed on the cases of non-compliance of OECD Guidelines for Multinational Enterprises by Korean and EU multinationals."	▪ Asked the Korean government to take measures to ensure the ratification of fundamental ILO conventions
	2014	▪ Ratification and implementation of fundamental ILO conventions	Korea	▪ "Further to the workshop on labour rights (forced labour and freedom of association and the right to collective bargaining) held in Seoul in September 2013 and the ensuing CSF conclusions, the Forum discussed with the ILO representative ways to approach legislative and practical aspects related to the promotion of freedom of association and the right to collective bargaining, and to prohibition of forced labour, so as to open the way for Korea's move towards ratification and effective implementation of the ILO fundamental conventions in both areas. With regard to the next steps, the CSF asks the Korean government to engage constructively in a dialogue with representatives of employers and workers to discuss and find ways to address remaining legislative and practical shortcomings, in particular the	▪ Asked the Korean government to take measures to ensure the ratification of fundamental ILO conventions

Subject	Meeting	Topics	EU/Korea	Details	Outcome
				issues identified by the ILO supervisory mechanism, so as to open the way for the future ratification of the remaining ILO fundamental conventions."	
	2015	▪ Ratification and implementation of fundamental ILO conventions	Korea	▪ "The Civil Society Forum was preceded by a workshop on labour-related aspects held on 9 September with a discussion on fixed-term contracts and minimum wages." ▪ "The CSF asks the Korean Government to engage constructively in a dialogue with representatives of employers and workers to discuss and find ways to address remaining legislative and practical shortcomings, in particular the issues identified by the ILO supervisory mechanism, and to ratify the remaining ILO fundamental conventions."	▪ Asked the Korean government to take measures to ensure the ratification of fundamental ILO conventions
	2017	▪ Ratification and implementation of fundamental ILO conventions	Korea	▪ "The CSF asks the Korean Government to ratify the remaining ILO fundamental conventions, notably No 29 and 105 (prohibition of forced labour), as well as No 87 and 98 (freedom of association and the right to collective bargaining) which is a commitment under Article 13.4.1 of the FTA	▪ Asked the Korean government to take measures to ensure the ratification of fundamental ILO conventions
Environment	2012	▪ Environmental issues and their impact on trade	Korea, EU	▪ "CSF members held a preliminary discussion on environmental issues and their impact on trade. They agreed to continue discussion on this issue and especially on the FTA's contribution to green growth in the context of the follow-up to the Rio+20 conference."	▪ Agreed to continue discussion
	2013	▪ Green economy	Korea, EU	▪ "On the issue of Green economy and trade in the context of sustainable development, the CSF underlines that: green economy must be included as part of a comprehensive sustainable development strategy which reconciles social, ecological and economic aspects, whilst ensuring redistributive growth and inter-generational equity; the EU-Korea FTA offers a rare, even unique, opportunity for gauging the contribution that international trade can make to the experimental concept that the green economy represents; and civil society has an important role to play in defining and implementing the green economy and the need to develop its involvement in debates related to energy and ecological transitions." ▪ "The CSF recommends that a common work programme between Korean and European civil society be established."	▪ Recommended establishment of a common work programme on environmental issues
	2014	▪ Trade in EGS	Korea, EU	▪ "The CSF asks the Commission and the Korean Government to provide both DAGs and CSF with information on the extent to which the environmental	▪ Information request to Commission and the

Subject	Meeting	Topics	EU/Korea	Details	Outcome
		▪ ETS		goods and services and eco-technologies are covered by the current EU-Korea FTA and, if possible, on trade flows between the EU and Korea in this area." ▪ "On the basis of presentations delivered by both DAGs, the Forum discussed features and the operation of the EU and Korea Emission Trading Systems (ETS), as well as lessons learned from implementation of the EU ETS. It was of the opinion that it would be useful to continue exchanges of information and experience, also in other areas related to climate change policy."	Korean Government on the extent to which the environmental goods and services and eco-technologies are covered by FTA
	2015	▪ Climate change policy	Korea, EU	▪ "Based on presentations of both DAGs, the Forum discussed civil society contribution to development and implementation of the climate change and energy policy and GHG emission reduction efforts at the respectively national level (in Korea), as well as at the EU and international level. The CSF members followed also a presentation delivered by the representatives of the Metropolitan City of Seoul outlining policy and measures taken in the area of climate change and energy policy." ▪ "With regard to its next meeting the CSF considers useful continuing discussion on aspects related to climate change and energy policy, as well as environment, e.g. chemicals or waste management, involving experts in these fields."	▪ The CSF agreed to continue discussion on climate change/energy policy at its next meeting
	2017	▪ Humidifier steriliser tragedy	Korea	▪ "Notes that the tragedy happened by humidifier sterilisers in South Korea raises the need for the EU and Korea to investigate the tragedy thoroughly and come up with more fundamental actions against such tragic accidents related to chemical substances or products in the context of applicable laws and corporate social responsibility."	▪ The CSF raised the need to come up with more fundamental actions in the context of applicable laws and CSF
		▪ Co-investment scheme	Korea, EU	▪ "Recommends that both the Korean government and the European Commission consider a co-investment scheme in order to find cost-effective investment solutions to decarbonisation in road infrastructure and production processes"	▪ The CSF recommended that the Parties consider a co-investment scheme regarding decarbonisation
CSR	2012	-	-	-	-
	2013	-	-	-	-

Subject	Meeting	Topics	EU/Korea	Details	Outcome
	2014	Internationally agreed principles /guidelines	Korea, EU	▪ "The Forum listened to comprehensive presentations prepared by both DAGs outlining current policy and practice in the area of CSR in the EU and Korea, emphasising the need to promote and implement international instruments, such as the OECD Guidelines for Multinational Enterprises, the UN Global Compact, ISO 26000 or the UN Guiding Principles on Business and Human Rights, and to engage in cooperation and mutual learning. The CSF expressed the view that there is scope for further discussion and cooperation on CSR between the EU and Korea DAG."	▪ The CSF agreed to continue discussion on CSR at its next meeting
	2015	Internationally agreed principles /guidelines	Korea, EU	▪ "The Forum discussed CSR based on delivered presentations. The EU DAG provided information about the EU and international initiatives in the area of CSR, as well as EU-led international initiatives for the Ready-Made-Garment sector in Bangladesh (developed further to the Rana Plaza building collapse in 2013) and encouraged the Korean companies sourcing in Bangladesh to consider joining the private sector-led initiatives, such as the Accord on Fire and Building Safety, with a view to contributing to the improvement of labour rights, health and safety at work, as well as building safety standards in Bangladesh. The Korea DAG delivered a presentation on international developments on CSR, the CSR policy and practice in Korea, as well as CSR practice of chosen Korean companies operating in Europe and European companies operating in Korea." ▪ "The CSR invites the EU DAG to consider organising a workshop on CSR, including environmental and human rights aspects, back-to-back to the CSF meeting in 2016."	▪ The CSF invited the EU DAG to consider organising a workshop on CSR at its next meeting
	2017	Joint projects	Korea, EU	▪ "The CSR invites the DAGs and the Committee on Trade and Sustainable Development (CTSD) to consider joint EU-Korea projects and cooperation on the implementation of the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises, and to consider organising a follow-up on these questions at the next CSF."	▪ The CSF invited the DAGs to consider joint EU-Korea projects in the area of CSR

Sources: Conclusions of the Civil Society Forum under the EU-Korea FTA (2012-2015).

Annex VI: Minutes of the civil society dialogue and the stakeholder workshop

CIVIL SOCIETY DIALOGUE

MEETING ON THE EVALUATION OF THE IMPLEMENTATION OF THE FREE TRADE AGREEMENT BETWEEN THE EU AND ITS MEMBER STATES AND THE REPUBLIC OF KOREA, INCEPTION REPORT

Date: 18 October 2015
Time: 14.30-16.30
Location: Albert Borschette Conference Centre, Room 4-D, Rue Froissart 36, Brussels

Panel presentation

The European Commission welcomed participants and explained that the meeting would focus on a presentation by Civic Consulting and the Ifo Institute, followed by a question and answer session.

The European Commission provided background information on the implementation of the EU-Korea Free Trade Agreement (FTA) and on the progress of the evaluation. The EU-Korea FTA was provisionally applied since 1 July 2011 and entered into force on 13 December 2015. This FTA was the first in a new generation of EU FTAs, and is characterised by its far-reaching and comprehensive nature. It is also the first FTA that the EU concluded with an Asian country. The EU-Korea FTA is the first comprehensive trade agreement subject to ex-post assessment as stipulated by the Better Regulation agenda. The assessment of the EU-Korea FTA began in June 2016, the interim report is expected to be published in March 2017, a stakeholder workshop to present the interim report will be held in April 2017, and the final report is expected to be published in August 2017.

Civic Consulting and the **Ifo Institute** gave a presentation of the Inception Report of the Evaluation of the implementation of the Free Trade Agreement between the EU and its Member States and the Republic of Korea. The presentation provided an overview of the progress made since the beginning of the evaluation and provided details regarding next steps of the study, including the consultation of stakeholders, the case studies, the economic, social, environmental and human rights analyses, the evaluation questions and the elaboration of conclusions and recommendations. **Civic Consulting** encouraged participants to take part in the public consultation and stated that participants could send additional information via email to *eukorea-eval@civic-consulting.de*. It also highlighted that updated information regarding the progress of the study will be available through the evaluation website, *www.eukorea-eval.com*.

Discussion highlights/questions and answers

The European Economic and Social Committee (EESC) inquired about the extent to which quantitative information would be gathered throughout the public consultation, as well as whether the size of responding organisations would be taken into account. **Civic Consulting** clarified that the consultation will focus mainly on gathering qualitative input, and that for practical reasons, the analysis of consultation results would group respondents by type (business association, public authority, etc.) rather than size.

The International Trade Union Confederation (ITUC) requested more details on the nature of the scientific advisory group and recommended including analysis on the implementation of core labour standards of the ILO in Korea in the human rights analysis. **The ITUC** also expressed willingness to provide resources for the human rights analysis, recommended contacting the Korean Confederation of Trade Unions and asked for clarification of "social impacts". Finally, **the ITUC** suggested adding a human rights session to the stakeholder workshop in April and inquired if the Korean ratification of and adherence to ILO conventions would be examined under the case study on the implementation of the institutional mechanisms of the Trade and Sustainable Development (TSD) chapter of the FTA. **Civic Consulting** clarified that the advisory group complements the expertise of the evaluation team by providing feedback on methodological tools (e.g. questionnaires) and commenting on relevant case studies/analyses. **Civic Consulting** also stated that an initial interview that focused on labour rights had already been conducted, and emphasised that the Korean ratification of and adherence to ILO conventions would be considered in the human rights analysis, while clarifying that the evaluation would focus on the impact of the FTA on human rights, rather than being a general analysis of the human rights situation in Korea. **Civic Consulting** reaffirmed its openness to receiving new information and suggestions of relevant stakeholders and confirmed that a human rights session would be added to the agenda for the stakeholder workshop in April 2017. Finally, **Civic Consulting** clarified that the TSD case study would also examine the outcomes of the TSD institutions with respect to labour rights.

The International Federation for Human Rights (FIDH) requested that any information they provided be taken into account in future reports, inquired if contact details for the human rights experts could be shared, and requested that future reports be published well in advance of stakeholder meetings. **The FIDH** also suggested that the evaluation should have a greater focus on Korea and should consider the indirect impacts of the FTA on human rights in addition to direct impacts. Finally, **the FIDH** suggested refining the current list of human rights indicators as well as adding a separate case study on human rights, while emphasising the importance of examining the impact on human rights across all other case studies. **Civic Consulting** stated that all information provided would be reflected on carefully, but emphasised that they could not guarantee that all such information would be incorporated in future reports (e.g. as recommendations). **Civic Consulting** also stated that it could not provide personal contact details of team members, but that emails addressed to the evaluation team (see the above contact email) would be considered with the relevant team members. **Civic Consulting** also emphasised that it will do everything possible to ensure that reports are published early in advance of stakeholder meetings. **Civic Consulting** clarified that selected Korean stakeholders will be interviewed and are welcome to take part in the consultation, and the human rights analysis will have a focus on Korea. **Civic Consulting** clarified that while the evaluation will consider indirect impacts to the extent possible, the main focus will be on assessing direct impacts of the FTA on human rights, as direct impacts are better suited to exploring causality. With reference to refining the list of human rights indicators, **Civic Consulting** reiterated its openness to suggestions from stakeholders. **Civic Consulting** finally

clarified that human rights will be integrated as a horizontal issue throughout all case studies, and thus will not be pursued as a separate case study.

The European Federation of Public Service Unions (EPSU) expressed concerns regarding speculative elements of and assumptions required for CGE modelling and inquired if the scope of the evaluation could be broadened to include other new generation FTAs. **The EPSU** also reiterated that the objectives of the FTA should be an important benchmark throughout the evaluation. **The Ifo Institute** stated that the economic analysis would consist of econometric analysis (which applies validated statistical methods to trade data) as well as CGE modelling. **The Ifo Institute** emphasised that while CGE modelling does require making certain modelling assumptions, it is nevertheless the best tool available for the required analysis, and that the analysis will identify inherent limitations of the approaches used, where relevant. **Civic Consulting** reiterated that the focus of the evaluation would remain on the EU-Korea FTA, and that the extent to which the objectives of the FTA have been fulfilled will indeed be examined under the "effectiveness" criteria of the evaluation.

The European Association of Dairy Trade emphasised the beneficial effect that the FTA has had on European dairy exports and inquired if the case study on agriculture would address non-tariff barriers (e.g. tariff rate quotas) and SPS issues such as the veterinary certificates required by the Korean government. **Civic Consulting** stated that non-tariff barriers and SPS issues will both be considered in the case study, but emphasised that it will not be possible to cover every problem in every agricultural sector in detail due to the broad nature of this case study.

The European Automobile Manufacturer's Association (ACEA) asked if the case study on passenger cars could be expanded to also briefly examine buses and other vehicles such as truck tractors, and requested that the case study also examine unresolved non-tariff barriers. **ACEA** also inquired if the economic analysis would look specifically at the automobile sector. **Civic Consulting** clarified that the focus of the case study would be on passenger cars, though exemplary issues experienced (e.g. with the width of buses, etc.) could be mentioned in the background section of the case study. **Civic Consulting** also confirmed that non-tariff barriers would be covered by the case study. **The Ifo Institute** confirmed that the economic analysis could focus on both the sector and the product level, and invited participants to send suggestions regarding specific products of interest, which the team would then consider for more detailed examination in light of their relevance for the case studies.

spiritsEUROPE pointed out the impact of the direct transport clause on EU exports and inquired regarding the nature of the recommendations that will be made in the final report. **Civic Consulting** replied that the evaluation will look at the problems that have emerged following the implementation of the FTA and will analyse how to resolve those problems, emphasising that these recommendations may not necessarily result in specific amendments to the FTA. **The European Commission** also clarified that the final report would in turn feed into a Staff Working Document which the Commission will prepare at the end of the evaluation.

AGORIA inquired as to which tariff lines will be examined under the case study on the use of tariff preferences and asked if there would be a chapter of the report focusing on Member State-specific impacts of the FTA. For the case study on the use of tariff preferences, **Civic Consulting** replied that the emphasis would be on sectors where the use of preferences is particularly low, though the specific sectors have not yet been selected. **Civic Consulting** also confirmed that the evaluation will focus on general themes, though comments will be made on specific Member States in relevant instances.

ICMP asked if the evaluation will examine copyright developments that have emerged due to the FTA. **Civic Consulting** confirmed that intellectual property rights (IPR) such as copyright will be examined as part of the consultation, though there will not be a specific case study on IPR.

The European Commission emphasised that the current ex-post evaluation follows the Better Regulation Guidelines of the Commission. It is not a sustainability impact assessment (SIA). Hence, it does not follow the rules of SIAs regarding draft reports submitted for comments to stakeholders and discussed at the Civil Society dialogues. **The European Commission** also stated that the civil society dialogue to present the inception report was not foreseen in the ToR, but it was decided to hold such a meeting in order to raise awareness of stakeholders about the evaluation and to gather feedback for the next stage of the evaluation. **The European Commission** clarified that a revised inception report will not be published, but that feedback received during the meeting will be taken into account in the upcoming interim report. Similarly, feedback received at the stakeholder workshop in April 2017 will not be included in a revised interim report, but will rather inform the final report. **Civic Consulting** emphasised that stakeholders who wish to communicate more information and/or suggest themselves for interviews in the context of the case studies or regarding horizontal issues such as human rights should email *eukorea-eval@civic-consulting.de* as soon as possible, rather than towards the end of the consultation process.

Stakeholder Workshop: Evaluation of the EU-Korea Free Trade Agreement: Interim Report

Date: 10 July 2017
Time: 09:30-12:45 and 14:00-17:00
Location: Albert Borschette Conference Centre, room 2D, Rue Froissart 36, Brussels

Introduction

DG TRADE welcomed participants and provided background information on the implementation of the EU-Korea Free Trade Agreement (FTA). The EU-Korea FTA was provisionally applied since 1 July 2011 and entered into force on 13 December 2015. This FTA was the first in a new generation of EU FTAs, and is characterised by its far-reaching and comprehensive nature. It is also the first FTA that the EU concluded with an Asian country. The contractor also welcomed participants and provided background information on the evaluation of the EU-Korea FTA, presenting the team, objectives, scope, and methodology of the evaluation and summarising the results of the stakeholder consultation that took place from December 2016 to March 2017. The contractor then explained the workshop agenda, highlighting that the workshop would be structured around brief presentations of results of the interim technical report, and encouraged participants to pose questions and comments throughout the presentations.

The contractor also reiterated that additional evidence from stakeholders would be welcomed and confirmed that the interview process is on-going, stating that all additional evidence would need to be received and new interviews completed by Friday, 14 July 2017. The contractor highlighted that information could be sent via email to *eukorea-eval@civic-consulting.de* and noted that updates regarding the progress of the study would continue to be made available through the evaluation website, *www.eukorea-eval.com*.

Results of the economic analysis

In the first session of the workshop, the contractor presented the results of the economic analysis, focusing on the following areas (for more detail, refer to the workshop presentation):

- Evolution of tariffs
- Evolution of trade in goods and services
- Evolution of FDI
- Econometric analysis (partial and general equilibrium)
- Impact on the EU budget
- Impact on the informal economy
- Impact on (least-) developing countries

With reference to the descriptive analysis of the evolution of trade in goods, participants noted that the evaluation did not distinguish between consumer products and industrial products and inquired if trade in the former increased more relative to the latter, in light of the growth in the Korean middle class. The contractor noted that due to the classification of the trade data used for the evaluation it is not possible to distinguish between consumer and industrial products.

The **International Federation of the Phonographic Industry (IFPI)** indicated that the FTA has had a definite positive impact on the EU music industry, as certain public performance rights were introduced in Korea due to the FTA. However, these rights have not yet been introduced in full. The **IFPI** also noted that a competition problem continues to exist insofar as the Korean authorities set prices for music licensing. The **IFPI** noted that stakeholders in the manufacturing industry were represented in large numbers in the consultation and interviews and inquired about the possibility to provide complementary data and be interviewed. The contractor clarified that the interview process thus far has focused largely on the case study sectors but confirmed that a separate interview would be appreciated. Participants commented that the significant number of manufacturing stakeholders represented in the evaluation may also correspond to the fact that such stakeholders profit the most from the FTA, given that they produce originating goods that benefit from the preferences of the agreement.

The **European Economic and Social Committee (EESC)** stated that certain EU Member States appear to have benefited more from the FTA relative to others (similar to how the EU has benefited more than Korea with respect to export volumes) and inquired as to the cause. The contractor replied that while the EU has exported more to Korea than vice versa, the FTA itself is not intrinsically asymmetric, and commented that more benefits on the Korean side will likely become apparent in the future once more data is available. The contractor also acknowledged heterogeneity among Member States (MS) but noted that all MS have seen increased exports to Korea. It was also noted that the EU supply chains have to be taken into consideration (for example, when French or German car manufacturers export more cars to Korea, other MS that export car parts to France or Germany benefit indirectly, which is reflected in the effects of the FTA on MS value-added presented in the report). The contractor confirmed that clarifications regarding the latter aspect could be added in the report, where needed.

Analysis of FTA implementation

In the second session of the workshop, the contractor presented the analysis of FTA implementation, covering the following areas:

- Effects on the reduction of non-tariff barriers (NTBs)
- Rules of origin

- Use of tariff preferences
- Regulatory changes undertaken in Korea
- Implementation of other FTA areas (competition, public procurement, intellectual property rights, institutional set-up, dispute settlement, e-commerce)
- Issues that may prevent exploiting the full potential/benefits of the FTA

With respect to the electronics sector, **Orgalime** commented on the considerable reduction in NTBs noted in the interim report and inquired how this reduction was calculated, given that its members still face significant NTBs in practice. The contractor noted that the CGE model filters out tariffs and factors such as changes in exchange rates, leaving a "residual" that broadly constitutes NTBs. The contractor also noted that the model indicates possible cross-sectional (i.e. not industry-specific) effects that led to a decrease in NTBs. Moreover, the NTB reductions reported are net effects, whereby certain measures may hinder trade but be outweighed by other factors in aggregate. The contractor stated that where necessary, the report could be clarified to reflect these points.

Participants inquired if formal NTBs eliminated by the FTA could have shifted to informal NTBs. The contractor replied that the analysis has not produced evidence of this kind of policy substitution. The **Mechanical Engineering Industry Association (VDMA)** remarked that EU machinery exports to Korea have increased (in contrast to expectations) but commented that Korean Occupational Safety and Health Agency (KOSHA) requirements introduced in 2013 mandating third party certification for many categories of mechanical engineering goods have prevented EU companies from exporting to Korea, whereas Korean exporters in this sector do not face such barriers when exporting to the EU. The **VDMA** inquired if this was reflected in the report and suggested that such regulatory issues could be addressed in amendments to the FTA. The contractor explained that throughout the report, efforts have been made to complement the results of the economic analysis with insights from the consultation and interviews. The contractor also noted that companies that experienced difficulties could be more likely to contact their associations compared to companies with success stories. Finally, the **EU Delegation to Korea** pointed out that businesses can often react to new NTBs and overcome them, at times with the help of EU institutions.

Regarding approved exporter status, participants noted that while the initial acquisition of this status is not particularly difficult (a point that was seconded by **Orgalime**), companies often have problems when proving the originating status of their goods. Participants stated that this can sometimes be the fault of companies (e.g. if inadequate details are provided in supporting documents), though EU companies have also encountered issues with Korean customs. Specifically, participants cited the recent issue of an EU policy document (also published on the Korea Customs Service website) that clarifies which EU countries' customs authorities are responsible in the event of an origin verification request. In the case of the EU-Korea FTA, this document states that the customs authorities of the EU country listed on the origin declaration are responsible. However, this document is reported to have been sometimes ignored by Korean authorities. Participants also noted that the Korea Customs Service (KCS) has been extremely strict regarding the wording of EU origin declarations, having withheld preferential tariffs on this basis in the past. It therefore suggested screening the wording of origin declarations under future FTAs against possible interpretations of customs authorities in partner countries.

The **VDMA** remarked that they often cite the rules of origin of the EU-Korea FTA as a good example of such rules, while also pointing out that there is a need for additional support for companies who require assistance with complying with rules of origin (the **VDMA** has an officer that works solely in this capacity and receives many requests for assistance from member companies). Participants stated that

fewer hybrid rules and greater consistency across different EU rules of origin would be helpful for companies.

Concerning direct transport, participants highlighted that problems in this respect stem from the interaction between the direct transport rule and the minimal operations that are allowed when utilising a hub such as Singapore, rather than the direct transport rule itself.

Concerning preference utilisation rates (PURs), participants noted that EU companies are deeply enmeshed in the global supply chain, which sometimes renders it impossible for manufacturers (especially in more complex industries) to identify where their materials originate from. Moreover, it was noted that some EU companies frequently change suppliers in order to benefit from cheaper prices, which further complicates origin calculations. As such, EU companies will assess the costs and benefits of using preferences and may on this basis choose to forego utilising the FTA. In this respect, it is unsurprising that the EU PUR is lower than that of Korea. The contractor confirmed that these points could be referenced in the report as reasons for the low use of preferences in the EU.

With reference to the question *"Do you see a need to improve the EU-Korea FTA"* in the public consultation, the **IFPI** asked if this question referred to the text of the agreement or to its implementation. The contractor clarified that the question covers both aspects and noted that the identification of conclusions and recommendations will take place in the final stage of the evaluation.

Finally, concerning needs that have not been addressed by the FTA, the **IFPI** commented that the dispute settlement mechanism has not yet been used despite requests from the music industry.

Analysis of impacts on SMEs

In this session, the contractor presented the analysis of FTA impacts on SMEs, emphasising the need for EU Member States to collect better firm-level data (on which analysis of SME impacts depends).

Participants commented that rules of origin are an issue for SMEs, noting that while large companies can afford to calculate origin, smaller firms may find such calculations to be cost-prohibitive. Participants also remarked that increasing the EUR 6 000 threshold for approved exporter status could allow more SMEs to make use of the preferential tariffs. The **European Services Forum (ESF)** noted that a single point of contact that provides a comprehensive list of formalities and barriers for various markets with respect to services would also aid SMEs in locating relevant information. The **IFPI** commented that large companies and SMEs in the music industry face the same intellectual property rights issues.

The **EU Delegation to Korea** commented that the new Korean administration appears to have greater focus on assisting SMEs/increasing the number of SMEs, as this would have a positive impact on the structure of the economy. The **EU Delegation to Korea** also highlighted Commission initiatives such as the EU Gateway to Asia programme, which assists EU companies in networking with Korean partners in certain sectors (e.g. green energy and organic food). The **EU Delegation to Korea** remarked that while awareness of the Korean market may be somewhat low among EU SMEs, it has observed an increase in exports to Korea on the part of the latter, particularly in sectors that cater to health-conscious consumer preferences.

Results of the social analysis

In this session of the workshop, the contractor presented evaluation findings concerning the following:

- Impacts of the FTA on consumers
- Implementation of the institutional mechanisms of the Chapter on Trade and Sustainable Development
- Social impacts (labour force participation, wages, employment)

Regarding impacts on employment, wages, and household income, **the National Center for Development Cooperation (CNCD-11.11.11)** inquired why alternative models were not used, given the limitations of the CGE model (e.g. concerning the assumption of constant employment). The contractor acknowledged these limitations but clarified that there is no universally-agreed on model in this respect, so that any modelling in this respect would likely be of limited analytical value for this evaluation.

With respect to impacts on consumers, participants commented that the larger decreases in prices observed in Korea relative to the EU could be attributable to the higher tariffs imposed by Korea prior to the FTA. The contractor replied that this could be possible, though it is difficult to ascertain the extent to which decreases in tariffs translate to decreases in prices. The **EU Delegation to Korea** echoed this point, remarking that due to a non-competitive distribution sector in Korea, lower tariffs may not be passed down as price cuts for consumers. Finally, participants emphasised the importance of increased consumer choice in the discussion of impacts on consumers. The contractor confirmed that this could be addressed in the report.

Regarding the implementation of the Chapter on TSD, the **International Trade Union Confederation (ITUC)** commented that while the institutional mechanisms of this chapter are indeed meeting regularly, an assessment of their implementation should be focused on concrete outcomes. (For example, the **ITUC** cited the fact that the Commission has not yet initiated government consultations with Korea on labour rights after two requests from the EU Domestic Advisory Group (DAG).) The contractor noted that the interim report presents evidence regarding implementation, outputs and outcomes/impacts of the TSD mechanism, and agreed on the importance of considering outcomes in an evaluation perspective. **DG TRADE** agreed that a focus on outcomes is important, but noted that the Trade Commissioner has replied to the requests of the EU DAG and has ensured a high level of transparency in this area. **DG TRADE** further remarked that the new Korean administration will likely be more open to cooperation concerning trade and sustainable development (a point echoed by the **EU Delegation to Korea**) and noted that progress on issues such as labour rights takes time.

Also with respect to the implementation of the Chapter on TSD, the **EESC** noted the importance of diversifying the members of the DAGs in order to broaden the subjects discussed. The **EESC** also commented on a lack of knowledge and awareness of the Chapter on TSD among civil society and public institutions, which could be one factor behind the prevalence of academics in the Korean DAG. The **EESC** suggested that there may be a role for the Commission in education and increasing awareness of this Chapter and sustainable development in general.

Results of the human and fundamental labour rights analysis

The contractor presented the evaluation results of the human and fundamental labour rights analysis, reiterating that information on impacts in specific sectors would be welcomed. The presentation focused on the following rights:

- Right to freedom from discrimination
- Right to peaceful assembly and association
- Right to just and favourable conditions of work
- Right to food

The **EESC** suggested that Korea's supply chain (including countries such as Vietnam) is a relevant issue in the context of the human rights analysis. **DG TRADE** added that monitoring commitments are based on international obligations, pointing out that as Korea has not yet ratified four of the ILO fundamental conventions, it is not subject to the same supervisory mechanisms as the EU is.

Results of the environmental analysis

In the final session of the workshop, the contractor presented evaluation findings concerning the following areas:

- Analysis of CO_2 emissions (in the EU, Korea, and globally)
- Other environmental impacts (waste management, de-forestation, etc.)

In response to a question by **DG REGIO,** the contractor clarified that the data used in the report concerns the quantity of waste generated per capita (which decreased in Korea following the FTA), rather than the treatment of waste, for which there is no data. **DG REGIO** noted that there are city-to-city cooperation actions concerning waste management, such that there may be some information available in this respect. The contractor stated that the issue could be examined, but noted the difficulties of distinguishing between correlation with the FTA and causation (the literature shows that there are areas of cooperation that are not directly related to the FTA that nevertheless are facilitated by or benefit from the FTA). The **EESC** inquired as to the impact of manipulation of emission control systems in diesel cars exported under the FTA, as the latter could result in health problems. The contractor explained that this impact is out of the scope of this study and has not been examined, and that no agreed methodology for the quantification of such impacts exists.

Conclusions

DG TRADE explained that the contractors would take into account the workshop's discussions and any additional evidence submitted by 14 July 2017 when producing the draft final report. **DG TRADE** noted that the draft final report would also include answers to the evaluation questions as well as conclusions and recommendations; the contractors are expected to submit the report in October 2017. On the basis of this report, the Commission will produce a staff working document. Both the staff working document and the final evaluation report by the contractors will become public.

CNCD-11.11.11 asked if the evaluation could result in amendments to the FTA. **DG TRADE** clarified that the purpose of the evaluation is to collect evidence and determine which aspects could be improved; recommendations that are amenable on the EU and Korean sides may be discussed. **DG TRADE** reiterated that a definitive answer is difficult to provide in this respect as the amendment process is complicated, but stated that the results of the evaluation would be taken into consideration.

Annex VII: Mapping of evaluation tasks

The table below maps the evaluation tasks (as listed in the terms of reference) to the location(s) in this report (or previous deliverables) in which they have been addressed.

Table 117: Mapping of tasks to report location

Task	Description	Report	Section(s)
1	Comment on and revise, if necessary, the intervention logic	Inception	6.1
2	Define and develop the evaluation tools	Inception	7, 8, 9, 10
3	Review existing studies and reports	Inception	5, Annex
4	Provide a concise but comprehensive description of the FTA	Final	4
5	Create a website dedicated to the evaluation	http://www.eukorea-eval.com/	
6	Stakeholder consultations	Final	Annex X
7	Conduct case studies	Final	10
8.1	Analyse the evolution of trade in goods	Final	5.2.1
8.2	Econometric analysis	Final	5.4, 5.5
8.3	Analyse the evolution of trade in services and FDI	Final	5.2.2, 5.3
8.4	Identify the non-tariff measures affecting EU-Korea trade	Final	6.1
8.5	Analyse the effects (if possible in economic terms too) of the implementation of the customs-related provisions	Final	6.3
8.6	Analyse the implementation of other areas of the EU-Korea FTA	Final	6.4
8.7	Identify issues in areas of the EU-Korea FTA which may prevent exploiting the full potential/benefits of the FTA	Final	6.5
8.8	Identify regulatory changes undertaken by the EU and Korea due to the implementation of the EU-Korea FTA, assess elements of regulatory convergence and analyse impact on regulatory costs both on administrations and businesses	Final	6.2
8.9	Analyse the impact of the EU-Korea FTA on SMEs	Final	5.6
8.10	Analyse the impact of the EU-Korea FTA on consumers	Final	7.1
8.11	Analyse the impact of the EU-Korea FTA on the EU budget	Final	5.7
8.12.a	Analyse the effects of the implementation of the TSD chapter	Final	10.8 and Annex
8.12.b	Examine the impact of the EU-Korea FTA on employment, wages, and household income	Final	7.2
8.12.c	Examine the environmental impacts of the EU-Korea FTA	Final	9
8.13	Examine the impact of the EU-Korea FTA on human rights	Final	8
9/10	Reply to the evaluation questions/provide conclusions and recommendations	Final	11

Source: Civic Consulting and the Ifo Institute.

Annex VIII: Summary of methods and models used in the evaluation

Partial equilibrium analysis

We use simple statistical modelling to isolate the effects of the EU-Korea FTA on bilateral trade flows. Holding other determinants of trade (such as income levels, aggregate price levels, etc.) constant, we focus on the FTA's effects on bilateral trade costs. This serves as an important input into the general equilibrium (GE) analysis (summarised subsequently) where we allow incomes, price levels, and so on, to adjust and to affect bilateral trade flows.

To this end, we model bilateral trade flows between 42 countries (including all EU countries) using a gravity equation with a comprehensive set of so-called fixed effects. This allows us to interpret the estimated effects as causal ones: other determinants of trade have been accounted for so that the effects reported indeed represent the additional trade due to the agreement.

For the main estimation of aggregate effects of the EU-Korea FTA, we use the latest version of the WIOD trade data, and equations similar to those applied in Aichele, Felbermayr, and Heiland (2016) for use in the Ifo Trade Model.[490] We incorporate the latest developments in the empirical gravity literature as summarized by Yotov, Piermartini, Monteiro, and Larch (2016).[491]

The main specification uses econometric panel data methods on bilateral sector-level trade flows for the period 2000-2014. The sample for the main estimation includes all 56 sectors in our sample (i.e., goods and services trade). The estimation is based on more than 1.5 million observations.

Baier, Yotov, and Zylkin (2016) demonstrate that the effects of FTAs can be asymmetric.[492] We therefore allow for the effects of the EU-Korea FTA to be different for EU exports to Korea ($EU \rightarrow KOR$) and for Korean exports to the European Union ($KOR \rightarrow EU$).

Finally, in addition to accounting for the specific effects of the EU-Korea FTA, which are of primary interest here, the main specification also controls for the presence of any other regional trade agreement that may have impacted trade between the countries in our sample during the period of investigation.

In summary, taking all of the above considerations into account, we specify the following econometric model as our main estimating equation:

$$\boldsymbol{X_{ij,t}^{k} = \exp[\eta_1 EU\_KOR_{ij,t} + \eta_2 KOR\_EU_{ij,t} + \eta_3 RTA_{ij,t} + \pi_{i,t}^{k} + \chi_{j,t}^{k} + \mu_{ij}^{k}] + \epsilon_{ij,t}^{k}}$$

Here, $X_{ij,t}^{k}$ denotes the nominal bilateral trade flows from exporter i to importer j in class k at time t, which also include intra-national trade flows. $EU\_KOR_{ij,t}$ is an indicator variable that is equal to one for exports from EU to Korea for the years after 2010, and it is equal to zero otherwise. Similarly, $KOR\_EU_{ij,t}$ is a dummy variable that takes a value of one for Korea's exports to EU after 2010, and it is equal to zero otherwise. $RTA_{ij,t}$ is an indicator for the presence of any other regional trade agreement. Finally, $\pi_{i,t}^{k}$, $\chi_{j,t}^{k}$, and μ_{ij}^{k} are exporter-sector-time, importer-sector-time, and directional sector-pair fixed effects, respectively. $\pi_{i,t}^{k}$ and $\chi_{j,t}^{k}$ will control perfectly for the theoretical multilateral resistances

[490] Aichele, Rahel, Gabriel Felbermayr, and Inga Heiland. Going Deep: The Trade and Welfare Effects of TTIP Revised. 2016. Ifo Working Paper No. 219.

[491] Yotov, Yoto et al. An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model. Geneva: UNCTAD and WTO, 2016.

[492] Baier, Scott, Yoto Yotov, and Thomas Zylkin. *On The Widely Differing Effects Of Free Trade Agreements: Lessons From Twenty Years Of Trade Integration*. 2016. School Of Economics Working Paper Series, 2016-15.

and for all other observable and unobservable variables at the exporter-sector-time and the importer-sector-time dimensions. μ_{ij}^{k} will absorb all time-invariant trade costs by allowing them to vary by sector and in each direction of trade. In addition, adding μ_{ij}^{k} is equivalent to implementing the average treatment effect methods to account for endogeneity of regional trade agreements following Baier and Bergstrand (2007).

General equilibrium analysis

The Ifo Trade Model used in this analysis is a Computable General Equilibrium (CGE) model, which falls into the class of New Quantitative Trade Theory (NQTT) models. This means that the estimation of parameters (essentially trade elasticities and the trade cost effects of the agreement in question) is conducted on the same data that are used as the baseline for the simulation exercise. However, the theoretical basis of the model is standard and comparable to other CGE models. It is a stochastic, multi-sector, multi-country Ricardian model of the type developed by Eaton and Kortum (2002),[493] extended to incorporate rich value chain interactions by Caliendo and Parro (2015),[494] broadened to include non-tariff trade costs by Aichele et al. (2014), and described in general terms by Costinot and Rodriguez-Clare (2014).[495]

The model assumes perfect competition and full employment. This is a standard assumption in similar exercises; see Costinot and Rodriguez-Clare (2014) for a survey of recent modelling advances. The reason is that there are no universally accepted frameworks that allow for linking trade policy to labour market outcomes.[496] Besides this technical aspect, there are good economic reasons for keeping unemployment rates constant for the modelling exercise. Lower trade barriers typically lead to an expansion of both exports and imports. Jobs are created in export-oriented firms and industries, but destroyed in import-competing ones. If lower trade costs lead to an asymmetric expansion of imports and exports, so that the trade surplus of a country grows or falls, the net balance of job creation and destruction might be positive or negative. Trade agreements such as the EU-Korea FTA aim to be “balanced”, i.e., reciprocal, so that they lead to a more or less proportionate expansion of both imports and exports, in particular in the long-run. Trade surpluses are usually not seen to be a function of trade costs but of macroeconomic variables such as exchange rates, interest rates, or the stance of fiscal or monetary policy which are not negotiated in trade agreements. Moreover, permanent imbalances would lead to financing constraints and are therefore not generally sustainable.

The assumption of constant overall employment has strong implications for sectoral effects: when one sector expands, at least one other sector must shrink. If the FTA draws more individuals into employment, such negative sectoral effects could be minimised. Because the model does not allow for this possibility, sectoral effects must be interpreted with care. Moreover, it is important to note that the Ifo Trade Model uses a standard static Ricardian framework. This means that trade is motivated by differences between countries in patterns of sectoral comparative advantages. Trade is impeded by trade costs—tariff and non-tariff ones, as well as by trade barriers imposed by geography, culture, or history.

[493] Eaton, Jonathan et al. "Trade and the Global Recession". American Economic Review 106.11 (2016): 3401-3438.

[494] Caliendo, Lorenzo, and Fernando Parro. "Estimates of The Trade And Welfare Effects Of NAFTA". Review of Economic Studies 82.1 (2015): 1-44.

[495] Costinot, Arnaud, and Andrés Rodríguez-Clare. "Trade Theory with Numbers: Quantifying the Consequences Of Globalization". *Handbook of International Economics, Vol 4*. Elhanan Helpman, Gita Gopinath and Kenneth Rogoff. 2014. 197-262.

[496] This is not to say that there are no trade models which would allow for unemployment; see Felbermayr and Prat (2013) or Helpman et al. (2013) for recent surveys. Felbermayr (2015) analyses labour market effects of a potential EU-US trade agreement and surveys the pertinent literature.

The Ifo Trade Model requires detailed data on input-output relations between domestic and foreign sectors as inputs, and treats cost shares as constant (assuming Cobb-Douglas technologies); emissions are treated as (undesired) outputs and their output-coefficients are taken from the data as well. As with all other available CGE models, the framework does not endogenise FDI; this has to be taken into account in the interpretation of results.

Similar to almost all other CGE models, we use data from the Global Trade Analysis Project (GTAP). The most recent available data set (GTAP 9.1) refers to the year of 2011, the year of the start of the provisional application of the EU-Korea FTA. The model is updated such that it reflects the trade policy landscape as observed in 2015. Starting in 2011, the effects of all free trade agreements as of 2016 are taken into account, which enables us to identify the pure causal effect of the EU-Korea FTA. In short, the results are based on world input-output structures that existed in 2011, which is the year of the start of the FTA's provisional application, but model the global trade linkages as of 2016. To obtain general equilibrium-consistent estimates of the causal effects of the EU-Korea FTA, the analysis compares this observed status quo situation with a simulated counterfactual situation in which the EU-Korea FTA is assumed to be non-existent (counterfactual scenario). To do so, tariff cuts as observed in the data and reductions in other trade costs as implied by the ex-post analysis of the agreement in the partial equilibrium analysis are counterfactually undone in the simulation model. More precisely, the estimated causal trade effects of the agreement are translated into trade cost reductions using the trade elasticities applied in the Ifo Trade Model (Aichele et al., 2016) and decomposed into the directly observable tariff and the non-observable non-tariff components using the model structure.

The resulting general equilibrium objects (trade values, sectoral value added, sectoral employment, wages, prices, GDP, tariff incomes, and greenhouse gas emissions) can be compared with their respective status quo counterparts. By construction, the difference is due to the agreement. It captures all general equilibrium feedbacks, e.g. those through trade diversion effects or changes in aggregate income. In contrast, the gravity estimates presented in the previous section refer to partial equilibrium effects of the agreement, because incomes and aggregate prices are taken as given. The advantage of our approach is that no direct measures of observed reductions in non-tariff trade costs (NTTCs) are needed, and the simulation exercise is cleanly tied to the gravity estimation.

The Ifo Trade Model allows for drawing conclusions about the EU-Korea FTA on the structure of bilateral trade flows at the GTAP 9.1. level of aggregation, aggregate trade (volumes and openness measures), levels of value added, employment, emissions, and price levels, both at the sectoral and on the aggregate levels, wages and overall price levels, measures of real per capita GDP and of welfare (compensating variation measures).

Simulating the effects of the EU-Korea FTA in the frame of the Ifo Trade Model, two vectors will change compared to the status quo: first, the vector that reflects tariffs between the EU and Korea, and second the vector that reflects NTTC. While the former is directly observable, the latter is indirectly estimated by the partial equilibrium analysis. The analysis of non-tariff trade costs in section 6 provides more details on its calculation. These estimates are based on trade creation effects that cannot be attributed to tariff cuts; using trade elasticities provided by the model, these trade creation effects can be translated to reductions in NTTCs. Accordingly, these estimated NTTCs reductions feed the NTTC changes used for the simulation. The estimation of the trade elasticities based on GTAP goods sectors can be found in Aichele et al. (2016).

For more specific information on the methods and models used in the evaluation, as well as related results, see section 5 and Annex II.3.

Annex IX: List of interviewed stakeholders

Table 118: Stakeholder organisations interviewed

Organisation	Type of stakeholder	Relevant case studies/sectors/analyses [c)]
Attiki-Pittas	Company	Agri
Granex	Company	Agri
Embassy of Ireland in Korea	Government	Agri
Fédération Française des industriels Charcutiers, Traiteurs, Transformateurs de Viandes (fict)	National business association	Agri
Freshfel	EU-level business association	Agri, PUR
European Association of Dairy Trade (EUCOLAIT)	EU-level business association	Agri, RoO, PUR
European Livestock and Meat Trading Union (UECBV)	EU-level business association	Agri, RoO, PUR
DG AGRI	European Commission	Agri, RoO, PUR
Danish Agriculture & Food Council	National business association	Agri, RoO, PUR
BMW	Company	Auto, PUR
Daimler	Company	Auto, PUR
Fiat Chrysler Automobiles (FCA)	Company	Auto, PUR
Groupe PSA	Company	Auto, PUR
Hyundai	Company	Auto, PUR
MAN Truck & Bus	Company	Auto, PUR
Porsche	Company	Auto, PUR
Scania	Company	Auto, PUR
Volkswagen	Company	Auto, PUR
Volvo	Company	Auto, PUR
European Automobile Manufacturers' Association (ACEA)	EU-level business association	Auto, PUR
Greefa	Company	Cross-cutting
Intralot	Company	Cross-cutting
Nutricia	Company	Cross-cutting
BusinessEurope	EU-level business association	Cross-cutting
Confindustria	EU-level business association	Cross-cutting
European Services Forum (ESF)	EU-level business association	Cross-cutting
DG COMP	European Commission	Cross-cutting
DG TRADE	European Commission	Cross-cutting
EEAS Korea Desk	European External Action Service	Cross-cutting
EU Delegation to Seoul	European External Action Service	Cross-cutting
Advantage Austria	Government	Cross-cutting
Embassy of Denmark in Korea	Government	Cross-cutting
Embassy of Latvia in Korea	Government	Cross-cutting
Embassy of Spain in Korea	Government	Cross-cutting
Enterprise Ireland	Government	Cross-cutting
Korean Ministry of Trade, Industry and Energy (MoTIE)	Government	Cross-cutting

Organisation	Type of stakeholder	Relevant case studies/sectors/analyses [c)]
Bulgarian Industrial Association (BIA)	National business association	Cross-cutting
Chamber of Commerce of the Czech-Korean Society	National business association	Cross-cutting
Confederation of Danish Enterprise	National business association	Cross-cutting
Confederation of Finnish Industries (EK)	National business association	Cross-cutting
Croatian Chamber of Economy	National business association	Cross-cutting
Estonian Chamber of Commerce and Industry	National business association	Cross-cutting
Lithuanian Confederation of Industrialists	National business association	Cross-cutting
Malta Business Bureau (MBB)	National business association	Cross-cutting
MEDEF	National business association	Cross-cutting
Swedish National Board of Trade	National business association	Cross-cutting
Voka (Flemish Chamber of Commerce and Industry)	National business association	Cross-cutting
Korea Labor Institute	Research institute	Cross-cutting
European Trade Union Confederation (ETUC)	Trade union	Cross-cutting
Smiths	Company	EGS
Siemens	Company	EGS, RoO, PUR
Confederation of Danish Industry (DI)	National business association	EGS, RoO, PUR
Orgalime	Company	Elect, PUR
Philips	Company	Elect, PUR
Ludwig Boltzmann Institute of Human Rights	Human rights research institute	HR
Migrant Forum in Asia	NGO	HR
Reporters Without Borders	NGO	HR
International Federation of the Phonographic Industry (IFPI)	Global business association	IPR
DG TRADE	European Commission	Postal
European Public Health Alliance (EPHA)	NGO	Public health
Mechanical Engineering Industry Association (VDMA)	National business association	PUR
European Anti-fraud Office (OLAF)	European Commission	RoO
Diageo	Company	RoO, PUR
European Chamber of Commerce in Korea (ECCK)	EU-level business association	RoO, PUR
European Chemical Industry Council (Cefic)	EU-level business association	RoO, PUR
DG TAXUD	European Commission	RoO, PUR
DG TRADE	European Commission	RoO, PUR
Korean Customs Service	Government	RoO, PUR

Organisation	Type of stakeholder	Relevant case studies/sectors/analyses [c)]
Verband der Chemischen Industrie e.V. (VCI)	National business association	RoO, PUR
SEA Europe	EU-level business association	Shipbuilding
Danish Maritime	National business association	Shipbuilding
German Shipbuilders and Ocean Industries Association (VSM)	National business association	Shipbuilding
Groupement des Industries de Construction et Activités Navales (GICAN)	National business association	Shipbuilding
Netherlands Maritime Technology	National business association	Shipbuilding
Danish Shipping	National business association	Shipping
Euratex	EU-level business association	Textiles
Associação Nacional das Indústrias de Vestuário e Confecção (ANIVEC)	National business association	Textiles
Associação Têxtil e Vestuário de Portugal (ATP)	National business association	Textiles
European Economic and Social Committee (EESC)	Government	TSD
Korea Ministry of Employment and Labor	Government	TSD
Korea Ministry of Environment	Government	TSD
DG TRADE	European Commission	TSD, HR
Korea Human Rights Foundation	Human rights organisation	TSD, HR
International Labour Organisation (ILO)	International organisation	TSD, HR
International Trade Union Confederation (ITUC) [a)]	Trade union	TSD, HR
Korean Confederation of Trade Unions (KCTU) [b)]	Trade union	TSD, HR
Queen Mary University of London	University	TSD, HR
University of Warwick	University	TSD, HR
Latvijas Finieris	Company	Wood

Source: Civic Consulting. Notes: Five interviewees wished to remain anonymous. All interviews are also considered in the cross-cutting analysis, where relevant. a) Represented on the EU DAG. b) Represented on the Korean DAG. c) Case studies/analyses are abbreviated as follows: automotive=auto; agriculture=agri; electronic goods=elect; environmental goods/services=EGS; IPR=intellectual property rights; postal services=postal; rules or origin=RoO; use of tariff preferences=PUR; implementation of the institutional mechanisms of the trade and sustainable development chapter=TSD; human rights analysis=HR.

Annex X: Summary of stakeholder consultation

1. Results of the stakeholder consultation

This annex provides a summary of the consultation activities conducted in the framework of this evaluation, consisting of an open public consultation, a survey on consumer interests and sustainable development (survey on consumers), a survey on small- and medium-sized enterprises (survey on SMEs), a total of 94 interviews with stakeholders in the EU and Korea, as well as a civil society dialogue and a stakeholder workshop in Brussels.

1.1. Public consultation and survey on consumers

Overview of responses

The open public consultation and the survey on consumers were carried out from December 2016 to March 2017; the former and the latter received 50 responses and seven responses, respectively. The majority of responses were submitted by business associations and companies;[497] some NGOs, consumer organisations, a trade union,[498] and individual citizens/academics also provided responses. As the survey on consumers consisted of a subset of questions from the public consultation that were more relevant to consumer organisations and NGOs, the results of the survey on consumers are presented together here with the results of the public consultation.

Trade activities with Korea

The large majority of companies/member companies of business associations are either currently involved in EU-Korea trade or are planning or exploring the possibilities for EU-Korea trade in the future. Only one respondent (an EU company in the beverages sector) does not intend to engage in EU-Korea trade.

Similarly, the majority of companies/member companies of business associations currently have cross-border investments, had such investments in the past, or are planning or exploring the possibilities to invest in the future. Others do not intend to make such investments.

Over half of companies have made use of the tariff preferences under the EU-Korea FTA. Among those that have not made use of the preferences, reasons included not knowing how to take advantage of the tariff preferences, the tariff preferences not being relevant to companies' products, and "other" (one EU chemical company elaborated upon this as a lack of competitiveness with Korea).

Market access for goods under the EU-Korea FTA

The large majority of companies and business associations that had an opinion assessed that access to the Korean market for EU goods and access to the EU market for Korean goods has either very much improved or slightly improved since the application of the EU-Korea FTA. Most other companies and business associations were of the opinion that market access remained the same.

[497] A comprehensive range of sectors was represented in the responses from companies and business associations, with manufacturing being the most common. All types of companies (independent, subsidiary, and controlling) were represented, as were all sizes, from micro companies (1-9 employees) to large companies (250 or more employees). The vast majority of respondents were based in the EU.

[498] In the following, we refer to NGOs, consumer organisations and trade unions as "civil society organisations".

Several respondents (EU business associations representing various sectors, including transport, machinery, and electronic equipment) who viewed that access to the Korean market for EU goods remained the same commented on the introduction of new non-tariff trade costs, which counteracted the benefits associated with tariff reduction (see below for further details).

The majority of other stakeholder groups (civil society organisations and individual citizens/academics) had no opinion or did not provide input regarding market access in the EU and Korea.

Customs procedures under the EU-Korea FTA

Companies and business associations were divided in their views concerning how costs of customs procedures and time required for customs clearance when exporting from the EU to Korea have been impacted since the application of the FTA, with the largest group of those having an opinion indicating that costs/time remained the same. Of the remaining companies/business associations, several indicated that costs/time decreased slightly or, in contrast, that they increased slightly. Most respondents from other stakeholder groups had no opinion.

The most common customs-related problems observed in both Korea and the EU were 'transparency/publication of and access to trade regulations', and 'import or export documentation requirements'. Also noted as a problem by a larger group of respondents were 'customs inspections' (in Korea). With respect to transparency of trade regulations in Korea, three respondents (all EU business associations) commented on transparency problems specifically related to regulations of the Korea Occupational Safety and Health Agency (KOSHA).

The majority of respondents who observed customs problems in Korea or the EU also incurred costs as a result. Most costs were reported as either very or moderately significant.

Customs-related provisions of the EU-Korea FTA

With respect to the functioning of customs-related provisions of the EU-Korea FTA, the large majority of companies and business associations expressing an opinion were satisfied with approved exporter status, rules of origin, and administrative cooperation (in all cases with a minority indicating that they were rather not or not at all satisfied with these provisions). Companies and business associations were nearly evenly split in terms of their views on the direct transport provision—slightly more than half of those with an opinion were very or rather satisfied, with the others either rather not or not at all satisfied. While no clear sectoral patterns were discernible in most answers, the group of business stakeholders unsatisfied with the direct transport provision included cross-sectoral organisations (BusinessEurope) and sectoral organisations/companies in the chemicals (Fecc, Cefic), basic metals, food products and beverages sectors (FoodDrinkEurope), and the engineering industries (Orgalime).

Non-tariff barriers

Companies and business associations were divided in their views regarding non-tariff barriers for EU exporters due to measures applied by Korea after the application of the FTA: slightly under half of those with an opinion thought that non-tariff barriers had increased in Korea, while others thought they decreased slightly or remained the same.

There is not always a clear sectoral pattern in the responses: those respondents that were of the opinion that NTBs had decreased slightly included a cross-sectoral organisation (BusinessEurope) as well as business associations/companies in the following sectors: production of food, dairy products (European Dairy Association), office

administration and other business support activities, and production of chemicals and chemical products. In contrast, respondents that assessed that non-tariff barriers for EU exporters have even increased slightly or very much due to Korean measures included business associations in the following sectors: chemicals (Fecc, Cefic), and engineering/technology (Orgalime, German Engineering Association – VDMA, Technology Industries of Finland). Finally, business associations that indicated NTBs remained the same came from the following sectors: automotive (ACEA), dairy trade (Eucolait) and manufacturing.

The most common non-tariff barriers in Korea highlighted by respondents across all represented sectors were standards and other technical requirements, conformity assessment, and labelling and marking requirements. Several EU companies and business associations in the chemical sector commented specifically on the implementation and modification of Korea REACH (The Act on the Registration and Evaluation of Chemicals)[499] as being burdensome for EU exporters. Significant non-tariff barriers were also cited by ACEA for the automotive sector. A German company in the food-manufacturing sector cited the lack of progress in the negotiation of a veterinary certificate for poultry products as a problem concerning trade in animals and animal products between the EU and Korea.

The majority of respondents reported that they incurred very significant or moderately significant costs resulting from non-tariff barriers they experienced.

Respondents who indicated at least one non-tariff barrier were split in their views on their causes, with some attributing them to issues that are out of scope of the FTA, and others pointing to FTA implementation problems.

Investment

The majority of business associations and companies that had an opinion on whether the environment for EU direct investments in Korea had improved since the application of the EU-Korea FTA indicated a slight improvement for EU FDI in Korea. Most of the remaining business associations and companies with an opinion considered that it had remained the same.

Two responding companies noted problems concerning investment protection in Korea, which included discrimination against non-national investors, seizure of assets without proper compensation, and restrictions on international capital transfers. The only business association with an opinion in this respect (Cefic) commented that in general, Korea maintains a rather solid rule of law, also regarding investment protection. However, based on the input of Cefic members, the lack of due process in the Korean court system was considered an issue.

When asked if costs were incurred due to these problems, two of the three respondents confirmed they incurred moderately significant costs as a result (mostly for Korean lawyers, as one respondent specified).

Trade in services

Two-thirds of business associations and companies that had an opinion on whether the access to the Korean market for EU services had improved since the application of the EU-Korea FTA, indicated that access had slightly or very much improved. The remaining

[499] Note that the Korean government has passed the K-REACH Amendment Act, which among other things abolishes an annual reporting requirement and introduces a pre-registration scheme for companies planning to register existing substances; the amended K-REACH legislation is expected to enter into force on 1 July 2018. (See https://chemicalwatch.com/58115/south-koreas-cabinet-passes-biocides-law-and-amended-k-reach.)

business respondents with an opinion considered that it had remained the same. Four of the respondents had observed problems concerning trade in services between the EU and Korea (in Korea), referring most frequently to 'discrimination against non-national service providers' and 'other problems'.

Four of the respondents had observed problems concerning trade in services between the EU and Korea (in Korea), referring most frequently to 'discrimination against non-national service providers' and 'other problems'.

Sanitary and phytosanitary measures

Half of the companies and business associations that had a view on whether trade in EU animals/animal products with Korea after the application of the EU-Korea FTA had become easier (three out of six) considered that it remained the same. (Eucolait, which indicated that trade remained the same, commented, however, on the Korean ban on soft raw milk cheeses and a lack of clarity and transparency in the current procedure for registering plants in Korea.) Other respondents with an opinion considered that trade had become easier in this respect, or indicated that trade had become much more difficult (the latter, an EU food manufacturer, cited difficulties exporting processed pork products to Korea, but not elaborate further on the type of difficulties).

The most common problems reported concerning trade in animals/animal products in Korea were ‘transparency regarding national sanitary requirements’ and ‘approval of establishments for products of animal origin’. ‘Import controls’, ‘recognition of disease-free areas’ and ‘non-application of relevant international standards’ were also cited.

Intellectual property rights

Two-thirds of business associations and companies that expressed an opinion on whether the protection of EU intellectual property rights in Korea improved since the application of the EU-Korea FTA indicated that such protection has remained the same. The remaining respondents with an opinion indicated that protection of IPR has improved in Korea, with one of them (Eucolait) commenting on the protection of geographical indications (including a number of prominent cheese names) being included in the scope of the FTA.

With respect to the protection of Korean IPR in the EU, all business associations and companies with an opinion indicated that such protection has remained the same since the application of the FTA.

The most frequently noted IPR-related problems were indicated with respect to designs and “other” areas in Korea. Concerning the latter, one respondent (an EU company in the beverages sector) indicated that they had to submit complete recipes and manufacturing processes to the Korean authorities before they could obtain a license for their products, even though these constitute business secrets. Another respondent (the European Games Developer Federation (EGDF)) indicated that Korean producers often duplicate existing European mobile games, leading local consumers to believe that the duplicates are original applications.

Public procurement

Among the companies and business associations who had an opinion regarding whether access to public tenders for EU suppliers in Korea improved since the application of the EU-Korea FTA, views were split: half thought that access remained the same, whereas others stated that access slightly improved or became worse.

“Local content requirements” were cited by the most respondents as an area in which problems concerning public procurement were observed in Korea. Other problems noted by respondents included ‘lack of transparency on procurement opportunities’, ‘lack of

clarity of the applicable rules, and/or of the applicable procedures', 'lack of access to tenders of state owned companies/public undertakings', 'lack of access to government tenders at the sub-central level', and 'discrimination through technical specifications'. Among the respondents who indicated problems, two reported incurring costs as a result.

Competition policy

With respect to whether free and undistorted competition in the Korean economy has improved since the application of the EU-Korea FTA, responses among companies and business associations were mixed: slightly under half of the respondents with an opinion indicated that competition remained the same; the remaining indicated that competition in Korea had either slightly improved or become very much worse. SEA Europe, which indicated that competition in Korea had become very much worse, commented on the Korean shipbuilding industry, which has benefited from state aid for several years in spite of overcapacity on the global market.

In terms of competition in the EU economy, slightly more than half of companies and business associations with an opinion indicated that competition had remained the same since the application of the FTA. Among the other respondents with views, 'slightly improved', 'slightly worse', and 'very much worse' were all chosen.

The most commonly reported competition-related problems in Korea were 'abuse of a dominant position', 'state aid', and 'companies being granted special or exclusive rights or privileges'. ('Cartels' and 'vertical or horizontal restrictions of competition' were also cited as problems in Korea.) Five company/business association respondents who reported problems also indicated that they incurred costs as a result—three reported moderately significant costs, and two indicated very significant costs.

Regulatory changes and administrative burdens/compliance costs

A majority of respondents with an opinion consider that required regulatory changes to implement commitments from the EU-Korea FTA in Korea were either fully or partly made, or were not needed in the relevant area. However, a relevant sub-group of business associations indicated that required regulatory changes have not been made. In the follow up question, respondents were asked to specify the FTA provisions for which regulatory changes have not or only partly been made. 'Technical barriers to trade', 'market access for goods', and 'sector-specific annexes on non-tariff barriers' were considered to be common provisions for which regulatory changes have not been made or have only been partially made in Korea. The respondents (among them Cefic and Fecc) who indicated insufficient regulatory changes with respect to the sector-specific annexes on non-tariff barriers referred specifically to the aforementioned Korea REACH legislation in connection to the sector-specific annex on chemicals. ACEA also commented on a proposed Extended Producers Responsibilities bill in Korea that would become a significant burden for EU automotive manufacturers, as well as the overall concern that Korea has not harmonised its national requirements to international standards.

With respect to regulatory changes in the EU, the majority of companies and business associations with a view indicated that required regulatory changes were either fully or partly made, with one EU company indicating that no regulatory changes were required in the relevant sector.

The majority of companies and business associations with an opinion on whether administrative burdens related to customs procedures had increased since the application of the EU-Korea FTA indicated that such burdens had increased; others indicated that these burdens remained the same or decreased slightly.

With respect to changes in other administrative burdens and substantive compliance costs since the application of the FTA, the majority of companies and business

associations with an opinion indicated that these burdens remained the same. (Among the other respondents with views in this area, BusinessEurope indicated that these burdens decreased slightly, and the European Games Developer Federation indicated that they increased slightly.)

In their comments, four EU respondents (three in the chemicals sector, one in the textiles sector) specifically described increased administrative burdens associated with the documentation required to prove the origin of goods under the FTA. Additionally, ACEA commented on new requirements for procedures of certification and aftermarket surveillance, technical documents, and shifted penalty conditions for the automotive industry. The EGDF noted inter alia the need to obtain a rating certificate from the Korean Game Rating and Administrative Committee in order to publish games that aren't suitable for minors under 18 years of age. FoodDrinkEurope also commented on the burden of the direct transport rule on businesses that use trade distribution hubs in other Asian countries.

Domestic advisory groups and civil society forum

The large majority of respondents (mainly civil society organisations and citizens/academia) who had on opinion on whether the EU and Korean Domestic Advisory Group (DAG) and the Civil Society Forum (CSF) contributed to the implementation of the trade and sustainable development chapter thought that the EU DAG contributed either very much or moderately in this respect.

'Recommendations not taken into account' was the most common problem mentioned concerning the EU DAG and the CSF, whereas 'lack of coordination/cooperation' was mentioned the most often as a problem concerning the Korean DAG. In their comments, two respondents (ClientEarth and the Austrian Federal Chamber of Labour) brought up the fact that the EU and Korea have not yet entered into formal consultations regarding labour rights in Korea. In contrast, BusinessEurope commented that in spite of initial difficulties, positive developments have taken place with respect to these institutional mechanisms, such as the participation of ILO representatives at the CSF since 2015, the participation of both DAG chairs at the meetings of the Committee on Trade and Sustainable Development, and the participation of the Korean Federation of Industry at the 2017 CSF.

Impact on consumers

All civil society organisations with an opinion indicated that there have been impacts on Korean and EU consumers due to trade between the EU and Korea since the application of the EU-Korea FTA. The majority of companies and business associations with an opinion also indicated that there have been impacts in this respect.

In terms of specific impacts on consumers in Korea, the majority of companies, business associations, and citizens/academic respondents with an opinion indicated either very positive or slightly positive impacts on the prices of goods and services and the choice/availability of goods and services following the application of the EU-Korea FTA. Civil society organisations tended to view neutral impacts in these areas. Respondents in all groups were divided in their views on positive versus negative impacts in other areas, such as safety of goods and services and protection/enforcement of consumer rights.

The price and choice of goods and services were also viewed as areas in which positive impacts were observed in the EU (no clear patterns among stakeholder groups were observed here). It should also be noted that very negative impacts in the areas of quality, sustainability, and safety of goods and services, information available to consumers, protection and enforcement of consumer rights, and consumer trust in enforcement and redress mechanisms were noted by two EU civil society organisations.

In contrast, several respondents commented that it is difficult to assess the specific impact of the EU-Korea FTA on consumers. In particular, the vzbv—a German consumer organisation—stated that consumer organisations are not in the position and do not have the means to assess the consequences of FTAs on consumers.

Impact on sustainable development

Approximately half of respondents with a view (a mix of all stakeholder groups) indicated that EU-Korea trade has contributed either very much or moderately to economic development, social development and environmental protection, with the other half indicating that EU-Korea trade did not contribute to these aspects of sustainable development.

Social impacts: The majority of business associations and companies with an opinion indicated that there have not been social impacts (e.g. related to labour rights, employment, wages, gender-related issues, etc.) due to trade between the EU and Korea. Civil society organisations with a view were split, with approximately half indicating that there have been social impacts, and the other half indicating there have been no such impacts. In terms of specific social impacts in Korea, two respondents (an EU business association and a Korean NGO) indicated either a very positive impact or slightly positive impact on employment (in terms of number of jobs), household incomes, freedom of association/effective recognition of the right to collective bargaining, elimination of all forms of forced or compulsory labour, effective abolition of child labour, social dialogue, and gender related issues. For the EU, one respondent (an EU trade union) noted a slightly positive impact on freedom of association/effective recognition of the right to collective bargaining, elimination of discrimination in respect of employment and occupation, social dialogue, and gender-related issues. In contrast, two respondents (an EU NGO and an EU consumer organisation) indicated a slightly negative or very negative impact on social dialogue, employment (number of jobs), social protection and poverty reduction in the EU.

Environmental impacts: The majority of businesses and companies and all citizens/academic respondents with an opinion indicated that there have not been environmental impacts in the EU and Korea since the application of the EU-Korea FTA, whereas the majority of civil society organisations with an opinion viewed that there have been such impacts. For Korea, one EU company commented on higher quality EU products imported into Korea having longer endurance. Three respondents indicated either a slightly negative or very negative impact on air pollution. Concerning the latter, ClientEarth and Transport & Environment brought up the negative impacts of e.g. exports of diesel vehicles to Korea in light of the recent findings concerning the manipulation of emission control systems in diesel cars. For the EU, two EU civil society organisations also noted negative impacts with respect to waste, energy use and mix, water resources, and transport.

Human rights impacts: The majority of respondents with a view (a mix of all stakeholder groups) indicated that there have not been human rights impacts (e.g. regarding non-discrimination) due to trade between the EU and Korea since the application of the EU-Korea FTA in 2011, neither in Korea nor in the EU. One respondent (an EU NGO) who did indicate such impacts also provided feedback on specific impacts in the EU. Specifically, this respondent indicated slightly negative impacts on the right to work and the right to non-discrimination and equality.

Closing questions

Additional comments/issues that respondents further elaborated upon in the last section of the consultation included:

- Harmonising product certifications and product testing procedures would be ideal

- The process of applying for approved exporter status should be simplified
- Rules of origin should be simplified and made more flexible
- The FTA may have negative impacts on employment

Some of the main improvements resulting from the EU-Korea FTA listed by respondents included:

- Creation of an institutional framework to address regulatory and other issues
- Tariff elimination
- Increased trade between the Parties
- Introduction of a chapter on trade and sustainable development

The most problematic areas of the EU-Korea FTA listed by respondents included:

- Functioning of the institutional set-up
- Inadequate enforcement of social/environmental/human rights standards
- Increased administrative burden
- Continued existence of non-tariff barriers
- Origin declarations and supporting documents

The majority of respondents across all stakeholder groups indicated that they see a need to improve the FTA. Some improvements cited included:

- Clarifying/improving the functioning of origin declarations and supporting documents
- Eliminating non-tariff barriers
- Including provisions regarding regulatory cooperation
- Simplifying/improving rules of origin
- Strengthening provisions/enforcement of social/environmental/human rights standards
- Strengthening the institutions of the Chapter on TSD

1.2. Survey on SMEs

Six responses were received for this survey. One respondent had 1-9 employees, another had 50-249 employees, and the other four indicated had 250 or more employees. Represented sectors included manufacturing, retail trade, and agriculture. All respondents were aware of the EU-Korea FTA.

All respondents indicated that access to the Korean market for EU goods had either improved or remained the same. However, in spite of this, three respondents indicated that the EU-Korea FTA had a very negative impact on their sector of production, e.g. because they could not compete in terms of price against cheaper Korean imports. Notably, only one respondent indicated that they had made use of the tariff preferences under the EU-Korea FTA.

When asked to specify the main benefits resulting from the EU-Korea FTA, three of the companies that export to Korea cited “increased exports to Korea/to the EU (compared to exports to other destinations)”; also cited were “more opportunities for cross-border investment”, “higher output of products/services”, and “higher employment”.

In terms of challenges and problems encountered in trading with Korea, the following issues were among those cited: “complex customs procedures”; “lack of transparency regarding trade rules”; “high compliance costs relative to the value of goods exported”; “standards and technical requirements”; and, “problems in terms of fair competition with Korean companies”. In total, four of the six respondents indicated that there is a need to improve the EU-Korea FTA.

1.3. Stakeholder interviews

As mentioned previously, a total of 94 stakeholder interviews were conducted with business associations, companies, government entities, trade unions, research institutes, NGOs, and other organisations at the EU and Member State-level, as well as in Korea. An overview of the interviews conducted is presented in the table below (for a full list of interviewees, see Annex IX).

Table 119: Overview of stakeholder organisations interviewed

Type of stakeholder	Number interviewed
Company	25
Business association	36
Government	21
NGO/other organisation	5
Trade union	3
Research institute/academia	4

Source: Civic Consulting.

The interview process began with exploratory interviews in the inception phase of the evaluation, and continued throughout the study. The majority of interviews focused on the eight case study topics (see section 10), though several interviews focusing on other sectors and topics, as well as cross-cutting interviews were also conducted. Interviews were mostly held by phone or face-to-face, though some interviewees preferred to provide their answers in writing.

Key themes of the interviews are summarised below:

- *Market access:* The EU-Korea FTA has had a very positive impact with respect to increasing EU exports of goods to Korea, though some challenges still persist.
- *Non-tariff barriers:* Non-tariff barriers still pose significant problems to trade with Korea in some sectors, e.g. the automotive, agriculture, electronics, and chemicals sectors.
- *Rules of origin:* The definitions of originating products in the EU-Korea FTA are not harmonised with those of other EU FTAs, leading to some administrative burdens as EU exporters have to perform different origin calculations. This could be one potential factor affecting the use of tariff preferences.
- *Direct transport provision:* The current rules are problematic for certain sectors (e.g. beverages and chemicals). This provision particularly affects EU exporters who make use of logistical hubs for operations such as repackaging and labelling prior to distributing their products to various Asian markets.
- *Chapter on TSD:* The permanent institutional mechanisms foreseen by Chapter 13 of the FTA (the CTSD, the two DAGs, and the CSF) have been implemented in line with the provisions of the agreement, though there are still serious concerns regarding fundamental labour rights violations in Korea.
- *Institutional set-up:* The institutional set-up consisting of the Trade Committee, specialised committees and working groups functions as intended.

1.4. Civil society dialogue and stakeholder workshop

Civil society dialogue

A one-day civil society dialogue (CSD) was held in Brussels on October 18, 2016. The purpose of the CSD was to present the inception report to civil society and exchange views on issues relevant for the evaluation. The following aspects of the inception report were presented:

- Methodology for the case studies
- Methodology for the economic analyses and other analyses
- Consultation strategy and tools

The discussion with participants focused on the analysis of human and labour rights in Korea, the analysis of non-tariff barriers, and the case studies, among other areas. The feedback received from this CSD was taken into consideration in the preparation of the interim technical report of the evaluation.

Stakeholder workshop

A one-day stakeholder workshop on the interim results of the evaluation was held in Brussels on July 10, 2017. The purpose of the workshop was to present and discuss interim results, as well as to obtain additional input from interested stakeholders to be considered in the final stage of the evaluation. Specifically, we presented on the following aspects of the interim technical report:

- Results of the economic analysis
- Analysis of FTA implementation
- Analysis of impacts on SMEs
- Results of the social analysis
- Results of the human and labour rights analysis
- Results of the environmental analysis

The discussion with participants covered public performance rights in Korea, effects of the FTA across EU Member States, the reduction of non-tariff barriers, the use of origin declarations, the direct transport clause, preference utilisation rates, and the implementation of the chapter on trade and sustainable development, among others. Workshop discussions were taken into consideration in the preparation of the final report of the evaluation. Further details on the questions and comments received from stakeholders during the workshop can be found in the minutes presented in Annex VI.

Annex XI: Additional data and information regarding the environmental analysis

1. Air pollution

One-third of the global population which is exposed to polluted air with concentrations of fine particulate matter above the WHO guideline value[500] (annual average 10 micrograms PM2.5/m^3) lives in Asia. Particularly in fast-developing regions, air pollution is a major challenge. The Korean population is also highly affected by air pollution. More than 50 percent of Korea's population is exposed to health-threatening levels of fine particulates. In 2013, 17 percent of Koreans were exposed to excessively high levels of PM2.5 (>35 micrograms/m^3). Despite a decline from 40 percent in 2000, this is still the highest air fine particulate concentration among the OECD Member States.[501]

The aforementioned Environmental Performance Index (EPI) ranks 180 countries along different criteria, such as environmental and human health protection. All EU28 Member States rank among the top 40 countries. In 2016, Korea has ranked in the 80th place out of 180 countries and thus fell 37 spots compared to the EPI ranking in 2014. This move backwards is mainly caused by air pollution. Urbanised areas are especially affected by unhealthy air, which reached new heights in 2016. For instance, in half of all days of April 2016, the air quality measures exceeded the healthy levels. Korea ranks 173rd out of 180 in the air quality ranking.

The following figure depicts the development of air pollution measured by the mean annual exposure to fine particulates since 2010. While the exposure to fine particulates in the countries of the European Union stayed approximately constant at 15 micrograms per cubic meter after the start of the provisional application of the EU-Korea FTA, the level increased from 25 to about 28 micrograms/m^3 in Korea. There seems to be no systematic change from 2011 onwards concerning this dimension of air pollution. Prior to 2010, the level stayed constantly at a level of 25 micrograms/m^3 since 1990.[502] However, it can be seen that Korea, which experienced higher levels of air pollution prior to the EU-Korea FTA, is still largely affected by this matter and has faced a worsening in air pollution over the last couple of years. This is the case despite the emphasis on sustainable development in the EU-Korea FTA and efforts of the national government to cope with air pollution and other forms of environmental pollution.[503]

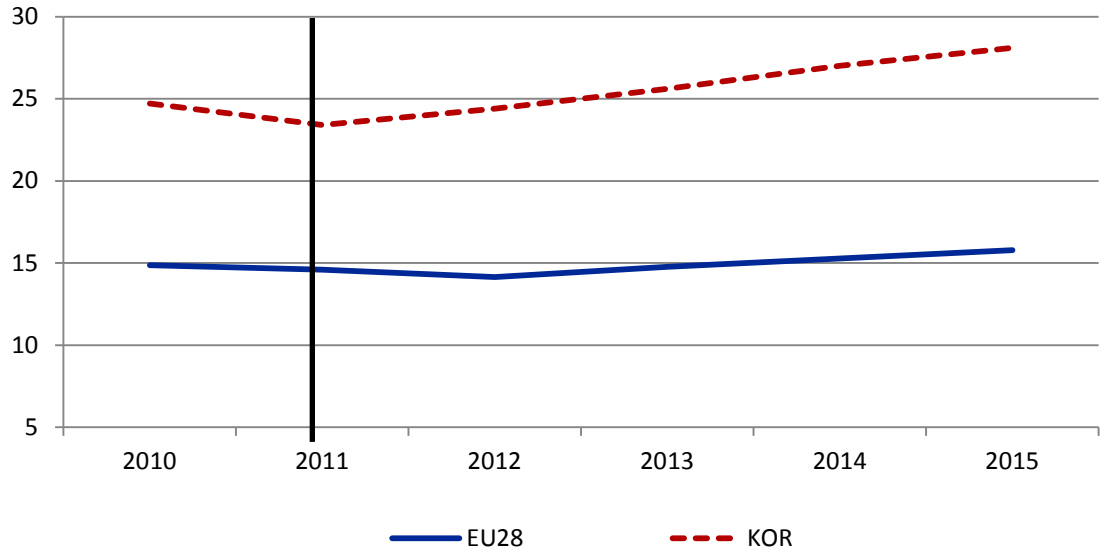
[500] Fine particulate pollution has health impacts even at very low concentrations, and no threshold has been identified below which no damage to health is observed. Therefore, the WHO 2005 guideline limits aimed to achieve the lowest concentrations of PM possible, with guideline values being 10 µg/m3 annual mean for PM2.5 and 20 µg/m3 annual mean for PM10, see: http://www.who.int/mediacentre/factsheets/fs313/en/

[501] OECD Environmental Performance Reviews: Korea 2017, DOI:10.1787/9789264268265-en, p. 73.

[502] Prior to 2010, data are available since 1990 in five year intervals.

[503] Korea has several relevant initiatives on environmental laws and regulations, such as the National Vision for Environment Policies in the 21st Century, the Special Act on Metropolitan Air Quality Improvement, or a Comprehensive Plan for Water Management. Among other strategies, the Korean government concentrates on environmental friendly solutions in the transportation sector. See: http://epi.yale.edu.

Figure 164: Mean annual exposure to fine particulates, in micrograms (PM2.5) /m³



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

The OECD provides projections about the number of premature deaths caused by outdoor air pollution. In 2010, the number of deaths per million people was approximately 450 for OECD EU countries and approximately 800 for non-OECD EU countries. Korea, with approximately 400 deaths per million, actually does quite well in this respect. However, the 2060 projections for Korea predict a tripling in premature deaths, while at the same time, figures in Europe are expected to decrease compared to status quo. Moreover, Korea is expected to have the highest premature death rate of all OECD countries.[504] Even though long-term forecasts such as this have a high degree of uncertainty, the qualitative impact is clear: Korea needs to strengthen its environmental policies with respect to emission reduction. It is also exposed to transboundary pollution originating in China. However, there is some discussion as to the extent to which China can be held responsible for air quality in Korea.[505]

2. Water resources and water quality

When analysing the environmental impact of free trade agreements, it is also interesting to scrutinise the development of water quality. Unfortunately, due to data constraints, a causal link between the FTA and effects on local water pollution or soil degradation cannot be made. However, as in previous sub-sections, descriptive statistics and inference from sectoral output level changes can be used to provide an overview of the situation before and after the start of the provisional application of the FTA.

In 2002, Korea introduced various water improvement strategies to remedy the problems of bad water quality, which could have an impact on human health, the environment and its biodiversity. The Ministry of Environment monitors the development of water quality trends. In the water resources category of the EPI 2016 ranking, Korea is in 9th place out of 180 countries, which confirms the success of Korean policies in this respect. The water resources category indicates the share of water treated before being released to the environment, which prevents damage to the ecosystem. A possible correlation between the FTA and this positive

[504] OECD Environmental Performance Reviews: Korea 2017, DOI:10.1787/9789264268265-en, p. 74.

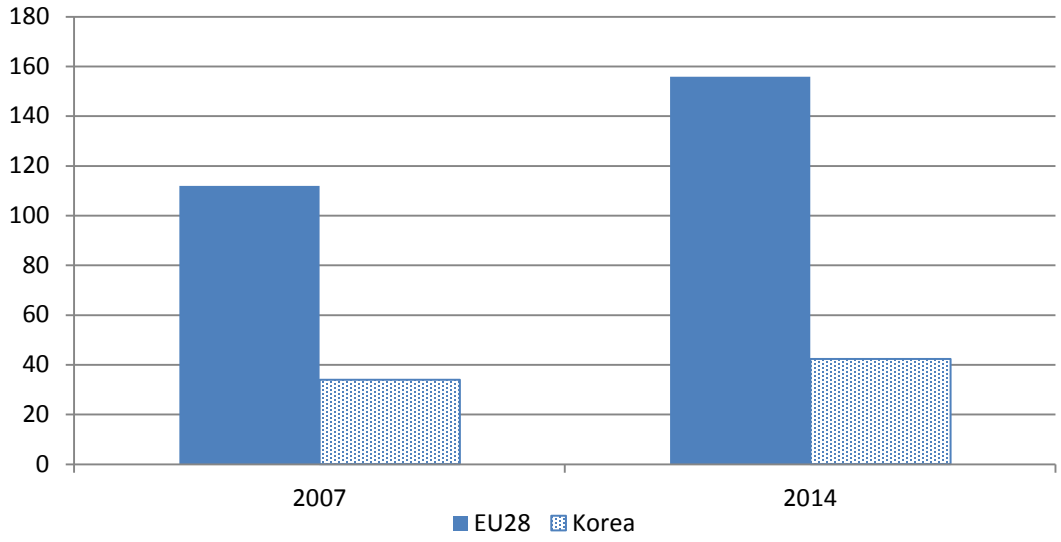
[505] http://www.oecd.org/tad/facilitation/indicators.htm

development is rather unlikely because the trend was evident already in the years before the negotiations started.[506]

According to the EPI ranking, water quality in Korea decreased in the ranking from the 29th to the 35th place since 2011. The OECD Korea Environmental Report 2017 also investigates water quality and comes to the conclusion that Korean rivers meet their water quality target levels. This effect is mainly driven by Korea's four major rivers (Hangang, Nakdongang, Geumgang and Youngsangang) that have relatively good water qualities. In contrast, only 10 percent of surface water in the four biggest Korean lakes meets quality targets. Thus, with a view toward the lakes, there are still challenges.

The figure below displays water productivity. According to the World Bank, it is defined as total GDP (in constant 2010 USD) over total freshwater withdrawal of a country (in m^3). Thus, water productivity is an increasing function in the economy-wide efficiency in the usage of water. Roughly speaking, this measure yields how much output corresponds to the use of one m^3 of water. While European water productivity substantially increased between 2007 and 2012 and remained at a high level afterwards, Korea only slightly increased its output-freshwater ratio. It stands out that at both points in time Korea had a water productivity that is less than one-third the value of the EU. This is not surprising given the importance of water-intensive rice cultivation for the agricultural sector in Korea.

Figure 165: Water productivity, GDP / m^3 freshwater withdrawal



Source: Own compilation, based on World Bank (2017).

However, the water productivity measure needs to be interpreted with caution: while some countries naturally have an abundant supply of water, others do not. This of course affects the scarcity of the water factor and determines not only its price but also the effort that is spent on the reduction of water as an input factor. Thus, ex-ante, it is not clear which level of water productivity is optimally chosen.

3. Biodiversity

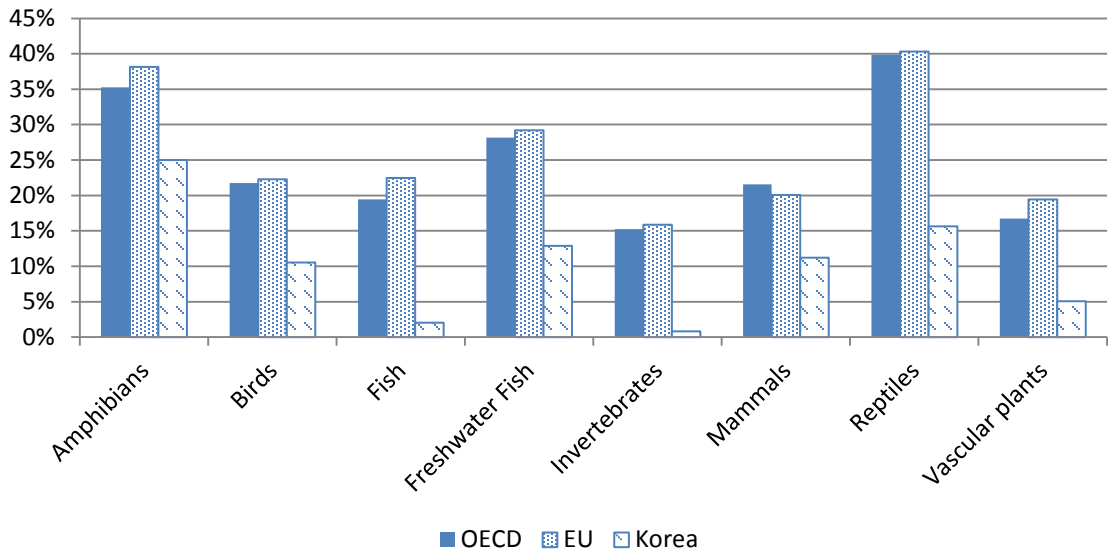
Recent literature indicates that trade can threaten biodiversity in developing countries.[507] The causal link between FTAs and this phenomenon is, unfortunately,

[506] http://epi.yale.edu/node/12706

hard to construct in any credible way. One reason for this is simply a lack of longer time series information on the evolution of biodiversity. Aggregate measures are available from the World Bank only for two years, namely 2005 and 2008; the living planet index of the World Wildlife Fund is an alternative measure, but data do not go beyond 2012. We therefore use the most recent OECD data and compare them across countries.

Because there is no data available for the period prior to the start of the provisional application of the FTA, the figure below depicts the current situation in Korea, selected EU countries and selected OECD countries. The percentage of threatened animals is significantly lower in Korea compared to the EU average and the OECD average over all categories. Only 10.5 percent of all known birds in Korea are threatened with extinction, while the percentage in of threatened birds the EU is more than twice as high. Similarly, 25 percent of Korean amphibians are threatened with extinction, while the EU average in this case is 38.2 percent. This pattern is true for all categories. The most striking examples are fish and invertebrates, where only 2.1 percent (0.8 percent) are threatened with extinction in Korea. In contrast, the average threatened species percentage is 22.5 percent in the case of fish and 15.9 percent in the case of invertebrates in the sample of EU countries. It is impossible to connect these findings to the implementation of the EU-Korea FTA. However, according to the data shown here, Korea performs better than the OECD average and the sample of EU countries with respect to biodiversity.

Figure 166: Threatened species as percentage of known species in 2015



Source: Own compilation, based on OECD (2017). The average value for the OECD countries refers to those OECD countries with data available, namely: Australia, Austria, Belgium, Canada, the Czech Republic, France, Germany, Greece, Hungary, Italy, Korea, Latvia, Luxembourg, Mexico, the Netherlands, Norway, Poland, Portugal, Slovenia, Sweden, Switzerland. The average value for the EU refers to those EU countries with data available, namely: Austria, Belgium, the Czech Republic, Estonia, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, Sweden.

In order to have some historic comparison, we have also analysed older data for Korea: According to the OECD report of 2006, referring to data in the early 2000s, 18 percent of Korean mammals, 13 percent of Korean birds, 9 percent of Korean freshwater fish and 1

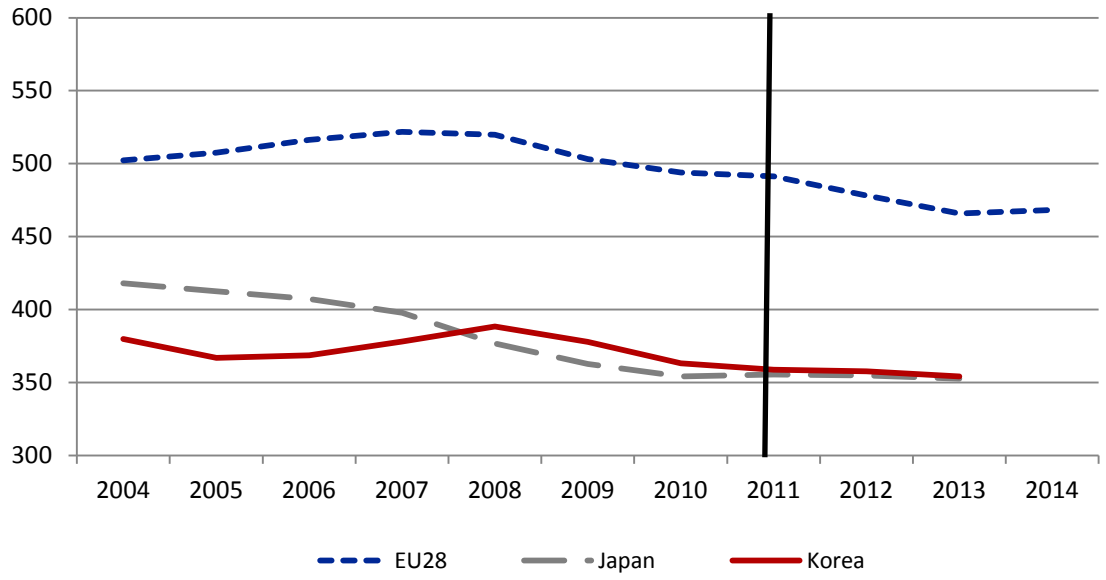
[507] Lenzen, M. et al. "International Trade Drives Biodiversity Threats In Developing Nations". *Nature* 486.7401 (2012): 109-112.

percent of Korean vascular plants were reported to be threatened with extinction.[508] Compared to the current data (11.2 percent of mammals, 10.5 percent of birds, 12.9 percent of freshwater fish, 5 percent of vascular plants), the percentage of threatened mammals and birds has decreased, while the percentage of threatened freshwater fish and vascular plants has increased.

4. Waste management

When highlighting environmental challenges, it is important to depict the development of waste management because it influences human health and the environment. The OECD defines municipal waste as waste from households, commerce and trade, office buildings, institutions and small businesses. Waste from construction, for instance, is not included. The figure below indicates the average municipal waste per capita for the EU, Korea and Japan in kilogrammes per capita. It can be observed that in the EU, 35 percent more waste is produced per capita than in Korea and Japan. There is a small decreasing tendency for all three depicted regions, but due to unobserved covariates it is highly unlikely that the FTA had any impact on this development.

Figure 167: Municipal waste in kg per capita



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Despite the promising figures on municipal waste per capita, Korea has a history of struggling with effective waste management. In the 1990s, the Local Autonomy System for waste implemented environmentally friendly recycling of waste. Both industrial businesses and the government tried to efficiently manage waste. In 2007, Korea introduced a number of different waste mitigation strategies. This coincides with the time period when the negotiations of the EU-Korea FTA started. Since then, a reduction of household waste generation is evident and the collection of recyclables has increased by 226 percent.[509]

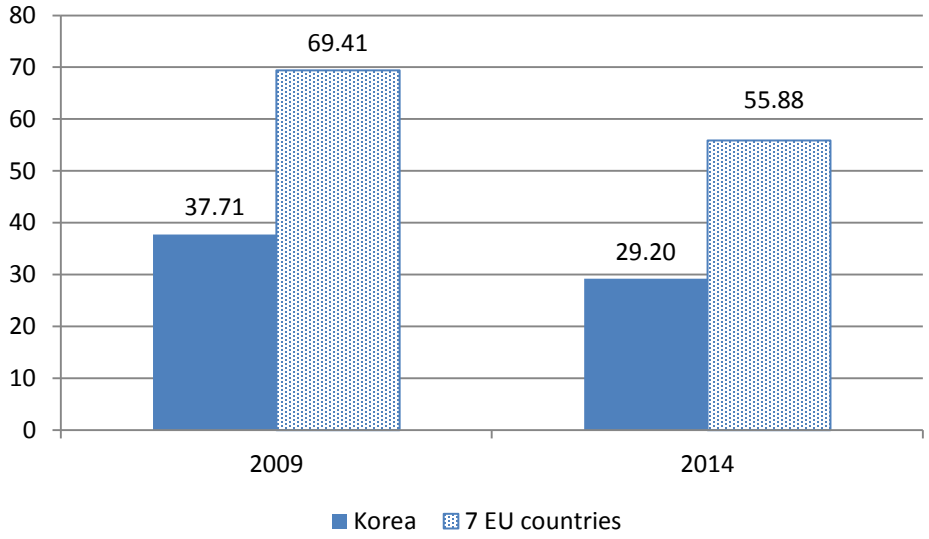
[508] OECD Environmental Performance Reviews: Korea, 2006

[509] http://epi.yale.edu/node/12685, 10 March 2017. See also Yu, Injae, et al. "City-to-City Cooperation in Environmental Infrastructure Installation." International Journal of Social Science and Humanity 6.8 (2016): 623, which indicates that city-to-city cooperation has potential to solve the difficulties encountered in the creation of environmental infrastructure.

5. (De-)forestation in the EU and Korea

The figure below depicts the annual net forest increase, i.e. the gross incremental increase of trees within the forest minus total volume of tree fellings. Because of limited data availability with respect to deforestation, only seven EU countries, namely the Czech Republic, Germany, Estonia, Hungary, Latvia, Lithuania and Slovakia, are included in the graph. Since the value for 2010 is not available for Korea and 2014 is the most recent observation given, this graph compares 2009 as a pre-treatment value with 2014 as the post-treatment observation. Overall, we observe a net increase in the forest stock in Korea as well as in the selected European countries, as depicted in the figure. However, the increase in 2014 is slower than the increase before the start of the provisional application of the EU-Korea FTA. The net forest increase in Korea slowed down from an annual increase of 37 million m^3 to 29 million m^3. The forests in the seven European countries shown in the graph grew by 69 million m^3 in 2009 and 55 million m^3 three years after the start of the provisional application of the EU-Korea FTA.

Figure 168: Net forest increase (million m^3)



Source: Own compilation, based on OECD (2017). Net increase is calculated by the difference of Gross Forest Increase and Total Fellings. The 7 EU countries referred to in this graph are the Czech Republic, Germany, Estonia, Hungary, Latvia, Lithuania and Slovakia. For other EU countries, no data were available.

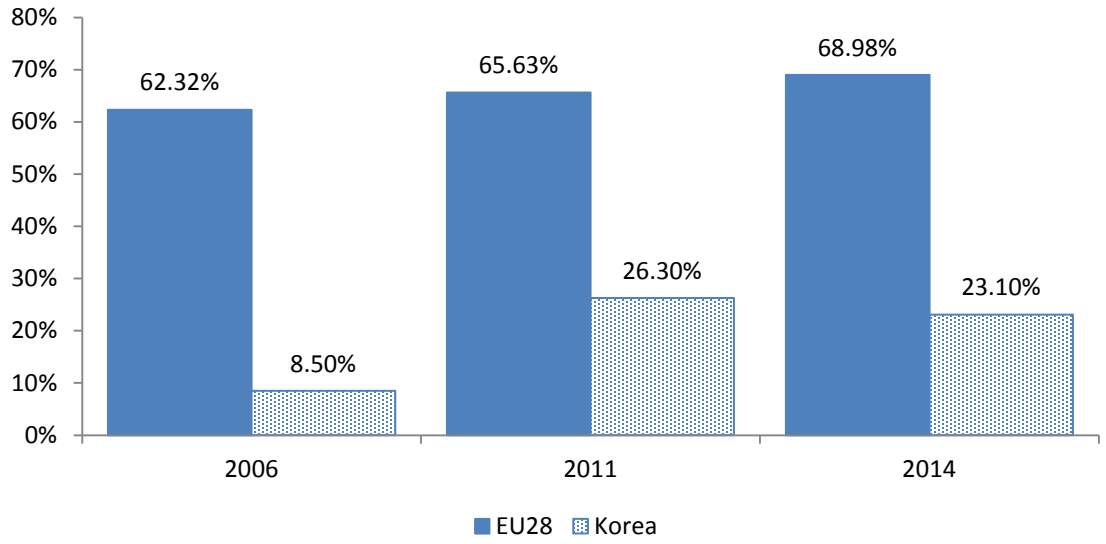
Most likely, the decline in net growth is related to high energy prices in 2014, for which wood is a natural substitute.[510] Thus, higher energy prices will increase total fellings. There is no reason to believe that the FTA has had any sizeable negative effect on forests in Korea and the observed European countries.

The figure below depicts the forest use intensity measured as a ratio of timber harvest to annual forest capacity. This ratio is clearly higher for the EU average compared to Korea. However, the latter increased from 9 percent to 23 percent during the period from 2006 to 2014. For the countries of the EU, this ratio also increased slightly from 62 percent to 69 percent. However, a connection to the EU-Korea FTA cannot be inferred since forest use intensity declined from 26 percent to 23 percent for Korea from 2011 (the year of the start of the provisional application of the FTA) to 2014. For the countries of the EU,

[510] Until August 2014, oil (Brent) yielded above 100 USD/Barrel. http://www.finanzen.net/rohstoffe/oelpreis@brent/Chart

there seems to be a stable increase in forest use intensity, but no major changes following the start of the provisional application of the EU-Korea FTA.

Figure 169: Forest use intensity (%)



Source: Own compilation, based on OECD (2017).

Concluding the descriptive section, we can summarise the following: Korea performs quite well in terms of waste management, forestation and biodiversity. This is not intuitive, as population density in Korea is the highest in the OECD, and given the significant economic growth of the past decades, one would expect a pronounced rivalry between economic and environmental demands. This rivalry becomes visible when focusing on emissions and air pollution. In this regard, Korean emissions stabilised at a high level which at least did not increase after 2011. With respect to greenhouse gas emissions, the OECD recommends that Korea, among others, tighten the Emission Trading Scheme (see section 9.5 for further details), reform energy taxation and electricity pricing, and develop renewable energy sources.[511] For the EU, the opposite conclusion can be drawn: the comparison with Korea shows a relative good performance in terms of emissions and air pollution, while especially European waste management and biodiversity are on average far from best practices.

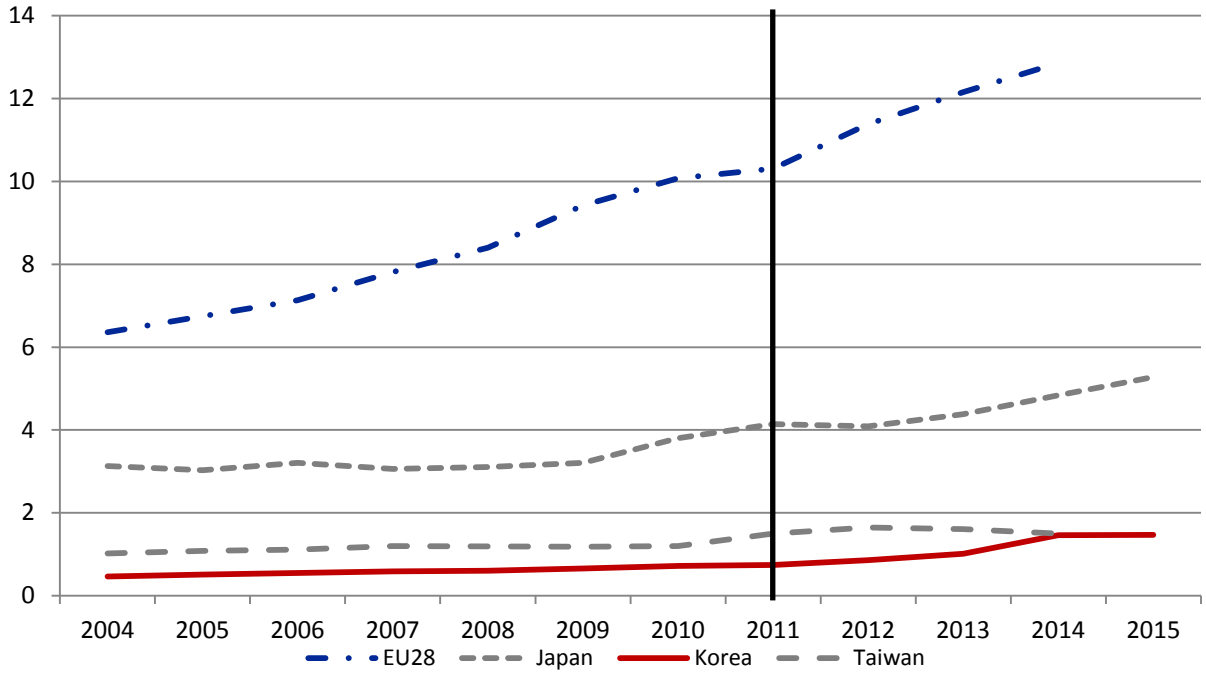
6. Use of renewable energy

The use of renewable energy is an important indicator for mitigation strategies to reduce greenhouse gas emissions from fossil energy sources. The OECD defines renewable energy to include hydro (excluding pumped storage), geothermal, solar, wind, tide and wave sources, biofuels, biogases and renewable municipal waste. The figure below depicts the evolution of the renewable energy share in the EU, Korea, Japan and Taiwan. For the EU as a whole, there is a clearly positive trend regarding renewable energy. The EU28 increased its share of renewable energy as primary source of energy supply increased from 6.5 percent in 2004 to almost 13 percent in 2015. While we cannot identify significant changes between 2009 and 2011, a clear increase in the renewable energy share is obvious for 2012 onwards, returning to the steady growth that was already experienced before the financial crisis.

[511] OECD Environmental Performance Reviews: Korea 2017, DOI:10.1787/9789264268265-en, p. 15.

In contrast, Korea has a significantly smaller amount of renewable energy compared to the EU28 average. It ranges between 0.5 percent in 2004 and 1.5 percent in 2015 within the observed period. However, a slight increase can be observed recently. Whether this can be attributed to the EU-Korea FTA is, however, unclear since a systematic deviation compared to the control countries of Japan and Taiwan is absent.

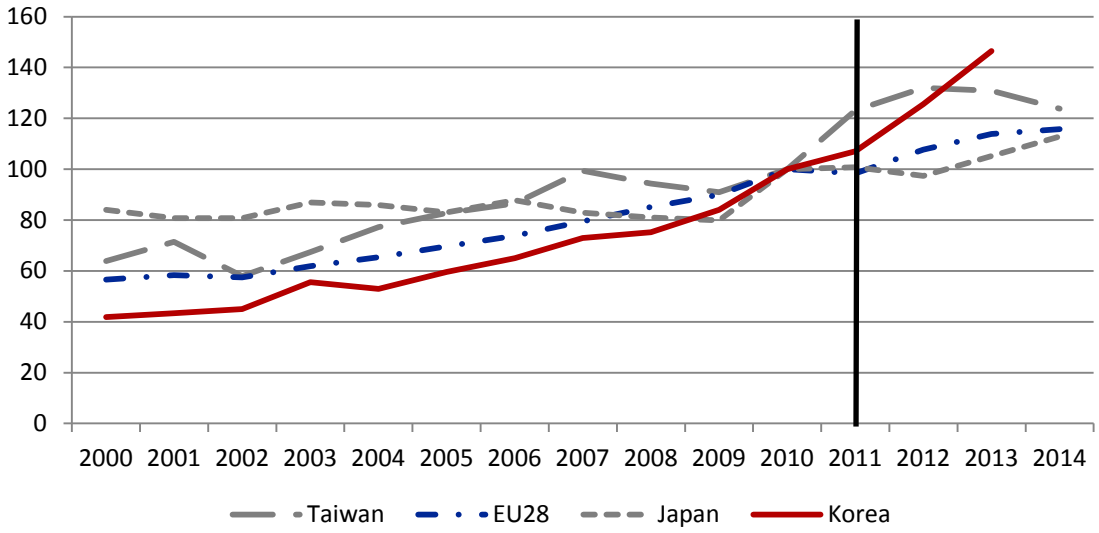
Figure 170: Evolution of renewable energy share in selected countries (% of primary source of energy)



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

In general, the trend of renewable energies points upwards. Because of the sheer size of the EU, it shows higher absolute levels of renewable energies when measured in tonnes of oil equivalent compared to Taiwan, Korea and Japan. For instance, in 2010, the level of renewable energies was 173 million tonnes of oil equivalent in the EU. In contrast, Korea showed a value of 1.8 million tonnes of oil equivalent. As visualised by the figure below, which depicts the development of total renewable energy indexed to the basis year 2010, there is an upwards trend. Korea in particular experienced a pronounced increase in renewable energies, both before and after the start of the provisional application of the EU-Korea FTA.

Figure 171: Development of total renewable energy supply, index with basis year 2010



Source: Own compilation, based on OECD (2017). The vertical line separates the period before the agreement from the one after the start of its provisional application. 2011 is, therefore, the first "treated" year.

Annex XII: Issues identified regarding trade statistics

Issues concerning the available trade statistics identified during the evaluation include:

- *Data on tariffs:* Better reporting of EU tariffs (TARIC, made available by the European Union) to WITS (compiled by the World Bank based on national reports and in collaboration with other international institutions) would allow for comparing the phase-in of tariff elimination agreed in the EU-Korea FTA with other Korean trade agreements (e.g. KORUS). Moreover, the EU does not publish bilateral tariff revenues; these can only be calculated by matching trade and tariff data, which could potentially be a source of errors.

- *Data on trade in goods:* Different product resolution (CN8 in COMEXT vs. HS6 in UN-Comtrade) leads to difficulties in comparing data; by aggregating CN8 to HS6, some information is lost. However, in order to gain a closer look at the "Korean perspective" (Korean trade with trade partners other than EU Member States), we had to rely on UN-Comtrade during the study. This issue could also be addressed by including third country trade in COMEXT, thereby developing it to a comprehensive global trade database.

- *Data on trade in services:* In this study, the World Input-Output Database (WIOD) was preferred to the database "Balance of payments—International transactions (bop)" by Eurostat, which underwent a change in methodology (from BPM5 to BPM6) in 2013. A methodology that is consistent for at least some sub-aggregates over time is recommended to simplify the comparability of data.

- *Data on foreign direct investment* were accessed through the Eurostat "Balance of payments—International transactions (bop)". However, the information base on sectoral FDI data is quite limited. Because of data limitations, no analysis at the Member State level was possible. Also, there appear to be consistency and reliability issues, as changes in stocks and the respective flows often do not correspond (or even contradict each other). Moreover, Eurostat FDI data do not reveal the ultimate ownership of capital; some (often very small) countries have apparently highly inflated FDI outflows and inflows at same time. Some countries, e.g. the Bundesbank in Germany, have made efforts to provide (German) FDI data on an ultimate ownership basis. Not only for FTA analyses but also for other policy questions, similar data at the EU level would allow far more profound assessments.

- *Exporter Dynamics Database (EDD)* contains firm-level data and allows for analysing the effects of the FTA on the number and size of exporting firms. Due to data limitations, it was only possible to provide an assessment for Belgium and Spain on FTA impacts on companies of different sizes. These are the only countries that have sufficiently reported their data for the post-FTA period, and a larger number of countries providing relevant firm-level data would greatly enhance the possibility to evaluate the impacts on SMEs caused by trade agreements and other interventions.

Annex XIII: References

Table 120: References

Author	Title	Year	Content tags
ACEA	The Implementation of the EU-Korea FTA	2016	EU, Korea, Case study, Automotive
Aichele, R. and Felbermayr, G.	Estimating the Effects of Kyoto on Bilateral Trade Flows Using Matching Econometrics	2013	Academic article, Economic analysis, Econometric Analysis, Matching
Aichele, R. and Felbermayr, G.	The Effect of the Kyoto Protocol on Carbon Emissions	2013	Academic article, Economic analysis, Econometric Analysis
Aichele, R. and co-authors	Going Deep: The Trade and Welfare Effects of TTIP Revised	2016	Academic article, Economic analysis
Asian Development Bank	Asia's Free Trade Agreements: How is Business Responding?	2011	Korea, Case study, Tariff preferences
Anderson, J.E. and Van Wincoop, E.	Gravity with Gravitas: A Solution to the Border Puzzle	2003	Academic article, Economic analysis
Anderson, J.E. and Yotov, Y.	The Changing Incidence of Geography	2010	Academic article, Economic analysis
Anderson, J.E. and Yotov, Y.	Terms of Trade and Global Efficiency Effects of Free Trade Agreements, 1990-2002	2015	Academic article, Economic analysis
Anderson, J.E. and co-authors	How Much Does Geography Deflect Services Trade?	2014	Academic article, Economic analysis, Services
Anderson, J.E. and co-authors	Dark Costs, Missing Data: Shedding Some Light on Services Trade	2015	Academic article, Economic analysis, Services
Anderson, J.E. and co-authors	Modelling Services Trade, Trade Costs, Borders and Output	2015	Academic article, Economic analysis, Services
Anderson, J.E. and co-authors	Estimating General Equilibrium Trade Policy Effects: GE PPML	2015	Academic article, Economic analysis
Anderson, K. and Stutt, A.	Agriculture and Food Security in Asia by 2030	2012	Report, Human rights
Zolin and Andreosso-O'Callaghan	The EU-Korea FTA: New Prospects for and Patterns of Agricultural and Agrifood Trade	2012	Academic article, EU, Korea, Case study, Agriculture

Author	Title	Year	Content tags
Baier, S. and co-authors	On the Widely Differing Effects of Free Trade Agreements: Lessons from Twenty Years of Trade Integration	2016	Academic article, Economic analysis
Baier, S. and Bergstrand, J.	Do Free Trade Agreement Actually Increase Members' International Trade?	2007	Academic article, Economic analysis,
Baier, S. and co-authors	Economic integration agreements and the margins of international trade	2014	Academic article, Economic analysis
Barry, C. and Reddy, S.	International Trade and Labor Standards: A Proposal for Linkage	2008	Academic article, Economic analysis
Bartels, L.	Human Rights Conditionality in the EU's International Agreements	2005	Human rights
Bergstrand, J. and co-authors	Ex-Post Assessment of Six EU Free Trade Agreements	2011	EU, Ex-post, Report, WITS, Gravity, Matching
Bergstrand, J. and co-authors	Economic Integration Agreements, Border Effects, and Distance Elasticities in the Gravity Equation	2015	Academic article, Economic analysis, Gravity
Bernard, A. and co-authors	The Empirics of Firm Heterogeneity and International Trade	2012	Academic article, Economic analysis, SME
Bouet, A. and co-authors	A Consistent, Ad-Valorem Equivalent Measure of Applied Protection Across the World	2004	Academic article, Economic analysis
Brando, N. and co-authors	Assessing the Impact of EU Trade and Development Policies on Human Rights	2013	EU, Guidance, Human rights
Buehn, A. And Schneider, F.	Size and Development of the Shadow Economies of Portugal and 35 other OECD Countries from 2003 to 2013: Some New Facts	2012	Academic article, Economic analysis, Informal economy
Caliendo, L. and Parro, F.	Estimates of the Trade and Welfare Effects of NAFTA	2015	Academic article, Economic analysis
Cebici, T. and co-authors	Exporter dynamics Database	2012	Academic article, Economic analysis
Cheng, I. and Wall, H.	Controlling for Heterogeneity in Gravity Models of Trade and Integration	2005	Academic article, Economic analysis, Gravity
Cheong, I.	Korea's Policy Package for Enhancing its FTA Utilization and Implications for Korea's Policy	2014	Korea, Case study, Tariff preferences

Author	Title	Year	Content tags
Cherniwchan, J.	Trade Liberalization and the Environment: Evidence from NAFTA and U.S. Manufacturing	2017	Academic article, Economic analysis, Environment
Cho, J., and co-authors	Employment Problems with Irregular Workers in Korea: A Critical Approach to Government Policy	2008	Korea, Human rights
Cho, J. and Cho, D.	The Wage Gap in Korea: Analysis of Wage Differences between the Formal and the Informal Sector	2009	Korea, Human rights, Academic article
Choi, N.	Impacts and Main Issues of the Korea-China FTA	2012	FTA Description, Korea, Report
Chun, Y.	Employment Laws Regulating Non-regular Work in Korea – An Introductory Guide	2013	Korea, Human rights, Legal, Report
Ciuriak, D.	Making Free Trade Deals Work for Small Business: A Proposal for Reform of Rules of Origin	2015	Report, Case study, RoO
Committee on Trade and Sustainable Development	Joint Statements of the Meetings of the Committee on Trade and Sustainable Development under the Korea-EU FTA	Various years	Communication, EU, Implementation of FTA, Korea, Sustainable development
Copeland, B. and Taylor, S.M.	Trade, Growth, and the Environment	2004	Academic article, Economic analysis, Environmental impacts
Copenhagen Economics	Impacts of EU Trade Agreements on the Agricultural Sector	2016	EU, Korea, Case study, Agriculture
Copenhagen Economics	The Impact of Trade Liberalisation on the EU Automotive Industry: Trends and Prospects	2016	EU, Korea, Report, Case study, Automotive
Costinot, A. and co-authors	What Goods Do Countries Trade? A Quantitative Exploration of Ricardo's Ideas	2012	Academic article, Economic analysis
Crivelli, P. and Gröschl, J.	The Impact of Sanitary and Phytosanitary Measures on Market Entry and Trade Flows	2012	Academic article, Economic analysis, SPS
Dai, M. and co-authors	On the Trade Diversion Effects of Free Trade Agreements	2014	Academic article, Economic analysis
De Anda del Corte, C.M.	The New Era of Origin Rules and Their Impact to Importers	2011	Korea, Case study, RoO

Author	Title	Year	Content tags
De Schutter, O.	Guiding Principles on Human Rights Impact Assessments of Trade and Investment Agreements	2011	Guidance, Human rights
Decreux, Y. and co-authors	The Economic Impact of the Free Trade Agreement (FTA) between the European Union and Korea	2010	EU, Economic analysis, Ex-ante, Korea, Report, Eurostat, CEPII, WTO, WITS, CGE
Development Solutions	A Comparative Study on the implementation of ILO Convention 111 in the Republic of Korea and the Member States of the European Union	2016	EU, Korea, Human rights
Disdier, A. and van Tongeren, F.	Non-Tariff Measures in Agri-Food Trade: What do the Data Tell Us? Evidence from a Cluster Analysis on OECD Imports	2010	Academic article, Economic analysis, OECD, Agriculture
Dutt, P. and co-authors	International Trade and Unemployment: Theory and Cross-National Evidence	2009	Academic article, Economic analysis,
Eaton, J. and Kortum, S.	Technology, Geography, and Trade	2002	Academic article, Economic analysis, Econometric analysis
Eaton, J. and co-authors	Trade and the Global Recession	2016	Academic article, Economic analysis
Egger, P. and co-authors	The Trade Effects of Endogenous Preferential Trade Agreements	2011	Academic article, Economic analysis
Europe Economics	An Analysis of the Issue of Consumer Detriment and the Most Appropriate Methodologies to Estimate It	2007	Consumer, Guidance
European Commission	11th Report on Potentially Trade-restrictive Measures	2014	Report, NTB
European Commission	EU-Korea FTA: A Quick Reading Guide	2009	Background, EU, FTA Description, Korea
European Commission	The EU-Korea Free Trade Agreement in Practice	2011	Background, EU, FTA Description, Korea
European Commission	The Economic Impact of the EU-Singapore Free Trade Agreement	2013	CGE, EU, Eurostat, Ex-ante, GTAP, OECD, Report, Singapore
European Commission	Assessing and Addressing the Effects of Trade on Employment	2013	Economic analysis, Guidance, ILO conventions, Sustainable development

Author	Title	Year	Content tags
European Commission	Annual Reports on the Implementation of the EU-Korea FTA	Various years	EU, Evolution of trade, FTA Description, Implementation of FTA, Korea, Report
European Commission	EU Structural Change	2015	EU, Report, Case study, Automotive, Electronic
European Commission	European Competitiveness Report 2014	2014	EU, Report, Case study, Automotive, Electronic
European Commission	Report from the Commission to the European Parliament and the Council on Trade and Investment Barriers: 1 January – 31 December 2016	2017	EU, Korea, Report, NTB
European Commission	Non-paper of the Commission services: Trade and Sustainable Development (TSD) chapters in EU Free Trade Agreements (FTAs)	2017	EU, TSD
European Domestic Advisory Group	Opinion on the fundamental rights at work in the Republic of Korea, Identification of Areas for Action	2013	Korea, Human rights
EU and Korean Domestic Advisory Groups	Conclusions of the Civil Society Forums	Various years	Communication, EU, Implementation of FTA, Korea, Sustainable development
European Economic and Social Committee	Draft Information Report – EU-Korea Free Trade Agreement	2017	EU, Korea, Case study, TSD, Human rights
European Parliament	An Assessment of the EU-Korea FTA	2010	EU, FTA Description, Korea, Report
European Parliament	Regulation (EU) No 511/2011 of the European Parliament and of the Council	2011	EU, Legal, Safeguard regulation
European Parliament	Draft report on the implementation of the Free Trade Agreement between the European Union and the Republic of Korea	2016	EU; Korea; Report
Fajgelbaum, P. and Khandelwal, A.	Measuring the Unequal Gains from Trade	2016	Academic article, economic analysis
Felbermayr, G.	TTIP and Jobs	2016	Report, economic analysis
Felbermayr, G. and Prat, J.	Efficiency Gains from Trade and Labor Market Outcomes	2013	Academic article, economic analysis

Author	Title	Year	Content tags
Felbermayr, G. and co-authors	Trade and Unemployment: What Do the Data Say?	2011	Academic article, economic analysis
Felbermayr, G. and co-authors	The Welfare Consequences of Import Tariffs	2015	Academic article, economic analysis
Felbermayr, G. and co-authors	Macroeconomic Potentials of Transatlantic Free Trade: A High Resolution Perspective for Europe and the World	2015	Academic article, economic analysis
Fernandes, A. and co-authors	Exporter behaviour, country size and stage of development: Evidence from the exporter dynamics database	2016	Academic article, economic analysis
Fontagné, L. and co-authors	Estimations of Tariff Equivalents for the Services Sectors	2011	Academic article, economic analysis, Services
Forizs, V. and Nilsson, L.	Trade Effects of the EU-Korea Free Trade Agreement: a Comparative Analysis of Expected and Observed Outcomes	2016	Korea, Case study, Tariff preferences
Forslid, R., Okubo, T. and Ulltveit-Moe, K.H.	Why are Firms that Export Cleaner? International trade, Abatement and Environmental Emissions.	2015	Academic article, Economic analysis, Environmental impacts
Francois, J. F.	Economic Impact of a Potential Free Trade Agreement (FTA) Between the European Union and South Korea	2007	CGE, EU, Economic analysis, Ex-ante, GTAP, Korea, Report
Friedman, E. and co-authors	Dodging the grabbing hand: the determinants of unofficial activity in 69 countries	2000	Academic article, Economic analysis, Informal economy
Gaulier, G. and Zignano, S.	BACI, International Trade Database at the Product-Level	2010	Academic article, Economic analysis
Guerin, Selen S. and co-authors	A Qualitative Analysis of a Potential Free Trade Agreement between the European Union and South Korea	2007	EU, Economic Analysis, Ex-ante, Korea, Report, CGE, GTAP
Gürtzgen, N.	Rent-sharing and collective wage contracts: evidence from German establishment-level data	2006	Academic article, Economic analysis, Consumer
Harrison, J.	Human Rights Impact Assessments of Trade Agreements: Reflections on Practice and Principles for Future Assessments	2010	Guidance, Human rights
Harrison, J.	The European Union and South Korea: The Legal Framework for Strengthening Trade, Economic and Political Relations	2013	EU, Korea, Legal

Author	Title	Year	Content tags
Harrison, J. and co-authors	Governing Labour Standards through Free Trade Agreements: Limits of the European Union's Trade and Sustainable Development Chapters	2016	EU, Korea, Case study, TSD
Head, K. and Mayer, T.	Gravity Equations: Workhorse, Toolkit, and Cookbook	2015	Academic article, Economic analysis, Gravity
Heid, B. and co-authors	A Simple Method to Estimate the Effects of Non-discriminatory Trade Policy within Structural Gravity Models	2015	Academic article, Economic analysis, Gravity
Helpman, E. and co-authors	Trade and Labor Market Outcomes	2013	Academic article, Economic analysis
Human Rights Watch	The US-Korea Free Trade Agreement: Annex 22-B: A Missed Opportunity on Workers' Rights in North Korea	2007	Korea, Human rights, Report
Human Rights Watch	North Korea: Workers' Rights at the Kaesong Industrial Complex	2006	Korea, Human rights, Report
IBM Belgium	Trade Sustainability Impact Assessment of the EU-Korea FTA	2008	CGE, EU, Ex-ante, FTA Description, GTAP, Korea, SIA
ILO	Reports of the Committee on Freedom of Association	Various years	Korea, Human rights, Report
ILO	Can Trade Policies Improve Human Rights? – The Multilateral Perspective	2010	Korea, Human rights, Report
ILO	Policies and Regulations to Combat Precarious Employment	2011	Human rights
International Trade Center	The Invisible Barriers to Trade: How Businesses Experience Non-Tariff Measures	2015	Guidance, NTB
International Trade Center	Navigating non-tariff measures: Insights from a business survey in the European Union	2016	EU, Report, NTB
International Trade Union Confederation	Internationally Recognised Core Labour Standards in the Republic of Korea	2012	Korea, Human rights, Report
International Trade Union Confederation	Update on Core Labour Standards in South Korea	2016	Korea, Human rights, Report

Author	Title	Year	Content tags
International Trade Union Confederation	Information briefing for the EU-Korea DAG and the EU-Korea TSDC	2016	Korea, Human rights, Report
Irwin, D.	Free Trade Under Fire	2015	Academic article, Economic analysis
ITAQA	Evaluation of the Economic Impact of the Trade Pillar of the EU-Chile Association Agreement – Final Report	2012	CGE, CN8, Chile, EU, Economic analysis, Ex-post, Gravity, Report
Javorcik, B.	Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages	2004	Economic analysis, Academic article, FDI
Jean, S. and co-authors	A General Equilibrium, Ex-post evaluation of the EU-Chile FTA	2012	Academic article, Chile, EU, Econometric analysis, Economic analysis, Ex-post, CGE, Eurostat
Jung, B.	Gradualism and Dynamic Trade Adjustment: Revisiting the Pro-trade Effects of Free Trade Agreements	2012	Academic article, Economic analysis
Jung, H. and Min, K.	A Measurement On Green Economy In Korea: Green Industry Statistics	2013	Korea, Case study, Environmental goods/services
Kim, S.	The Worker Dispatch System of Korea: Status and Challenges	2011	Korea, Human rights, Academic article
Korea Automobile Manufacturers Association	Korean Automobile Industry – Annual Report 2014	2014	Korea, Report, Case study, Automotive
Korea Fair Trade Commission	2015 Annual Report	2015	Korea, Report, Competition
Korean Ministry of Employment and Labour	Employment and Labor Policy in Korea	2013	Korea, Human rights, Report
Korean Trade-Investment Promotion Agency	Doing Business in Korea	2015	Korea, FDI
Koske, I. and co-authors	The 2013 update of the OECD's database on product market regulation	2015	EU, Korea, Competition, Procurement
Knudsen, D. and Moon, W.	North Korea and the Politics of International Trade Law: the Kaesong Industrial Complex and WTO Rules of Origin	2010	Korea, Case study, RoO, Human rights

Author	Title	Year	Content tags
Krugman, P.	What do undergrads need to know about trade?	1993	Academic article, Economic analysis
Kyvik Nordas, H.	Services SMEs in International Trade: Opportunities and Constraints	2015	Economic analysis, SME, Services
Lakatos, C. and Nilsson, L.	The EU-Korea FTA: Anticipation, Trade Policy Uncertainty and Impact	2015	Academic article, EU, Econometric analysis, Economic analysis, Korea, Eurostat, CN8
Lee, J.	Korea-EU FTA: Major Features and Implications	2009	EU, Ex-ante, FTA Description, Korea, Report
Lee, J.	The Future of Korean Trade Policy: Korea's Trade Structure and its Policy Challenges	2012	FTA Description, Korea, Report
Lee, K.	Changes in Policies for Migrant Workers in Korea and Policy Recommendations	2007	Korea, Human rights, Report
Lenzen, M., and co-authors	International Trade Drives Biodiversity Threats in Developing Nations	2012	Academic article, Economic analysis, Environmental impacts, Developing country
Lightfoot and co-authors	The servitization of manufacturing: A systematic literature review of interdependent trends	2013	Economic analysis, Academic article, Services
London Economics	The economic and societal benefits deriving from the presence of Hyundai and Kia in Europe	2013	EU; Korea; Report; Case study; Automotive
Ludwig Boltzmann Institute	Civil and Political Rights in the Republic of Korea and in the Democratic People's Republic of Korea	2014	Korea, Human rights, Report
Marx, A. and co-authors	EU-Korea Relations in a Changing World	2013	EU, FTA Description, Korea, Report
Melitz, M.	The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity	2003	Academic article, Economic analysis, Econometric Analysis
Melitz, M. and Redding, S.	Heterogeneous Firms and Trade	2014	Academic article, Economic analysis
Mirrlees, J. and Diamond, P.	Optimal Taxation and Public Production II: Tax Rules	1971	Academic article, Economic analysis, EU budget

Author	Title	Year	Content tags
National Bureau of Trade Sweden	The Servicification of EU Manufacturing. Building Competitiveness in the Internal Market	2016	Report, Economic analysis, Services
Narayanan, G. and co-authors	Global Trade, Assistance, and Production: The GTAP 9 Database	2015	Academic article, Economic analysis, GTAP
OECD	Peer Review of the Korean Shipbuilding Industry and Related Government Policies	2015	Korea, Report, Economic analysis, Competition
Olivero, M. and Yotov, Y.	Dynamic Gravity: Endogenous Country Size and Asset Accumulation	2012	Academic article, Economic analysis
Poten & Partners	Tax Implications Could Weigh on South Korean Crude Imports Closing	2013	Korea, Case study, Tariff preferences
Ravikumar, B. and Santacreu, A.	Capital Accumulation and the Gains from Trade	2017	Academic article, Economic analysis
Rigod, B.	Trade in Goods under the EU-Korea FTA: Market Access and Regulatory Measures	2013	Academic article, EU, FTA Description, Goods, Korea, Regulatory changes
Santos Silva, J. and Tenreyro S.	The Log of Gravity	2006	Academic article, Economic analysis, Gravity
Schneider, F.	Size and Development of the Shadow Economy of 31 European and 5 other OECD Countries from 2003 to 2015: Different Developments	2015	Academic article, Economic analysis, Informal economy
Shin, K.	Economic Crisis, Neoliberal Reforms, and the Rise of Precarious Work in South Korea	2013	Korea, Human rights, Academic article
Song, Y.	KORUS FTA vs. Korea-EU FTA: Why the Differences?	2011	EU, FTA Description, Korea, Report, USA
Statistics Korea	Explore Korea through Statistics	2014	Korea, Case study
Trade Union Advisory Committee to the OECD	Upholding Labour Rights in Korea in an OECD Context	2016	Korea, Human rights
UNCTAD	International Classification of Non-Tariff Measures	2012	Guidance, NTB

Author	Title	Year	Content tags
UNEP	Measuring The Environmental Goods And Services Sector: Issues And Challenges	2014	Korea, Case study, Environmental goods/services
United Nations	Human Development Report 2015	2015	Korea, Human rights, Report
United Nations	National Report Submitted in Accordance with Paragraph 15(A) of the Annex to Human Rights Council Resolution 5/1: Republic of Korea	2008	Korea, Human rights, Report
United Nations	Report of the Special Rapporteur on the Rights to Freedom of Peaceful Assembly and of Association on his Mission to the Republic of Korea	2016	Korea, Human rights, Report
United Nations	The State of Food Insecurity in the World 2015	2015	Korea, Human rights, Report
US Department of Commerce	Top Markets Report: Environmental Technologies	2016	Korea, Case study, Environmental goods/services
US Department of State	Republic of Korea 2015 Human Rights Report	2015	Korea, Human rights, Report
US Department of State	Trafficking in Persons Report 2016	2016	Korea, Human rights, Report
Van den Putte, L.	Involving Civil Society in Social Clauses and the Decent Work Agenda	2015	EU, Korea, Case study, TSD, Report
van Berkum, S.	EU meat export opportunities in the Far East	2012	EU, Korea, Case study, Agriculture, Report
Verbraucherzentrale Bundesverband (vzbv)	Verbraucherrechte in Internationalen Handelsabkommen (Consumer rights in international trade agreements)	2017	Report, Consumer
Walker, S.	The Future of Human Rights Impact Assessments of Trade Agreements	2009	Guidance, Human rights
World Economic Forum	The Global Competitiveness Repot 2014-2015	2015	Korea, Report, IPR
World Intellectual Property Organization	Geographical Indications – An Introduction	2013	Guidance, Report, Case study, Agriculture

Author	Title	Year	Content tags
World Trade Institute	TTIP and the EU Member States	2016	Report, Economic analysis
World Trade Organization	Trade Policy Review: Republic of Korea	2016	Korea, Report, WTO, Evolution of Trade
Youngs, R.	A New Context for EU-Korean Relations	2013	EU, FTA Description, Korea, Report
Yotov, Y. and co-authors	An Advanced Guide to Trade Policy Analysis: The Structural Gravity Model	2016	Economic analysis, Guidance, Gravity
Zylkin, T.	Not All Free Trade Agreements have the same Advantages	2014	Academic article, Economic analysis

Sources: Civic Consulting, the Ifo Institute.

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