Anticipation and trade policy uncertainty: The case of the EU-Korea FTA

WORK IN PROGRESS

Csilla Lakatos and Lars Nilsson*

September 2014

Abstract

Anticipatory trade effects of free trade agreements (FTAs) have been documented in various papers. That is, trade between two partners appears to increase before an FTA between them has entered into force. Several reasons have been put forward trying to explain this phenomenon; among them reduced trade policy uncertainty. Despite the substantial increase in the number of FTAs over the past decade, the number of empirical studies on the issue is nevertheless limited.

Our contribution to this strand of literature is multi-fold. Firstly, using an econometric framework, this paper is one of the first to explore the role of anticipation and trade policy uncertainty in the case of a recently concluded deep and comprehensive EU FTA, including significant behind the border measures. We do so considering the start of negotiations, signature and entry into force of the agreement separately using monthly data at a lower level of aggregation (8-digit level) compared to previous studies.

Secondly, we account for changes in the EU product classification over time. Such considerations do not seem to have been a source of concern in previous studies, but if not properly handled analytically this can lead to wrongful conclusions. Thirdly, we distinguish between the impact on products which are subject to liberalisation under the FTA as opposed to those which are not (duty-free products) and, finally, we examine the effects on both the extensive margin (probability to export products) and the intensive margin (change in the value of products exported).

As far as the EU is concerned, the results indicate significant and positive effects throughout the three stages examined compared to the period before the FTA negotiations began. On average, the figures indicate that the probability to export has increased by about 11.2% while the value of exports has been boosted by 10.7%. In case of Korea, the impact is smaller. The average probability to export has increased by 4.8% while the value of Korean exports has risen by 2.0% as a result of the agreement.

Given the initial differences in the trade policy environment of the two trading partners, asymmetries in the reactions of EU and Korean exporters could be expected. EU exporters have more to gain in terms of increasing the predictability of the trade policy regime of the destination market than vice-versa.

JEL classification: F13

---

* Csilla Lakatos works in the Chief Economist and Trade Analysis Unit in the European Commission's Directorate General for Trade, for which Lars Nilsson is the Deputy Head. The opinions expressed in this paper are the authors' own and do not necessarily reflect any views of the European Commission. Contact: lars.nilsson@ec.europa.eu.

1. Introduction

It may seem evident that trade effects of trade liberalisation occur once trade barriers start being reduced. By definition, this is also the assumption behind ex-ante modelling exercises which require "shocks" in the form of tariff cuts or reduction of other forms of trade barriers[1] to yield any effects.

However, there are several studies showing evidence of the existence of anticipatory trade effects in the context of negotiations of free trade agreements (FTAs). That is, trade between two partners appears to increase before a bilateral FTA between them has entered into force.

Croce et al. (2004) argue that a strong presumption that an FTA actually will be concluded may be sufficient to generate an increase in exports before conclusion and implementation of the agreement. Another reason put forward by Freund and McLaren (1999) is that adjustment effects in the business environment are needed for the actual later implementation of the FTA. They find, in the case of the EU that trade of countries joining the bloc started to increase four years before accession.

Along the same lines, estimates by Magee (2008) indicate that FTAs have significant anticipatory effects on trade flows. His results suggest that trade increases by about 25% four years prior to entry into force of an FTA.

Coulibaly (2007) finds anticipation effects of various strength five years prior to entry into force of the Association of Southeast Asian Nations (ASEAN), the Economic Community of West African States (ECOWAS) and the Southern African Development Community (SADC). Mölders and Volz (2011) distinguish between different implementation stages of a number of East Asian FTAs. Their results generally point toward the existence of anticipatory trade effects during the negotiation stage, depending on regression technique used.

In a related vein, using a computable general equilibrium (CGE) model, Bergin and Lin (2012) empirically examine the European Monetary Union's (EMU's) ability to increase trade. In terms of number of products, they find that trade on the extensive margin increase years prior to the EMU entering into force and ahead of trade on the intensive margin.

While, undoubtedly, policy uncertainty in general and trade policy uncertainty in particular can have a negative impact on exporters' decisions to enter markets, there is relatively little research on the sources and impact of trade policy uncertainty. This may partly be due to that statutory trade policy may be perceived to be stable, though applied trade policy in fact can be quite volatile. For example, applied tariff rates are far lower than bound rates in many countries and provide scope for substantial (legal) increases. In addition, tariffs are not the only type of protection countries may make use of.

Some policy instruments, ungoverned by the WTO or other bodies, may interact with economic shocks to generate substantial uncertainty. During the recent crisis Global Trade

[1] For example, non-tariff barriers in goods and services and/or lower trade costs due to regulatory reforms.

Alert (2009) noted an increase in the number of state measures taken, including such affecting trading partners' commercial interests. In combination with other measures such as imports bans, export taxes or restrictions, NTBs, quotas, etc., these tariff measures create uncertainties which affect decisions to export.

Handley and Limão (2012) provide theoretical and empirical evidence of the impact of uncertainty on exports and investment decisions.[2] They find an increase in Portugal's exports to the EU following the 1986 enlargement, which, to 75%, can be explained by uncertainty removal and to about 17% of remaining tariff reduction.[3]

Our contribution to the existing literature in this area is multi-fold. Firstly, using an econometric framework, this paper is one of the first to explore the role of anticipation and trade policy uncertainty in the case of a recently concluded deep and comprehensive EU FTA, including significant behind the border measures. We do so considering the start of negotiations, signature and entry into force of the agreement separately using monthly data at a lower level of aggregation (8-digit level) compared to previous studies.

Secondly, we account for changes in the EU product classification over time. Such considerations do not seem to have been a source of concern in previous studies, but if not properly handled analytically this can lead to wrongful conclusions. Thirdly, we distinguish between the impact on products which are subject to liberalisation under the FTA as opposed to those which are not and, finally, we examine the effects on both the extensive margin (probability to export a specific product) and the intensive margin (change in the value of products exported).

The next section briefly describes the EU-Korea FTA and trade and protection patterns. Section 3 presents the data and empirical framework and Section 4 the detailed results of the econometric analysis. Section 5 summarises the main findings and draws some conclusions.

2. The EU-Korea FTA and trade and protection patterns

2.1 The EU-Korea FTA

The EU-Korea FTA[4] is the first agreement concluded in the new wave of deep and comprehensive FTAs that the EU launched following the lifting of the its self-imposed moratorium on such agreements in favour of a comprehensive multilateral round in the late 1990s.

Negotiations on an FTA between the EU and Korea were launched in May 2007 in Seoul. After eight formal rounds of talks, the FTA was initialled by both sides on 15 October 2009. The agreement was signed during the EU-Korea Summit in Brussels on 6 October 2010. The European Parliament gave its consent to the FTA on 17 February 2011 and it has been

[2] They did not consider the potential existence of effects prior to Portugal's accession.
[3] Tariffs facing Portugal were already low due to previous arrangement.
[4] Official Journal (2011), http://eur-lex.europa.eu/legal-content/en/ALL/?uri=OJ:L:2011:127:TOC.

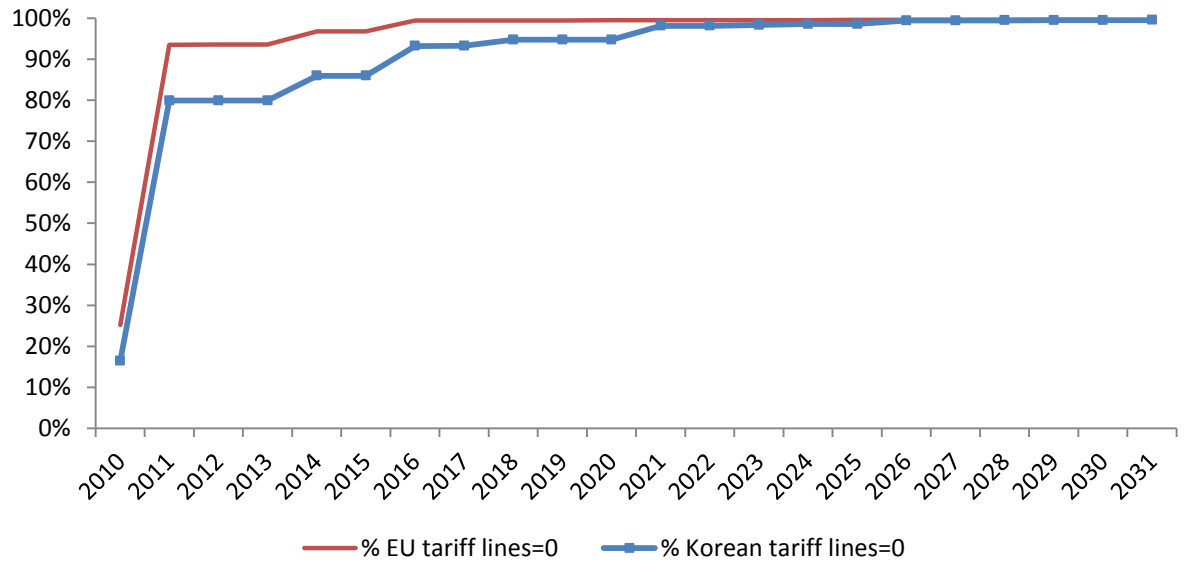
provisionally applied since 1 July 2011. At the time of conclusion, the EU-Korea FTA was perhaps the most ambitious trade agreement ever negotiated by the EU.

Before the entry into force of the FTA in 2010, average trade weighted tariffs applied to EU exports in Korea were 6.2%, compared to 2.5% on Korean exports to the EU.[5] Furthermore, about 68% of the value Korean exports entered the EU duty free compared to 15% of the value of EU exports to Korea.[6]

Compared to previous EU FTAs in force, the agreement is unprecedented both in its scope and in the speed at which trade barriers are removed. The majority of customs duties on goods were removed at the entry into force of the agreement and by 1 July 2016, practically all EU customs duties on industrial goods will be removed. This corresponds to almost 99% of all duties paid by Korea exporters before the entry into force of the agreement.[7]

As shown in Figure 1, the staging of the elimination of customs duties is more front-loaded on the EU side than in the case of Korea. In the first year of the entry into force of the agreement, 94% of all EU tariff lines were liberalized corresponding to about 90% of the value of Korean exports to the EU. The figures for Korean liberalisation were 80% corresponding to 65% of the value of EU exports.

Figure 1: EU-Korea FTA: staging of the elimination of customs duties



Source: WTO RTA-IS database

Furthermore, the agreement tackles non-tariff barriers (NTBs) to trade, with a specific focus on the automotive, pharmaceuticals, medical devices and electronics sectors. The FTA also eliminates quantitative import restrictions and all forms of duties, taxes, charges and

[5] DG Trade Integrated Statistical Database.

[6] Ibid.

[7] A limited number of agricultural and fisheries products have transitional periods longer than seven years and rice and a few agricultural products are excluded from the agreement.

restrictions on exports and includes provisions on issues ranging from services and investments, competition and government procurement to intellectual property rights.

The EU-Korea FTA will also serve as an additional insurance and enhance predictability and stability of the trade policy environment in the two markets. To this end, the preamble includes language in which the parties state that they are "Convinced that this Agreement will create […] a stable and predictable environment for investment…" while Article 12.2. lays down that the parties shall pursue "…an efficient and predictable regulatory environment for economic operators…".[8]

2.2 Trade between the EU and Korea

Korea is the EU's eighth largest trading partner and the EU is Korea's second trading partner after China. The most important category of goods traded is Machinery and mechanical appliances, which accounts for close to 35% of total EU exports to Korea and about as much in terms of EU imports.

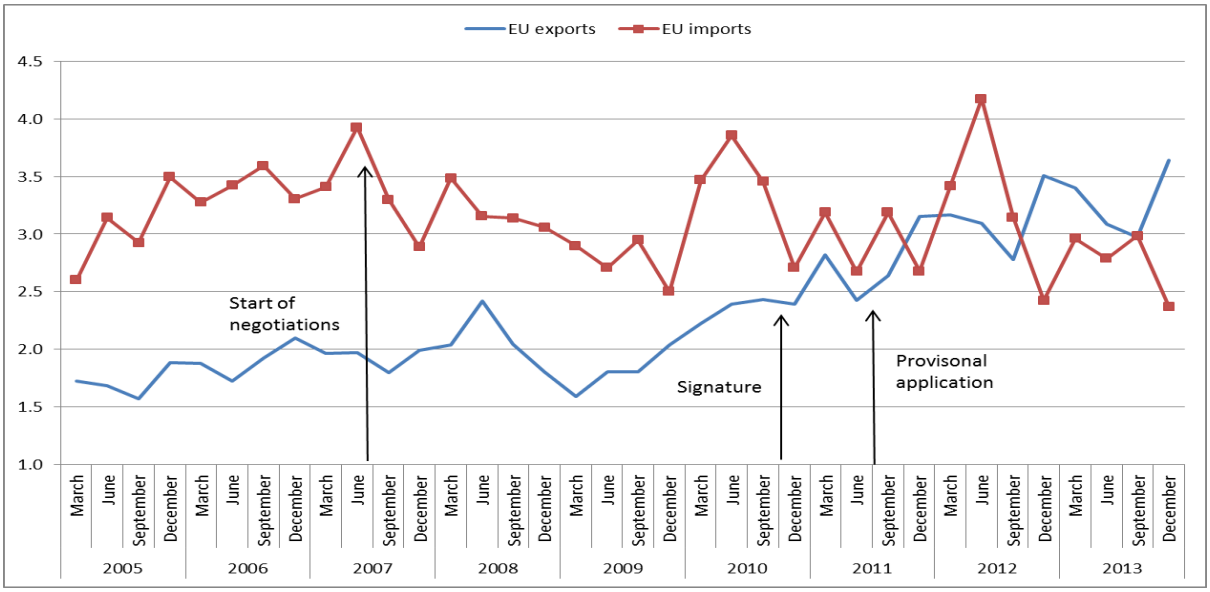
Figure 2 shows that beginning in 2005, EU exports to Korea increased until the start of the negotiations in approximately mid-2007. Except for a short re-bound in spring 2008, they then decreased until early 2009, but have been on an upward trend since then and reached some € 37 billion in 2013.

EU imports from Korea increased from the beginning of the period until the time of the start of the negotiations in 2007. Imports then decreased until early 2009 and have shown several ups and downs since that point in time. EU imports from Korea stood at a somewhat lower level by the end of 2013 compared to 2009, potentially still being affected by the crisis. One should recall, however, that part of this development is due to investment and location of Korean production in the EU e.g. of cars.[9]

[8] Official Journal (2011).

[9] Copenhagen Economics (2014).

Figure 2: EU exports to and imports from Korea, 2005-2013 (€ billion)



Source: COMEXT.

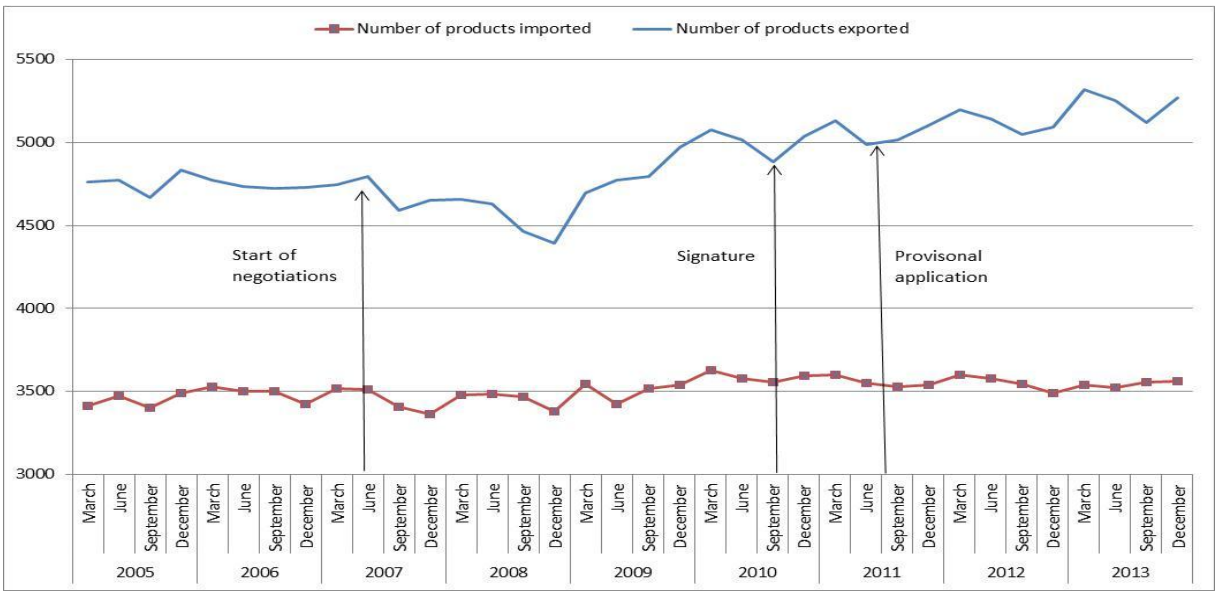
Figure 3 shows the development of the number of monthly EU and Korean products exported over the pre-negotiation period until the end of 2013.[10] Between 2005 and mid-2007, we see a fairly stable number of about 4,700 EU products exported to Korea every month, but there is a drop shortly after the negotiations started in May 2007 which by and large corresponds to the start of the global financial crisis and which lasts until late 2008. We then witness a substantial and steady increase in the number of products exported to Korea, reaching more than 5300 in 2013.

Both the signature of the agreement in October 2010 and the entry into force of its provisional application in July 2011 are followed by increases in the number of EU products exported. The development in the number of products exported is reflected in the change in the value of EU exports to Korea as witnessed in Figure 1.

The number of Korean products exported to the EU is lower, around some 3,500 on average. The evolution of the number of products imported from Korea is also different. There is a drop in the number of products imported in mid-2007 which is then reversed and the following increase lasts until the time of signature of the agreement in October 2010. After that, the number of products remains by and large unchanged until the end of the period, including after provisional application of the agreement in mid-2011. Contrary to the EU case, there is no real parallel with this development to the evolution of the value of products exported as seen in Figure 1.

[10] The number of products is expressed in terms of the 8-digit Combined Nomenclature (CN8).

Figure 3: The number of EU products exported to and imported from Korea, 2005-2013 (CN8 product count)



Source: COMEXT.

2.3 Bound and applied tariffs

Exporting involves both variable costs and fixed costs and, as a result, uncertainty related to the trade policy environment of the destination country affects exporters decisions about entry, exit and the amount traded.

Bound tariffs are a first guarantee of trade policy stability and both the EU and Korea are members of the WTO, which lists "Predictability: through bindings and transparency" as one of its functions and principles.[11] Recently, Handley (2014) has shown that binding trade policy commitments at the WTO can indeed make a difference by increasing entry into new markets even if there is no change in applied tariff levels.

The EU has bound 100% of its tariff lines while Korea has a binding coverage of 89.9%. However, the binding coverage in the case of Korea is significantly lower in manufacturing sectors which play an important role in EU exports to Korea such as Electrical machinery (74%) and Transport equipment (81%).[12]

Another aspect to consider in this context is that bound WTO commitments are often well above applied levels of protection providing policy space for an increase in tariffs. The simple average bound rates are 6.6% in the EU and 17.6% in Korea (see Table 1).

In Korea the average gap of 4.3 percentage points between applied and bound MFN rates translates into a potential (legal) increase in tariffs of some 40%-50% in sectors such as

[11] http://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm.
[12] WTO (2014).

Electrical machinery and Transport equipment. This so called "binding overhang"[13] is argued to be positively correlated with trade policy uncertainty (Groppo and Piermartini (2013)). For the EU essentially all applied rates equal the bound rates.[14]

Table 1: The structure of MFN tariffs in Korea and EU27

	Korea (2012)		EU (2013)	
	MFN applied	MFN bound	MFN applied	MFN bound
Bound tariff lines (% of all tariff lines)		89.9		100
Electrical machinery		74.0		100
Transport equipment		81.3		100
Simple average tariff rate (%)	13.3	17.6	6.5	6.6
WTO agricultural products	55.0	63.4	14.8	14.8
WTO non-agricultural products	6.6	9.2	4.4	4.4
Electrical machinery	6.2	8.9	2.8	2.4
Transport equipment	5.5	8.1	4.3	4.1

Source: WTO Trade Policy Review, Report by the Secretariat for Korea and the EU, respectively, and WTO Trade Profiles of Korea and the EU.

Overall, EU exporters have more to gain in terms of removing trade policy uncertainty. As a result, we expect EU exports to Korea to increase relatively more compared to Korean exports to the EU.

4. Econometric estimation

4.1 Data

The dataset used in the econometric estimation includes monthly EU27-Korea bilateral trade data for the period January 2005–December 2013 at the 8-digit level of the Combined Nomenclature (CN8).

Product classification systems are regularly modified by government authorities and underlying physical goods may be classified in different categories in different years. Some products may not even be part of the classification system in all years. Given our objectives to estimate the impact of the various stages of the FTA lifespan on (i) the probability to export a given product and on (ii) the value of exports, establishing a database that uses a consistent product classification over time is crucial.

The aggregate number of CN8 product codes is relatively stable over time (10,096 CN8 lines in 2005 compared to 9,349 in 2013), but certain codes corresponding to certain products

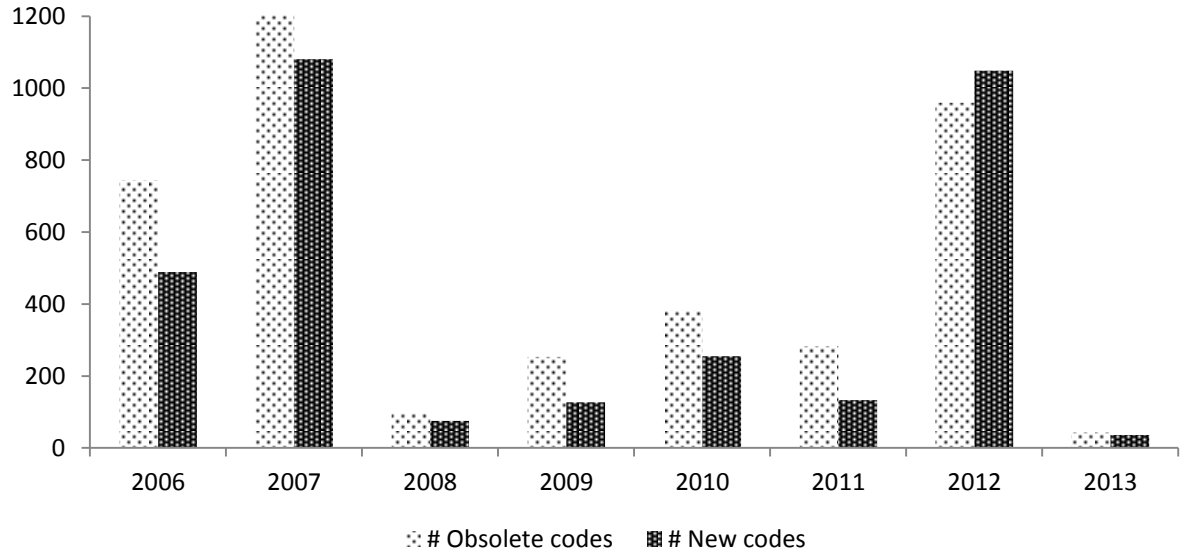
[13] The difference between bound and applied MFN rates.

[14] Due to composition effects, the EU applied tariff by sections of the Harmonised System as displayed in Table 1 are higher than bound tariffs.

have become obsolete while other, new, codes gave been introduced. Such changes are usually not one-to-one changes. In 2012, for example, there were 959 old CN8 codes replaced by 1,048 new codes, see Figure 4. Ignoring changes in the product classification could result in a significant bias in our estimations.[15]

As a first step, we therefore account for changes in the CN8 nomenclature[16] over time using a concordance algorithm developed by Van Beveren et al. (2012). Secondly, we create a fully balanced panel dataset by assuming that missing values in a given month-year for a given product represent zero trade.

Figure 4: Changes in the CN8 classification



Source: Eurostat RAMON

Finally, we complement the trade data with bilateral import tariffs data from the WTO Regional Trade Agreements Information System (RTA-IS) database.[17] Note that while matching tariffs applied by the EU to Korean exports was a relatively straightforward task (both the trade and tariffs data are in CN8 classification); assumptions had to be made to match the tariff data applied by Korea using its 10-digit nomenclature to EU exports.[18]

The matching was made at the HS6 level, since there is no harmonisation of national product codes at a lower level of aggregation, assuming that if there was at least one product in a given HS6 chapter that will be liberalised under the FTA then the whole chapter is

[15] Note that simply dropping the product codes that have been affected by changes in the nomenclature over our sample period results in the drop of more than 50% of the value of EU-Korea trade.

[16] The CN8 classification is subject to yearly revisions, however, the most significant revisions have occurred in the years when the HS (Harmonized System) classification has been revised, i.e. 2007 and 2012 as far as this paper is concerned.

[17] http://rtais.wto.org/UI/PublicShowMemberRTAIDCard.aspx?rtaid=167. These tariffs are originally reported to the WTO from the EU's TARIC database (Tarif intégré de l'Union européenne).

[18] These tariffs were obtained from the Market Access Database (MADB), http://madb.europa.eu/madb/indexPubli.htm.

considered to be liberalised.[19] The decomposition of the results by types of tariffs for EU exports to Korea below therefore needs to be interpreted bearing in mind that we may overestimate the number of liberalised products.

4.2 Estimation methodology

To measure the impact of the various stages of the EU-Korea FTA on the probability to export product *i* in month *m* and year *y*, we use a binary logit model. The econometric specification is as follows:

$$X_{imy} = \alpha + \Sigma\beta_n(negotiation_{ns}) + \Sigma\gamma_p(T_{pmy}) + \Sigma\delta_r(HS2_{rh)} + \varepsilon_{imy}$$

where:

- *X* is a dummy variable that takes value 1 if CN8 product *i* is exported in month *m* and year *y*, and 0 otherwise.
- α is constant
- *negotiation* a dummy variable corresponding to different stages of the negotiations as follows:
    - s=1 (omitted dummy), represents the period before the negotiations began (*January 2005-April 2007*)
    - s=2, represents the period after beginning of negotiations and before signature of the agreement (*May 2007-October 2010*)
    - s=3, represents the period between the signature of the agreement and before entry into force (*November 2010-June 2011*)
    - s=4, represents the period after entry into force of the agreement (*July 2011-December 2013*)
- *T* represent *month x year* fixed effects
- *HS* correspond to *HS2 chapter* fixed effects

Finally $\alpha,\ \beta_n,\ \gamma_p,\ \delta_r\ and\ \phi$ are parameters to be estimated. The econometric specification for the intensive margin is of the same general form, except for the dependent variable which is not binary but the actual value of product *i* traded in month *m* and year *y*, using a Poisson estimator.

It is important here to recall that variable *T* representing *month x year* fixed effects will pick a number of factors, observable as well as unobservable, influencing bilateral EU – Korea trade which are not explicitly modelled, including tariff cuts.

[19] In addition, we do not have information that would allow us to carry out the same concordance procedure on the Korean nomenclature.

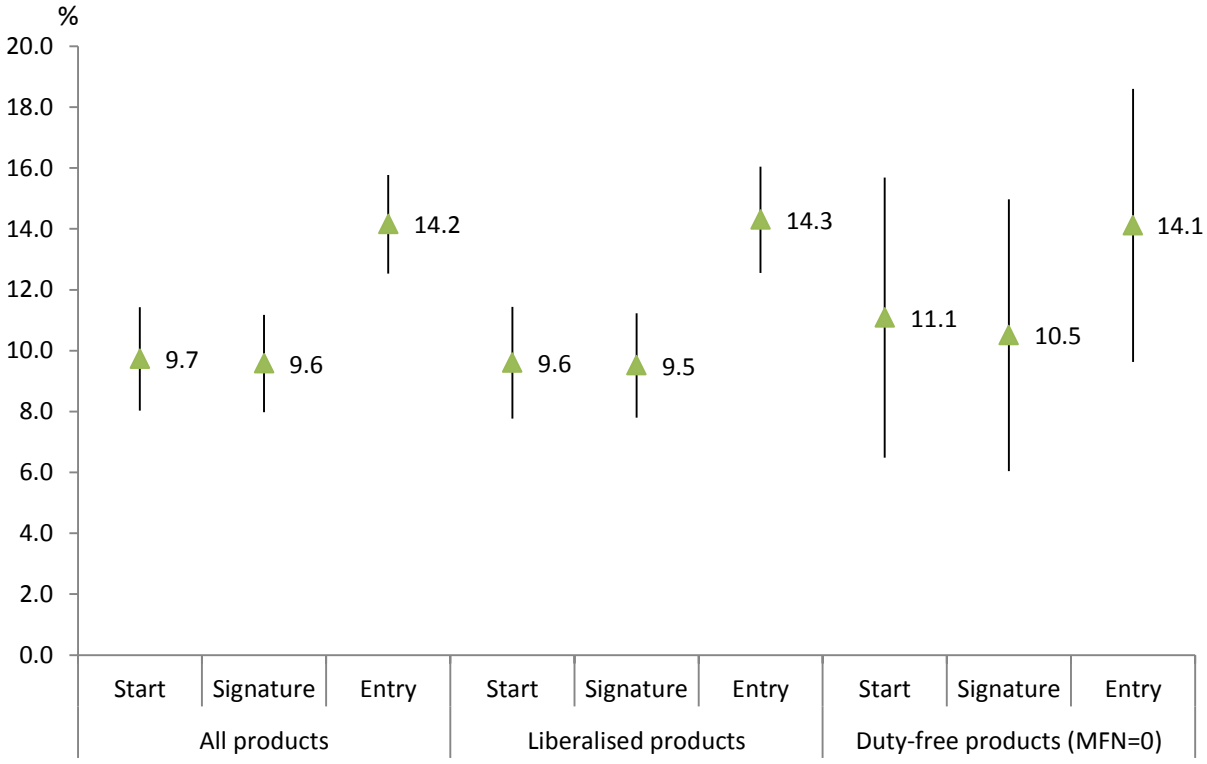
5. Empirical results

5.1 The extensive margin

The first objective of the paper is to disentangle the effects of the various stages of the EU-Korea FTA on trade on the probability to export (the extensive margin). The results of the logit estimations assessing that probability for the EU are presented in Annex Table 2. The first column includes results of running the regression on all products, while columns 2 and 3 presents results of regressions run on products which are liberalised under the agreement and those which are not, respectively. To facilitate the interpretation of the results, the associated marginal effects are presented in Figure 4.

For all products, we note that the period after the beginning of negotiations but before signature of the agreement (May 2007-October 2010), triggers an increase in the probability for EU firms to export to Korea of 9.7% compared to the reference period (before the negotiations began (January 2005-April 2007)). For the following period, between signature and entry into force (November 2010-June 2011), the estimate is practically the same at 9.6%. After entry into force of the agreement (July 2011-December 2013), the probability for EU firms to export increases to 14.2%.

Figure 4: EU exports to Korea: evolution of the probability to export (marginal effects)



Note: Estimate and 95% confidence interval. Relative to respective products traded before the start of negotiations. All estimates are significant at the 1% level. Start: May 2007-Octobre 2010, Signature: November 2010-June 2011, Entry into force: July 2011-December 2013.

We proceed to analyse if the impact is different if we consider products that will be liberalised under the agreement and those which are already duty-free (the MFN rate equals zero), something that seems to have been omitted in the existing literature.

The results show that there are significant and positive effects on EU exports to Korea on the extensive margin of products being liberalised under the FTA. The impact is almost identical to the overall impact as seen in the left-hand side of Figure 4. The same by and large holds for products which are not subject to any liberalisation.

The regression results for the probability of Korean firms to export to the EU during the three stages of the FTA analysed are found in Annex Table 4, while the marginal effects of are presented in Figure 5 below. Compared to the EU, the probability of Korean firms to export is lower. In the first period, it is 3.8%, while it increases to 5.4% in the period between signature and entry into force. It practically stays at that level (5.3%) in the period following entry into force of the FTA. Hence, overall, the actual entry into force of the agreement does not seem to affect the probability to export to the EU.

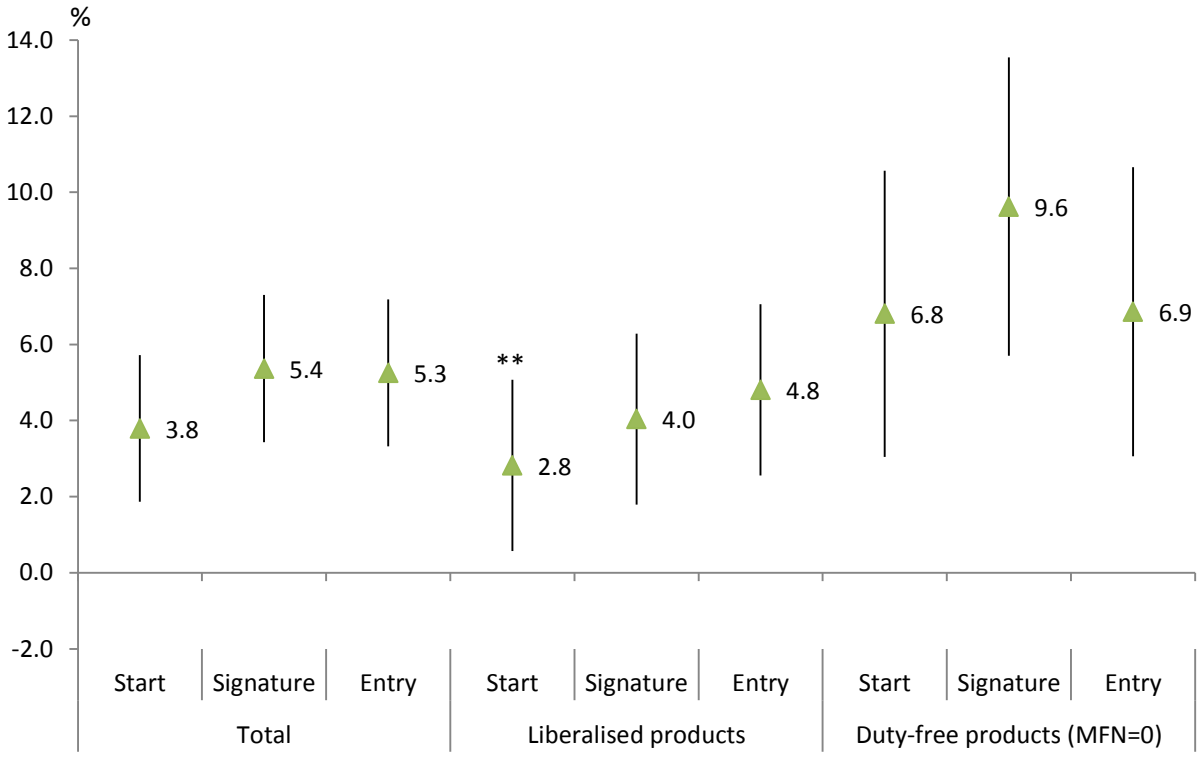
Splitting the sample into liberalised products and duty-free products reveals that there is an increased probability to export liberalised products after signature as opposed to the duty free products. Still, however, the probability to export duty free products to the EU is higher than liberalised products and the impact is higher in the period between signature and entry into force.

The results with respect to the impact on duty-free products are slightly puzzling. Duty-free products are not subject to a reduction in trade policy uncertainty related to tariffs and while the EU-Korea FTA contains provisions on NTBs, these affect product groups (automotive, pharmaceuticals, medical devices and electronics) which are not primarily imported into Korea free of duties. Nevertheless, except for automotive, these sectors, as well as being among the most important exported to Korea overall, they also figure among the top sectors imported duty-free into Korea from the EU in 2010.[20] This may point to a spill-over effect from the products subject to liberalisation since most imported intermediates originate from within the same sector.[21]

[20] HS2 chapters 30, 85 and 94.

[21] This is e.g. the case for Korea according to GTAP v9.1.

Figure 5: Korean exports to the EU: evolution of the probability to export (marginal effects)



Note: Estimate and 95% confidence interval. Relative to all respective products traded before the start of negotiations. All estimates are significant at the 1% level, except where indicated with ** (5% level). Start: May 2007-Octobre 2010, Signature: November 2010-June 2011, Entry into force: July 2011-December 2013.

5.2 Intensive margin

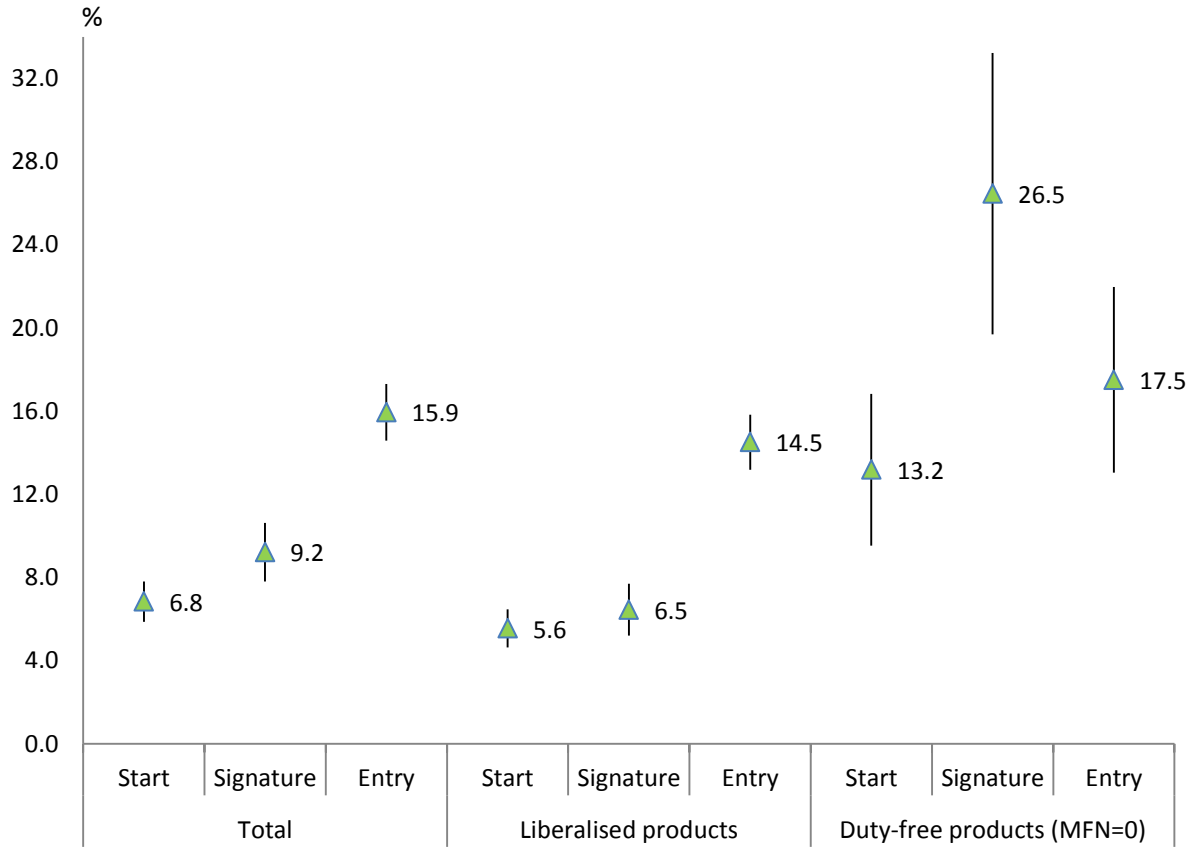
The second objective of this paper is to examine potential export effects on the intensive margin along the different stages of the EU-Korea FTA. The econometric analysis is carried out using a Poisson estimator, which compared to OLS accounts for zero trade flows. The regression results for the EU are presented in Annex Table 5 and the marginal effects in Figure 6.

There are statistically significant anticipatory effects on EU exports on the intensive margin which are positive and growing over the lifespan of the FTA. The figures indicate that compared to the reference period, the EU has increased its exports to Korea by 6.8% in the period after the beginning of negotiations but before signature of the agreement, by 9.2% between signature and entry into force and by close to 16% following entry into force of the FTA.

Looking at the impact in terms of liberalised and duty-free products, the results indicate that EU exports of liberalised products increased by 5.6% in the first period compared to the reference period and 6.5% in the period from signature to entry into force. However, after entry into force, the figure more than doubles reaching 14.5%. The results for the duty-free products are different. While the figures suggest a higher impact in each stage of the FTA

compared to the liberalised products, there is no clear trend, with most of the impact emerging in the period after signature but before entry into force.

Figure 6: EU exports to Korea: evolution of the intensive margin (marginal effects)



Note: Estimate and 95% confidence interval. Relative to all respective products traded before the start of negotiations. All estimates are significant at the 1% level. Start: May 2007-Octobre 2010, Signature: November 2010-June 2011, Entry into force: July 2011-December 2013.

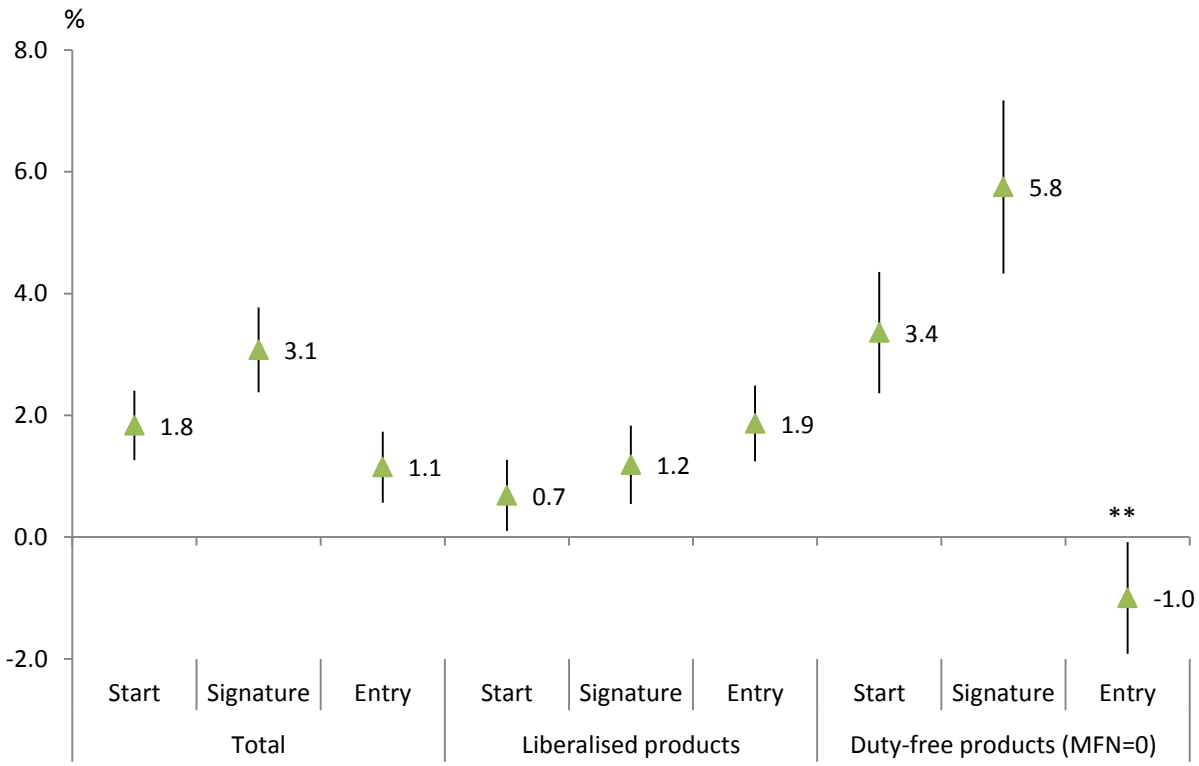
As far as the results on the intensive margin for Korean exports to the EU are concerned (see Annex Table 6 and marginal effects in Figure 7), the period following signature of the agreement brings an increase in exports of 3.1%, which is greater than the increase in the start-of-negotiations period which is 1.8%. The impact following entry into force of the agreement is lower still at 1.1%. This could potentially reflect that Korean exporters perceive most trade policy uncertainty to be removed once the agreement was signed.

The decomposition of the results into Korean exports of liberalised and duty-free products reveals differences. In the period after the beginning of negotiations but before signature of the agreement, there is a small but statistically significant impact on Korean exports to the EU of 0.7%. This effect increases to 1.2% after signature and to 1.9% after entry into force.

The picture is different for exports of duty-free products. The results indicate an increase of such Korean exports to the EU of 3.4% in the first period and 5.8% after signature. However, after entry into force, we see a statistically significant negative impact (at the 5% level)

suggesting a decrease in exports of duty-free products of 1% compared to the reference period.

Figure 7: Korean exports to the EU: evolution of the intensive margin (marginal effects)



Note: Estimate and 95% confidence interval. Relative to all respective products traded before the start of negotiations. All estimates are significant at the 1% level, except where indicated with ** (5% level). Start: May 2007-Octobre 2010, Signature: November 2010-June 2011, Entry into force: July 2011-December 2013.

6. Summary and conclusions

This paper contributes to the somewhat unexplored economic literature which examines anticipatory effects of trade agreements and implicitly quantifies the impact of reductions in trade policy uncertainty. Expanding on previous approaches and accounting for changes in the product classification over time, we explore the trade effects on both the extensive and intensive margins during different stages of the EU-Korea FTA's lifespan considering separately the start of negotiations, signature and entry into force.

In the case of the EU, the results indicate there are statistically significant and positive effects across the three stages examined both in terms of trade on the extensive and intensive margins. The same holds for both margins when examining exports of liberalised and duty-free products separately. On average, the figures indicate that the probability to export has increased by about 11.2% while the value of exports has been boosted by 10.7%.

In the case of Korea, the results generally indicate the same, but with lower effects. The average probability to export has increased by 4.8% while the value of Korean exports has risen by 2.0% as a result of reduced uncertainty.

We also found that both the probability to export duty-free goods and the value of such exports have been impacted by the agreement. These products are not subject to any tariff related trade policy uncertainty but may face an increase in demand following an increase in demand for products liberalised under the agreement which use them as intermediates; hence a form of a spill-over effect.

The impact on EU exports is more substantial along all stages of negotiations and after entry into force compared to Korea exports. Such asymmetry is to be expected given initial differences in the trade policy environment of the two countries. EU exporters have more to gain than Korean ones in terms of increasing the predictability of the trade policy regime of the destination market.

It thus seems that an announcement that an FTA will be negotiated, with sufficient credibility that negotiations will be concluded, may be enough to reduce uncertainty and to generate an increase in exports before conclusion and actual implementation of the FTA.

References

Bergin, P. and C.Y. Lin, (2012). The Dynamic Effects of Currency Union on Trade, *Journal of International Economics 87*, 191-204.

Coulibaly, S. (2007), Evaluating the Trade Effect of Developing Regional Trade Agreements: A Semi-parametric Approach, *World Bank Policy Research Working Paper 4220*.

Copenhagen Economics (2014), The impact of trade liberalisation on the EU automotive industry: trends and prospects, report prepared for DG Trade.

Croce, E., Juan Ramón, V. H., and Zhu, F. (2004), Performance of Western hemisphere trading blocs: A cost-corrected gravity approach, *IMF Working Paper 04/109*. Washington, DC: International Monetary Fund.

Global Trade Alert (2009), 1st Report, 8 July, http://www.globaltradealert.org/.

European Commission (2006), Global Europe: Competing in the World – A Contribution to the EU's Growth and Jobs Strategy, *COM (2006) 567 final*.

Freund, C. L. and J. McLaren (1999), On the Dynamics of Trade Diversion: Evidence from Four Trade Blocs, Board of Governors of the Federal Reserve System, *International Finance Discussion Papers Number 637*.

Groppo, V. and Piermartini (2013), Trade Policy Uncertainty and the WTO, Presented at the 2nd Annual IMF/World Bank/WTO workshop, Geneva, Switzerland

Handley, K. (2014), Exporting under Trade Policy Uncertainty: Theory and Evidence, *mimeo*, University of Michigan.

Handley, K. and N. Limão (2012), Trade and Investment under Policy Uncertainty: Theory and Firm Evidence, *NBER Working Paper No. 17790*

Magee, C. S. (2008), New measures of trade creation and trade diversion, *Journal of International Economics, 75(2), 349–362*.

Mölders, F and U. Volz (2011), Trade creation and the status of FTAs: empirical evidence from East Asia, *Review of World Economics 147, pp. 429–456*.

Official Journal (2011), L 127, Volume 54, 14 May.

Van Beveren, I., Bernard, A. B. and H. Vandenbussche (2012), Concording EU Trade and Production Data over Time, NBER Working Paper 18604
https://www.sites.google.com/site/ilkevanbeveren/Concordances

WTO (2012), Trade Policy Review, Republic of Korea, *WT/TPR/S/268*.

WTO (2013), Trade Policy Review, European Union, *WT/TPR/S/284.*

WTO (2014), Tariff Profile Korea, http://stat.wto.org/TariffProfile/WSDBTariffPFView.aspx?Language=E&Country=KR.

Annex

Table 2: The extensive margin by stages of negotiations (EU)

	EU exports to Korea (all products)	EU exports to Korea (liberalised products)	EU exports to Korea (duty-free products)
Start of negotiations	0.402***	0.400***	0.447***
	(0.0363)	(0.0396)	(0.0957)
Signature	0.407***	0.408***	0.428***
	(0.0364)	(0.0396)	(0.0957)
Entry into force	0.597***	0.610***	0.574***
	(0.0367)	(0.0400)	(0.0959)
Pseudo R^2	0.14	0.14	0.16
N	803,520	684,288	118,800
Month-year fixed effects	Yes	Yes	Yes
HS2 chapter fixed effects	Yes	Yes	Yes

Note: Standard errors in parentheses, *p<0.10, **p<0.05, **p<0.01. Results are relative to the respective group of products traded before the start of negotiations. The number of observations in columns 2 and 3 does not sum to the number of observations in column 1 due to dropped observations as a result of collinearity.

Table 3: The extensive margin by stages of negotiations (Korea)

	Korean exports to the EU (all products)	Korean exports to the EU (liberalised products)	Korean exports to the EU (duty-free products)
Start of negotiations	0.153***	0.113**	0.292***
	(0.0396)	(0.0460)	(0.0816)
Signature	0.215***	0.162***	0.401***
	(0.0396)	(0.0460)	(0.0813)
Entry into force	0.211***	0.192***	0.292***
	(0.0396)	(0.0460)	(0.0816)
Pseudo R^2	0.16	0.17	0.18
N	696,492	517,968	178,524
Month-year fixed effects	Yes	Yes	Yes
HS2 chapter fixed effects	Yes	Yes	Yes

Note: Standard errors in parentheses, *p<0.10, **p<0.05, **p<0.01. Results are relative to the respective group of products traded before the start of negotiations.

Table 4: The intensive margin by stages of negotiations (EU)

	EU exports to Korea (all products)	EU exports to Korea (liberalised products)	EU exports to Korea (duty-free products)
Start of negotiations	0.561***	0.251***	0.716***
	(0.0374)	(0.0435)	(0.0893)
Signature	0.617***	0.521***	0.997***
	(0.0370)	(0.0412)	(0.0856)
Entry into force	1.063***	1.101***	0.845***
	(0.0346)	(0.0377)	(0.0875)
Pseudo R^2	0.17	0.19	0.17
N	803,520	684,288	119,232
Month-year fixed effects	Yes	Yes	Yes
HS2 chapter fixed effects	Yes	Yes	Yes

Note: Standard errors in parentheses, *p<0.10, **p<0.05, **p<0.01. Results are relative to the respective group of products traded before the start of negotiations.

Table 5: The intensive margin by stages of negotiations (Korea)

	Korean exports to the EU (all products)	Korean exports to the EU (liberalised products)	Korean exports to the EU (duty-free products)
Start of negotiations	0.211***	0.098**	0.380***
	(0.0326)	(0.0421)	(0.0517)
Signature	0.316***	0.160***	0.537***
	(0.0318)	(0.0415)	(0.0502)
Entry into force	0.132***	0.254***	-0.122**
	(0.0332)	(0.0406)	(0.0582)
Pseudo R^2	0.27	0.28	0.37
N	696,492	517,968	178,524
Month-year fixed effects	Yes	Yes	Yes
HS2 chapter fixed effects	Yes	Yes	Yes

Note: Standard errors in parentheses, *p<0.10, **p<0.05, **p<0.01. Results are relative to the respective group of products traded before the start of negotiations.