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RESEARCH ARTICLE

Do Free Trade Agreements Increase the New Goods Margin? Evidence from Korea

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Abstract We analyze the changes in the composition of bilateral trade—and more specifically, in the new goods margin—following the free trade agreements (FTAs) signed by Korea between 2004 and 2008. We find that new goods trade increased disproportionately after the FTAs came into effect, and that least-traded goods (LTG)—those accounting for the lowest 10% of trade prior to the FTAs—ended up accounting for 37% of post-FTA trade with FTA partners. In contrast, the corresponding share for a comparable group of countries that did not sign FTAs with Korea was only half as large, averaging close to 20%. We also find that only less than 2% of all least-traded products accounted for most of the growth in LTG trade, and that those goods tended to be clustered in the same industries as the intensively-traded goods. Furthermore, a larger fraction of LTG became heavily traded for the case of FTA partners than for non-FTA countries. Finally, we find evidence that least-traded imports were subject to higher pre-FTA tariff protection than other products.

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1 Introduction

Over the last two decades, free trade agreements (FTAs) have become an increasingly dominant and defining feature of the international trade landscape. According to the World Trade Organization, as of March 2018 there are 305 active regional trade agreements, 233 of which were signed in 2000 or later. Moreover, since 2000 FTAs have no longer been bound by geographical proximity, since the majority of the new agreements have been signed among distant countries and regions.

These trade agreements entailed the elimination of tariffs and other behind-the-border barriers, and as such provided potential for trade growth of goods that had traditionally been traded, as well as created new trading opportunities for previously non-traded goods. The former channel is often referred to as the intensive margin of trade, while the latter is referred to as the extensive, or *new goods*, margin.

The aggregate trade expansion effects of FTAs have been widely studied in the literature. Interestingly, early estimates found effects that ranged from both positively significant and insignificant, to even negatively significant effects. However, Baier and Bergstrand (2007) pointed out that most of such studies suffered from an endogeneity bias, since they included FTA dummies as exogenous variables in their specifications, when it could well be the case that countries that trade heavily endogenously choose to engage into FTAs with their trade partners. This generated a downward bias in the estimations of the FTA effects on trade volumes. After correcting for such bias, Baier and Bergstrand (2007) found that for a sample of FTAs signed between 1960 and 2000, bilateral trade nearly doubled, on average, 10 years after the signing of the agreement. These results were later confirmed by other studies, such as Baier and Bergstrand (2009) and Anderson and Yotov (2016).

On the other hand, the FTA effects on the margins of trade have been covered less intensively. Nevertheless, articles such as Baier et al. (2014) found statistically significant and positive effects of various trade liberalization arrangements—including FTAs—on the extensive margin for a large sample of countries covering the 1962–2000 period (although the effects on the extensive margin were smaller than on the intensive margin). This result was confirmed further by Kehoe and Ruhl (2013) who found significant expansions along the extensive margin of trade as a response to FTAs such as NAFTA and CUSFTA, a result also shared by Hillberry and McDaniel (2003). Additionally, Foster et al. (2011) and Foster (2012) found that, for a sample of 174 countries, most of the increases in imports due to FTAs (59% to 83%, depending on the specification) were due to the extensive margin of trade. On the other hand, Besedes and Prusa (2011) find the effects of the extensive margin to be short-lived, as soon after entry, firms entering into new markets face other type of costs and barriers which were unknown at the time of entry.

In this article, we analyze the changes in the composition of bilateral trade—and more specifically, in the new goods margin—following the recent free trade agreements signed by Korea. As a country that heavily relies on international trade, bilateral trade agreements have become a major driving force of Korean trade policy. Indeed, since the FTA signed with Chile in 2004, Korea has been actively pursuing similar agreements with its trade partners, large and small. This strategy culminated with Korea becoming one of few countries to have signed FTAs with both the European Union and the United States, in 2011 and 2012, respectively.

Our analysis considers the FTAs signed between Korea and its partners between 2004 and 2008, so that we cover sufficiently long pre- and post-FTA periods—eight years in each case. Therefore, we focus on the agreements with Chile, the European Free Trade Association (EFTA), and six members of the Association of Southeast Asian Nations (ASEAN) that account for almost all of Korean trade with that bloc. Moreover, so that we can gauge the post-FTA trade outcomes more precisely, we compare the extensive margin trends between Korea and its FTA partners with those observed between Korea and a group of countries that did not sign agreements. This comparison group is constructed in such a way that its trade share with Korea and its geographical distribution are similar to those of the FTA countries.

We use highly disaggregated bilateral product-level trade data taken from the World Bank's World Integrated Trade Solution (WITS) database. Our definition of "new goods" in international trade follows the methodology laid out in Kehoe and Ruhl (2013), who define the set of new (or least-traded) goods as those initially accounting for the bottom 10% of trade. This implies that the set of new goods includes products initially traded in small volumes, but also includes goods with zero trade values. Once the set of least-traded goods has been constructed, we trace how its share out of total trade grew over time for each of the FTA partners as well as the non-FTA partners. Additionally, we compare the patterns of newly-traded goods with those of intensively-traded goods, to better understand the dynamics of the margins of trade both in the aggregate and the industry level.

Our analysis yields five main findings. First, we find that exports and imports of new goods with FTA partners grew disproportionately and ended up accounting, on average, for 37% of all exports and nearly 38% of all imports eight years after the FTAs came into effect. Those values significantly exceed the ones observed for non-FTA countries, 23% and 17%, respectively. Second, we find that even though trade in least-traded goods grew at a comparatively faster pace, this growth was driven by a very small number of goods. Indeed, the basket of "top" least-traded goods—those accounting for two thirds of total least-traded goods trade—consisted of less than 2% of all least-traded products (nearly 5000 six-digit codes). The number of top least-traded goods, however, was consistently higher with FTA partners than with non-FTA countries.

Third, we find that a larger fraction of least-traded goods went on to become heavily-traded with FTA than with non-FTA countries, and they accounted for a larger share of total trade. Of those goods accounting for two thirds of *all* exports and imports with FTA partners eight years after the agreement entered into force (which we refer to as "top-traded" goods), 27% and 36% were originally least-traded,

respectively, compared with 21% and 1% for the case of non-FTA countries. Thus, FTAs were not only associated with a larger variety of products, but also with a higher proportion of new goods surging to top-traded. Conversely, a lower fraction of goods that were heavily-traded prior to the implementation of the FTAs remained as such during the post-FTA period in FTA partners than in non-FTA economies. These two facts suggest that more least-traded goods gained relative importance and fewer intensively-traded products retained it in FTA partners than in non-FTA countries.

Fourth, when we look at the changes in the industry distribution of top-traded goods over time, we find that more industries posted gains in their trade shares of top-traded goods with FTA countries that with non-FTA ones, especially in imports. In fact, we find that for non-FTA countries, the trade share gains were concentrated on just a few industries. Moreover, when we compare the post-FTA industry distributions of top least-traded goods and top-traded goods, we find that most top least-traded goods tended to be clustered in the same industries as the top-traded goods, with the sectoral correlation between the industry distributions of both sets of goods exceeding 0.5 for both flows of trade. This indicates that, although FTAs were associated with an increased variety of products, those new products belonged to heavily-traded industries.

Finally, we find that least-traded import goods were initially subject to higher Korean tariffs than non least-traded import goods. This finding also holds for the top least-traded import products, those driving the bulk of least-traded imports. That least-traded import goods initially faced higher tariffs than other goods, and that after the removal of such comparatively higher barriers their growth exceeded that of of non least-traded goods, is in line with the literature originating from Melitz (2003), who finds that a reduction in variable trade costs—such as a reduction in tariffs—leads to new firms entering the export market. On the other hand, top-least traded export goods faced slightly lower average tariffs than other non-least traded export goods.

Our article contributes to the understanding of the effects of trade liberalization on the extensive margin of trade, a topic characterized by ample debate, and for which the literature does not provide a conclusive answer. For example, Kehoe and Ruhl (2013) highlight the importance of the extensive margin during episodes of trade liberalization, as do Hummels and Klenow (2005) and Dalton (2017). On the other hand, Helpman et al. (2008) and Besedes and Prusa (2011) conclude that the intensive margin is the dominant force. Our findings suggest that Korea's free trade agreements were indeed characterized by significant changes in the composition of trade, with new goods trade growth outpacing that of intensively traded goods. Since our study documents the post-FTA patterns on both the imports and exports extensive margin, it complements the work in Foster (2012), who focus solely on import flows. Finally, since our paper focuses on agreements signed on 2004 and later, it provides more up-to-date estimates on the FTAs effects on the extensive margin, thus complementing the findings in Baier et al. (2014), whose sample covers the 1962–2000 period.

The rest of the paper is organized as follows. Section 2 describes the dataset we work with and the methodology we employ in our analysis. Section 3 presents the main results. Section 4 analyzes the dynamics of trade margins at the aggregate as

Table 1 Industry distribution of all goods

ISIC Code	Industry Name	Number of Goods	ISIC Code	Industry Name	Number of Goods
A-B	Agriculture	305	24	Chemicals	862
C	Mining	108	25	Rubber, plastic	116
15-16	Food	413	26	Other non-metallic minerals	158
17-18	Textiles	770	27-28	Basic and fabricated metals	594
19	Leather	67	29	Machinery	517
20	Wood	64	30-33	Electric equipment	454
21-22	Paper	151	34-35	Transport equipment	136
23	Coke, petrol, fuel	20	36-37	Manufacturing nec	189

well as industry level. Section 5 documents the tariff rates applied on least-traded and non least-traded goods prior to the signing of the free trade agreements. Section 6 concludes.

2 Data and Methodology

2.1 Data

Our analysis employs highly disaggregated merchandise trade data. More specifically, we extract Korea's exports and imports data with its FTA partners, as well as with a group of main non-FTA partners for comparison purposes, from the World Bank's World Integrated Trade Solution (WITS) database.[1] We work with a 6-digit level of disaggregation—the finest one available from WITS—according to the 1992 Harmonized System (HS) product classification.

We are also interested in the product distribution of the trade margins at the industry level. Therefore, each product is assigned to one of the 16 traded industries according to the International Standard Industrial Classification (ISIC) Revision 3. A small number of products had to be dropped since there was no corresponding industry assigned to them. In the end, our study covers 4924 products, a number which is nearly three times as large as the number of products used in Kehoe and Ruhl (2013) or in Dalton (2017). The product distribution across industries is shown in Table 1.

2.2 Trade Partners

We consider countries that signed FTAs with Korea entering into effect between 2004 and 2008, namely Chile, the members of European Free Trade Association (EFTA, consisting of Iceland, Liechtenstein, Norway and Switzerland), and six members of the Association of Southeast Asian Nations (ASEAN): Indonesia, Malaysia, the

[1]One advantage of using the WITS database is that their data are publicly and readily available. Finer levels of disaggregation for Korea do exist, but access to such information is restricted.

Philippines, Singapore, Thailand and Vietnam.[2] Although Korea eventually signed FTAs with other countries—the European Union, India, Peru, the United States and Turkey—those came into force in 2010 or after. Since the post-FTA period would be too short to properly assess the effects of those agreements, we drop those cases from our study.

To assess the changes in the patterns of trade following the agreements, we consider pre- and post-FTA periods of equal length, each spanning eight years. This length closely matches the one suggested by Baier and Bergstrand (2007) of ten years.[3] Thus, for each FTA partner, we collect Korea's bilateral trade data so that the initial (or base) year is eight years before the agreement entered into force, and the final year is eight years after that milestone. Hence, our analysis cover 17 years of bilateral trade flows in total.

Furthermore, we construct an additional group of countries for comparison purposes. This comparison group is made up of economies that did not sign FTAs with Korea between 1996 and 2013, the span that includes the pre- and post-FTA periods for all the FTA countries. Moreover, so that they are comparable with the FTA group, the shares of total trade of the FTA and non-FTA countries before 2004 are of similar magnitudes. Finally, the geographical distribution of FTA and non-FTA countries is comparable as well. Just as in the case of the FTA countries, we analyze the evolution of the trade variables in the non-FTA countries during intervals that span 17 years.[4] Table 2 details the countries in each group with their corresponding trade shares prior to 2004.[5]

Figure 1 shows that, up to 2004, the share in total trade of both FTA and non-FTA countries was on a declining trend. However, after 2004—when Korea started signing a series of FTAs—the trend reverted for FTA countries, who saw their importance in total trade with Korea consistently increase to eventually reach 14.4% in 2016. On the other hand, the downward trend for non-FTA countries continued, falling to 11.8% in 2016.

2.3 Defining "New" Goods

In order to construct a measure of the extensive margin in international trade, we follow the methodology laid out in Kehoe and Ruhl (2013), hereinafter KR, who define the set of new goods as one including products initially traded in small volumes, or not traded at all. More specifically, KR first average the trade value of goods over the first three years in their sample, in order to avoid any distortions implied by a

[2]Those six countries represent 98% of Korea's trade with the ASEAN bloc. We leave out the remaining members—Brunei, Myanmar, Cambodia and Laos—because of their limited importance in Korea's trade.

[3]We do not match it exactly because doing so would reduce our country sample size significantly.

[4]Because FTAs were not all signed during the same year, the periods analyzed for non-FTA countries were chosen according to the geographical distribution of their FTA counterparts. Thus, for example, for Argentina and Panama, we consider the years 1996–2012, which is the period of analysis for Chile.

[5]For convenience, we use the term "country" to refer to the members of the non-FTA group, even though some of them are not precisely countries (like the EFTA bloc) or are not widely recognized as such by the international community (e.g., Taiwan).

Table 2 FTA and Non-FTA partners

FTA countries			Non-FTA countries		
Country	Year of FTA	Share of Total Trade (%) (average 1996–2004)	Country	Period Analyzed	Share of Total Trade (%) (average 1996–2004)
Chile	2004	0.50	Argentina	1996–2012	0.21
Singapore	2006	2.60	Australia	2000–2016	2.69
EFTA	2006	1.27	Bangladesh	2000–2016	0.19
Indonesia	2008	2.44	Hong Kong	1998–2014	4.10
Malaysia	2008	2.42	New Zealand	2000–2016	0.29
Philippines	2008	1.37	Panama	1996–2012	0.65
Thailand	2008	1.17	Russia	1998–2014	1.05
Vietnam	2008	0.72	Taiwan	2000–2016	3.26
Total		12.50	Total		12.44

potentially anomalous initial year. Next, goods are sorted in ascending order according to their initial trade value. Finally, ordered goods are included into a bracket until 10% of trade is accumulated. To ensure that exactly 10% of trade is contained in each bracket, some goods had to be split across different sets. Once this threshold has been reached, the remaining goods are assigned into the next bracket until 10% of trade has been added. This process continues until ten equally-sized brackets have been constructed. The goods in the first bracket are those with the smallest trade values—including some with initially zero trade—and as such are labeled as "least-traded"

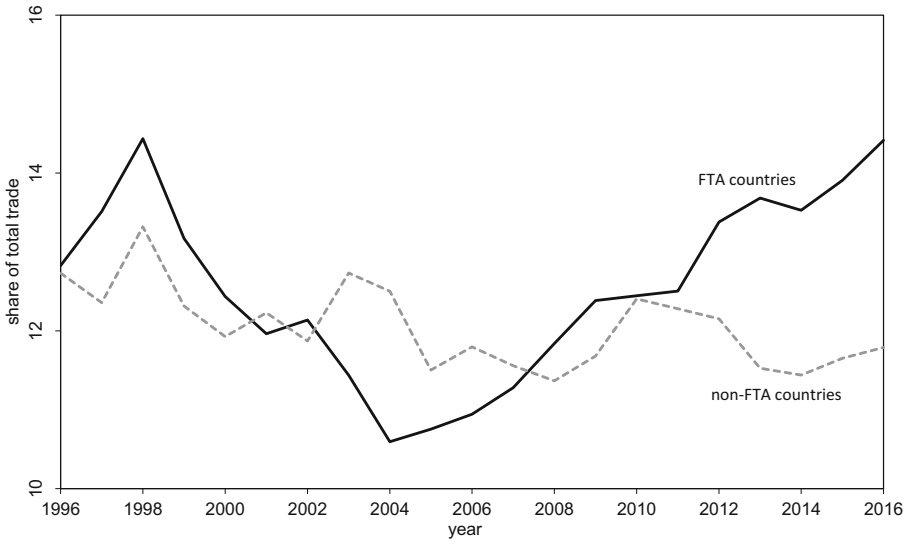

Fig. 1 Trade shares of FTA vs. Non-FTA countries (percent)

(LT) goods, or "new" goods.[6] Once all goods have been assigned to the ten brackets, our objective is to trace the evolution of least-traded exports and imports with Korea's FTA partners, and compare it with its non-FTA counterparts.

3 Trade in New Goods

3.1 New Goods Exports and Imports

Figure 2 breaks down Korean exports and imports to and from its FTA and non-FTA partners according to the KR methodology.[7] The columns in the graphs correspond to the 10 brackets containing the goods according to their trade values (exports and imports) eight years before implementation of each FTA. The values on the vertical axis measure the average fraction of total trade accounted for by the goods in each bracket eight years after each agreement entered into effect. The values on top of each column denote the average number of goods contained in each bracket. Finally, for the ease of exposition, we plot a horizontal bar at the 0.1 value in the vertical axis. Thus, if all columns were aligned at the horizontal bar, this would imply that trade growth across all brackets was uniform, without any changes in their relatives shares. On the other hand, if a column exceeds the horizontal line, then the trade growth of the goods contained in that bracket outpaced average trade growth.

The graphs show that Korean trade in least-traded goods—those accounting for the bottom 10% of pre-FTA exports and imports and represented by the first columns in Fig. 2—experienced, on average, a larger expansion with FTA partners than with non-FTA countries. While the number of least-traded goods was quite similar across the two groups of countries (4721.4 versus 4712.6 for the case of exports, and 4847.3 versus 4799 for the case of imports), the share of least-traded exports to FTA partners grew to account for 37% of all exports, compared to 22.9% for non-FTA countries. For least-traded imports, the difference was more pronounced: least-traded imports from FTA partners went on to represent 37.5% of all imports, whereas for non-FTA economies that share was less than half that value, at only 17%.

[6]The KR methodology is not the only approach to analyze the patterns of the extensive margin. Our decision to follow the KR methodology over other competing techniques is due to one of its main attributes: it determines whether a good is least-traded or not by using a threshold that considers its relative, rather than absolute, importance in total trade. Since there is no absolute concept of zero in trade data because of the under-reporting of small-value shipments, alternative studies, most notably among them Evenett and Venables (2002), use a fixed cutoff value (for example $50,000) to classify a good as not traded. But depending on the specific country pair—in particular, trade with small nations—an arbitrary value of $50,000 can have significant implications and can lead to very few goods being treated as actually traded. Since our article deals with Korean trade with many countries—large and small—the country-pair specific nature of the KR methodology seems to be most appropriate one to employ. Other studies, such as Amarsanaa and Kurokawa (2012), Dalton (2017) and Cho and Díaz (2018) share this view and use the KR methodology as well.

[7]Unless otherwise noted, the averages we report in the following sections are weighted averages for the FTA and non-FTA countries. The weights correspond to each country's share in total trade between 1996 and 2004 as shown in Table 2. Trends for specific FTA and non-FTA countries are presented in the Appendix.

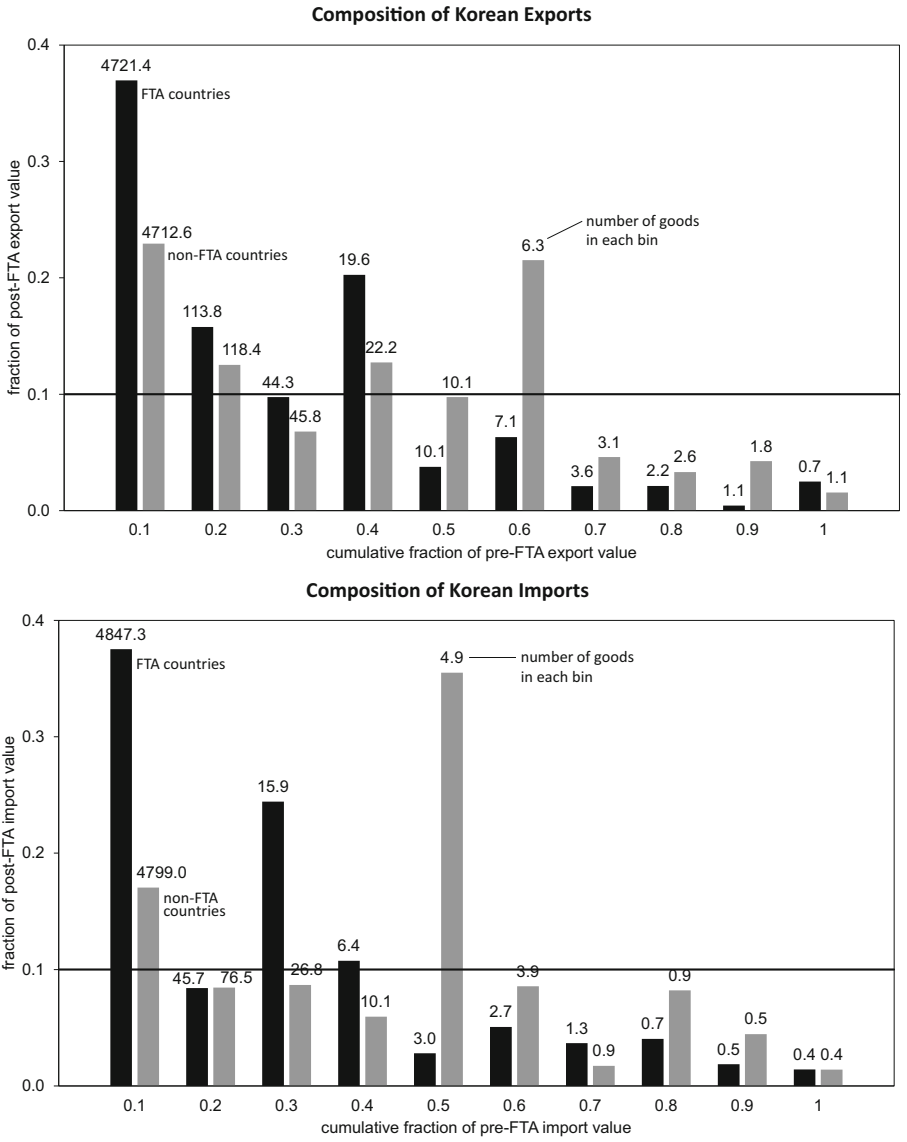

Fig. 2 Composition of exports and imports

Figure 3 plots the evolution over time of the share of total exports and imports accounted for by least-traded goods. While least-traded exports had been on the rise for both FTA and non-FTA partners prior to the signing of the FTAs, after the agreements entered into effect the growth in the share of least-traded exports to FTA partners continued and intensified, while for non-FTA countries it stagnated. In fact, during the post-FTA years, the share of of LT exports increased by 12 percentage points (pp) with FTA countries, while only by 4 pp with non-FTA countries. The

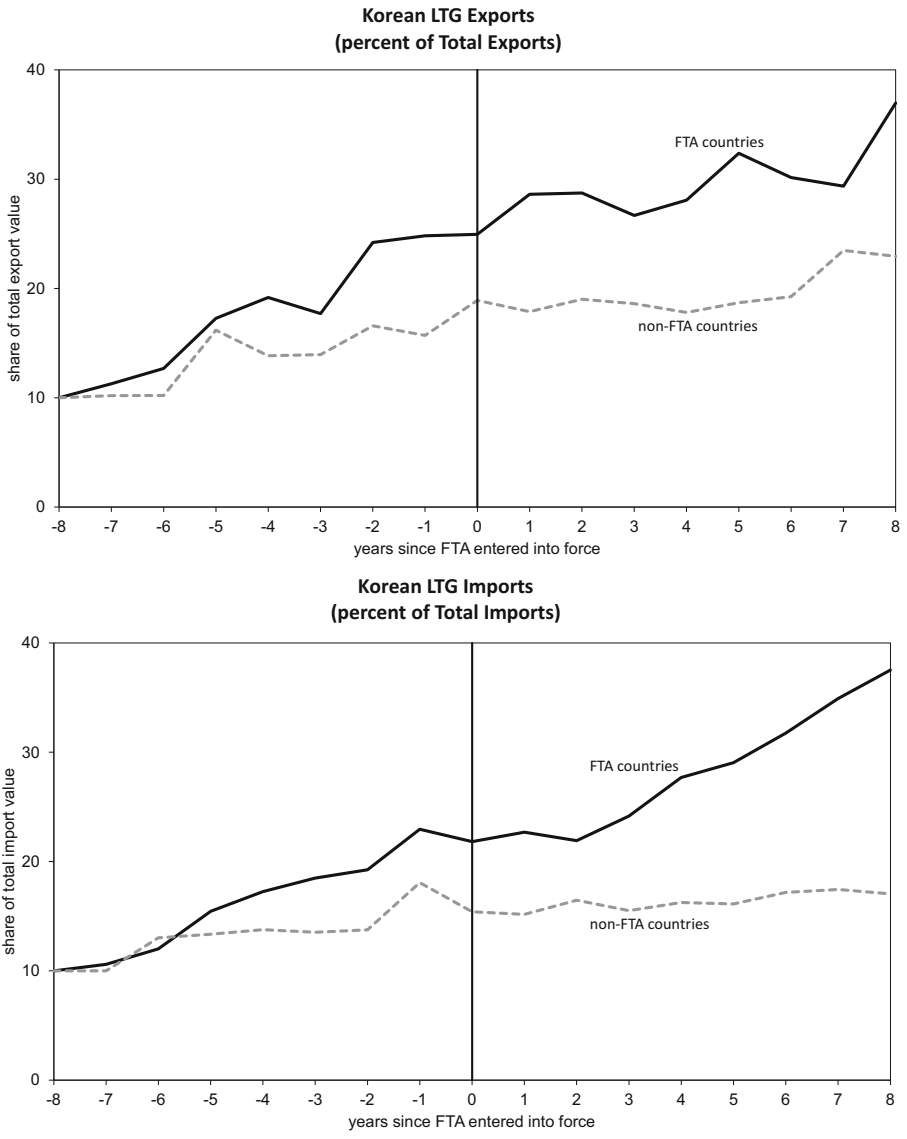

Fig. 3 Time series of LT exports and imports

case of least-traded imports was even more pronounced, with the share of least-traded imports from FTA countries surging after the signing of the FTAs, while the non-FTA counterpart remained roughly unchanged throughout the whole post-FTA period. Indeed, during the post-FTA years, the share of of LT imports grew by 15.7 pp with FTA countries, whereas by only 1.6 pp with non-FTA economies. The growth in the least-traded goods share of Korean trade is comparable in magnitude those found in other studies on the topic, such as Kehoe and Ruhl (2013) for the case of

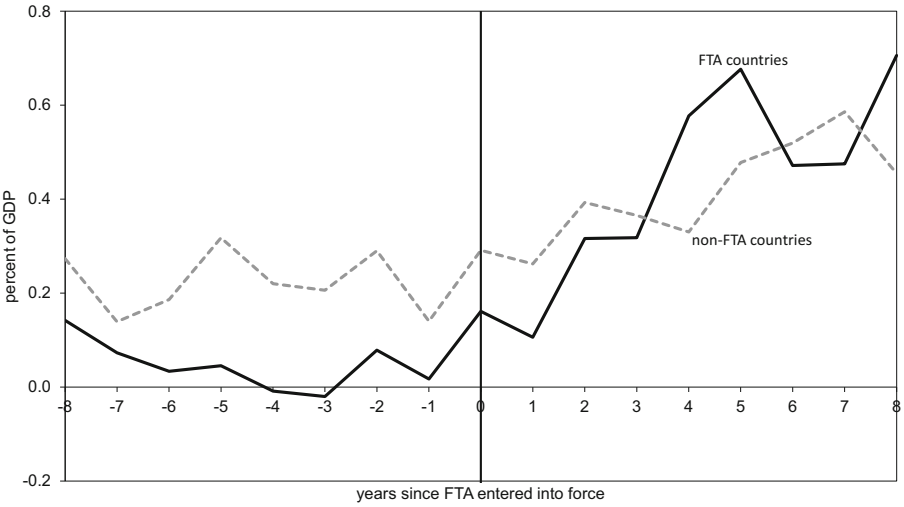

Fig. 4 LT trade balance (percent of GDP)

the NAFTA partners, Dalton (2017) for Austrian trade with its new EU partners, and Cho and Díaz (2018) for the case of the Baltic countries as they transitioned towards EU membership.

Subtracting least-traded imports from least-traded exports yields the least-traded goods balance, which we plot in Fig. 4. We find that during the pre-FTA years, trade of least-traded goods with FTA countries was close to balanced, averaging 0.05% of GDP. However, the trade surplus increased rapidly during the post-FTA period, averaging 0.42% of GDP. The timing of the changes in the pattern of the LTG trade surplus—from being relatively stable and balanced to a rapid increase—coincides with the FTAs entering into force.[8] These patterns contrast with those observed for the non-FTA countries, which exhibited positive (though stable) LTG trade balances prior to the signing of the FTAs, and that rose at a much slower pace than for the case of the FTA partners.

4 Trade Margin Dynamics

In this section, we analyze the role of newly-traded goods in post-FTA trade growth in greater details. We first compare the patterns of newly-traded goods against those of intensively traded goods to contrast trade growth at both the extensive and intensive margins. We then explore the dynamics of trade margins at the aggregate level, followed by a more disaggregated analysis at the industry level.

[8]It should be noted that the pattern of a rising surplus in LT goods upon implementation of FTAs is in fact a trend observed for the trade balance of all goods. Prior to the FTAs, the average trade surplus for all goods was at 0.36% of GDP. This value rose to 1.35% of GDP in the post-FTA period.

4.1 Top-Traded and Top Least-Traded Goods

Having documented that both least-traded exports and imports went on to account for a larger fraction of total trade with the countries that signed FTAs with Korea than with those that did not—and that this fact intensified after the signing of the agreements—we now proceed to report in deeper detail the impact of the FTAs on Korean new goods trade, and compare those trends with the ones observed for the goods that were intensively traded. To do so, we find it useful to focus on two sets of goods. The first one, which we call "top least-traded" goods (or TLT goods), is composed of the least-traded goods that after the signing of the FTAs went on to account for the top two thirds of all least-traded goods trade. The second group, which we label as "top-traded" goods (or TT goods), is made up of the goods that account for the top two thirds of *all* trade.[9]

As shown in Table 3, the vast majority—more than 95%—of goods were initially traded in very low volumes, or not traded at all. Even though the share of these goods in total trade grew disproportionately, especially with FTA countries, least-traded goods trade was actually driven by only a very small number of products. Indeed, TLT goods—those accounting for two thirds of all least-traded goods exports or imports eight years after the signing of the FTAs—represented less than 2% of all least-traded goods, with fewer TLT products in imports than in exports. These patterns are consistent across FTA and non-FTA countries, though the numbers for FTA partners were slightly higher.

The sets of pre- and post-FTA TT goods were composed of even fewer products, amounting to roughly less than 1% of all six-digit codes. Prior to the FTAs, this pattern was similar across FTA and non-FTA countries, with 0.7% and 0.3% of all products being classified as top-traded export and import goods, respectively. However, the post-FTA trends differ between FTA and non-FTA countries. While the number of goods in the post-FTA TT basket increased for the FTA countries for both exports and imports (by margins of 35% and 131%, respectively), the non-FTA counterparts decreased in larger magnitudes. Thus, after the FTAs entered into effect, the number of TT export goods with FTA partners (vis-à-vis non-FTA countries) more than doubled, and increased fivefold for the case of imports, indicating that the bulk of total trade with FTA partners was due to a larger number of products, while the opposite situation took place for non-FTA economies.

4.2 Transitions from Least-Traded to Top-Traded

We next investigate whether goods that originally were traded in low volumes switched to become heavily-traded after the FTAs came into force. Indeed, we find not only that TLT goods did become TT goods, but also that their trade share took a significant portion of all post-FTA TT goods trade. As presented in Table 4, nearly

[9] Alternative definitions have been used to analyze the trade margins at the product level. For example, Cassey and Schmeiser (2013) document export growth along five margins: newly-exported products, exports exiting the market, and continuously-traded products to the same, new and lost markets.

Table 3 Top-traded and top least-traded goods

	Least-Traded (LT) goods		Top LT (TLT) goods		Top-Traded (TT) goods			
					Pre-FTA		Post-FTA	
Trade Flow	Number	% of all goods	Number	% of LTG	Number	% of all goods	Number	% of all goods
Exports to:								
FTA countries	4721.4	95.9	72.5	1.6	33.2	0.7	44.7	0.9
Non-FTA countries	4712.6	95.7	70.2	1.5	34.1	0.7	18.5	0.4
Imports from:								
FTA countries	4847.3	98.4	53.2	1.1	10.6	0.2	24.5	0.5
Non-FTA countries	4799.0	97.5	47.8	1.0	14.4	0.3	4.9	0.1

Table 4 Transitions from least-traded to top-traded

	Exports		Imports	
	Pct of Post-FTA TT Goods that were LTG	Share of Post-FTA TT Exports	Pct of Post-FTA TT Goods that were LTG	Share of Post-FTA TT Imports
FTA countries (average)	26.7	19.2	36.2	17.2
Chile	41.7	20.8	0.0	0.0
EFTA	50.0	51.0	29.1	22.7
Singapore	0.0	0.0	25.0	2.8
Indonesia	27.3	14.1	33.3	13.8
Malaysia	29.3	21.4	44.4	13.8
Philippines	35.7	16.9	43.8	24.5
Thailand	29.2	18.8	54.5	39.2
Vietnam	39.1	46.9	52.8	44.5
Non-FTA countries (average)	21.1	9.0	1.3	0.8
Argentina	52.6	30.0	0.0	0.0
Panama	0.0	0.0	0.0	0.0
Russia	40.5	28.4	0.0	0.0
Hong Kong	12.5	2.5	0.0	0.0
Australia	0.0	0.0	0.0	0.0
Bangladesh	29.7	27.2	69.2	47.5
New Zealand	22.2	13.3	10.0	5.2
Taiwan	44.4	17.5	0.0	0.0

27% of all post-FTA top-exported goods were originally least-traded, and for the case of imports that share was even larger at 36%. Moreover, the least-traded goods that went on to become top-traded accounted for 19.2% and 17.2% of all post-FTA TT exports and imports, on average, respectively. Looking at individual FTA countries, we find strong evidence of least-traded goods transitioning into the TT category as well as taking a significant share in export volume. The exception is Singapore, where the growth of least-traded goods was the weakest. On the import side, more than half of the top-traded goods imported from Thailand and Vietnam were least-traded before the respective FTAs entered into effect. Among FTA countries, we find the strongest role of new goods in Vietnam for both trade flows.

On the other hand, the transition of least-traded goods to top-traded in non-FTA countries was consistently lower, both in terms of frequency and trade volumes. In particular, for the case of imports, less than 2% of TT goods imported from the non-FTA countries were originally least-traded, and the fraction of all TT imports accounted for by least-traded goods was under 1%. Looking at the individual countries, six out of the eight non-FTA countries exhibited no transition of least-traded goods onto the set of TT imports.

In Table 3 we previously documented that, after the signing of the FTAs, the top-traded basket with FTA countries was characterized by a larger variety of products—more than twice as large for exports and five times larger for imports when compared to non-FTA countries. Table 4 complements this finding by showing that this larger set of heavily-traded goods was actually made up of more *new* products. This finding is consistent with results from earlier studies such as Arkolakis et al. (2008) and Broda and Weinstein (2006), that find growth in the variety of goods traded following periods of trade liberalization.

4.3 Persistence of Top-Traded Goods

To complement the previous analysis of least-traded goods transitioning to being top-traded, we also document the persistence patterns of heavily-traded goods by calculating the fraction of pre-FTA TT goods that remained in the top-traded set after the FTAs came into effect. As presented in Table 5, we find that, for both cases of exports and imports, a smaller fraction of pre-FTA TT goods remained in the heavily-traded basket for FTA countries than for non-FTA partners. Only 19% of the most heavily exported and imported goods stayed as such for the case of FTA countries, compared to 37% for exports to and 62% for imports from non-FTA countries. We also find noticeable cross-country variation in the persistence of top-traded goods. For countries like the EFTA group or Singapore, none of the previously top-traded export goods remained as top-traded after the FTAs were signed, signaling a significant TT turnover. Similarly, for the EFTA bloc and the Philippines, less than 13% of all top-traded import goods remained in that category after the implementation of the FTAs. Moreover, the goods that continued being top-traded in the FTA countries accounted for a much smaller fraction of total trade than in the non-FTA countries. For the non-FTA countries, the persistence of heavily traded goods was particularly higher in imports, and the persistent TT goods accounted for more than 62% of post-FTA TT goods, and more than 73% of TT import value.

Table 5 Persistence of top-traded goods

Countries	Exports		Imports	
	Pct of Post-FTA TT Goods that were Pre-FTA TT	Share of Total Post-FTA Exports	Pct of Post-FTA TT Goods that were Pre-FTA TT	Share of Total Post-FTA Imports
FTA countries (average)	18.8	27.5	19.3	24.5
Chile	25.0	56.5	50.0	45.7
EFTA	0.0	0.0	10.9	30.0
Singapore	0.0	0.0	25.0	3.7
Indonesia	35.4	64.1	16.7	32.9
Malaysia	19.5	21.4	16.7	34.6
Philippines	25.0	27.9	12.5	6.6
Thailand	23.9	43.5	19.7	43.9
Vietnam	37.0	24.6	22.6	15.7
Non-FTA countries (average)	36.6	39.7	62.4	73.2
Argentina	10.5	7.8	0.0	0.0
Panama	100.0	100.0	100.0	100.0
Russia	21.6	46.3	50.0	44.8
Hong Kong	25.0	7.5	25.0	56.5
Australia	62.5	86.3	80.0	81.6
Bangladesh	34.4	33.7	15.4	16.4
New Zealand	55.6	37.2	40.0	62.0
Taiwan	22.2	30.1	100.0	100.0

Therefore, the findings displayed in Table 5—combined with those in Table 4—point to two different stories for FTA and non-FTA countries. For the former, FTAs were accompanied by a larger fraction of previously least-traded goods gaining importance in overall trade, and a smaller fraction of heavily exported goods remaining as such, while for the latter the trends were reversed.

4.4 Changes in the Industry Distribution of Top-Traded Exports and Imports

So far, we have documented trade margins patterns at the aggregate level. We now turn our attention to the *industry* distribution of trade growth along the extensive and intensive margins. In Table 6, we first show the changes in the industry distribution of TT exports and imports before and after the FTAs came into force, calculated as the difference between the industry shares in the last year and the first year of our analysis.

A look at the changes in the industry-level distribution of TT exports and imports reveals that, in addition to the number of TT goods increasing with FTA countries and decreasing with non-FTA countries (as summarized earlier in Table 3), more industries recorded increases in their shares of TT exports and imports with FTA countries than with nations that did not sign FTAs with Korea. This fact is more

Table 6 Changes in the industry distribution of top-traded exports and imports

	Exports		Imports	
Industry	FTA countries	Non-FTA countries	FTA countries	Non-FTA countries
Agriculture	**0.001**	0.000	**0.005**	**0.002**
Mining	0.000	0.000	−0.009	**0.103**
Food	**0.005**	−0.024	**0.002**	**0.004**
Textiles	−0.033	−0.097	**0.001**	**0.001**
Leather	−0.016	−0.015	**0.008**	−0.011
Wood	0.000	0.000	**0.014**	**0.001**
Paper	−0.001	−0.028	**0.008**	−0.014
Coke, petrol, fuel	**0.191**	**0.187**	**0.062**	**0.043**
Chemical	**0.013**	−0.016	**0.013**	−0.019
Rubber, plastic	**0.003**	−0.005	**0.004**	−0.001
Other non-metallic	0.000	**0.007**	−0.001	0.000
Metals	−0.073	−0.068	−0.059	−0.082
Machinery	**0.013**	−0.012	**0.028**	0.000
Electric equip.	−0.228	**0.006**	−0.080	−0.013
Transport equip.	**0.125**	**0.065**	**0.004**	−0.014
Manuf. nec	−0.002	−0.001	−0.001	0.000

Note: The bold entries denote industries that recorded gains in their shares of TT exports or imports during the post-FTA period, relative to the pre-FTA period. Since we report changes in the distribution over time, all the entries in each column add to zero

prominent for the case of top-traded imports: out of 16 industries, 11 of them posted positive gains in the share of TT imports from FTA partners, while 10 industries recorded declining shares for the case of non-FTA countries. As for TT exports to FTA partners, 7 out of 16 industries posted positive gains, in contrast to only 4 for non-FTA partners.

Table 6 also allows us to analyze the pattern of sectoral shifts in top-traded exports and imports. For exports, we find a similar pattern across FTA and non-FTA countries, with the Coke, Petroleum and Fuel industries recording the largest gains, followed by the Transport Equipment sector. On the other hand, for TT imports, we find that Coke, Petroleum and Fuel also showed the largest gains from FTA countries, while imports in the Mining industry posted the largest gain from non-FTA countries.

4.5 Post-FTA Industry Distribution of TT and TLT Exports and Imports

We now compare the distribution of TT exports and imports in the final year of the post-FTA period with that of TLT exports and imports. As summarized in Table 7, we also find that, after the signing of the FTAs, exports and imports of top-least traded goods tended to take place in the same industries as top-traded goods trade, with Chemical Products, Metals, Electric Equipment and Transport Equipment accounting for over two thirds of TT and TLT exports to FTA and non-FTA countries, and Mining Products, Chemical Products and Electric Equipment accounting for more than half of TT and TLT imports from both groups of countries. Indeed, as shown in Table 7, the correlations between the industry distribution of TLT and TT exports and imports exceeded 0.5 in all cases, with the ones for the non-FTA countries being higher than those for the FTA partners.[10]

5 Least-Traded Goods and Tariff Rates

Given the disproportionate growth in the share of least-traded goods with Korea's FTA partners, a natural question is whether least-traded goods were initially subject to higher tariffs prior to the signing of the FTAs, and thus benefited from a larger tariff reduction than the one experienced by other goods. To do so, we collect base-year pre-FTA data on Most Favored Nation (MFN) tariff rates applied by Korea on its imports, and pre-FTA MFN tariffs applied by the eventual Korean FTA partners. The data are taken from the WITS database, which in turn collects its data from the United Nations Conference on Trade and Development (UNCTAD) TRAINS database.[11]

On the import side, we find that prior to the signing of the FTA, Korea's tariffs on least-traded import goods were, on average, substantially higher than those applied on non-LTG goods—almost twice as high (see Table 8). However, as we previously

[10]Note that by computing correlations, we do not intend to assign any causality implications, but rather to summarize the large data sets we work with.

[11]The WITS tariff data is organized according to the 1996 HS classification. Since the classification system we use throughout the paper is the 1992 HS one, we use the concordance tables provided in the WITS database to convert the 1996 classification into the 1992 nomenclature.

Table 7 Post-FTA industry distribution of TT and TLT exports and imports

	Exports				Imports			
	FTA countries		Non-FTA countries		FTA countries		Non-FTA countries	
Industry	TLT	TT	TLT	TT	TLT	TT	TLT	TT
Agriculture	0.003	0.001	0.005	0.000	0.017	0.037	0.023	0.035
Mining	0.000	0.000	0.000	0.000	0.025	**0.227**	**0.203**	**0.233**
Food	0.022	0.006	0.048	0.000	0.073	0.030	**0.132**	0.028
Textiles	0.010	0.042	0.011	0.002	0.048	0.012	0.016	0.011
Leather	0.001	0.004	0.001	0.000	0.030	0.010	0.011	0.003
Wood	0.000	0.000	0.000	0.000	0.030	0.018	0.000	0.001
Paper	0.020	0.001	0.008	0.001	0.021	0.010	0.006	0.001
Coke, petrol, fuel	0.015	**0.237**	0.016	**0.219**	0.013	0.098	0.008	0.047
Chemical	**0.203**	0.084	**0.198**	0.056	**0.191**	0.033	**0.107**	0.010
Rubber, plastic	0.018	0.006	0.025	0.002	0.022	0.005	0.023	0.008
Other non-metallic	0.007	0.001	0.060	0.007	0.011	0.001	0.016	0.000
Metals	**0.142**	0.097	**0.173**	0.048	0.097	0.078	0.081	0.049
Machinery	0.060	0.046	0.092	0.019	0.073	0.046	**0.104**	0.000
Electric equip.	**0.191**	**0.258**	**0.192**	**0.426**	**0.316**	**0.388**	**0.237**	**0.520**
Transport equip.	**0.308**	**0.215**	**0.163**	**0.219**	0.018	0.004	0.027	0.052
Manuf. nec	0.000	0.001	0.008	0.001	0.015	0.004	0.007	0.000
Correlation	0.539		0.593		0.504		0.625	

Note: The bold entries denote industries that accounted for 10% or more of TLT or TT exports or imports during the post-FTA period. Since we report the cross-sectional distribution of trade, all the entries in each column add to one

documented, focusing on the tariffs applied to all least-traded goods might not be completely accurate since most of the least-traded goods remained non traded after the FTAs were passed (recall that less than 1.6% of all least-traded goods—nearly 5000 products—accounted for two thirds of all least-traded trade). Nevertheless, when we consider only top least-traded (TLT) import goods, we find that the average tariff applied on those goods by Korea (9.4%) was still higher than the average tariff applied to non-LTG imports, including pre-FTA top-traded goods. Even when we consider goods that were top-traded post-FTA—a set that is made up by a significant fraction of TLT goods—we find that least-traded goods were subject to higher tariffs. We find similar trends across individual countries, with the majority showing higher tariffs on TLT goods than on non-LTG goods.

Turning to Korean exports (see Table 9), we find that the set of all least-traded Korean export goods were initially exposed to higher average tariffs than non-LTG export goods.[12] However, contrary to our findings on the import side, we find that top

[12]Note that some countries like Chile and Singapore have a uniform tariff schedule, with no variation in tariff rates.

Table 8 Tariff rates on Korea's least-traded imports

	Least-Traded Goods			Non Least-Traded Goods		
Countries	All LTG	TLT	Non TLT	All Non LTG	Pre-FTA TT	Post-FTA TT
Chile	14.4	13.8	14.4	3.0	3.5	3.0
EFTA	14.4	7.4	14.5	8.5	5.7	7.6
Singapore	14.3	9.5	14.4	6.8	6.7	5.6
Indonesia	13.8	8.8	13.9	5.3	4.1	5.3
Malaysia	13.9	7.6	13.9	4.5	1.2	4.2
Philippines	13.8	9.9	13.8	8.6	0.0	6.8
Thailand	13.7	14.8	13.7	16.8	5.5	26.0
Vietnam	13.7	7.7	13.8	15.3	27.9	8.6
Average	14.0	9.4	14.1	7.7	5.3	7.6

Note: For each country, we report simple average tariff rates for the different product groups. The average across countries (last row) is weighted by the pre-FTA trade value of each country

least-traded export goods—those accounting for the bulk of least-traded exports—were actually subject to lower average tariffs than those imposed on non-LTG products (or pre- and post-FTA top-traded goods).

That least-traded import goods were initially subject to higher tariffs than other goods, and that after the removal of those relatively higher tariffs their growth outpaced that of non least-traded goods, is in line with the literature emanating from Melitz (2003), who finds that a reduction in variable trade costs—such as a reduction in tariffs—leads to new firms entering the export market. Our results also concur with those of Debaere and Mostashari (2010) and Romalis (2007), who find that

Table 9 Tariff rates on Korea's least-traded exports

	Least-Traded Goods			Non Least-Traded Goods		
Countries	All LTG	TLT	Non TLT	All Non LTG	Pre-FTA TT	Post-FTA TT
Chile	11.0	11.0	11.0	11.0	11.0	11.0
EFTA	11.9	1.5	11.9	1.4	0.0	0.9
Singapore	0.0	0.0	0.0	0.0	0.0	0.0
Indonesia	8.4	6.6	8.5	8.9	9.4	9.4
Malaysia	7.7	10.0	7.7	10.2	8.5	9.0
Philippines	7.6	6.5	7.7	7.3	6.4	8.7
Thailand	18.7	13.9	18.9	13.4	12.2	13.6
Vietnam	16.6	8.8	16.7	16.3	23.5	15.8
Average	8.3	6.3	8.4	7.3	7.1	7.3

Note: For each country, we report simple average tariff rates for the different product groups. The average across countries (last row) is weighted by the pre-FTA trade value of each country

import growth was higher in highly-protected sectors. Moreover, the fact that the tariff reduction Korea granted to its least-traded imports was higher than the tariff reduction enjoyed by Korean least-traded export goods is consistent with the least-traded import goods margin growing at a higher rate than the export one during the post-FTA years, as shown in Section 3.1.

6 Conclusion

Do free trade agreements deepen existing trade patterns or do they also provide new trade opportunities? With this article, we aim at expanding the literature on the patterns of the new goods margin after the implementation of FTAs by analyzing Korea's recent free trade agreement experiences. To do so, we study the FTAs signed by Korea between 2004 and 2008. Using the methodology laid out in Kehoe and Ruhl (2013), we construct a set of new (or least-traded) goods, and document their contribution to total trade growth after the FTAs came into force. We find that new goods trade grew disproportionately with FTA partners, with their share in total trade growing, on average, from 10% to around 37% for both exports and imports eight years after the FTAs were signed. When we conduct a similar exercise with an a priori comparable group of countries that did not sign FTAs with Korea, growth in least-traded goods trade was much less pronounced, increasing to 23% of total exports, and 17% of total imports.

We also find that a larger fraction of goods that were originally least-traded went on to become heavily-traded with FTA than with non-FTA countries. On the other hand, a lower fraction of goods that were heavily-traded prior to the implementation of the FTAs remained as such during the post-FTA period in FTA partners than in non-FTA economies. These two findings suggest that more least-traded goods gained relative importance and fewer intensively traded products retained it in FTA partners than in non-FTA countries.

Furthermore, we find that even though least-traded goods trade outpaced that of intensively traded goods, the industry distribution of new goods closely resembled that of heavily-traded products. Finally, we find that Korean imports of least-traded goods were initially subject to higher tariff rates than other goods. Thus, the high growth rate of least-traded imports could be, at least in part, attributed to the fact that they enjoyed a larger fall in trade barriers. However, we find that Korean least-traded export goods faced, prior to the signing of the FTAs, tariff rates that were slightly lower than those applied on other Korean goods. This suggest that other factors—such as product-specific trade elasticities or other demand-driven factors—may account for the fast growth of Korean least-traded exports. While do not analyze those factors, studies that do would suitably complement the findings presented here.

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Appendix

Table 10 Composition of post-FTA exports (FTA Countries)

	Brackets									
Country	**0.1**	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Chile	**0.352**	0.141	0.085	0.026	0.019	0.014	0.096	0.180	0.044	0.044
	(4863.3)	(38.2)	(9.7)	(5.3)	(2.7)	(1.9)	(1.0)	(0.8)	(0.5)	(0.5)
Singapore	**0.160**	0.213	0.016	0.485	0.028	0.099	0.000	0.000	0.000	0.000
	(4796.1)	(87.8)	(27.6)	(7.0)	(1.8)	(2.)	(0.2)	(0.2)	(0.2)	(0.2)
EFTA	**0.881**	0.096	0.018	0.003	0.002	0.000	0.000	0.000	0.000	0.000
	(4918.2)	(3.1)	(1.0)	(0.4)	(0.4)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Indonesia	**0.328**	0.125	0.088	0.116	0.059	0.095	0.022	0.054	0.007	0.106
	(4590.6)	(168.5)	(72.3)	(37.6)	(20.0)	(16.0)	(8.9)	(6.1)	(2.7)	(1.3)
Malaysia	**0.373**	0.244	0.224	0.124	0.015	0.016	0.004	0.000	0.000	0.000
	(4744.1)	(111.2)	(42.9)	(14.7)	(5.9)	(3.7)	(0.8)	(0.3)	(0.3)	(0.3)
Philippines	**0.307**	0.101	0.100	0.330	0.048	0.089	0.025	0.000	0.000	0.000
	(4704.6)	(140.1)	(46.9)	(19.4)	(9.9)	(1.9)	(0.4)	(0.3)	(0.3)	(0.3)
Thailand	**0.361**	0.115	0.154	0.089	0.097	0.088	0.091	0.004	0.000	0.001
	(4598.4)	(152.9)	(73.0)	(40.2)	(23.7)	(17.0)	(11.7)	(4.8)	(0.9)	(1.4)
Vietnam	**0.498**	0.080	0.050	0.163	0.038	0.044	0.015	0.051	0.021	0.040
	(4603.3)	(166.2)	(64.5)	(32.1)	(20.6)	(14.3)	(8.3)	(6.8)	(5.8)	(2.1)

Note: The values in parentheses denote the number of products included in each bracket. The first column corresponds to the set of least-traded goods

Table 11 Composition of post-FTA imports (FTA Countries)

	Brackets									
Country	**0.1**	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Chile	**0.212**	0.028	0.107	0.333	0.019	0.033	0.067	0.067	0.067	0.067
	(4915.0)	(3.0)	(2.3)	(1.5)	(0.8)	(0.5)	(0.2)	(0.2)	(0.2)	(0.2)
Singapore	**0.227**	0.038	0.476	0.025	0.043	0.186	0.006	0.000	0.000	0.000
	(4826.2)	(54.8)	(20.1)	(9.7)	(5.1)	(6.2)	(1.1)	(0.3)	(0.3)	(0.3)
EFTA	**0.385**	0.153	0.166	0.198	0.045	0.005	0.012	0.012	0.012	0.012
	(4751.2)	(112.2)	(45.0)	(11.0)	(2.3)	(1.4)	(0.2)	(0.2)	(0.2)	(0.2)
Indonesia	**0.383**	0.081	0.255	0.071	0.016	0.016	0.027	0.050	0.050	0.050
	(4879.5)	(33.9)	(6.5)	(1.6)	(0.7)	(0.5)	(0.4)	(0.3)	(0.3)	(0.3)
Malaysia	**0.386**	0.077	0.273	0.040	0.022	0.012	0.107	0.082	0.000	0.000
	(4880.1)	(28.6)	(9.1)	(2.5)	(0.7)	(0.9)	(0.8)	(0.6)	(0.4)	(0.4)
Philippines	**0.446**	0.150	0.110	0.273	0.013	0.008	0.000	0.000	0.000	0.000
	(4899.7)	(16.8)	(2.8)	(2.5)	(0.7)	(0.5)	(0.2)	(0.2)	(0.2)	(0.2)
Thailand	**0.537**	0.090	0.068	0.065	0.036	0.016	0.042	0.099	0.047	0.000
	(4806.1)	(62.3)	(23.5)	(11.5)	(8.0)	(5.5)	(2.9)	(2.0)	(1.5)	(0.7)
Vietnam	**0.550**	0.068	0.051	0.194	0.030	0.040	0.027	0.025	0.008	0.007
	(4794.3)	(50.5)	(25.7)	(19.1)	(10.7)	(8.0)	(7.9)	(3.7)	(1.9)	(2.0)

Note: The values in parentheses denote the number of products included in each bracket. The first column corresponds to the set of least-traded goods

Table 12 Composition of post-FTA exports (non-FTA Countries)

	Brackets									
Country	**0.1**	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Argentina	**0.448**	0.156	0.055	0.271	0.025	0.004	0.000	0.012	0.026	0.003
	(4822.2)	(60.5)	(18.9)	(8.6)	(4.7)	(3.3)	(2.1)	(2.0)	(1.0)	(0.7)
Panama	**0.382**	0.037	0.046	0.062	0.079	0.079	0.079	0.079	0.079	0.079
	(4919.8)	(2.5)	(0.4)	(0.3)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Russia	**0.419**	0.098	0.090	0.067	0.015	0.105	0.124	0.065	0.005	0.010
	(4691.0)	(124.8)	(49.2)	(26.0)	(12.7)	(7.8)	(5.2)	(2.1)	(1.5)	(3.8)
Hong Kong	**0.126**	0.142	0.062	0.059	0.120	0.343	0.033	0.005	0.106	0.003
	(4652.5)	(135.2)	(62.8)	(27.6)	(17.1)	(12.1)	(6.1)	(5.5)	(3.9)	(1.1)
Australia	**0.143**	0.146	0.056	0.046	0.041	0.395	0.082	0.089	0.001	0.000
	(4721.7)	(119.3)	(43.9)	(22.8)	(8.8)	(3.7)	(1.2)	(1.0)	(0.8)	(0.8)
Bangladesh	**0.375**	0.175	0.091	0.069	0.080	0.062	0.030	0.058	0.037	0.023
	(4674.2)	(117.3)	(55.3)	(29.8)	(17.5)	(10.5)	(7.7)	(5.4)	(3.6)	(2.7)
New Zealand	**0.209**	0.061	0.025	0.028	0.012	0.092	0.068	0.042	0.074	0.389
	(4709.3)	(101.5)	(49.9)	(26.0)	(12.7)	(9.2)	(5.6)	(5.2)	(2.1)	(2.5)
Taiwan	**0.319**	0.114	0.087	0.316	0.159	0.002	0.002	0.001	0.000	0.000
	(4741.8)	(122.9)	(34.8)	(18.1)	(3.2)	(1.4)	(0.5)	(0.5)	(0.4)	(0.4)

Note: The values in parentheses denote the number of products included in each bracket. The first column corresponds to the set of least-traded goods

Table 13 Composition of post-FTA imports (non-FTA Countries)

	Brackets									
Country	**0.1**	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Argentina	**0.082**	0.002	0.234	0.019	0.156	0.309	0.050	0.050	0.050	0.050
	(4900.4)	(12.8)	(3.3)	(2.2)	(3.0)	(1.5)	(0.2)	(0.2)	(0.2)	(0.2)
Panama	**0.097**	0.091	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101
	(4922.8)	(0.3)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Russia	**0.185**	0.009	0.005	0.044	0.017	0.437	0.001	0.002	0.284	0.015
	(4878.5)	(18.3)	(6.9)	(6.3)	(4.8)	(3.4)	(1.4)	(1.6)	(1.8)	(0.9)
Hong Kong	**0.150**	0.045	0.139	0.085	0.392	0.074	0.009	0.105	0.000	0.000
	(4719.4)	(122.2)	(45.4)	(17.0)	(8.0)	(8.3)	(1.4)	(1.5)	(0.4)	(0.4)
Australia	**0.152**	0.191	0.066	0.062	0.194	0.048	0.033	0.180	0.055	0.019
	(4890.3)	(17.7)	(7.3)	(3.8)	(1.8)	(0.7)	(0.6)	(0.7)	(0.6)	(0.6)
Bangladesh	**0.601**	0.266	0.023	0.006	0.003	0.072	0.023	0.002	0.002	0.002
	(4896.3)	(13.2)	(4.9)	(2.6)	(3.9)	(1.9)	(0.5)	(0.3)	(0.3)	(0.3)
New Zealand	**0.270**	0.135	0.151	0.066	0.031	0.039	0.013	0.098	0.098	0.098
	(4899.3)	(11.9)	(6.7)	(2.2)	(0.9)	(1.1)	(0.9)	(0.3)	(0.3)	(0.3)
Taiwan	**0.193**	0.060	0.050	0.027	0.663	0.005	0.002	0.000	0.000	0.000
	(4752.5)	(115.2)	(35.7)	(11.7)	(5.0)	(2.5)	(0.5)	(0.3)	(0.3)	(0.3)

Note: The values in parentheses denote the number of products included in each bracket. The first column corresponds to the set of least-traded goods

Table 14 Share of LT exports in total exports (FTA Countries)

	Years since FTA came into force																
Country	−8	−7	−6	−5	−4	−3	−2	−1	0	+1	+2	+3	+4	+5	+6	+7	+8
Chile	0.100	0.119	0.210	0.230	0.244	0.309	0.352	0.385	0.326	0.404	0.476	0.680	0.675	0.593	0.537	0.342	0.352
Singapore	0.100	0.090	0.086	0.112	0.119	0.137	0.141	0.127	0.139	0.118	0.106	0.113	0.115	0.100	0.122	0.096	0.160
EFTA	0.100	0.202	0.312	0.387	0.608	0.309	0.649	0.602	0.395	0.651	0.625	0.320	0.396	0.680	0.326	0.387	0.881
Indonesia	0.100	0.102	0.109	0.201	0.163	0.144	0.178	0.214	0.227	0.200	0.173	0.131	0.191	0.265	0.242	0.257	0.328
Malaysia	0.100	0.116	0.114	0.149	0.148	0.188	0.282	0.264	0.312	0.381	0.397	0.414	0.343	0.370	0.476	0.414	0.373
Philippines	0.100	0.099	0.084	0.091	0.097	0.115	0.130	0.170	0.217	0.237	0.238	0.298	0.265	0.257	0.190	0.251	0.307
Thailand	0.100	0.103	0.100	0.152	0.164	0.187	0.191	0.237	0.287	0.291	0.312	0.282	0.330	0.334	0.367	0.373	0.361
Vietnam	0.100	0.102	0.116	0.145	0.152	0.173	0.191	0.196	0.205	0.228	0.283	0.322	0.448	0.472	0.464	0.478	0.498

Table 15 Share of LT imports in total imports (FTA Countries)

	Years since FTA came into force																
Country	−8	−7	−6	−5	−4	−3	−2	−1	0	+1	+2	+3	+4	+5	+6	+7	+8
Chile	0.100	0.095	0.078	0.133	0.171	0.170	0.126	0.225	0.168	0.283	0.197	0.206	0.239	0.292	0.242	0.188	0.212
Singapore	0.100	0.094	0.083	0.111	0.120	0.121	0.141	0.145	0.142	0.148	0.135	0.152	0.211	0.214	0.289	0.232	0.227
EFTA	0.100	0.127	0.168	0.255	0.259	0.300	0.316	0.343	0.311	0.252	0.274	0.330	0.375	0.387	0.257	0.356	0.385
Indonesia	0.100	0.110	0.135	0.150	0.117	0.102	0.118	0.169	0.178	0.169	0.151	0.148	0.158	0.206	0.237	0.325	0.383
Malaysia	0.100	0.117	0.138	0.154	0.203	0.204	0.198	0.222	0.195	0.230	0.241	0.260	0.288	0.273	0.303	0.339	0.386
Philippines	0.100	0.099	0.098	0.149	0.178	0.263	0.243	0.256	0.251	0.243	0.226	0.301	0.311	0.319	0.385	0.463	0.446
Thailand	0.100	0.109	0.127	0.164	0.219	0.203	0.224	0.355	0.324	0.367	0.358	0.358	0.418	0.437	0.488	0.501	0.537
Vietnam	0.100	0.079	0.118	0.161	0.207	0.259	0.289	0.316	0.344	0.355	0.362	0.388	0.439	0.448	0.498	0.528	0.550

Table 16 Share of LT exports in total exports (non-FTA Countries)

	Years since FTA came into force																
Country	−8	−7	−6	−5	−4	−3	−2	−1	0	+1	+2	+3	+4	+5	+6	+7	+8
Argentina	0.100	0.089	0.179	0.286	0.320	0.284	0.425	0.280	0.374	0.291	0.321	0.427	0.352	0.536	0.459	0.437	0.448
Panama	0.100	0.157	0.180	0.315	0.393	0.106	0.166	0.125	0.199	0.171	0.194	0.105	0.194	0.187	0.095	0.300	0.382
Russia	0.100	0.113	0.122	0.142	0.176	0.237	0.193	0.178	0.231	0.238	0.215	0.333	0.251	0.266	0.302	0.321	0.419
Hong Kong	0.100	0.087	0.077	0.094	0.095	0.081	0.080	0.108	0.115	0.105	0.095	0.098	0.096	0.133	0.124	0.126	0.126
Australia	0.100	0.099	0.104	0.276	0.123	0.135	0.178	0.158	0.160	0.139	0.179	0.190	0.156	0.131	0.147	0.218	0.143
Bangladesh	0.100	0.075	0.088	0.121	0.173	0.213	0.175	0.168	0.155	0.203	0.266	0.334	0.275	0.336	0.353	0.353	0.375
New Zealand	0.100	0.104	0.099	0.096	0.094	0.130	0.139	0.173	0.190	0.181	0.209	0.253	0.206	0.148	0.163	0.243	0.209
Taiwan	0.100	0.110	0.107	0.130	0.133	0.179	0.240	0.208	0.282	0.277	0.295	0.232	0.253	0.248	0.277	0.324	0.319

Table 17 Share of LT imports in total imports (non-FTA Countries)

	Years since FTA came into force																
Country	−8	−7	−6	−5	−4	−3	−2	−1	0	+1	+2	+3	+4	+5	+6	+7	+8
Argentina	0.100	0.059	0.052	0.066	0.087	0.355	0.338	0.573	0.220	0.168	0.116	0.089	0.098	0.075	0.127	0.101	0.082
Panama	0.100	0.123	0.675	0.379	0.481	0.537	0.396	0.612	0.221	0.154	0.292	0.203	0.503	0.485	0.432	0.240	0.097
Russia	0.100	0.068	0.075	0.085	0.102	0.081	0.092	0.138	0.129	0.122	0.175	0.194	0.238	0.211	0.185	0.156	0.185
Hong Kong	0.100	0.095	0.086	0.122	0.113	0.075	0.086	0.136	0.150	0.145	0.177	0.154	0.110	0.113	0.145	0.165	0.150
Australia	0.100	0.117	0.129	0.147	0.138	0.127	0.129	0.144	0.114	0.139	0.124	0.094	0.101	0.115	0.112	0.159	0.152
Bangladesh	0.100	0.113	0.145	0.139	0.147	0.175	0.186	0.111	0.139	0.251	0.347	0.451	0.398	0.442	0.489	0.562	0.601
New Zealand	0.100	0.114	0.123	0.133	0.140	0.167	0.163	0.258	0.188	0.221	0.201	0.222	0.221	0.219	0.188	0.234	0.270
Taiwan	0.100	0.099	0.100	0.107	0.114	0.136	0.155	0.167	0.180	0.166	0.143	0.165	0.171	0.163	0.182	0.170	0.193

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