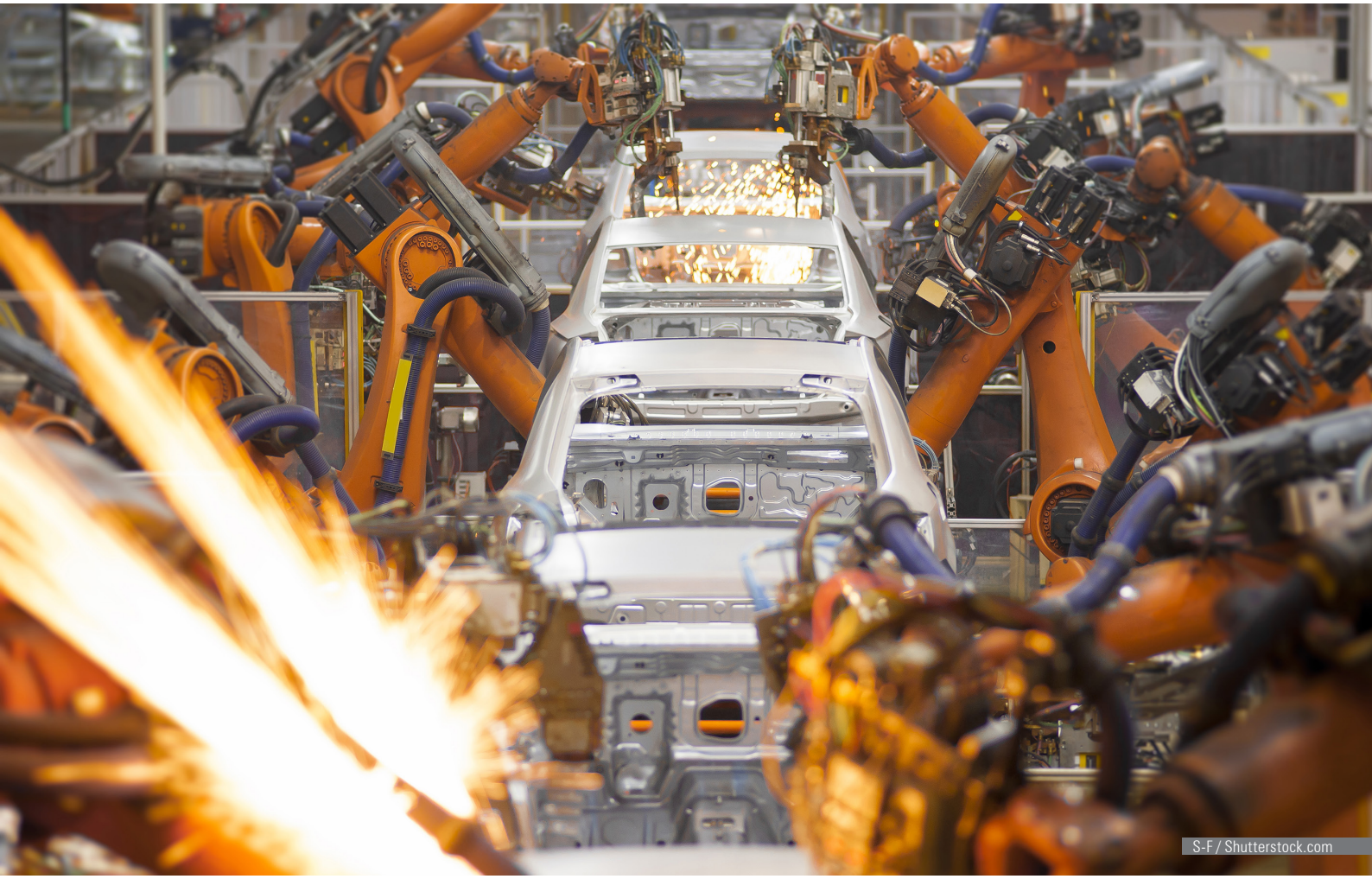
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The prospective effects of the Free Trade Agreement between colombia and South Korea on the colombian automotive sector

Los efectos prospectivos del Tratado de Libre Comercio entre Colombia y Corea del Sur en el sector automotor colombiano

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Abstract

This paper evaluates the effects of the Free Trade Agreement (FTA) between Colombia and South Korea on the Colombian automotive sector and assesses some likely short and medium-term prospective effects. Results were drawn using a mixed methodology, including interviews, literature review, reports from the Colombian Association of Automotive Vehicles, and ITC-Trademap data base analysis. Between the negotiations of the FTA in 2009 and coming into effect in 2016, relevant programs were developed to support the preparation of the Colombian automotive sector for the enhancement of its competitiveness in view of the market liberalization for Korean automotive goods.

Within the short term 2016-2017 there were immediate effects for the auto parts industry and the final vehicles. The auto parts industry was affected in some products, but the overall results show that it happened because of business cycles rather than due to the FTA. The vehicles industry has not experienced an increase in the Korean manufacturers' market share in Colombia; however, after-sales services have improved, thus reflecting what is likely to be the strategy of the Korean companies on the national market.

Based on the current state of the sector, the short-term effects (2017-2024) are the adjustment of the Korean and Colombian companies on a yearly basis, and a possible increase of Korean companies' sales. On the medium-term prospective effects (2024-2036), the tariffs will be eliminated; and the sum of various positive and negative FTAs for the national industry will create equilibrium market prices without jeopardizing the Colombian automotive industries.

This paper will contribute to the understanding of the FTA between Colombia and South Korea in the automotive sector, the relations that this process has with GVCs, economic equilibrium, the liberal economic system and the effects that derive from these factors. It will be useful for the public and private sector, as well as for the academia.

Keywords

Automotive sector, vehicles industry, auto parts industry, Free Trade Agreement, Colombia, South Korea, prospective effects.

Resumen

Este artículo evalúa los efectos del Tratado de Libre Comercio (TLC) entre Colombia y Corea del Sur en el sector automotor colombiano y analiza algunos posibles efectos prospectivos en el corto y mediano plazo. Se extrajeron resultados mediante una metodología mixta, incluyendo entrevistas, revisión de literatura, reporte de la Asociación Colombiana de Vehículos Automotores y análisis de los datos encontrados en ITC-Trademap.

Entre las negociaciones del TLC en 2009 y la entrada en vigor en 2016, se desarrollaron programas relevantes para apoyar el sector automotor en Colombia. En los inicios del periodo a corto plazo (2016/17), hubo efectos importantes para la industria de auto partes, y de igual manera de vehículos. La industria autopartista fue afectada en algunos productos, aunque los resultados muestran que esto sucedió por los ciclos de los negocios, más que por el TLC. La industria de vehículos no ha tenido un incremento de las manufactureras coreanas en la participación del mercado en Colombia; no obstante, se ha evidenciado una mejora en los servicios posventa, y esta es probablemente la estrategia de las empresas coreanas en el mercado nacional.

Con base en el estado actual del sector, los efectos prospectivos al corto plazo (2017-2024) serán el ajuste de las compañías coreanas y colombianas con bases anuales y un posible incremento de ventas de empresas coreanas. En el mediano plazo (2024-2036), los efectos prospectivos serán la eliminación de aranceles, y la suma de varios TLC positivos y negativos para la industria nacional, creando precios de mercado equilibrados sin comprometer la industria automotriz colombiana.

Este artículo contribuirá al conocimiento del TLC entre Colombia y Corea del Sur en el sector automotor y las relaciones que tiene el proceso con las cadenas globales de valor, el equilibrio económico, el sistema económico liberal y los efectos que de estos factores se derivan. Será útil para el sector público y privado, como también para la academia.

Palabras clave

Sector automotor, Industria de vehículos, Industria de auto partes, Tratado de Libre Comercio, Colombia, Corea del Sur, Efectos prospectivos.

Introduction

Since its economic opening in the 1990s, Colombia has been liberalizing its economy through Free Trade Agreements (FTAs) with multiple trade partners across the globe. The liberalization of the national economy has the objective of harnessing the benefits of free trade to have a broader trade balance, opening up new markets for the companies and enabling the national consumers the access to international products and services. The 21st century has brought an important development of trade relations between the countries with access to the Pacific Ocean, not only at the continental level but also between America (South and North America) and Asia.

The first Free Trade Agreement (FTA) signed between Colombia and an Asian country was with South Korea, an agreement that came into effect in July 2016. Although it was seen as a beneficial FTA for the agricultural sector, the automotive and home appliances sectors were concerned about the effect that the agreement could have on the market prices. These sectors lobbied the government against the FTA with South Korea arguing that the prices could dump their industries, resulting in their bankruptcy. Since this FTA has been applied for less than two years, only a handful of studies have been conducted to assess the specific effects that the agreement actually has had over this period. Therefore, it is important to investigate which are the prospective effects in the short and medium-term of the Free Trade Agreement between Colombia and South Korea on the Colombian automotive sector.

The Colombian automotive sector is composed by the vehicles manufacturers industry -final goods of the automotive global value chain (GVC)-, and the auto parts industry -intermediate goods of the automotive GVC-, latter including the spare parts production. This paper concentrates on the automotive sector rather than the industry due to the macroeconomic and financial variables that affect the whole sector of the economy, rather than just the industrial production of vehicles and auto parts (Investopedia, 2015).

Nonetheless, since the changes in the automotive industries will automatically have an effect on the overall automotive sector, this paper will use industry as a synonym of sector. The auto parts and spare parts of the national companies compose the automotive intermediate goods Colombian industry. On the other side, the multinational manufacturers and vehicles assemblers with companies that have industrial manufacturing facilities in Colombia compose the final goods industry.

The main objective of this paper is to determine the short and medium-term prospective effects of the Free Trade Agreement between Colombia and South Korea on the Colombian automotive sector. The specific objectives are to:

1) Analyze the Free Trade Agreement between Colombia and South Korea in general and in the sector of study;
2) Study the global value chains in the automotive sector;
3) Identify effects and potential conflicts generated in the automotive sector in Colombia, as a result of the FTA with South Korea; and
4) Identify the prospective responses of the Colombian automotive sector to the effects that derive from the FTA between Colombia and South Korea.

The hypothesis for this stated problem is that the Free Trade Agreement in the short-term will have a negative effect on the Colombian automotive sector, however not as high as imagined by the national automakers, due to the already existent lower prices derived from the global value chains and the presence of other strong multinational manufacturers. On the medium-term, the sector will recover from the South Korean prices impact and the experience will ultimately benefit the quality and prices of the national producers, making the national and international production friendlier to the Colombian customer.

This project will contribute to the understanding of this problem by providing pragmatic information that can serve as a tool for the automotive sector, the policymakers and, the academia to gain awareness. To analyze and further study of the prospective effects of this Free Trade Agreement on one of the sectors expected by its stakeholders to be mostly affected at the national level: the automotive sector.

In order to analyze the stated problem, it is important to explore the context, frameworks and relevant concepts that will guide the assessment of the objectives of this investigation. The following section describes pertinent theoretical foundations on the FTAs, GVCs and the economic concepts of liberalization and equilibrium.

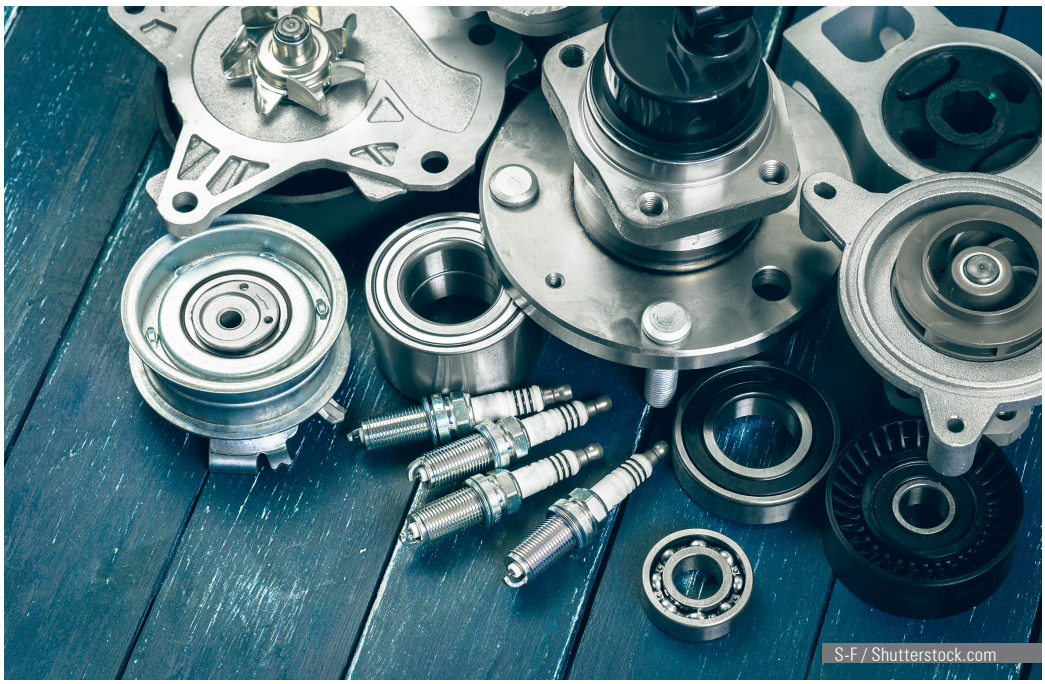
Free Trade Agreements – Liberal economic system

The liberal economic system based on free trade is nowadays the leading global economic system. According to Rich (2017): "Free trade is an economic model in which goods and services are exchanged between parties without tariffs or government regulation" (p.1). Even though, there is controversy in arguing that free trade is always beneficial, most economists agree that free trade improves the relations and economic prosperity of the involved parties. A Free Trade Agreement (FTA) is an involvement of two or more countries with the objective of eliminating tariffs and government regulation in trade between both countries, exclusively among participating countries.

Moreover, an FTA is a pact of making tariff exceptions and harmonizing regulations between countries, in order to have a direct access to the markets. Since these are agreements, each FTA is different from the other, due to the difference in the relations between the countries, including the products and services that are traded among them, and the fact that the countries will sign them only if they consider that the FTA is beneficial for the national industry and production. However, as a common ground, all the FTAs look for eventually having free trade in between the parties that are negotiating them.

Economic liberalization in Colombia took off during Cesar Gaviria presidency, from 1990 to 1994. Colombia opened itself to the global commerce with a series of modifications on the monetary, fiscal and commercial policies. Since then, the governments have further deepened economic openness and negotiated FTAs (Garay S, 1998). Colombia currently

has 15 trade agreements with countries and common markets worldwide. The most notable FTAs signed during the last years include those with the United States, the European Union and South Korea (Ministerio de Comercio, Industria y Turismo, 2017a).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Global Value Chains

According to Hernández & Pedersen (2017), the concept of a global value chain (GVC) has been studied and defined according to several concepts and trends, including the degree of involvement of the companies, the function, the potential competitive advantages, and the regional and global networks. GVCs is a concept that describes the process of assembling and manufacturing in different countries, in which each step adds value to the final product, taking advantage of the specific countries production characteristics involved in the process (World Bank, 2017). The (Organization for Economic Cooperation and Development (OECD, 2015) explains that:

> International production, trade, and investments are increasingly organized within so-called global value chains (GVCs) where the different stages of the production process are located across different countries. Globalization motivates companies to restructure their operations internationally through outsourcing and offshoring of activities (p.1).

Global value chains have changed the production and manufacturing of several goods around the world, taking advantage of the specialization of certain industries and markets in different countries. Inside the context of the GVCs, the intermediate goods industries recall importance in the international arena and especially in countries with free trade since they become more attractive to contribute to the GVCs. Since the 1980s, the global production of vehicles has made the industries use GVC increasingly, benefiting from the FDI and cross-border trade that enable manufacturing automotive companies to lower costs and develop technology on a global scale (T. J. Sturgeon, Memedovic, Biesebroeck, & Gereffi, 2009).

Economic Equilibrium

Economic equilibrium is a relevant concept for the automotive sector, as it is the point in which the whole market supply and demand are balanced. According to Investopedia (2017):

> Economic equilibrium is the point at which all-economic factors within a particular product, industry or the market as a whole reach an optimum balance between supply and demand, including in the cost of the items involved. The term economic equilibrium can also be applied to any number of variables, such as the interest rate that allows the greatest growth of the banking and non-financial sector, or that creates the ideal number of employment opportunities within a particular sector. (n.p).

A perfect economic equilibrium is the base of the theory; however, it is almost impossible to achieve it, as perfect economic conditions are only theoretical. The reference to market equilibrium or economic equilibrium is a market in which prices are equilibrated on the offer due to the market forces, the demand and the equilibration of business models in the sector. This concept is going to be relevant to the analysis of the medium-term prospective effects.

Methodology

The current study used a mixed approach whereby both quantitative and qualitative tools were used to draw conclusions on the prospective effects of the FTA between Colombia and South Korea on the Colombian automotive sector. The qualitative sources include a literature review, documentary analysis, and interviews. The interviews, primary sources of this research, were semi-structured and directed to three automotive sector leaders: Mr. Pablo Urrego, Legal, Government Relationship and Corporate Social Responsibility (CSR) Director of Renault Sofasa[4]; Mr. Martín Gustavo Ibarra, Chief Executive Officer (CEO) of Araújo Ibarra & Asociados[5]; and Mr. Bongsoon Jang, Director of the Korea International Cooperation Agency (KOICA)[6] in Colombia.

The secondary sources include official reports, press releases and stakeholders' webpages. Additional sources include literature on the GVCs and its effect on international markets, among other relevant topics, and sectoral reports on the general performance of the automotive market in Colombia, including Andemos.[7]

The quantitative information is based on information obtained from Trademap that was used to support the documentary analysis. The data was organized based on Sturgeon & Memedovic (2010) final products of the auto industry.

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[4] This interview aims to have an opinion from the actual industry, in this case from the manufacturer Renault Sofasa. This company, subsidiary of the French multinational company Renault, is the first manufacturer company in Colombia and the second in terms of market share. It counts with 1600 direct employees and 272 service points over the country. (Renault, 2016)

[5] Mr. Ibarra is the CEO of one of the most prestigious Colombian international business consultancy companies in the country. It counts with more than 40 years of experience working with national and international companies and governments. They give advice on international commerce and strategy, legal and economic topics, and project management. This company counts with a broad international alliance network with partners in Asia, Latin America, North America and Europe. (Araújo Ibarra & Asociados, 2017)

[6] KOICA is in charge of the South Korean aid programs at the international levels. Its objective is to combat poverty and support socioeconomic growth with the partners of the South Korean government around the world. KOICA serves as a platform for its partner countries to contribute to the United Nations Sustainable Development Goals (UN SDGs) (Korea International Cooperation Agency, 2008).

[7] Andemos is the name of the Asociación Colombiana de Vehículos Automotores (Colombian Association of Automotive Vehicles), which is an association that represents the interests of both the vehicle importers and national manufacturers in Colombia. This association based in Bogotá lobbies the national government and its institutions related to the automotive sector. Andemos participation is important in the legislative process and the negotiation of international trade agreements since it is the voice of the automotive vehicles industry. Every month, Andemos publishes reports on the general performance of the automotive market in Colombia. (Asociación Colombiana de Vehículos Automotores, 2016).

This paper will define the short and medium-term using the Drehmann, Borio, and Tsatsaronis (DBT) cycles, which are the ones the Colombian Central Bank uses for its analysis. Short-term cycles are classified between one and eight years[8], and the medium-term cycles between eight and twenty years (Gómez-González, Ojeda-Joya, Tenjo-Galarza, & Zárate, 2013).

The DBT model is ideal for the automotive timeframes because it considers the financial and business cycles, which are the drivers of the sector. Finally, the periods just stated will count on this paper starting the date in which the FTA between South Korea and Colombia entered into effect: July 15, 2016. Hence, the present time (October 2017) is already one year ahead of the short-term effects.

Results and Assessment

This section analyzes the current effects of the FTA on the Colombian automotive industry and assesses its prospects at both the short and medium-term. An analysis of the effects between July 15, 2016 and the present time (November 2017) will be considered in the short-term. The prospective effects for the rest of the short-term (2017-2024) and the medium-term (2024-2036) will result from a comprehensive analysis of the variables that affect the automotive sector and the decisions taken by various stakeholders over the course of the years.

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Context of the FTA Colombia-South Korea (2009-2016)

Colombia and South Korea started FTA negotiations in December 2009. From that moment on and until June 2012, seven negotiation rounds took place, alternating between the two countries. These rounds took place in Seoul (4), Bogotá, Cali and Cartagena, with an additional five mini rounds in Los Angeles (2 rounds), Washington, Atlanta and Chicago, USA (Ministerio de Comercio Industria y Turismo, 2017c).

Under the agreement, in the next 10 years after its coming into effect, South Korea committed to eliminate its tariff barriers up to 96.10% of the Colombian products, and Colombia committed to doing the same with

[8] The DBT cycles are originally in quarters. This paper rounds up the quarters into years to have the same units of time throughout the results.

96.70% of the South Korean products. The Colombian government saw this commercial agreement as a significant opportunity for the exports of minerals and agricultural products.

The FTAs with the European Union (EU) and the United States of America (USA) had been controversial for the agricultural sector. This sector argued that the European and American products would affect their production due to the highly subsidized agricultural products from both places. The Colombian agricultural sector was concerned about the entrance of low-priced products such as rice, corn and chicken from the USA, and of dairy products in the case of the EU.

The FTA with South Korea is perceived as one that benefits the agricultural sector, but not the automotive and home appliances sectors. The agricultural sector saw this agreement as the only one signed during the last years that was positive for them, since South Korea has limited arable land, and its agricultural production is based on a very low number of protected products. In contrast, the Colombian agriculture is rich in a variety of products that would gain through the FTA a strategic access to a far-reaching market for Colombian agriculture.

Moreover, the Colombian automotive and home appliances sectors heavily criticized the FTA with South Korea, given that the South Korean companies in those sectors are among its strongest competitors at a global level. These Asian enterprises have cutting-edge technology, strong research and development (R&D) areas, and high-level of "know-how" that enables them to be among the best companies in vehicles and home appliances in the world. Therefore, the national industries were concerned about the entrance of the Korean products on the national market, predicting that the FTA would negatively affect the Colombian industries due to the strong capabilities of Korean companies in these sectors (Revista Dinero, 2014).

On February 21, 2013, the heads of state of both countries signed the Free Trade Agreement between the Republic of Colombia and the Republic of Korea. The legislative bodies of Colombia and South Korea had to approve the FTA, in order to validate it parliamentary, so the agreement could come into effect. The South Korean National Assembly ratified the document on April 29, 2014 (Revista Dinero, 2014).

The debates in the Colombian Congress over this FTA were heated. The left-handed parties, led by the *Polo Democrático Alternativo*'s Senator, Jorge Enrique Robledo, argued that the agricultural products had no opportunities to compete with the of Southeast Asian suppliers. In addition, they stated that the national automotive and electro domestic industries would be destroyed by the low prices of the South Korean companies that would enter the market with no tariff barriers (Congreso de la República de Colombia, 2013).

Concisely, the argument of the Colombian automotive industries, including the intermediate and final goods industries was that the FTA would negatively affect them. On the side of the manufacturers, they argued that the multinational Korean manufacturers such as Kia, Hyundai, Ssangyong and Daewoo, would enter the Colombian market with no tariffs and gain a competitive advantage in prices, which would be lower than the national manufacturers' prices. Additionally, the auto parts industry exposed that the South Korean auto parts producers counted with government subsidies that could generate a market imbalance (Universidad del Rosario, 2013).

Despite the controversy in the Colombian Congress and the lobbying from the automotive industries, the parliamentary body ratified by majority the FTA on December 26, 2014. Finally, on July 15, 2016, the Free Trade Agreement came into effect on the framework of the 1078 Decree of 2016 (Ministerio de Comercio Industria y Turismo, 2016); Presidencia de la República, 2016).

Moreover, the negotiation of FTAs with several countries with strong manufacturing industries made the national government overlook the fact that it was important to support the automotive sector in order to prevent an industrial imbalance. The FTA with South Korea in its start in 2009 was an important concern; however, the FTAs with the United States and the European Union were as well an issue for the automakers.

The national importers were positive about the tariff-free vehicles coming, while the national manufacturers asked the government for contingency plans to compensate for the potential effects of the FTAs. Nonetheless, most manufacturers in Colombia worked for an American, European or South Korean subsidiary; therefore, in some cases, the FTA was beneficial for them, bringing closeness with the parent firm, while in other cases, their competition gained that same advantage.

Furthermore, according to Procolombia (2010), Colombia has an ideal scenario for creating a production and assembly platform for cars, trucks, buses and auto parts to cover up national and regional markets. Thus, export promotion institution highlights the following six capabilities from the Colombian sector: a dynamic automotive industry, a wider market, an auto part sector in development, qualified and price-competitive labor force, a globally competitive sector, and tax incentives and benefits (Procolombia, 2010).

This is one of the sectors with the highest potential in Colombia to voice their concerns about the implications of the FTA with South Korea. In response to their concerns, the government launched programs to promote productivity and prevent strong negative effects on the national automotive sector. Among these programs, there is CDTIA-*Centro de Desarrollo Tecnológico de la Industria Automotriz* (Center of Technological Development of the Automotive Industry) and PROFIA-*Programa de Fomento a la Industria Automotriz* (Automotive Industry Promotion Program). Both are programs created by the Ministry of Commerce, Industry and Tourism.

CDTIA was launched on November 23, 2012, in the framework of the XIII *Salón Internacional del Automóvil* (International Automobile Room) within the framework of their Productive Transformation Program of the government, which selects potential sectors for the Colombian economic growth. It counts with the collaboration of the Department of Science, Technology and Innovation (*Colciencias)*, the Automotive Chamber of the ANDI-*Asociación Nacional de Empresarios de Colombia* (National Business Association of Colombia) and ACOLFA- *Asociación Colombiana de Fabricantes de Autopartes* (Colombian Auto Parts Manufacturers Association) (Ministerio de Comercio Industria y Turismo, 2012).

In fact, CDTIA was created as a non-profit entity specialized in the added-value chain, and the activities that it develops consist of the certification, formation, improvement, R&D, and strategic aid to companies in the automotive sector (Ministerio de Comercio Industria y Turismo, n.d.).

PROFIA is a program consigned on the Article 7 of the Decree 1567 of 2015, which authorizes auto part makers and manufacturers to import certain materials for their production with a discount or exoneration of the applied tariffs. These companies must incorporate the imported products in the manufacturing of vehicles or auto parts for the subsequent sale on the national or international markets. It is an essential fiscal incentive for the auto parts industry in order to make it more competitive and adequate at lower costs their products to the vehicles GVCs (Ministerio de Comercio Industria y Turismo, 2017b).

Additionally, the South Korean government has promoted different projects for the strengthening of the auto parts industry in Colombia. Mr. Bongsoon Jang, KOICA's Director for Colombia highlighted that in Colombia the international competitiveness is necessary. He expressed that KOICA is implementing a project to improve the industry of auto parts in Colombia (Jang, 2017).

KOICA's initiative is called the Cluster-Based Approach Project for the Development of Micro, Small and Medium Enterprises -MSMEs- Enhancing Competitiveness and Innovation Policies in Colombia. This is a joint project with the Ministry of Commerce, Industry and Tourism that initiated in 2009 and culminated in 2011 with the technical cooperation agreement that enabled the program. The project has two stages: The Knowledge Sharing Scheme (KSS) and the Regional Pilot Program (RPP).

The KSS aims to share and develop theoretical and practical knowledge with the Colombian companies and design strategies under a cluster-based approach. The main idea is to have a sustainable knowledge transfer. The RPP has three programs for industries development: the energy sector in Antioquia, the food industry in Valle del Cauca, and the auto parts and automotive sector in Bogotá. The last one is the most important for this research, considering that South Korean knowledge transfer to the auto parts and automotive sector in the capital can be very beneficial for the formation of automotive clusters with potential to be replicated across the country (Korea International Cooperation Agency, 2012).

According to Mr. Jang, they are working with national auto parts MSMEs to progress on international competitiveness, through R&D. The Director said that there are many existing auto parts companies, however, he expressed that they will be able to export their products only if they reach international competitive levels. He also stated that there is always room to work together and KOICA is developing this program to promote the development of the industry (Jang, 2017).

The South Korean government does not look at Colombia as a competitor in this sense. It would rather share its knowledge to provide competitiveness to the national industries that want not only to prevent a negative effect of the FTA, but also to export their products and be competitive in the international markets.

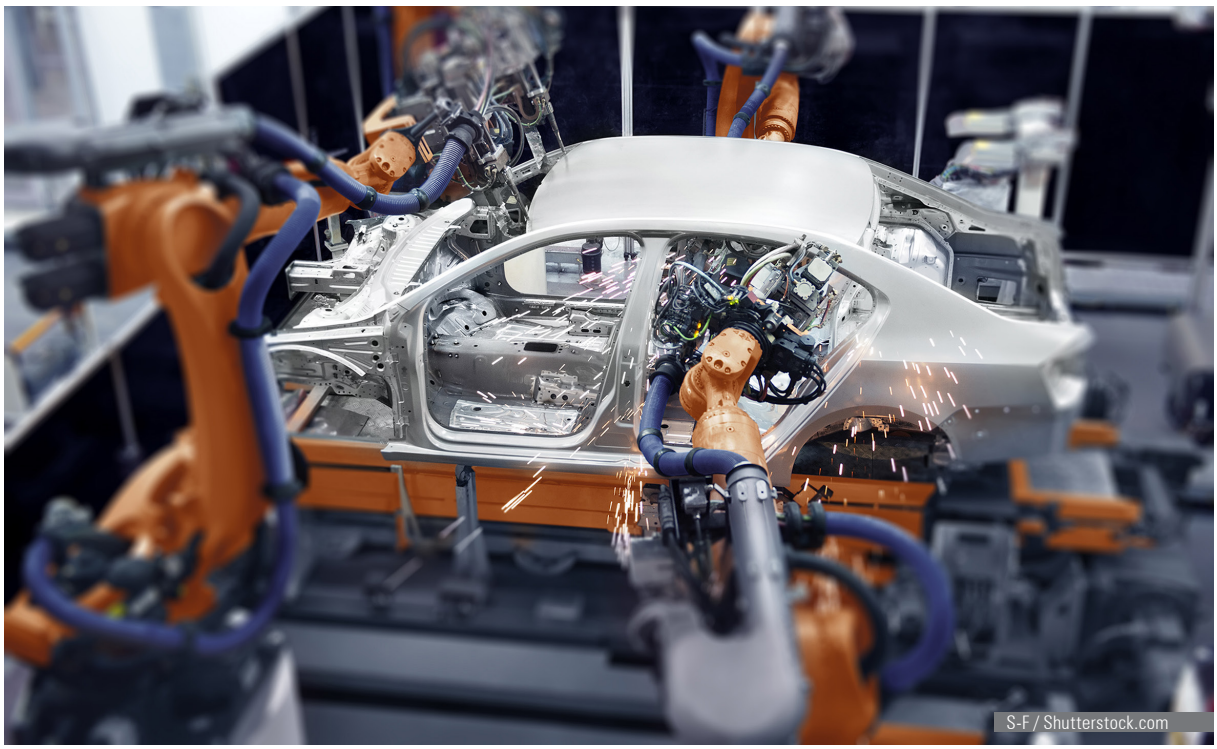
In a nutshell, the Colombian and the South Korean governments have worked alongside with their public institutions to develop programs of the automotive sector promotion, especially in the auto part industry. Initiatives like the CDTIA and PROFIA, as well as KOICA's support are examples of the preparation that the automotive industry has developed throughout the years to face the FTA. These actions are important because they strengthen the sector in general and set better conditions for the FTA's entrance into effect. All of this is to protect the national industry through research and development programs and government incentives, which is the correct action to take when free trade is applied.

Short-Term effects 2016-2017
FTA tariff reductions

Tariff reductions analysis is essential to assess the actual effects that the agreement has caused since coming into force in June 2016. The FTA has the objective of eventually eliminating all the customs duties; however, the elimination of such duties has different schedules depending on each of the tariff lines. The Colombia-Korea FTA has tariff liberalization schedules ranging from 0 to 19 years. The categories are 0, 3, 5, 7, 10, 12, 15, 16 and 19. As described in Annex 2-A: many products are part of the category 0, which means that since coming into effect, the product is free of customs duties. On the auto parts and vehicles tariff lines, there is a strong presence of the categories 0, 5, 7 and 10.

Therefore, the effects of the FTA on the Colombian automotive market will be transitioning every year, since the customs duties elimination effect depends on each tariff line. The positive side of this system is that certain

products of the FTA will take more time than other goods, in order to achieve the elimination of the tariffs. Consequently, many companies from the automotive sector will have yearly periods to adapt to the tariffs on the imports of their competitors from South Korea.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Effects on the automotive sector

The global operation of multinational manufacturers is important for the analysis of the effects that the FTA between Colombia and South Korea will have on the Colombian automotive sector. The CEO of Araújo Ibarra & Asociados explained that South Korea is one of the most efficient countries in the automotive sector, but Colombia is already open with other equally efficient countries (Ibarra, 2017).

Through the FTA with Mexico, Colombia has long ago liberalized automotive products imports from that country. A similar case occurs with the United States and the European Union, concluding that it is not the first time when Colombia has an FTA with big automotive producers.

The Ministry of Commerce, Industry and Trade explains this saying that Colombia already has agreements with a total tariff deduction with countries that produce more than 45% of the global automotive vehicles, not counting South Korea on that percentage (Ministerio de Comercio Industria y Turismo, 2014). T. Sturgeon & Memedovic (2010, p.18) explain that: “automotive industries are extremely important drivers of GVC development”.

The automotive sector in Colombia is already open to free trade with the most important manufacturing countries. This openness is a challenge, but it also represents a set of potential opportunities in the international market. The automotive sector is so globalized through the GVCs and overseas manufacturing that depending on protectionist governmental measures would ultimately be regressive for the national manufacturing industries.

Effects on the auto parts market

According to the data obtained by Trademap using T. Sturgeon & Memedovic (2010) classification of intermediate goods on the automotive sector, the most updated quarter in Colombia is the Quarter 1 of 2017. The dynamics of the automotive sector cannot have a quarter-to-quarter comparison because in Colombia the market behaves differently in different quarters along the year. This is why the most appropriate comparisons can be between the first quarter of 2016 –when the FTA had not yet come into force- and the first quarter of 2017 –when the FTA had already come into force-.

The data for the first quarter of 2015 is also shown in order to determine whether variations were given because of the FTA. The 20 auto parts that were traded most were selected for the study. The study achieves the Pareto principle since these 20 products represent more than 80% of the imports from South Korea. Table 1 displays the variation from 2016 and 2017 of the 20 tariff lines that represent the majority of auto parts imports from South Korea to Colombia, the tariffs of 2016, and the tariffs of 2017 that contain the deduction of customs duties agreed on the FTA.

Table 1 – Auto parts tariffs variation 2016-2017, Tariffs 2016 and Tariffs 2017 with customs duties reduction*

Auto parts - Intermediate goods for vehicles									
#	Tariff line	Product	2015 Q1	2016 Q1	2017 Q1	VAR 16/17	Tariff 2016	CAT	Tariff 2017
1	8507100000	Lead-acid, of a kind used for starting piston engines.	1452	2420	2414	-0.25%	10%	7	8.57%
2	8708931000	Clutches.	1135	1375	1495	8.73%	10%	5	8.00%
3	8708299000	Other; Other parts and accessories of the motor vehicles of headings 8701 to 8705.	1619	1137	1058	-6.95%	10%	5	8.00%
4	8708292000	Mudguards, bonnets, sides, doors, and parts thereof.	1471	1149	999	-13.05%	10%	5	8.00%
5	8708100000	Bumpers and parts thereof.	978	792	669	-15.53%	10%	5	8.00%
6	8708999900	For the vehicles of heading 87.03; Other parts and accessories of the motor vehicles of headings 8701 to 8705.	709	413	663	60.53%	5%	5	4.00%
7	8708939100	Plates and discs.	678	832	540	-35.10%	5%	5	4.00%
8	8708301000	Mounted brake linings.	517	417	471	12.95%	10%	5	8.00%
9	8507200000	Other lead-acid accumulators.	321	179	459	156.42%	5%	5	4.00%
10	8708809090	Other suspension systems and parts thereof (including shock-absorbers).	509	265	417	57.36%	5%	5	4.00%
11	8527210000	Reception apparatus, combined with sound recording or reproducing apparatus.	356	14	408	2814.29%	15%	5	12.00%
12	8512209000	Other lighting or visual signaling equipment of a kind used on bicycles.	534	410	386	-5.85%	5%	0	0.00%
13	8708802010	Shocks "absorber" rims, hub-caps and other accessories.	643	334	370	10.78%	10%	5	8.00%
14	8409914000	Pistons, suitable for use solely or principally with the engines of heading 84.07 or 84.08.	668	348	332	-4.60%	5%	0	0.00%
15	8409919900	Other parts, suitable for use solely or principally with spark-ignition internal combustion piston engines for use solely or principally with the engines of heading 84.07 or 84.08.	595	276	318	15.22%	5%	5	4.00%

...continuación

Auto parts - Intermediate goods for vehicles									
#	Tariff line	Product	2015 Q1	2016 Q1	2017 Q1	VAR 16/17	Tariff 2016	CAT	Tariff 2017
16	8512201000	Headlamps of roads (other than sealed beam lamps of subheading 8539.10).	506	214	265	23.83%	5%	0	0.00%
17	8708939900	Other clutches and parts thereof.	298	190	182	-4.21%	5%	5	4.00%
18	8511309200	Ignition coils.	187	104	169	62.50%	10%	5	8.00%
19	8409917000	Valves, suitable for use solely or principally with spark-ignition internal combustion piston engines.	195	76	155	103.95%	5%	0	0.00%
20	8409999900	Other parts suitable for use solely or principally with the engines of heading 84.07 or 84.08	178	148	145	-2.03%	5%	5	4.00%

Source: Own elaboration based on Trademap (International Trade Center, 2017).

* The first column shows the number count for the items, the second one exhibits the tariff lines of the most imported products. Column three shows the name of the product according to the Harmonized System (HS), while columns four, five and six display the number of thousand United States Dollars (USD) imported by Colombia of the product per year, 2015, 2016 and 2017 respectively. Additionally, column seven shows the variation between the values of 2017 and 2016. The values calculated are from the first quarter because it is the most updated information, and the 2015 values are there to check if the variation happens because of the FTA coming into force or if 2016 was an unusual year for the import of the product. Column eight displays the tariff of 2016, the category of customs duties elimination is in column nine, and the tariff of 2017 with the reduction of customs duties is in column ten.

According to the results of Table 1, out of the 20 most imported auto parts, nine experienced their imports decreased between 2016 and 2017, while 11 experienced their increase. This means that 45% of the most imported auto parts decreased in the trade, while 55% increased. The number of products that decreased is almost the same as those that increased, which had only one more. This suggests that until the first quarter of 2017, the FTA had affected only slightly more than half of the most traded auto parts.

Out of the 11 products that had their imports increased in 2017, three have less than 10% variation, which is minimal and normal for this business nature. Three cases deserve particular attention because they had a significant increase of over 100%. These are Other lead-acid accumulators (vehicle batteries) with a 165.42% increase, Reception apparatus, combined with sound recording or reproducing apparatus (cameras) with a 2814.29% increase, and Valves, suitable for solely use or principally with spark-ignition internal combustion piston engines with a 103.95% increase.

When analyzed, the reason for such variations is due to an abrupt change of the data for the first quarter of 2016. This is because the vehicle batteries had in 2015 imports for USD 321.000 in 2016 they were for USD 179.000, and in 2017, they were for USD 459.000. The difference is high between 2016 and 2017, but actually, the variation between 2015 and 2017 is of 42.99%.

This effect is also illustrated with the cameras, which had an astonishing 2814.19% 2016/17 variation. However, the data from 2015 is USD 356.000, 2016 has only USD 14.000 and 2017 got up to USD 408.000. Again, the 2015/17 variations show a smaller percentage: 14.61%. On the valves, the numbers are USD 195.000 in 2015, USD 75.000 in 2016 and USD 155.000 in 2017. The 2015/17 variations are -20.51%.

The three examples illustrate that the high 2016/17 variation is not due to a high increase in 2017, but rather an important decrease between 2015 and 2016, when the FTA between Colombia and South Korea had not come into effect. In conclusion, this data seems to suggest that the high percentage variations on the 2016/17 periods are not due to the reduction of tariffs on the Colombian imports from South Korea.

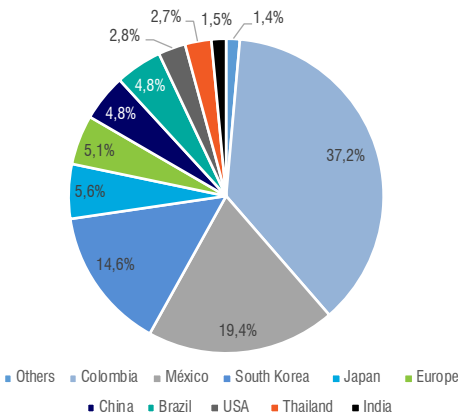
In addition, Table 1 shows the reduction of tariffs according to staging categories displayed on the Free Trade Agreement. Staging categories 0, 5, 10 and 15 are present in the table, with 15 out of 20 products having a category 5. This means that the elimination of the tariffs on auto parts will happen over the course of five years on most of the cases. This time will give the companies to adjust year by year in a progressive process to the lower prices of Korean auto parts. However, the adjusting will be very predictable due to the gradual reduction of the barriers.

Overall, the auto parts products were not heavily affected by the first year's tariff reduction of the Korean products into the Colombian market. Almost half of them did not see the imports increase, and those products in which imports increased were under 100% increase except for three. These exceptions, in which the increase was significant, were not a result of the tariff reduction, but rather a low level of sales for 2016, when the FTA had not yet come into force.

Effects on the vehicles market

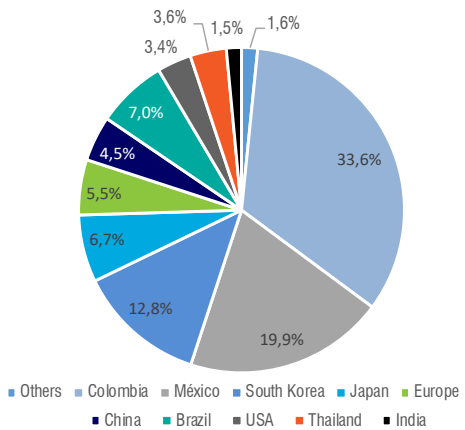
According to Andemos, the Korean automakers market share in Colombia in July 2016, the month in which the FTA came into force was 14.6% (See Chart 1) (Asociación Colombiana de Vehículos Automotores, 2016b). By September 2017, their market share had dropped to 12.8% (See Chart 2) (Asociación Colombiana de Vehículos Automotores, 2017b). In total, even though the FTA came into force, the Korean brands lost 1.8% of the Colombian market share.

Chart 1. Market share by countries of origin in July 2016



Source: Andemos Vehicles Report July 2016 (Asociación Colombiana de Vehículos Automotores, 2016).

Chart 2. Market share by countries of origin in September 2017



Source: Andemos Vehicles Report September 2017 (Asociación Colombiana de Vehículos Automotores, 2017b).

The market share is an adequate variable to analyze because it does not depend on the economic growth of the country nor the sales level, but rather on the percentage of sales out of the total sales that each producer country had. Even though the South Korean automobiles had tariff reductions, the market share did not increase. This could mean that these companies did not reduce their prices because lower prices can replicate higher sales.

The tariffs are not the main driver of the South Korean vehicle's sales in Colombia, since the market share of the Korean vehicles not only did not increase after the FTA, but also, actually decreased. Other countries are increasing their market shares such as Japan and Brazil, and they have not gained tariff benefits from Colombia for the period June 2016-September 2017.

Another example in manufacturing countries that increased in the period 2016/17 is Mexico, which is on the second place of market share in Chart 1 and 2. Colombia has an FTA with Mexico, in which tariffs for the automotive sector are eliminated, and since both countries are part of the Pacific Alliance, there are even more regional integration policies. Korean companies are taking advantage of the manufacturing capabilities of Mexico, and their products can access the countries that have FTAs with Mexico.

For instance, Kia Motors opened manufacturing facilities in 'Pesquería', Nuevo León, Mexico in July 2016. During the first year of production, the facilities manufactured 183.290 vehicles. Kia Motors Mexico employs more than 2.300 persons, with 15% of production going to the local Mexican market and 85% for exports (Kia Motors Mexico, 2017).

Mr. Pablo Urrego from Renault Sofasa said that there has been an effect of the FTA with South Korea on his company. Nonetheless, he explained that Sofasa has to adapt to these changes and that the FTAs themselves are not always negative. He stated that today Sofasa exports to more than 10 countries, mostly in Latin America, taking advantage especially of the Pacific Alliance integration mechanisms in commerce.

The conclusions for his interview are, on one hand, that the FTA with South Korea affects manufacturing companies like Renault Sofasa, but they have the financial and productive muscle to resist the effects. On the other hand, other FTAs open up commercial opportunities for the manufacturing companies, making the concept of FTAs a positive one in other situations that can definitely help the companies with their exports (Urrego, 2017).

Furthermore, the South Korean companies did not lower significantly their prices in Colombia. The cost reduction in tariffs can be reflected either in higher revenues for the companies, or it can be reflected in better service. The service effect could be a shift on the Korean companies in Colombia. The tariffs of the FTA are reduced on January 1 every year. The first tariff reduction after the FTA came into effect in Colombia was on January 1, 2017.

Additionally, the February 2017 issue of the magazine *El Carro Colombiano* included two articles explaining the announcement of a guarantee periods extension that South Korean manufacturers offer in Colombia. On February 9, the magazine announced that Kia wanted to provide a more complete and effective service in Colombia. For this reason, Kia Motors increased the guarantee of their new vehicles from 5 years or 100.000 km that they had in the past, to seven years or 150.000 km (Restrepo, 2017a) (Distrikia, 2017). On February 28, the same magazine announced that Hyundai Motors announced a new brand image, three new models and an extension of their guarantee to seven years or 140.000 km (Restrepo, 2017b).

Apparently, the South Korean manufacturers are not reflecting the cost reduction of tariffs on a decrease of their vehicles prices, but rather on the increase of the company services. Korean companies are famous for their long-term investments and service. This could be a strategic move to gather long-term oriented customers, which will be more interested on the brands' customer service than on a sudden price reduction.

Besides that, there is an example of Colombian industries from Antioquia[9] that has shown the synergy between companies to address the challenges of the FTAs and find opportunities together: Red de Ensamble (Assembling network). In 2014, six of the largest Colombian manufacturing companies based in Antioquia, associated themselves with the objective of developing capabilities to lessen the effects of the FTA, but also to increase their competitiveness for exporting. The companies are AKT, Sofasa, Incolmotos Yamaha, Auteco and Mitsubishi Electric, and Haceb (home appliances).

With the guidance of the public corporations International Cooperation Agency for Medellín and *Ruta N* (Innovation and Business Center of Medellín) and the most renowned universities in Medellín, these six companies consolidated a network for developing mechanisms of support to the sectors, especially to face the FTAs, sharing the manufacturing know-how of the companies and creating an ecosystem of innovation and competitiveness in the region. This project was categorized by the ANDI as the most important project in productivity for the next twenty years and a model of public-private alliances for the country (Álvarez C., 2014).

According to this network, the companies that are part of it produce 58% of the national vehicles production, and the sum up of the six companies equals 9,120 direct jobs, 4.85 trillion Colombian pesos (COP), and 936 billion COP in exports (Sierra Suárez, 2016). Mr. Urrego explained that the *Red de Ensamble* has been effective and it has given its member companies' competitive advantages both at the national level but also to export. For example, one of Sofasa's changes was the specialization of the product. Instead of producing several models in their facilities, Sofasa specialized in three vehicles: Renault Logan, Sandero and Duster. Beforehand, Renault saw the FTA with Mexico as a threat. Nonetheless, through this specialization, the company was able to focus on the market through their expertise products, and nowadays, for instance, Sofasa exports approximately 25,000 Renault Duster vehicles per year to Mexico, becoming the most important client for Renault Colombia (Urrego, 2017).

Short and Medium-Term effects
Short-term effects 2017-2024

Over the course of the years accompanied by the tariffs reduction, the South Korean sales will increase. However, the difference in the customer preference might be the service and not on the price. This means that South Korean automobiles are likely to offer a better after-sales service, such as maintenance and warranties, as the short-term effects showed the trend (Distrikia, 2017; Restrepo, 2017b). Customers will pay very similar to the other brands prices and cars on the market, perhaps with some occasional discounts.

However, one factor that will influence the sales will be a better service, derived from the savings of the import costs and applied to the customer service departments of the Korean companies. Therefore, the prices will not lower down significantly, causing a minor impact on the market prices, but with the potential of gaining more market share for the Korean manufacturers. In conclusion, the Korean FTA will not mean a significant prices reduction in the automotive sector, but rather a competitive advantage in the after-sales services.

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[9] Department of Colombia. Capital: Medellín.

Medium-term effects 2024-2036

On the medium-term, the FTA will complete the total tariff reduction and set the imports on Colombia of South Korean automotive industries with the elimination of customs duties. According to the Equilibrium Theory in Economics, this change over the course of the years will generate the adaptation of the market to the adjusted prices, not only from the benefits from the imports for the Korean manufacturers, but also, for those from the United States, the European Union, and probably Japan (in negotiation of an economic association agreement with Colombia) (Investopedia, 2017) (Ministerio de Comercio Industria y Turismo, 2017). The sum of all these changes in the market and factors will eventually trigger an equilibrium price for the vehicles in the Colombian market on the medium-term. Colombia is already at a point of no return on economic openness.

The GVCs will continue to develop in the global automotive market. If the Colombian auto parts companies are able to market products that are suitable for being part of the GVCs, the industry will strengthen and gain importance in the system. This is likely considering that the industrials are associated, the government is giving fiscal and financial incentives, and the private and public sectors in Colombia and South Korea are favoring an innovation ecosystem for the automotive sector.

Lastly, due to the efforts to protect the automotive sector, and the opportunities for exports opened up by FTAs with non-manufacturing countries, the auto parts and vehicles industries will strengthen up to compete internationally, and the Colombian industries will not be jeopardized, as initially suggested by some factions of the Congress. In the medium-term, the FTAs will cause the market to be free of tariff barriers in many bilateral relations, which will create a market equilibrium different from the current one, but still profitable for the national and international industries.

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Conclusions

The Free Trade Agreement between Colombia and South Korea has generated diverse expectations to the different stakeholders in the automotive sector in Colombia, many of them regarding the fact that the agreement is potentially harmful for employment and sectoral sustainability. The results of the different methodologies used to show that the effects have not been as intense as imagined, and the prospective effects will likely not be as thought.

The effects between the negotiation (2009) and coming into effect (2016) of the agreement involved the creation of programs by Colombian and Korean institutions to promote the growth in the automotive sector, especially in the auto parts industry. The short-term effects that can be analyzed from coming into effect in 2016 and the present year 2017 have two sides: auto parts and vehicles.

Auto parts had some products with high variations in the period 2016/17, but they were not necessarily caused by the tariff reduction. Surprisingly low sales of the products in 2016 were mostly due to business cycles. The vehicles industry actually saw the Korean market share reduced during the same period, while other manufacturing countries increased their market share in Colombia.

Additionally, manufacturing companies in Colombia have made strategic plans to prevent a negative effect of the FTA with South Korea, and to harness it and other FTAs through specialization and R&D. The *Red de Ensamble* is an example of an effective response of six strong companies from Antioquia, which got together to lessen the effects of the FTA, plus developing a network where manufacturing know-how is shared, and an innovation ecosystem is created to enhance international competitiveness. For instance, Renault Sofasa increased its sales with Mexico, harnessing the FTA with a specialization strategy.

On the other side, predicting prospective effects is very difficult in a complex sector like the automotive one. However, by analyzing the effects that already happened and the elements of the industries, it is possible to suggest scenarios in the short and medium-term of the automotive sector in Colombia. The prospective short-term effects draw that there will be a constant adaptation year by year until the tariff goes off. The Korean companies will likely invest their conserved money from the tariff reductions on after-sales services.

The prospective medium-term effects of the FTA consider the economic openness of Colombia with the most relevant manufacturing countries in the world. The auto parts and vehicles industries will have to adjust to the various positive and negative changes of the Colombian FTAs, including South Korea. The GVCs will globalize the automotive market even more and the Colombian companies will be able to introduce themselves in the international assembling of vehicles and spare parts.

Finally, when tariffs are eliminated, the market will reach an equilibrium price that does not endanger the national car production, since international opportunities will also open up for those companies. This market equilibrium will be a phenomenon caused by the economic forces that will push the price towards a balanced point in which national manufacturers will still have revenues, and the Colombian consumer will get benefited from equilibrated prices and a better service.

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