

China in the automotive industry in Mexico: perspectives and challenges in the transition from NAFTA to T-MEC

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This paper proposes a first approximation on the possible repercussions of the T-MEC in the performance of the Chinese automotive industry in Mexico. A brief review of the content of the agreement is made, emphasizing the possible limitations to the presence of the Asian country in the North America region. Next, we review the characteristics of the main Chinese investment companies in the country, which gives us an interesting clue to the magnitude of the corporations that already have a presence in the automotive industry in Mexico (AIM). Although Chinese investments can be considered modest, they could tendentially grow significantly. Finally, we refer in an exploratory way the possible influence of the "Chinese model of production" and the type of union relations that could be deployed throughout the country based on the so-called corporate unionism linked to the previous regime.

On November 30th, 2018, the Mexico-United States-Canada Treaty (T-MEC) was signed to replace the North American Free Trade Agreement (NAFTA). The signing occurred without solving the problem of tariffs on steel and aluminum, combined with the inclusion of chapter 4 that seeks a greater regional added value (VCR) in the autoparts-automotive chain (CAA), the maximum winner of NAFTA. It is argued that these actions seek to raise the competitiveness of the industry in the region against China, since in addition to Chapter 4, Article 32.10 requires the economies to report their intention to start free trade agreement negotiations with economies of no market at least three months in advance. In the following

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lines, chapter 4 is examined, identifying the conditions and challenges presented by the triangular relationship between Mexico, the United States and China before the new rules of origin in the CAA.

T-MEC: new rules of origin for the CAA

Chapter 4 (SE, 2019) contains new rules of origin for the CAA to increase the level of local integration: i) based on the net cost method the VCR is raised: for passenger and light vehicles from 66% to 75% %, with a transition period of 3 years, and for heavy vehicles, the transition period is 7 years to raise the VCR from 60% to 70%; ii) describes a different typology to classify auto parts, now divided into essential, main and complementary. The VCR of the 15 essential auto parts for light vehicles should go from 66% to 75%; iii) a vehicle will be originative if the producer certifies that it complies with a labor content value of 30% at the beginning, and 40% three years after the T-MEC enters into force; iv) defines seven essential auto parts, which must be originative in North America so that the vehicle can be considered as originative as well; v) Article 4-b.6. establishes that a vehicle will be originative if at least 70% of the producer's steel and aluminum purchases in North America are originative during the previous year.

The CAA in North America: conditions and challenges in the T-MEC.

Based on the CAA segments identified in the T-MEC, the foreign trade statistics were generated between 2001-2017 to understand the conditions and challenges that the economies of the region face with the NAFTA update (see table 1).

Table 1. United States and Mexico: Import structure of the automotive auto parts chain (CAA) (2017)

Importaciones de Estados Unidos								
	Total		Desde México		Desde China		Desde resto del mundo	
CAA total (mdd)	541,830	[250,316]	163,263	[49,459]	51,905	[4,026]	326,662	[196,831]
Vehículos de pasajeros	32.6%	(-10.0)	18.3%	(-10.6)	3.2%	(3.2)	44.3%	(-2.6)
Camión Ligero	3.4%	(-2.3)	10.9%	(-2.0)	0.0%	(0)	0.1%	(-3.9)
Autopartes	38.2%	(4)	40.4%	(0.4)	61.2%	(-9)	33.5%	(5.3)
Esenciales	8.6%	(-1.5)	9.3%	(3.5)	7.0%	(5.3)	8.5%	(1.0)
Principales	20.9%	(4.2)	20.8%	(2.7)	38.7%	(-4.5)	18.2%	(2.4)
Complementarias	8.7%	(1.3)	10.2%	(-5.8)	15.6%	(-9.8)	6.8%	(1.9)
Camión pesado	2.4%	(1.4)	6.6%	(5.6)	0.0%	(0)	0.7%	(-0.4)
Autopartes	23.4%	(4)	23.8%	(6.7)	35.5%	(5.8)	21.3%	(1.6)
Principales	21.0%	(3.6)	23.2%	(6.7)	29.7%	(5.6)	18.5%	(1.1)
Complementarias	2.5%	(0.4)	0.6%	(0)	5.8%	(0.2)	2.8%	(0.5)

Importaciones de México								
	Total		Desde Estados Unidos		Desde China		Desde resto del mundo	
CAA total (mdd)	131,955	[47,198]	69,747	[33,770]	12,209	[230]	49,999	[13,199]
Vehículos de pasajeros	8.7%	(-2.1)	5.1%	(-3.6)	3.8%	(3.8)	15%	(-1.5)
Camión Ligero	1.4%	(-1.1)	1.0%	(-1.6)	0.0%	(0)	2%	(0.1)
Autopartes	53.2%	(0.5)	54.4%	(0.1)	63.2%	(-21.5)	49.0%	(1)
Esenciales	16.9%	(3.9)	19.5%	(6.4)	8.7%	(8.1)	15%	(2.2)
Principales	24.9%	(-0.6)	24.7%	(-1.5)	33.1%	(13.9)	23%	(-0.5)
Complementarias	11.3%	(-2.8)	10.2%	(-4.8)	21.3%	(-43.5)	10%	(-0.7)
Camión pesado	0.3%	(0)	0.4%	(0)	0.0%	(0)	0%	(0)
Autopartes	36.4%	(2.7)	39.1%	(5)	33.0%	(17.7)	33.5%	(0.4)
Principales	32.7%	(2.3)	36.5%	(5.3)	27.1%	(17)	29%	(0.1)
Complementarias	3.7%	(0.4)	2.6%	(-0.3)	6.0%	(0.7)	5%	(0.3)

The figures preceded by the % sign refer to the percentage structure of imports in 2017; figures in brackets refer to the value of imports in millions of dollars (mdd) in 2001; the figures in parentheses refer to the percentage variation experienced by the import structure between 2001 and 2017. Source: prepared by the authors based on the Global Trade Atlas (2019).

In 2017, the United States imported 541,830 million dollars (USD) in CAA, that is, 2.2 times more compared to 2001; 74.5% corresponded to imports of passenger vehicles and main auto parts. Mexico is the main supplier of that market with a 30% share in 2017. China raised its relative share from 1.6% in 2001 to 9.6% in 2017. In contrast, Mexico imported 131,955 million dollars in CAA in 2017 (2.8 times more compared to 2001), 90% was in auto parts. In 2001, USA accounted for 72% of CAA imports in Mexico; While in 2017 its share fell to 53%, China raised its relative share in Mexico from 0.5% to 9%.

Considering the readjustments in the import structure of the CAA in the USA between 2001 and 2017, characterized by a relative increase in imports of main auto parts and a drop in passenger vehicles, it is possible to identify the levels of competition closely following Lall

and Weiss (2005). It is observed that: i) Mexico and China increased their competition in the US market in main auto parts for heavy trucks; ii) in main auto parts for light vehicles Mexico displaces China; iii) Both countries have increased their competition in the essential auto parts segment and have withdrawn from the market of complementary autoparts for light vehicles; iv) the relative fall in imports of passenger vehicles in the US has caused Mexico and the rest of the world (without China) to withdraw from that market.

Following a similar procedure, it was found that Mexico increased the share of imports of essential auto parts and main auto parts, and that it reduced its imports of complementary auto parts for light industry. It is observed that: i) USA and China have increased their competition in main parts (for heavy trucks) and essential ones, in a race that China is clearly leading; ii) China displaces the USA in the main auto parts market for light industry; iii) both economies have withdrawn from the market of complementary autoparts for light vehicles.

It is significant to note that the growing competition in major auto parts (for heavy trucks) and essential parts between China and Mexico in the United States, as well as between China and the United States in Mexico, was captured in the T-MEC, as they are precisely the segments that They have the greatest commitment to raise the VCR. That is, the T-MEC seeks to raise the VCR in the most dynamic segments, without making it explicit, to contain the advance of China. Although, from a Global Value Chains perspective, it has been pointed out that many Chinese imports have their origin in the US companies that make up the Asian country, the fact is that the Chinese exports of CAA to the NAFTA area have significantly increased its national added value (TiVA OECD, 2019).

China's investment in the Automotive Industry in Mexico

The factors that drive capital investment and a high level of technical innovation in Chinese companies both locally and globally are basically two: i) national strategies in China that

seek and drive an era of rapid growth and development and ii) the efforts of traditional companies in the global field to develop intelligent connected vehicles. The investment schemes of Chinese companies have been deployed in the Mexican territory not only with a view to overcoming the trade slowdown that is already experienced in the local market², but also to take advantage of the new capabilities that they have been developing as part of national strategies growth that drives the assimilation of artificial intelligence and the internet of things in processes and finished products.

Between 2001 and 2017, several companies with headquarters in China announced investment projects in Mexico for 5.9 billion dollars, projecting to generate 40.4 thousand direct jobs. Nine of these companies allocated their investments to the automotive industry (terminal sector and auto parts) accounting for 46.2% of total Chinese investments in Mexico and 21.1% of the employment generated during the period indicated (OFDI Monitor of China in LAC, 2019). Although China's presence in the NAFTA area has been practically irrelevant in terms of investment, it is possible to observe the enormous potential that the area represents for China as a global expansion strategy, even in the context of the renegotiation of the agreement between the partners of North America and before the modifications and new regulations that the projected T-MEC seeks to establish to contain the potential advance of China in the region.

Companies that have undertaken investment projects in Mexico during the aforementioned period have a significant presence in their local market, in which close to 25 million finished units are sold with a Chinese share of 44% (BAIC, 2017). Companies in the terminal industry and the parts and components sector have established their presence in Mexico through the establishment of subsidiaries or through partnerships with local companies in various states

² Since January 1, 2018, the purchase tax discounts for small displacement vehicles in China have been completely canceled, so a greater deceleration is expected in the sale of finished units.

of Mexico, with announced amounts of investment that, although they are practically irrelevant as a share of their overall capital spending, they are relevant in terms of jobs generated in the places where they are allocated in Mexico (Table 2).

The hypothesis that one of the main intentions of the new T-MEC is to stop the advance of China in the competition for the market in North America is notoriously visible when considering the production strategies in process and product developed by the large corporations in the automotive industry in China. An example of this is the Minth Group, a company focused on lightweight technologies, intelligence and electrification. This corporation developed an intelligent application (known as ACC emblems), to reduce the weight of automobiles through more intensive use of aluminum components such as the Nissan and Renault aluminum battery packs, among other advances and production strategies. The possibility of continuing with technologies of intensive use of aluminum, should adapt to a greater or lesser presence in the North American area.

Employment, working conditions and union organization in Chinese companies of the automotive sector in Mexico. A first approach

Although the presence of China in the automotive sector in Mexico can be considered discreet and recent, both by the amount of investments of \$ 2,841 billion and by its recent data in the national territory, the oldest registered in 2010 (see table x), the presence of this industry in Mexico must also be weighed for more than 9 decades, particularly in the context of the boom it has had in the previous four decades. The importance of the companies of the Asian giant that have ventured into the automotive industry in Mexico is still significant, among them: BAIC, JAC, Key Security Systems, Minth Group, Nexteer, Suzhou Sonavox Electronics and Sanhua Holding Group, to mention a few; these companies have generated 11,809 jobs in Mexico. (see table 2)

Selected Chinese companies with presence in Mexico, by beginning of operations, jobs generated and investment amount in the automotive sector

Date	Company	Automotive Sector	Jobs generated	Investment amount (US million dollars)
2017/07	BAIC	Autos ensamblados	500	30.0
2017/02	JAC Motors	Componentes	4,400	1,000.0
2017/09	Key Safety Systems	Componentes	1,800	88.7
2017/04	Minth Group	Componentes	1,800	350.0
2014/10	Nexteer Automotive	Componentes	400	40.0
2017/06	Sanhua Automotive	Componentes	600	15.0
2017/06	Sanhua Holding Group	Manufacturas	21	600.0
2017/03	Suzhou Sonavox Electronics	Componentes	205	3.4
	Otros	Varios	2083	641
Total			11,809	2,841.00

Source: own elaboration with data from the OFDI Monitor of China in LAC (2019).

Three aspects should be considered about the Chinese presence in the productive sphere. First, the transfer of the productive models of the Asian country to Mexico, secondly, the general perspectives of the development of work in Mexico within the sector and, thirdly, the influence of the still existing model of corporate unionization based on the control of the labor force from the floor of the factory, and the processes of election, negotiation and participation of the members of the organization.

On the first aspect, the history of the expansion of the automotive industry over more than a century has shown that, although dominant paradigms exist, they can not be implemented as they developed in the countries of origin. Firstly, due to the disparities existing in the productive structures of the various countries that have been recipients of the investments

of transnational companies in the sector. Secondly, because of the specific conditions that the development of labor relations in the countries receiving these activities deploy. The strategy that China has executed internally is based on a high technological content in the final assembly phases, with a highly qualified work force and the intensive use of outsourcing, so the supply chain is based on workforce precarious (Di Tomasso 2018). This model resembles in a certain way the condition of development of the IA in Mexico, between the terminal industry and that of auto parts, in which, despite having a competitive performance in terms of productivity, this is not reflected in the salary level (Salazar-Xirinachs, Dussel Peters and Armony, 2018).

The last aspect leads us to identify the location zones of some of the productive plants in the terminal sector, in auto parts or in some of the clusters in the country. It also allows to identify the areas of influence of some of the corporate union organizations linked to the PRI that have traditionally been, together with companies and local, state and federal authorities, the main promoters of the so-called collective contracts of employer protection.

The plants of Chinese companies in Mexico characterized by their proximity to clusters or plants in the terminal sector are: Nexteer, in the Queretaro cluster, Sanhua Holding Group in Coahuila; Suzhou Sonavox Electronics as well as Sanhua Holding Group in Tlaxcala, a state close to Puebla where VW and Audi operate. Key Security Systems in the state of Tamaulipas, where there is a large concentration of maquiladora companies that are part of the center-east automotive supply corridor in the US; Minth Group, located in Aguascalientes, near the Nissan plant. Finally, BAIC, in the state of Veracruz and JAC in the state of Hidalgo with projects for the assembly of finished vehicles under the CKD modality, a strategy that would inhibit a dynamic link with the auto parts sector. The last company plans to install a stamping plant, but until 2020. This panorama is a first

approximation to the eventual productive framework that could mean the Chinese presence in the AIM.

Finally, we refer to the presence of the main corporate union organizations linked to the institutional revolutionary party (PRI, for its acronym in Spanish) in the entities where factories of Chinese origin are located: there are 26 labor union centers and 190 unions throughout 23 federative entities that participate in a total of 1,020 plants in the auto parts sector in Mexico (Arteaga García, Álvarez, C. 2016). Also regarding the location of the plants, there are 55 unions in Querétaro; 48 in Coahuila and 43 in Puebla.

Although we still do not have the specific reference on the productive models and the system of labor relations that are developed in Chinese companies, it is important to point out that both dimensions will be marked by the results of the T-MEC ratification, with possibilities of expansion of the operations for these companies, or, maintaining them with a low profile. This will determine, to a certain extent in the medium and long term, the possibilities of implementing productive frontier models at a technological and organizational level.

Regarding the labor union dimension, the corporate organizations linked to the PRI will be, at least, under pressure on aspects of transparency, on the unrestricted application of the ILO Agreement 189 concerning freedom of association, and on the democratizing aims of new organizations such as the Federation of Independent Labor Unions of the Automotive, Auto Parts, Aerospace and Tire Industries (FESIIAAN, for its acronym in Spanish) as a new actor that vindicates democracy, the independence of the labor union centers and transparency as an internal way of life for their organizations.

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