

# Strategies for Japanese Auto Parts Suppliers to Expand Business in Mexico

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## Summary

- Interest in Mexico has been rising among Japanese auto parts suppliers in recent years. Reasons for this include the recent near-shoring trend caused by trade friction between the US and China and disruptions to the supply chain under the Covid-19 pandemic, deteriorating profitability in the US, and the increasing difficulty of producing auto parts amid the labor shortage.
- The labor shortage for the auto industry in the US may continue over the long term as the labor supply is effected by the decline in the ratio of working age population due to the aging population, and as the labor demand increases with the announcement of numerous EV related investments. Given this situation, it will become strategically important for Japanese auto parts suppliers to consider utilizing Mexico within the context of the shift of production from the US to Mexico. We believe that a greater shift of production from the US to Mexico is a helpful tool for rebuilding North American operations, an urgent issue for Japanese auto parts suppliers, particularly for labor intensive parts and smaller parts which are easier to transfer and can enjoy the merits of transferring the production more easily.
- There are of course issues with production in Mexico, such as the high costs of electricity and transportation. While there is no swift solutions for these issues, it may be necessary to find ways to mitigate these issues through cooperation with other suppliers.
- Meanwhile, another issue to consider when planning a shift of production from the US to Mexico is what to do with the US factories, which are likely to end up with surplus of production capacity. Possible ways to deal with that surplus include consolidation of the supplier's US factories, integration with other company's factories, sale to other companies, maintaining production levels through contracted production, and producing new products for EVs. It will be important to consider the use of Mexico and optimization of US operations at the same time.
- The easiest time to make the move would be coinciding with model changes. However, given that entry into Mexico by companies from other countries, particularly China, is accelerating, there is potential for Chinese companies to buy up the available transportation capacity, labor resources, and available land in industrial parks. This fact necessitates planning any shift of production to Mexico sooner.

Table of Contents

## Strategies for Japanese Auto Parts Suppliers to Expand Business in Mexico

I. Introduction .....	2
II. Current State of the Mexican Automotive Industry .....	3
1. Trends in auto production and export in Mexico .....	3
2. Mexico Production and Investment Trends by Automaker .....	4
3. Trends in auto parts production and export in Mexico .....	6
4. Domestic Automobile Sales in Mexico.....	8
III. Background Behind Growing Interest in Mexico .....	10
1. The near-shoring trend.....	10
2. Difficulties and worsening profitability with auto parts production in the US.....	11
3. Policy Trends .....	14
IV. Shifting of Production from the US to Mexico .....	17
V. Challenges and Solutions for Mexican Production.....	18
1. Electricity costs .....	19
2. Transportation costs .....	20
3. Labor costs .....	21
VI. Conclusions.....	22

**I. Introduction**

Notable challenges for US operations of Japanese auto parts suppliers

The US is a major market for Japanese automakers, and large in terms of the number of vehicles produced as well. Therefore, US operations are extremely important for Japanese auto parts suppliers. However, there have recently been notable challenges for the US operations of Japanese auto parts suppliers. According to a JETRO survey<sup>1</sup> released in December 2022, only 17.1% of Japanese companies in the auto parts industry operating in the US expected to make operating profits in 2022. While this was surely influenced by the stagnation in the production of completed vehicles due to the Covid-19 pandemic and the semiconductor shortage, there are likely other structural factors such as high costs.

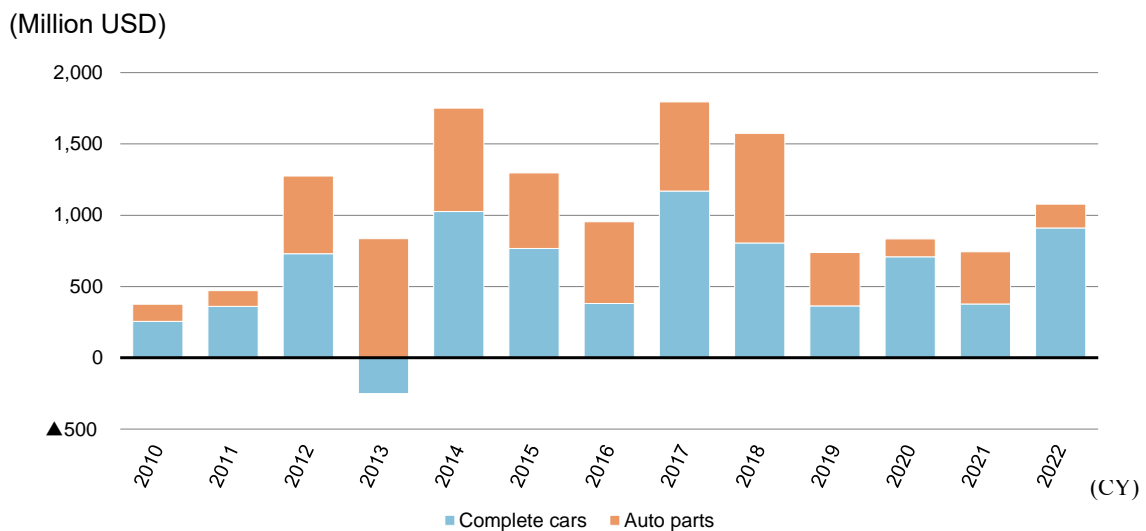
Increased interest in using Mexico

One response to this situation that is gaining interest among auto parts suppliers is to make effective use of Mexico, which is geographically close to the US and has relatively low labor costs. Direct investment in Mexico from Japan in the auto industry picked up steam towards the mid-2010s with a series of new investment from Japanese automakers, but has been relatively sluggish in recent years. We believe that given the rising attention in effectively utilizing Mexico, investment in the country will see an upsurge in the coming years (See Fig. 1).

This paper considers strategies to expand business in Mexico

This report reviews the current situation of the automotive industry in Mexico, where there is increasing interest, lists the reasons why this interest is occurring, and then consider the strategies for Japanese auto parts suppliers to expand business in Mexico.

[Fig. 1] Amount of Direct Investment from Japan into Mexico in the Automotive Industry



Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from the Mexican Government.

<sup>1</sup> JETRO (2022), "2022 nendo Kaigai Shinshutsu Nikkei Kigyou Jittai Chousa (Hokubei Hen) (2022 nen 12 gatsu) [2022 年度 海外進出日系企業実態調査(北米編) (2022 年 12 月)]"

## II. Current State of the Mexican Automotive Industry

This chapter will review the data on the current state of the automotive industry in Mexico.

### 1. Trends in auto production and export in Mexico

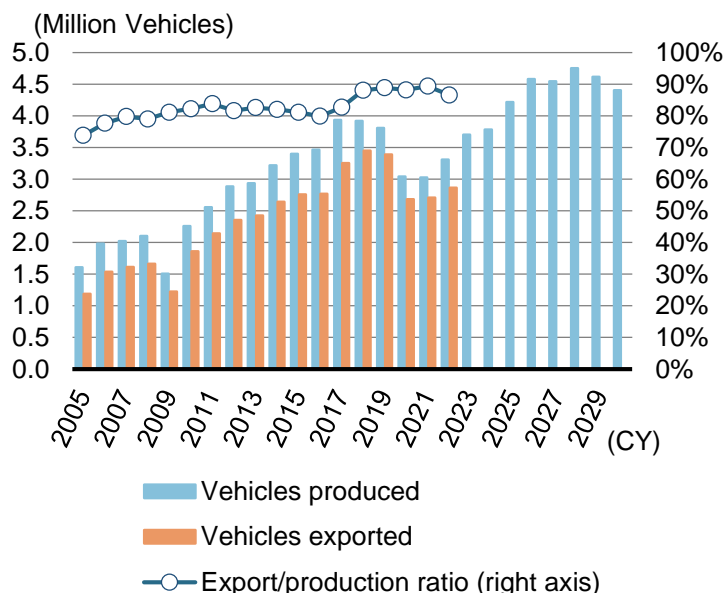
Mexico is the 7th largest producer of automobiles in the world and will retain its global share moving forward

First, the number of automobiles<sup>2</sup> produced in Mexico shows that the country produces the 7th highest volume in the world, with 3.31 Million vehicles produced in 2022. A major increase in the number occurred towards the mid-2010s when there was a series of new investment from automobile manufacturers for factories producing completed vehicles, reaching a peak of 3.93 Million vehicles in 2017. The production volume subsequently declined due to the Covid-19 pandemic and the semiconductor shortage, but is expected to recover as the semiconductor shortage eases. Moving forward, production is expected to rise, albeit slowly, towards a level of 4.50 Million vehicles, and Mexico’s share of global production is not expected to change significantly as it remains an important producer in the global market (See Fig. 2).

86.6% of production is exported, primarily to the US and Canada.

In Mexico, the majority are produced for export rather than to meet domestic demand. The ratio of exports reached 86.6% in 2022. Looking at the breakdown of export destinations, over 70% of exports go to the US, and over 80% when including Canada, showing that a large portion of exports are destined for the large consumer markets in neighboring North America. Mexico has become an important production region for capturing the major North American market, especially for American and Japanese automakers for which North America is the primary market (See Fig. 3).

[Fig. 2] Automobile Production and Export Volume



Note: Data after 2023 is from S&P Global Mobility forecasts (as of Aug. 2, 2023)

Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from AMIA, S&P Global Mobility

[Fig. 3] Automobile exports by destination country

	2022	
	No. of units	Share
US	2,221,912	77.5%
Canada	216,392	7.6%
Germany	170,960	6.0%
Colombia	22,080	0.8%
Puerto Rico	24,498	0.9%
Chile	20,676	0.7%
UK	13,400	0.5%
Brazil	19,020	0.7%
Argentina	8,234	0.3%
Saudi Arabia	8,002	0.3%
Japan	11,429	0.4%
Other	129,038	4.5%
<b>Total</b>	<b>2,865,641</b>	<b>100.0%</b>

Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from AMIA

<sup>2</sup> Automobiles refer to passenger vehicles and light trucks in this paper.

2. Mexico Production and Investment Trends by Automaker

GM's production is currently the largest

A breakdown of the number of vehicles produced by automaker shows GM in the lead most recently (See Fig. 4). GM produces Chevrolet Silverado and GMC Sierra full size pickup trucks at their Silao factory, Chevrolet Equinox and GMC Terrain compact SUVs at their San Luis Potosi factory, and Chevrolet Equinox and Chevrolet Blazer mid-size SUV at their Ramos Arizpe factory. They also have plans to commence production of Equinox EV and Blazer EV at their Ramos Arizpe factory starting in 2023 (See Fig. 5).

Nissan held top place in the first half of the 2010s but its production volume fell recently

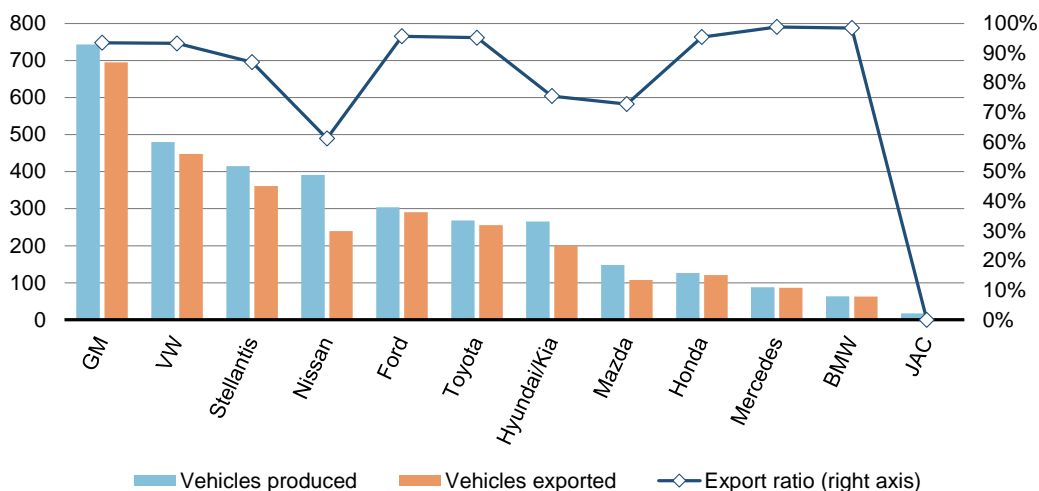
Volkswagen<sup>3</sup>, the second largest automaker by production volume in Mexico, produces VW Tiguan compact SUV at their Puebla factory and Audi Q5 compact SUV at their San José Chiapas factory, while Stellantis in third place produces RAM 1500, 2500, and 3500 full-size pickup trucks at their Saltillo factory and Jeep Compass compact SUV at their Toluca factory. Though Nissan held top place in production volume during the first half of the 2010s, their production volume currently has declined, partly due to the closing of production lines, placing them in 4th place in 2022. This is followed by Ford, Toyota, Hyundai/Kia, Mazda, Honda, Mercedes, and BMW in order of production volume.

Majority of production is exported with the exception of some automakers

An examination of the export ratio for each automaker shows that for automakers other than Nissan, Hyundai/Kia, and Mazda, which produce small cars for the domestic market in Mexico, the ratio of exports exceeds 90%, indicating that many makers export the majority of their production models to the US and other countries.

[Fig. 4] Production and Export Volume by Automaker (2022)

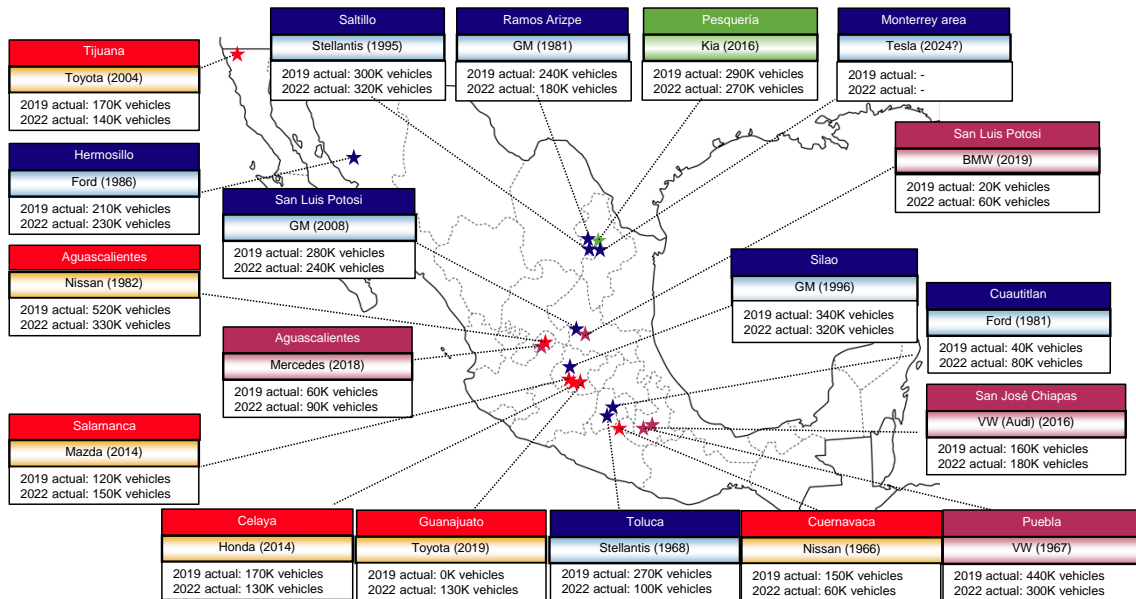
(Thousand vehicles)



Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from AMIA

<sup>3</sup> Includes Audi

[Fig. 5] Production locations and volume of major automakers in Mexico



Note: Dates in parentheses indicate the year production started

Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from S&P Global Mobility and other public data

Vigorous investment by automakers in Mexico in recent years

The investment trends by automakers in Mexico in recent years show a great deal of vigorous investment activity (See Fig. 6). In June 2023, Toyota announced an additional investment of \$328 Million to produce their hybrid pickup trucks at their factory in Guanajuato, while Nissan announced in May 2022 an investment of over \$700 Million in their Aguascalientes factory to update production facilities and introduce automation technology over the next three years. Ford announced in November 2020 that it will invest \$420 Million in their Cuautitlán plant to expand production of Mustang Mach-E EV, while GM announced an investment of over \$1 Billion in April 2021 to build a paint factory using innovative technology at their Ramos Arizpe factory, with a portion of that investment assigned to prepare to shift to EV production. Volkswagen announced in October 2022 an investment of \$765.3 Million to modernize their Puebla factory by 2025, and BMW announced in February 2023 an investment of 800 Million Euros to add an EV production line and a new factory to produce EV battery packs to their San Luis Potosi factory.

Tesla also announced construction of a new factory in Mexico

However, investment by Tesla is garnering the greatest attention among these many automaker investments. Tesla announced the construction of their Mexico Gigafactory near Monterrey, which is located in the northern part of Mexico in March 2023. One reason for this is likely the geographic proximity to Tesla's battery factories located in Nevada and Texas. Tesla will invest approximately \$5 Billion to construct the new factory, and expects to create 5,000 new jobs. Their production capacity is expected to be around 1 Million vehicles per year, which may make a major contribution to the total automobile production volume in Mexico.

The US and Canada are still the primary countries where EVs are produced

Regarding EV production in Mexico, there has been activity by European and American automakers as described above, but no Japanese automakers have currently announced EV production in Mexico<sup>4</sup>, so EV production will still mainly remain in the US and Canada. It may be the case that Japanese automakers produce EVs mainly in the US and Canada while utilizing Mexico for ICE (internal combustion engine) vehicles. Even the European and American automakers are planning to locate their capital-intensive battery cell production in the US and Canada. Considering the transportation cost of batteries, which is heavy, and can be flammable, and the issue of maintaining jobs in North America, the center of EV production should be expected to remain in the US and Canada rather than Mexico.

[Fig. 6] Major Recent Investments by Automakers in Mexico

Company	Date	Description
Ford	2020/11	Announced \$420 Million Investment in Cuautitlan factory to support production of the new Mustang Mach-E EV
GM	2021/4	Announced over \$1 Billion investment to open an auto paint factory using innovative tech at their Ramos Arizpe factory. A portion of the initial investment will be applied to prepare to expand the assembly factory and global production system to convert the factory to EV production.
Nissan	2022/5	Announced plans to invest over \$700 Million in the Aguascalientes factory over the next three years. The investment will primarily be applied to updating production facilities, adopting the latest automation technology, and employee training.
Kia	2022/9	Announced \$408 Million investment in Pesquería factory by 2024 to add five new facilities and create 800 new jobs.
Audi	2022/10	Media reports of investment of millions of dollars to begin EV production at their San José Chiapas factory. EV production is expected to begin in 2027.
VW	2022/10	Announced plans to invest \$763.5 million to modernize their Puebla factory and begin production of gasoline powered mid-size SUVs by the end of 2024 and EVs by 2025.
BMW	2023/2	Announced 800 Million Euro investment in their existing factory in San Luis Potosi for EV production and battery assembly.
Stellantis	2023/2	Announced \$200 Million investment in their Saltillo factory to expand the production area to meet the increased demand for their Ram ProMaster. Production area expansion will cover both internal combustion and EV vehicles.
TESLA	2023/3	Announced the construction of a Mexico Gigafactory near Monterrey in the northern state of Nuevo León. Investment in the new factory construction is approximately \$5 Billion with plans to employ up to 5K new workers.
Toyota	2023/6	Announced additional investment of \$328 Million in Guanajuato factory. The investment will be applied to production of Tacoma hybrid mid-sized pickup truck.

Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. Based on data from MarkLines

### 3. Trends in auto parts production and export in Mexico

Auto parts production has also increased

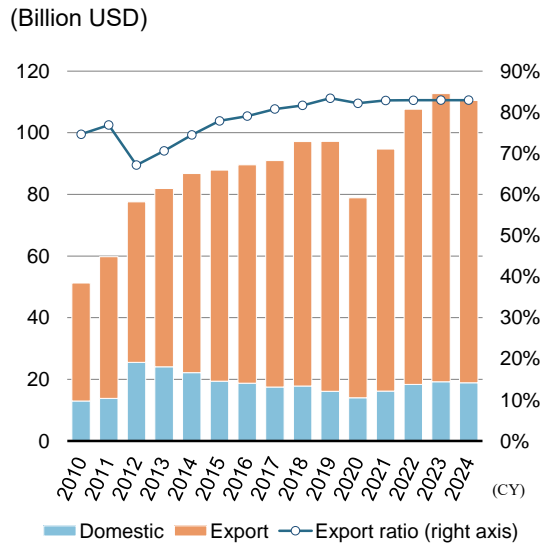
The production of auto parts has increased in Mexico alongside that of automobiles, reaching a new record of \$107.6 Billion in 2022 (See Fig. 7). Like vehicles themselves, over 80% of production is for export, with a large portion thereof being shipped to the US.

Mexico is the largest supplier of auto parts for the US

Mexico is the largest supplier of auto parts for the US, and the global share of auto parts from Mexico has been rising since 2010 (See Fig. 8). The share of imports from Mexico are particularly high for relatively smaller and labor intensive parts such as electrical cables, steering wheels, and airbags.

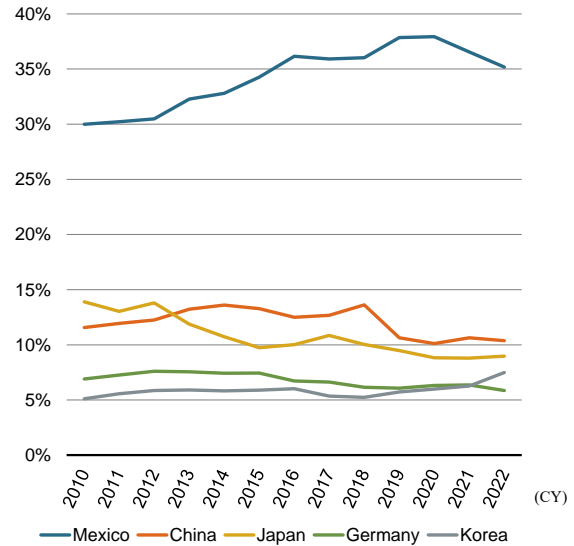
<sup>4</sup> President Masahiro Moro of Mazda commented that a possible location for North American EV production would be Mexico in an interview with various media outlets on July 14, 2023.

[Fig. 7] Auto Parts Production and Exports



Note: 2023 figures are INA estimates  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from Industria Nacional de Autopartes A.C. (INA)

[Fig. 8] Percentage of US Auto Parts Imports by Country



Note: The scope of auto parts is based on the list of auto parts published by the US Department of Commerce, International Trade Administration, Office of Transportation and Machinery  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from Global Trade Atlas

Many auto parts suppliers are investing or planning to invest in Mexico

A look at recent investment trends in Mexico by auto parts suppliers shows that many auto parts suppliers are currently investing or planning to invest in Mexico (See Fig. 9). This investment includes a significant amount of EV-related investment as well. Particularly for EVs, since the US imposes anti-dumping duties on imports of Non-oriented electrical steel sheets, the raw material for motors, it is expected that more and more cases will be seen where electrical steel sheets are imported to Mexico from Asia, and further motor production is carried out in Mexico. Announcements of motor production in Mexico include LG Magna e-Powertrain (announced to start operation in August 2023), POSCO, and Volkswagen in 2022, and BorgWarner in 2023. Further more, due to the labor intensive nature of assembling E-Axle electric drive modules, which combine motor, inverter, and transmission, many suppliers are expected to select Mexico as their production location because of their advantage in terms of labor cost. So while EV production by automakers is expected to mainly remain in the US and Canada as previously stated, the use of Mexico may increase for these EV-related parts production.



**[Fig. 9] Major Investments in Mexico by Auto Parts Suppliers (from January 2023)**

Company	Country	Date	Category	Description
Suminoe Textile	Japan	2023/1	New investment	Announced acquisition of land to build a new production line for synthetic leather for automobile interiors via their Mexican subsidiary. Amount of investment is approximately \$3 Billion, with scheduled launch in June 2024.
DANA	US	2023/1	New investment	Launched a \$21 Million driveshaft production factory in Querétaro.
Leoni	Germany	2023/1	Additional investment	Announced expansion of their cable factory in Cuauhtémoc. Plan to invest approximately \$16.8 Million in production facilities over next five years.
Mahle	Germany	2023/1	New investment	Announced construction of new factory at Ramos Arizpe with \$58 Million investment.
Yanfeng Seating	China	2023/1	New investment	Opened a second factory in Ciénega de Flores with an investment of \$23 Million. Created 800 new jobs for car seat production.
SKF	Sweden	2023/2	New investment	Announced investment of 700 Million Swedish krona to build a new bearing factory in Monterrey.
Bosch	Germany	2023/2	Additional investment	Commenced expansion of their Colón factory for a new production line for automotive transmission columns with \$7.7 Million investment.
Knorr-Bremse	Germany	2023/2	Additional investment	U.S. Subsidiary Bendix Commercial Vehicle Systems announced investment of \$57 Million for the No. 4 Acuña factory to produce brake systems for commercial vehicles.
ZF	Mexico	2023/2	Additional investment	Report of 240 Million Euro investment for third factory in Querétaro.
Bosch	Germany	2023/3	Additional investment	Announced €240 million investment in the expansion of their Aguascalientes factory.
Faurecia	France	2023/4	New investment	Announced opening of latest manufacturing facilities in Monterrey. The new factory will hire approximately 1,500 people and manufacture seats, instrument panels, and center consoles.
ZF	Germany	2023/4	New investment (EV-related)	Announced total investment of over \$194 Million to construct new factory in Ciudad Juarez. Production launch scheduled for January 2024, will produce over 1K inverters per day.
ZF	Germany	2023/4	Additional investment (EV-related)	Announced construction of new factory in Toluca with 39.6 Million Euros to produce front and rear axles and corner module suspensions for passenger EVs.
Lear	US	2023/4	New investment	New factory built with \$34 Million investment started operations in Torreón. New factory boasts largest floor area of any factory owned by Lear.
BorgWarner	US	2023/5	Additional investment	Started construction to expand factory in Saltillo with \$47 Million investment. Will produce starter coils, gas circulation coolers, and engine thermostats.
Miba	Austria	2023/5	New investment	Announced construction of new factory at Ramos Arizpe with \$25 Million investment.
Brembo	Italy	2023/5	Additional investment	Announced \$207 Million investment in expansion of their Escobedo factory. Will double production volume of brake calipers.
Sungwoo Hitech	Korea	2023/5	Additional investment	Invested \$300 Million to expand battery systems factory in Nuevo León.
HL Mando	Korea	2023/6	Additional investment	Invested \$185.3 Million in expansion of factory in Arteaga.
Yazaki Corporation	Japan	2023/6	Additional investment	Invested approximately \$30 Million to expand their Guanajuato factory.
Valeo	France	2023/6	New investment	Invested \$29 Million to construct cutting edge production factory in Lerma.
Denso	Japan	2023/6	Additional investment	Invested \$13 Million to expand Silao factory. Will manufacture air conditioners, radiators, alternators, and wiper systems.
Aptiv	US	2023/6	New investment (EV-related)	Plan to invest \$40 Million to establish new factory for manufacturing EV operational systems in El Salto and create 2,200 new jobs.
SAMTECH	Japan	2023/6	Additional investment	Invested \$19 Million to expand factory in León.
HIHO	Korea	2023/6	New investment	HIHO, a manufacturer of aluminum wheels, announced a \$100 Million investment to open a new factory in Apaseo el Grande. Expected to create approximately 600 jobs.
Asiaway Automotive Components	China	2023/6	New investment	Invested \$41.4 Million to open the first phase of a new die-casting factory in San Luis Potosi that will create 300 new jobs.
BorgWarner	US	2023/7	New investment (EV-related)	Announced start of construction on a \$198 Million manufacturing factory in San Luis Potosi specializing in power electronics components and electric motors.
Linamar	Canada	2023/7	Additional investment (EV-related)	Acquired a \$60 Million facility dedicated to the production of EV-related components at their factory in Gomez Palacio.
LG Magna e-Powertrain	Korea Canada	2023/7	New investment (EV-related)	Announced launch of new factory at Ramos Arizpe in August with approximately \$1 Billion investment. Produces integrated inverters, motors, and chargers for their primary customer GM for supply primarily to the US market.

Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from MarkLines

#### 4. Domestic Automobile Sales in Mexico

1.09 Million cars sold in Mexico in 2022

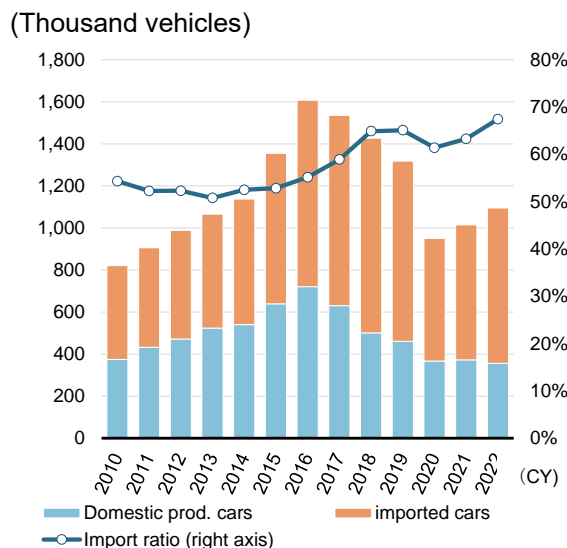
A look at domestic automobile sales in Mexico shows a peak of 1.61 Million units in 2016, followed by a decline to 950,000 in 2020 due to the effects of the Covid-19 pandemic. This was followed by only a slight recovery due to the semiconductor shortage, with 1.09 Million units sold in 2022 (See Fig. 10).

Nissan remains at top, but loses market share, while SAIC has grown in recent years. Nissan maintains the top share of sales in 2022 at 15.5%, but this is a significant decline over five years from their 23.9% share in 2017. GM, in a close second place, has also declined slightly from its share of 16.8% in 2017. Meanwhile, Hundai/Kia has expanded their share to third place from 8.7% in 2017 to 11.9% in 2022. This is followed by Volkswagen, Toyota, Stellantis, and Mazda in that order. Also, China’s SAIC has expanded sales of their MG brand vehicles in recent years, achieving a 4.4% share in 2022 (See Fig. 11).

Over 60% of sales are imported vehicles, with the majority imported from China. Furthermore, despite Mexico being a major automobile producer, over 60% of vehicles sold are imports, so the country is notable for their trade structure where both imports and exports are high. China holds the top share of imports (at 25% in 2022), followed by the US, Brazil, Japan, India, and Thailand. The large share of Chinese imports is effected by the fact that GM imports their leading models from China, in addition to the imports by Chinese automakers such as SAIC Motors.

EV transition still a long way off in Mexico. While EV sales have increased in Mexico to 5,631 vehicles in 2022 (an increase of +394% y-o-y) reflecting the global EV trend, this number remains at only 0.5% of all vehicles sold in the country<sup>5</sup>. Thus Mexico is showing a considerable delay in EV adoption compared to the US and Europe. Furthermore, the spread of charging stations, particularly fast chargers, is extremely limited, suggesting that adoption of EVs in domestic sales in Mexico is still a long way off.

[Fig. 10] Domestic Automobile Sales



[Fig. 11] Share of Domestic Automobile Sales

2017		2022	
Manuf.	Share	Manuf.	Share
Nissan	23.9%	Nissan	15.5%
GM	16.8%	GM	15.1%
VW	15.2%	Hyundai/Kia	11.9%
Hyundai/Kia	8.7%	VW	10.0%
Toyota	6.9%	Toyota	9.0%
Stellantis	6.2%	Stellantis	6.8%
Honda	5.9%	Mazda	4.4%
Ford	5.4%	SAIC	4.4%
Mazda	3.5%	Ford	3.9%
Renault	2.0%	Suzuki	3.7%
BMW	1.4%	Honda	3.6%
Mercedes	1.4%	Renault	3.3%
Other	2.7%	Other	8.5%

Note: Figures in graphs and tables do not include Tesla sales.

Source: Fig.10 & 11 compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from INEGI

<sup>5</sup> From INEGI. Note that these figures do not include Tesla sales.

### **III. Background Behind Growing Interest in Mexico**

Fig. 9 shows that many auto parts suppliers are investing or planning to invest in Mexico. In this chapter, we will sort out the background behind this growing interest and investment in Mexico among auto parts suppliers. We recognize three major factors.

#### 1. The near-shoring trend

The first factor in the growing interest in Mexico is the near-shoring trend. We recognize three further factors behind the emergence of this trend (See Fig. 12).

The first is the outbreak of trade friction between the US and China starting in 2018

The first of those is the outbreak of trade friction between the US and China starting in 2018. China is a major source of auto parts imports for the US, but the increase in tariffs for numerous Chinese imports under the previous Trump administration increased the costs of exporting from China to the US, necessitating a restructuring of the supply chain to avoid those tariffs. Furthermore, the transition to the Biden administration has not returned the tariffs against China to their original level. In addition to the tariffs, the conflict between the US and China has extended to imposing regulations on imports and exports as well as investment, and there are cases where restructuring the supply chain is necessitated from the perspective of economic security as well.

The second factor is the change from NAFTA to USMCA

The second factor is the change from NAFTA trade agreement between the US, Mexico, and Canada to USMCA in 2020. We will explain the details below, but to summarize, the Rules of Origin that must be met to import and export within the US, Canada, and Mexico without tariffs became stricter under USMCA under the Trump administration, which emphasized returning production to the US. This increased the need to procure parts within those three countries for production within those three countries in order to meet the rules and carry out imports and exports within the three countries without tariffs.

The third factor is supply chain disruption under Covid-19

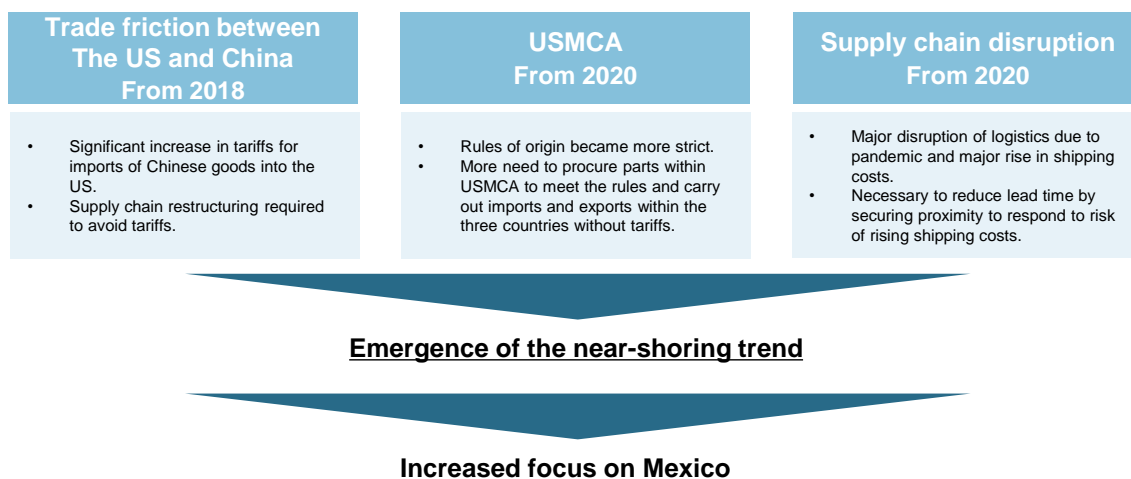
The third factor is supply chain disruption under the Covid-19 pandemic. In the US, the lines of container ships offshore unable to enter the ports of Los Angeles and Long Beach in California, and the shortfall of domestic logistics due to the shortage of drivers and other factors, led to a major increase in both logistics costs and lead time. These are still fresh in our mind, and conditions have not yet returned to normal. Based on this experience, many companies are attempting to avoid the risk of rising logistics costs and lead time by securing geographic proximity from their suppliers, accelerating the trend toward near-shoring.

The above three factors contributed to the emergence of the near-shoring trend, and particularly increased interest in Mexico.

Due to the three factors above, a near-shoring trend is occurring under which suppliers are being shifted to areas close to the major auto production region of the US, Canada, and Mexico, or shifting production from Japan, Asia, and other regions. Among those three countries, interest in Mexico is particularly high compared to the US and Canada due to the cheaper labor costs. In fact, an examination of changes in procurement locations among Japanese companies operating in the US shows a decline in procurement from Japan and China and an increase in procurement within the US and Mexico, indicating that many

companies are actually moving toward near-shoring<sup>6</sup>. The top three reasons for reviewing procurement locations are factors related to rising logistics costs, responding to the risks of supply chain disruption due to logistics disruptions, and responding to the risks of supply chain disruptions due to international tensions.

[Fig. 12] Near-shoring Trend in North America



Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd.

## 2. Difficulties and worsening profitability with auto parts production in the US

Profitability of Japanese auto parts suppliers in the US is notably low

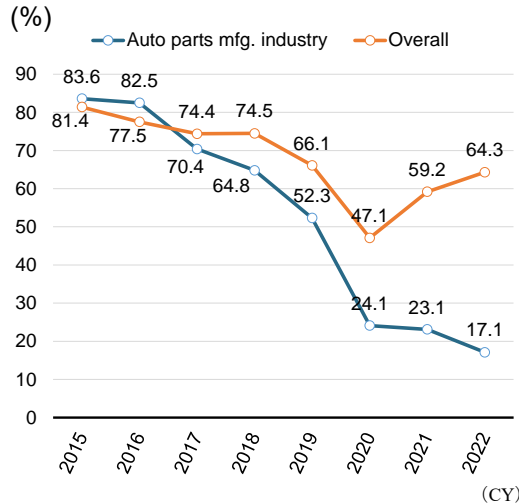
The second factor is the increasing difficulty and worsening profitability of the auto parts supplier business in the US. While the first factor, the near-shoring trend, primarily promotes the transition of production from Japan and Asia to Mexico, this promotes a transition from the US to Mexico. According to a survey by JETRO, only 17.1% of Japanese companies in the auto parts manufacturing business in the US were expected to show positive operating profits in 2022 (See Fig. 13). The profit margin is notably low compared to other regions such as Europe, Asia, and China. While there is some impact from the downturn in automobile production due to Covid-19 and the semiconductor shortage, there are also structural factors such as high costs.

A major factor in low profitability is probably high labor-related costs

It is likely that the high labor-related costs are a major factor contributing to low profit margins. According to a survey that asked Japanese companies in the US what their management issues were for their US operations, many of the top responses were labor-related, including rising employee wages, difficulties in employee recruitment, employee quality, and employee retention (See Fig. 14). In fact, we frequently hear of cases from Japanese auto parts suppliers in the US complaining difficulty of finding workers and the significant rise in wages to secure labor after recovering from the Covid-19 pandemic. We also hear complaints that the extremely high turnover rate harms productivity and quality.

<sup>6</sup> JETRO (2022), "2022 nendo Kaigai Shinshutsu Nikkei Kigyou Jittai Chousa (Hokubei Hen) (2022 nen 12 gatsu) [2022 年度 海外進出日系企業実態調査(北米編)(2022 年 12 月)]"

[Fig. 13] Percentage of Japanese Companies Operating in the US with Operating Profits



[Fig. 14] Management challenges of Japanese Companies Operating in the US



Note: The graph on the right covers Japanese companies operating in the US, including those other than auto parts makers, via a multiple answer survey in September 2022.

Source: Fig. 13 & 14 compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from JETRO

US employment costs rose by +5.5% y-o-y at one point

These complaints from Japanese companies are also supported by the macroeconomic statistics. The macroeconomic statistics show that at one point, hiring costs in the US rose by +5.5% y-o-y, a level not seen in approximately 40 years (See Fig. 15). Meanwhile, although they have been settling slightly more recently, the turnover rate in the manufacturing sector reached the highest level since 2001, exceeding the level prior to the Covid-19 pandemic.

Upward pressure on labor-related costs and labor shortages from the labor supply side will continue

Looking ahead, it is probably best to assume that upward pressure on the US auto industry's labor-related costs and labor shortages will continue. A look at the labor supply shows that the working-age population in the US is only rising slowly, resulting in a decline in the relative working-age population due to the overall aging population (See Fig. 16). In terms of immigration, which would normally alleviate the situation, it has become a serious topic of debate<sup>7</sup> in the US with considerable political conflict between the Democrat and Republican parties, making it difficult even for the Democratic administration with a high tolerance for immigration, to implement policy that increases immigration over previous levels.

Upward pressure on labor-related costs and labor shortages from the labor demand side will continue as well

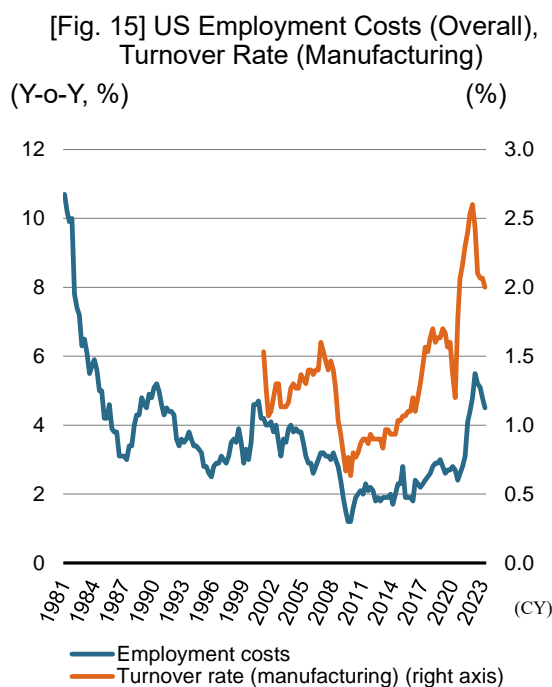
Looking at the labor demand, there is also high demand for personnel in the auto industry. One of the few points in common between the Republican Trump administration and Democratic Biden administration is the attraction of industry to the US. For the auto industry, EV related investment is currently expanding particularly due to the major subsidies for said investment and tax credits under the Inflation Reduction Act that was passed in August 2022. Looking at the example of Georgia, there

<sup>7</sup> According to a Gallup Poll in June 2023, 41% of respondents answered that immigration should be lowered from current levels, exceeding the 26% that answered it should be increased. <https://news.gallup.com/poll/1660/immigration.aspx>

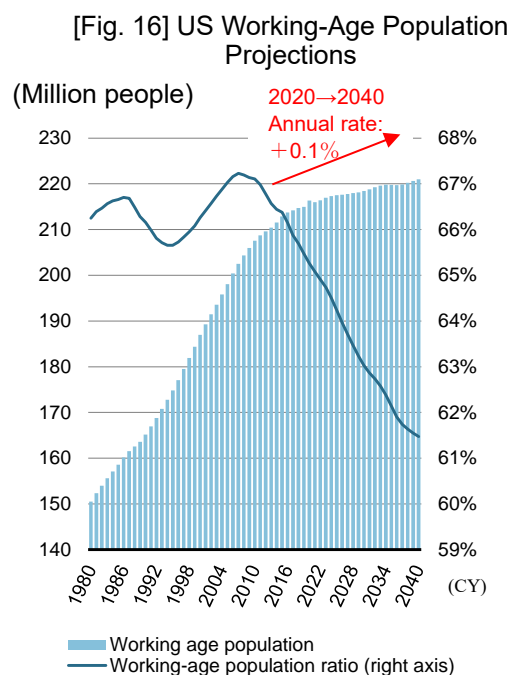
have been over 35 EV related investments announced since 2020, with investment exceeding \$21 Billion and 27,400 new jobs expected to be created<sup>8</sup>. There are currently approximately 420,000 workers employed in manufacturing in Georgia, so an increase in 27,400 workers would be an increase of 5%, showing that a significant demand for workers is occurring in the auto industry. While there are of course differences between states, the pressure of rising labor-related costs and labor shortages can be expected to continue for the US auto industry on the labor demand side as well.

The average wage for general factory jobs is about 10 times higher in the US than Mexico

However, the average wage for a regular factory worker in Mexico is about \$300 per month, only one tenth of the wage of over \$3,000 per month in the US<sup>9</sup>. While Mexican wages are rising, they are rapidly rising in the US as well, so the gap has not narrowed significantly. Meanwhile, in terms of demographics, the ratio of working age population in Mexico is rising as well. In addition to the current labor shortage in the US, and given that it is highly likely for the pressure of labor costs and the labor shortage to continue for the US auto industry in terms of both labor supply and demand, it seems natural that interest in Mexico, with its geographic proximity to the US and low labor costs, would increase.



Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from the US Department of Labor.



Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from the World Bank.

<sup>8</sup> From "Hyundai Supplier PHA to Create Over 400 Jobs in Chatham County" published by the state government of Georgia. Figures as of March 2023.

<https://www.georgia.org/press-release/hyundai-supplier-pha-create-over-400-jobs-chatham-county>

<sup>9</sup> JETRO (2023), "2022 nendo Hokubei Tousei Kanren Cost Hikaku Chousa (2023 nen 3 gatsu) [2022 年度 北米投資関連コスト比較調査(2023 年 3 月)]"、"2022 nendo Chunanbei Tousei Kanren Cost Hikaku Chousa (2023 nen 3 gatsu) [2022 年度 中南米投資関連コスト比較調査(2023 年 3 月)]"

### 3. Policy Trends

The third factor is that recent policy related developments have been consistent with the expansion of production in Mexico and procurement from Mexico.

Stricter Rules of Origin under USMCA

As previously mentioned, the Rules of Origin for automobiles and auto parts were made stricter under USMCA that came into effect in 2020 (See Fig. 17). Specifically, USMCA raises the regional value content required for tariff-free imports and exports of completed cars between the three countries while also adopting new regulations, such as wage clauses and conditions for steel and aluminum. Meanwhile, the required regional value content was also raised for auto parts. When the Rules of Origin are not met, exports of passenger vehicles to the US incur a tariff of 2.5%, while pickup trucks, the stronghold of US automakers, incur a tariff of 25%.

No change in position of Mexico even after USMCA took effect

The wage clause in particular calls for 40% to 45% of value added, including parts, to be produced in regions with an hourly wage of \$16 or more. Considering the wage level in Mexico, in practice this clause promotes the procurement of parts and materials from the US and Canada, and serves as a headwind against expanding production in Mexico. However, three years have already passed since USMCA came into effect, investment in Mexico by automakers has not slowed down, and there is no change to the positioning of Mexico as a production region for the North American market, as shown in Fig. 6.

Effect of passenger vehicle tariffs remaining at 2.5%

A major factor in the background is that US import tariffs on passenger vehicles other than pickup trucks remain at only 2.5% even when the Rules of Origin under USMCA are not met. In fact, the application of USMCA when exporting automobiles from Mexico to the US has been trending downward since it came into effect. As some European luxury auto manufacturers have a low rate of procurement from both the US/Canada and Mexico, it seems they are not attempting to meet the Rules of Origin. However, as the tariffs are only 2.5%, there are still merits to producing in Mexico due to the low labor costs and the relatively short transportation distance compared to exports from Japan or Europe (See Fig. 18, 19).

Automakers failing to meet USMCA Rules of Origin likely to increase

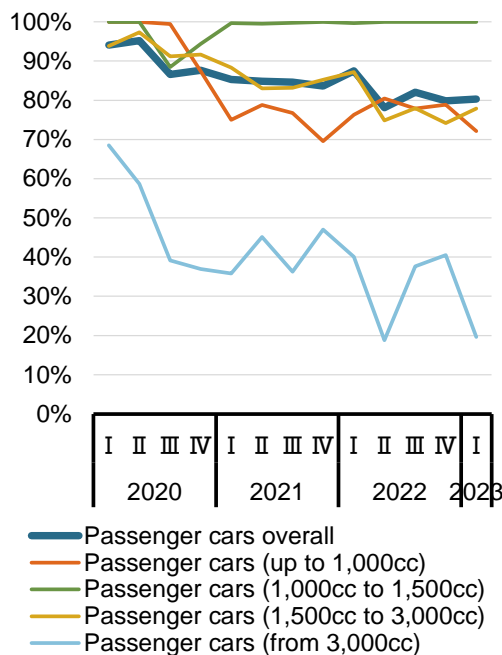
Meanwhile, the final increase in the required standard under the USMCA Rules of Origin was implemented in July 2023, and it is possible that the number of automakers and car models that cannot or will give up trying to meet the standard may increase moving forward. If automakers decide not to try to meet the Rules of Origin, there will no longer be any limits on procurement region. In order to make up for the 2.5% tariff, many will likely try to drastically improve procurement by procuring cheaper parts irrespective of the place of origin, which may lead to significant changes to the supply chain.

[Fig. 17] USMCA Rules of Origin for Automobiles and Auto Parts

Rules of Origin (Automobiles)		Gradual increase in regional value content from original 62.5% under NAFTA - 66.0% when coming into effect -> <b>75% 3 years later</b>
	Wage clause	<b>40-45% of value added</b> , including parts, <b>must be produced at locations where the hourly wage is \$16 or more</b>
	Steel, Aluminum	<b>70% of steel and aluminum to be procured within the region</b> (total across national borders for the corporate group)
	Super core parts	<b>Each of 7 super core parts</b> , or the total thereof, must meet the regional value content shown under (1) below.
Rules of Origin (Parts)	(1) Core parts	Requires achievement of the regional value content in stages over 3 years after issuance of the USMCA. - (1): 66.0% when coming into effect -> <b>75.0% 3 years later</b> - (2): 62.5% when coming into effect -> <b>70.0% 3 years later</b> - (3): 62.0% when coming into effect -> <b>65.0% 3 years later</b>
	(2) Principal parts	
	(3) Complementary parts	

Note: Above thresholds are for the Net Cost method. The wage clause can be alleviated by carrying out by paying wages for research and development or manufacturing of core parts in the high-wage regions  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from the USTR website and JETRO.

[Fig. 18] Rate of Application of NAFTA/USMCA to Passenger Car Exports from Mexico to the US



Note: Only includes gasoline vehicles.  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from the US International Trade Commission.

[Fig. 19] Procurement Source Ratio of Major Passenger Cars Produced in Mexico (excluding pickup trucks)

Manufacturer	Model	US and Canada procurement Ratio	Mexico Procurement Ratio
Honda	HR-V	30%	40%
Ford	Bronco Sport	19%	64%
Kia	Forte	16%	45%
Nissan	Kicks	15%	60%
Nissan	Sentra	15%	65%
Nissan	Versa	15%	70%
Infiniti	QX50	10%	60%
Infiniti	QX55	10%	55%
Kia	Rio	7%	50%
BMW	3 Series Sedan	7%	15%
BMW	2 Series Coupe/Convertible	6%	17%
Mazda	CX-30	5%	65%
Mazda	Mazda3	5%	65%
Mercedes	GLB SUV	5%	40%
VW	Jetta(automatic)	5%	35%
VW	Taos(AWD)	5%	33%
VW	Tiguan (AWD)	4%	34%
Audi	Q5 40	2%	66%

Note: The definition of regional value content calculated under the USMCA Rules of Origin is different. Figures for 2023MY. Models listed in the report under the U.S. labeling law.  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on "Part 583 American Automobile Labeling Act Reports" published by the NHTSA.



<p>The tax credits for new EVs under the US Inflation Reduction Act include requirements on location of final assembly and country of procurement for battery materials.</p>	<p>Another important policy change in recent years is the Inflation Reduction Act that was enacted in August 2022. Among the many provisions of the Inflation Reduction Act, the addition of a tax credit for purchasing new EVs has a major impact on the Auto industry (See Fig. 20). While there was already a tax credit for new EVs, it was limited to 200,000 vehicles per manufacturer, a limit already met by Tesla and GM, making purchasers unable to apply the tax credit. The elimination of this limit has made the tax credit available to a larger number of consumers. However, many conditions to applying the credit were adopted. With regard to Mexico, criteria were adopted regarding the region of final EV assembly and the country of origin of the critical minerals and parts used in batteries.</p>
<p>EV production in Mexico and procurement of EV parts materials from Mexico meet the conditions</p>	<p>The final assembly location requirement for EVs calls for final assembly to take place in North America, but “North America” in this act includes Mexico. Meanwhile, a certain percentage of critical minerals used in batteries must be procured either from the US or from a country with an FTA with the US, so procurement from Mexico meets that requirement because Mexico is a member of USMCA. A certain percentage of battery parts must also be procured from North America, but as with the requirement for region of final assembly, Mexico is included in “North America”. Therefore, production of EVs in Mexico and procurement of EV parts from Mexico both meet the requirements for applying the new EV tax credit.</p>
<p>Able to invest in Mexico confidently</p>	<p>It can be said that based on the content of the Inflation Reduction Act, we can confirm that it is not the policy of the US government to exclude EV production in Mexico. While there exists of course a certain risk of sudden policy changes due to changing administrations in the US, it can still be said that it has become easier for automakers and auto parts suppliers to forecast the future business environment when considering investment in Mexico, even when preparing for the future ages of EVs.</p>

[Fig. 20] Overview of New EV Tax Credit under the US Inflation Reduction Act

- Grants a tax credit of up to \$7,500 for the purchase of a BEV, PHEV, or FCV
- Applies to purchases made starting January 1, 2023.
- Final assembly must take place in **North America (including Mexico)** to be applicable.
- To qualify for the \$3,750 tax credit, 40% of critical minerals used in the battery (by value) must be produced and fabricated in the US or a **country with an FTA with the US** (20 countries including Australia, Canada, **Mexico**, Chile. Japan is included though there is no FTA), or **recycled in North America (including Mexico)**. These conditions will grow gradually stricter beginning in 2024.
- To qualify for the remaining tax credit of \$3,750, the second half of the \$7,500, 50% of battery components (by value) must be manufactured or assembled in **North America (including Mexico)**. These conditions will grow gradually stricter beginning in 2024.
- EVs made with battery components and critical minerals from Foreign Entities of Concern (China, Russia, Iran, North Korea) are excluded (starting 2025 for critical minerals, 2024 for components. Details not yet announced regarding foreign entities of concern.)
- The limit of 200K vehicles per manufacturer under the existing tax credit was eliminated (GM, Tesla, Toyota had already reached the limit.)
- New price cap: MSRP\* for vans, SUVs, and pickup trucks must be under \$80K, sedans must be under \$55K.
- New income limit: maximum \$300K (when income tax reported together with spouse), \$225K (head of household), \$150K (other cases).
- A program will be adopted from 2024 to allow car buyers to transfer credit to dealers at the time of purchase and reduce the purchase price on the spot.

Note: MSRP: Manufacturer's Suggested Retail Price  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from the US Congress and JETRO.

**IV. Shifting of Production from the US to Mexico**

<p>Activity by Japanese auto parts suppliers still appears limited</p>	<p>We examined investment trends by auto parts suppliers in Mexico in Fig. 9, but activity on the part of Japanese auto parts suppliers still seems limited at this time. This is likely due in part to the fact that the delay in setting policy for investing in the adoption and production of EVs in North America on the part of Japanese automakers prevented them from making investment decisions. But considering that interest in Mexico is increasing among Japanese auto parts suppliers, it is highly likely that the number of cases of investment will rise moving forward.</p>
<p>The shift of production from the US to Mexico is particularly important</p>	<p>Considering the difficult challenges to the US operations of Japanese auto parts suppliers, the ongoing shortage of personnel in the US over the mid to long term previously mentioned, and the fact that many Japanese auto parts suppliers have production facilities in North America, then the utilization of Mexico is more important within the context of the shift of production from the US to Mexico. When transferring production out of the US, there are of course options such as returning production to Japan or shifting it to the ASEAN region. But from the standpoint of geographic proximity which has become increasingly important in recent years, there are cases where some automakers prefer production to remain in North America. Furthermore, considering the uncertainty of the sustainability of the weak Yen, the labor shortage in Japan, and the lack of an FTA between the US and ASEAN, then Mexico is likely to be considered the first option for suppliers that already have existing production facilities in Mexico.</p>
<p>There are also cost advantages of shifting to Mexico</p>	<p>A look at preceding research on the cost merits to shifting production from the US to Mexico shows a considerable merit in the direct reduction of labor costs, and the secondary merit of cheaper parts availability due mainly to those lower labor costs. Specifically, in the case of the least expensive model of Ford's Fusion sedan, with an MSRP of \$22,185, the labor cost of assembly is \$600 less, while the cost to procure parts is \$1,500 less, when producing in Mexico compared to those in the US. Subtracting the cost of shipping to the US (\$900) leaves a cost savings of \$1,200 per vehicle (See Fig. 21). Therefore, in addition to the perspective of escaping from the various difficulties of US based production, it is also important to realize these cost benefits when shifting production to Mexico.</p>

[Fig. 21] Example of Calculating Cost Benefits of Shifting Production from US to Mexico

Cost item	Advantages of Mexico Production of the Ford Fusion for the US market (per vehicle)
Assembly worker labor costs	<b>\$600 reduction</b> for Mexico production versus US production
Parts procurement costs	<b>\$1,500 reduction</b> for Mexico production versus US production
Transportation costs to market	<b>\$900 increase</b> for Mexico production versus US production
Tariff cost	<b>zero</b> (Assuming applicable FTA conditions are met)
<b>Total</b>	<b>Cost savings of \$1,200 per vehicle</b>

Note: Data is as of 2016. Compares production at the Flat Rock Plant, Michigan, US vs. Hermosillo, Sonora, Mexico.

Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on "The Growing Role of Mexico in the North American Automotive Industry", Bernard Swiecki, Debbie Maranger Menk.

The new issue is what to do with US factories

Another issue to consider when planning a shift of production from the US to Mexico is what to do with the US factories. Given the lengthening of the average life of vehicles, the rising vehicle prices due to the transition to EVs, and the fact that the automobile penetration rate is already at a high level, sales and production of automobiles in North America overall are likely to reach a plateau and are unlikely to grow in a significant way. Accordingly, if auto parts suppliers strengthen their Mexico locations, it will replace their US factories, and it is highly likely to result in creating surplus of production capacity.

Consider the use of Mexico and streamlining of US operations at the same time

Possible ways to deal with that surplus include consolidation of the company's US factories, integration with other company's factories, sale to other companies, maintaining production levels through contracted production, and producing new products for EVs. There are in fact examples of auto parts suppliers expressing an intent to shift production from the US to Mexico who have also expressed their policy on the US locations, including restructuring. Considering that one reason for using Mexico is the deteriorating profitability of US operations, it could be said that the use of Mexico should be considered as a package that includes optimizing US operations. Particularly, as noted previously, Japanese auto makers may produce EVs mainly in the US and produce ICE mainly in Mexico, so the consolidation of ICE-related parts production to Mexico with restructuring of ICE parts factories in the US has a highly likely to occur.

**V. Challenges and Solutions for Mexican Production**

There are obviously issues with production in Mexico as well

So far we have discussed the reasons for the increasing interest in Mexico and the merits to moving production there, but there are of course issues with using Mexico for production as well. For example, costs such as electricity costs are high and so are transportation costs in Mexico. There are also labor shortages in some regions, though not as notable as in the US. None of these problems have swift solutions, but require mitigation when shifting or strengthening production to Mexico. The

following are some possible directions for mitigating them worth considering.

This time, we focus on cost items

There are of course many other issues with Mexico, such as the narrow base of industry and the weak concentration of the materials industry, political instability, inadequate electrical and road infrastructure, low public safety, and the PTU (workers' profit sharing) requirement to share 10% of profits with employees. However, in this report, we will focus on cost items.

## 1. Electricity costs

Electricity costs are high in Mexico

Electricity prices are high in Mexico, and many companies have pointed out the challenge of the high prices in local interviews<sup>10</sup>. Data from the IEA<sup>11</sup> shows that compared to \$69.3 per MWh for industrial electricity in the US, it costs \$89.5 per MWh in Mexico.

Favorable climate and geography for renewable energy generation in Mexico

Mexico has a favorable climate and geography for renewable energy production, so we believe it is important to leverage these advantages to lower electricity costs. For example, according to data from the International Renewable Energy Agency (IRENA), the national daily average for solar radiation in Mexico is 5.5 kWh/m<sup>2</sup>, and it actually exceeds 8 kWh/m<sup>2</sup> in the spring and summer in the northwest of the country, a level that equals the southwestern US where numerous solar power plants have been constructed<sup>12</sup>.

However, the current administration is not supportive of renewables operated by private companies

On the other hand, Mexican President Andrés Manuel López Obrador (AMLO) favors the state-run Federal Electricity Commission (CFE: Comisión Federal de Electricidad), and cannot be said to be supportive of renewable energy production by private companies. Many have pointed out that it is difficult to obtain approval for private renewable energy generation of 500kW or more, which requires approval from the Energy Regulatory Commission (CRE: Comisión Reguladora de Energía). This difficulty in utilizing renewable energy is also a negative factor for achieving carbon neutrality, which is becoming increasingly important these days.

Installing solar power generation facilities of 500kW or less is the only option currently available

Given the current regulatory trends, the only option available for reducing electricity costs is to install solar power generation facilities of under 500kW, for which the approval of the CRE is not required. In one example, Kiwapower, a company with partial stake from Marubeni in Japan, is currently deploying an onsite Power Purchase Agreement (PPA) service in Mexico involving solar power for corporations. While they can only supply a portion of electricity demand, so the impact is limited, it is still worth considering as an option for reducing electricity costs through private solar power generation due to its ease of adoption.

We did hear some local opinions predicting deregulation in the future, including an acceleration of approvals for private companies engaged in

<sup>10</sup> This JETRO report explains that one reason for the high electricity prices is the inefficient operation of the Mexican Federal Electricity Commission.

JETRO (2020), "Takadomari suru Denryoku-Chou (CFE) no Sangyou-you Denryoku Kakaku (Mexico) [高止まりする電力庁 (CFE) の産業用電力価格 (メキシコ)]"

<https://www.jetro.go.jp/biz/areareports/2020/221885cd807a4482.html>

<sup>11</sup> IEA "IEA, Key World Energy Statistics 2019"

[https://www.connaissancedesenergies.org/sites/default/files/pdf-actualites/Key\\_World\\_Energy\\_Statistics\\_2019.pdf](https://www.connaissancedesenergies.org/sites/default/files/pdf-actualites/Key_World_Energy_Statistics_2019.pdf)

<sup>12</sup> IRENA "REMap 2030, Renewable Energy Prospects: Mexico"

[https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2015/IRENA\\_REMap\\_Mexico\\_report\\_2015.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2015/IRENA_REMap_Mexico_report_2015.pdf)  
Average daily solar radiation in Japan is about 3-4 kWh/m<sup>2</sup>.

Some predict future deregulation	renewable power generation. There is also some likelihood that deregulation might occur to help solve the electricity shortages present in some regions of Mexico.
Initiatives such as joint procurement will also become necessary after deregulation	In one example from Japan, Tokai Rika concluded an off-site PPA with Chubu Electric Power Miraiz for the joint procurement of electricity generated through solar power with 12 suppliers <sup>13</sup> . In another example, though not related to automotive suppliers, Walmart offers the program for the joint procurement of renewable energy in the US with Schneider Electric to its suppliers. An announcement was made in October 2022 that five food companies would jointly procure electricity from wind power generation via a PPA under the program <sup>14</sup> . Once deregulation occurs in Mexico, it will be important for companies to boost their buying power through similar joint procurement of renewable energy and reduce their electricity costs as much as possible. When that happens, these joint agreements may involve not only affiliated companies or closely related companies, but may also involve the companies in the same industrial park.

## 2. Transportation costs

Another issue is high transportation costs	According to local interviews, many companies mentioned the high transportation costs as an issue. According to data for 2016 from KPMG, the cost of international transport in Mexico was \$2,384 (land transport of a 40 foot container), which is 1.5 times higher than the US at \$1,593 <sup>15</sup> . Reasons for this include the presence of many small scale family or individually run companies due to the prohibition of foreign companies from entering into the trucking industry, and the need for additional costs such as security measures or measures against cargo damage <sup>16</sup> .
Possible effectiveness when considering joint transport between auto parts suppliers	Given this situation, we believe it may be effective in reducing transportation costs for multiple auto parts suppliers to consider transporting jointly. For example, different auto parts suppliers take different approaches when delivering products from Mexico to the US, depending on the auto manufacturer. In some cases, automakers in the US may do milk runs <sup>17</sup> to Mexico to pick up the products, while in many others, the supplier transport individually to automaker warehouses located in US cities close to the Mexican border. In the latter case, there may be room to increase the load efficiency and reduce costs through joint transportation because the number of destinations is limited.
Need for players to act as brokers for joint transport and consolidate needs	There is also a need for players able to aggregate transportation needs from different suppliers and act as brokers for joint transportation. For example, in Vietnam, Nagase & Co. is working with the local transportation platform startup(Logivan Vietnam Technology Company, Ltd.) and the Japanese startup Zeroboard, which provides a cloud service to calculate and visualize greenhouse gas emissions, to help reduce costs and greenhouse gas emissions through logistics optimization <sup>18</sup> .

<sup>13</sup> [https://miraiz.chuden.co.jp/info/press/1209705\\_1938.html](https://miraiz.chuden.co.jp/info/press/1209705_1938.html)

<sup>14</sup> <https://perspectives.se.com/blog-stream/first-cohort-for-renewable-energy-supply-chain-program-announced-gigaton-ppa>

<sup>15</sup> KPMG "KPMG's guide to international business locations costs"  
[https://mmkconsulting.com/compalts/reports/compalt2016\\_report\\_vol1\\_en.pdf](https://mmkconsulting.com/compalts/reports/compalt2016_report_vol1_en.pdf)

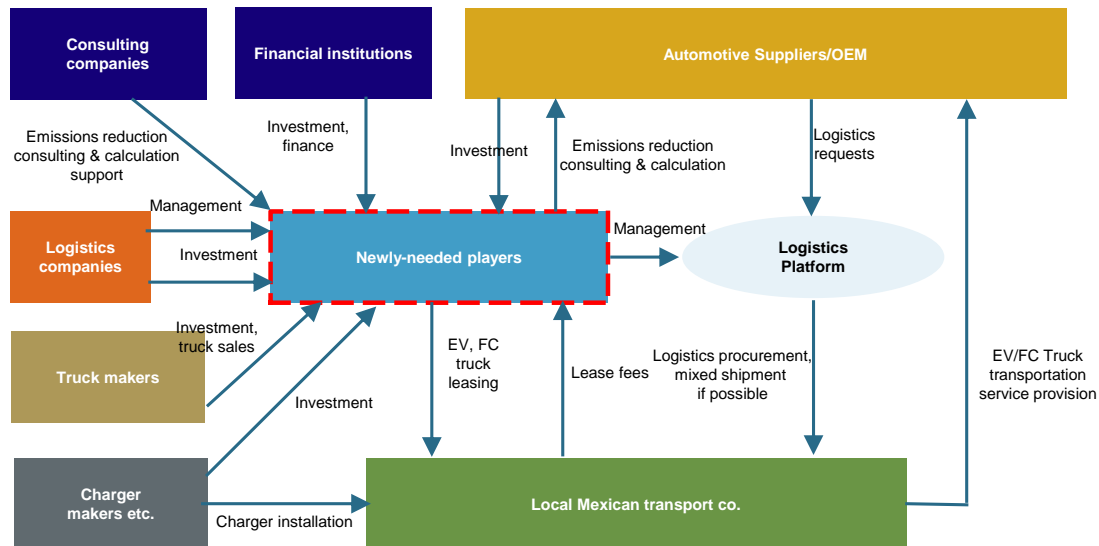
<sup>16</sup> JETRO (2016), "Mexico Risk Management Kenkyuukai Houkokusho [メキシコ・リスクマネジメント研究会報告書]"  
[https://www.jetro.go.jp/ext\\_images/\\_Reports/01/71de2d3f922bef03/20150133.pdf](https://www.jetro.go.jp/ext_images/_Reports/01/71de2d3f922bef03/20150133.pdf)

<sup>17</sup> Milk run refers to a transport method that involves visiting multiple suppliers to pick up raw materials or parts.

<sup>18</sup> <https://www.nagase.co.jp/assetfiles/news/20221007.pdf>

Similar players involved in logistics optimization are also expected to emerge in Mexico (See Fig. 22). Considering the need for the decarbonization of transportation moving forward, then the hope is that players will emerge who take on a role in contributing to emissions reductions for the overall automotive supply chain, such as by owning high priced EV and FCV trucks and renting them out to trucking companies, in addition to seeking efficiency of transportation.

[Fig. 22] Image of Players Needed for Future Logistics Efficiency in Mexico



Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd.

### 3. Labor costs

Some regions of Mexico faced with labor shortages

As many company set up operations in Mexico, labor shortages are starting to occur in some regions of the country, though they are not yet at the level of the US. In particular, Many say that the labor supply and demand is tightening particularly in the northern regions, such as Nuevo León, where many Chinese companies are actively expanding. A look at the unemployment rate by city shows a certain regional differences, with 2.7% in Tijuana in northern Mexico and 2.8% in Guadalajara in central Mexico versus 4.8% in Mexico City. Therefore, when shifting operations to Mexico or strengthening existing operations, it is important to understand the labor supply and demand situation in each region to be able to properly leverage the lower wages of Mexico.

Importance of using partner resources through outsourcing and consignment

An additional measure available is the use of outsourcing and consignment. While temporary staffing services are basically prohibited under Mexican law, outsourcing and consignment are allowed. Therefore, it may become important to leverage resources of partner companies, such as outsourcing when companies are in short supply for internal facilities and personnel, or utilizing production consignment as a way to secure staffing for the future even when facilities or personnel are currently too much. We have in fact learned through interviews of examples of auto parts suppliers outsourcing or consigning work to other companies in the same industry in Mexico based on their mutual operational availability, making the option worth considering particularly with regard to operations that are easy to outsource or consign, such as

pressing and painting.

**VI. Conclusions**

An important step toward solving the urgent problems of auto parts suppliers

Rebuilding North American operations is an urgent issue for Japanese auto parts suppliers. Meanwhile, the importance of the major North American market for Japanese automakers and auto parts makers is increasing as they struggle in China, with the shift to EVs and the emergence of domestic manufacturers. While there are challenges for production in Mexico as explained in Chapter V., we believe that a greater shift of production from the US to Mexico is a helpful tool for “rebuilding North American operations” when coupled with measures to mitigate those challenges, particularly for labor intensive parts and smaller parts which are easier to transfer and can enjoy the merits of transferring more easily.

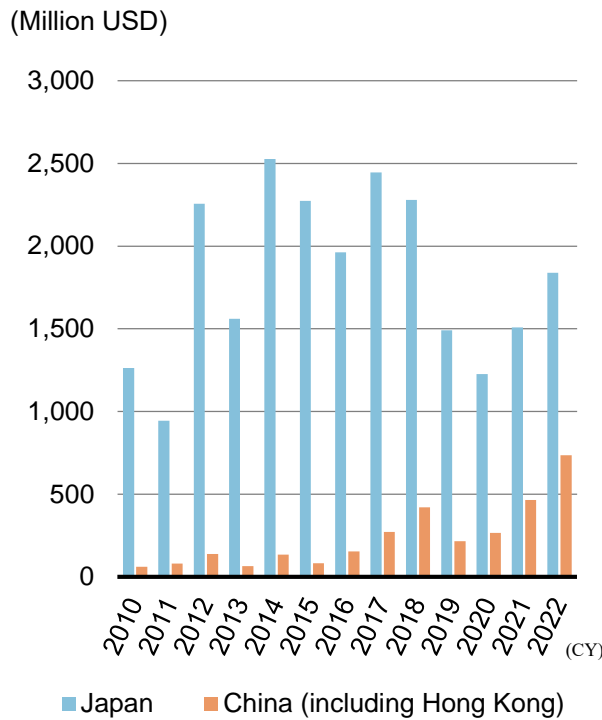
The move to Mexico should be considered sooner rather than later

The easiest time for an actual transfer would be when automakers change models to accommodate changes in specifications and other elements. However, it is also necessary to watch out for the entry of companies from other countries, especially China. A look at direct investment by China in Mexico shows an accelerating trend (See Fig. 23). We have heard some local opinion that it is growing more difficult for Japanese companies to secure transport capacity, personnel, and land in industrial parks as Chinese companies buy up all those resources. Meanwhile, the share of the domestic Mexican automobile sales market held by China rose to 7.3% in 2022 due to the sudden increase in sales by SAIC, while BYD began delivering the Yuan Plus EV, a compact SUV, to the Mexican market in June 2023 (See Fig. 24). While it is true that the transition to EVs in Mexico is considered to be a long way off, as mentioned in Chapter II., it is necessary to watch out for a potential scenario like Thailand, where the EV market increases rapidly due to expanding sales of Chinese EVs. While there is currently a greater presence of Chinese companies in areas other than auto parts, such as furniture and electrical equipment, if Chinese automakers were to start setting up operations in Mexico, then the entry of Chinese auto parts makers would likely accelerate as well. Accordingly, any considerations to shift production to Mexico should be made sooner rather than later.

Caution required even if you do not plan to move

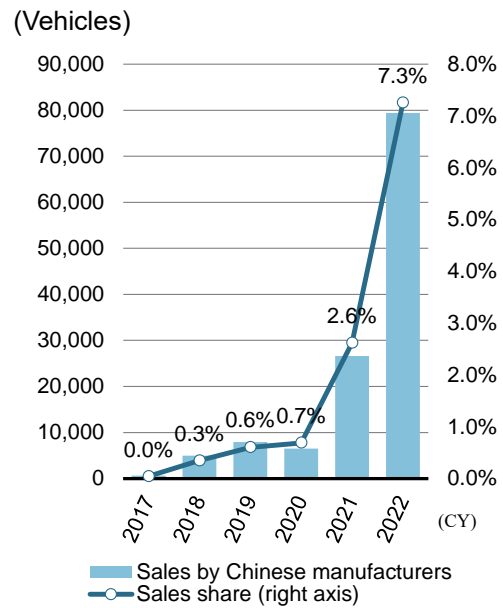
Another concern is that if your company’s customers were to shift production to Mexico, then it is highly likely that they would switch to procuring from local Mexican suppliers. So in that sense, even if your company does not intend to shift production to Mexico, it is necessarily to closely watch any activity on the part of your partners and clients to make use of Mexico.

[Fig. 23] Direct Investment in Mexico by Japan and China



Note: Includes non-automotive industries  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. based on data from the Mexican Government.

[Fig. 24] Number of Vehicles Sold in Mexico by Chinese Manufacturers



Note: Chinese manufacturers include MG but exclude Volvo.  
 Source: Compiled by the Industry Research Department, Mizuho Bank, Ltd. Based on data from INEGI

We hope that Japanese auto parts suppliers have a strong presence in North America in the EV age

Production transfers are costly, and considering the current challenging situation for the North American operations of auto parts suppliers, it is no easy decision to shift production to Mexico or strengthen existing operations there. However, given that the labor shortage in the US is expected to continue over the long term, and that investment to prepare for the EV age is increasingly necessary, then some effort must be made to improve the profitability of North American operations. Therefore, we hope to see Japanese auto parts suppliers improve profitability by leveraging Mexico, generating investment capability, and using that to have a strong presence in North America in the age of EVs.

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[Link to survey](#)



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The logo consists of the word "MIZUHO" in a bold, dark blue, sans-serif font. Below the text is a red, curved underline that starts under the 'M' and ends under the 'O', arching slightly upwards in the middle.