

# Future Global Market Development Analysis for Taiwanese Automotive Fasteners

With chip shortage easing and economic activities recovering from the pandemic, the global automotive market is expected to rebound in 2023. Fasteners take up about 4.5% of the weight of an assembled vehicle, and each vehicle uses 3,000 to 4,000 fasteners which equate to a large demand and a variety of types, including transmission components (engine, electrical installation, steering wheel, transmission device), chassis components (main frame structure, brake, pump, etc.), body parts (control lock, anti-vibration system), and other parts (airbag, safety seat). The cost of automotive fasteners only account for 2 to 3% of the car body, but fasteners serve as a critical connection between the car body and components. Automotive fasteners and the car market are inextricably linked, and therefore this is studied through this article which analyzes the future development for Taiwanese automotive fasteners.

## Global Import and Export of Automotive Fasteners

### Import Analysis

Table 1 shows the global automotive fastener importing countries and their import values from 2018 to 2022. In 2022, the global import value of automotive fasteners was US\$389 million, and the top three importing countries regions were Hong Kong (US\$42 million), the U.S. (US\$37 million), and Italy (US\$26 million). The 5-year compound import growth rate was about 3.8%. The top ten automotive fastener importing countries accounted for about 60% of the world's total import value, with a compound growth rate of about 3.7%. However, there are variations in these countries. In the recent global political and economic turmoil, the top importer Hong Kong stays roughly unchanged. The top ten importing countries with a higher growth rate are Italy (13.5%), the Netherlands (12.7%) and India (10.6%).

### Export Analysis

Table 2 shows the global automotive fastener exporting countries and their export values from 2018 to 2022. The global automotive fasteners export value was USD 296 million in 2022. The world's top three exporting countries were: Germany (USD 44 million), the Philippines (USD 41 million), and China (USD 36 million). The 5-year compound export growth rate was about 8.3%. Except for China and the Philippines, Europe and the U.S. make the majority of the ranking. The top ten exporting countries accounted for about 60% of global exports, with a compound export growth rate of about 12.6%. Except for UK with negative growth, the other nine largest exporting countries had positive growth. The exporting countries with a higher growth rate were the Philippines (130.0%), Turkey (18.4%), China (15.0%), Germany (13.4%), and India (10.8%).



**Table 1. Global Automotive Fastener Importing Countries and Their Import Values from 2018 to 2022**

Unit: USD 0.1 billion; %

Countries/Regions	2018	2019	2020	2021	2022	Share in 2022	CAGR
Hong Kong	0.42	0.42	0.48	0.64	0.42	10.8%	0.1%
USA	0.26	0.20	0.21	0.26	0.37	9.4%	8.5%
Italy	0.16	0.13	0.14	0.25	0.26	6.7%	13.5%
Germany	0.27	0.21	0.18	0.24	0.25	6.5%	-1.6%
India	0.17	0.15	0.13	0.25	0.25	6.5%	10.6%
Netherlands	0.11	0.08	0.08	0.10	0.17	4.4%	12.7%
Belgium	0.23	0.17	0.13	0.16	0.16	4.1%	-9.4%
U.K.	0.12	0.11	0.07	0.14	0.15	3.9%	5.9%
France	0.09	0.09	0.07	0.11	0.12	3.2%	7.7%
Singapore	0.13	0.14	0.12	0.14	0.11	2.8%	-4.4%
Subtotal of Top 10 Importing Countries	1.96	1.69	1.60	2.28	2.26	58.3%	3.7%
Subtotal of Other Importing Countries	1.38	1.25	1.41	1.75	1.62	41.7%	4.0%
<b>Total Global Import</b>	<b>3.34</b>	<b>2.94</b>	<b>3.01</b>	<b>4.02</b>	<b>3.89</b>	<b>100.0%</b>	<b>3.8%</b>

Source: ITC/MIRDC

**Table 2. Global Automotive Fastener Exporting Countries and Their Export Values from 2018 to 2022**

Unit: USD 0.1 billion; %

Countries	2018	2019	2020	2021	2022	Share in 2022	CAGR
Germany	0.27	0.29	0.30	0.45	0.44	11.4%	13.4%
Philippines	0.01	0.02	0.13	0.40	0.41	10.5%	130.0%
China	0.21	0.16	0.14	0.26	0.36	9.4%	15.0%
Czech Republic	0.27	0.24	0.22	0.28	0.34	8.7%	6.0%
USA	0.19	0.18	0.17	0.16	0.21	5.3%	2.1%
India	0.10	0.10	0.08	0.14	0.16	4.0%	10.8%
U.K.	0.16	0.16	0.14	0.12	0.13	3.4%	-5.7%
Belgium	0.11	0.08	0.10	0.14	0.12	3.2%	2.2%
Italy	0.09	0.08	0.07	0.09	0.09	2.4%	1.4%
Turkey	0.05	0.04	0.04	0.07	0.09	2.3%	18.4%
Subtotal of Top 10 Exporting Countries	1.47	1.35	1.40	2.10	2.36	60.7%	12.6%
Subtotal of Other Exporting Countries	0.69	0.51	0.44	0.57	0.60	15.5%	-3.2%
<b>Total Global Export</b>	<b>2.15</b>	<b>1.86</b>	<b>1.83</b>	<b>2.68</b>	<b>2.96</b>	<b>76.2%</b>	<b>8.3%</b>

Source: ITC/MIRDC



## Global Export of Taiwanese Automotive Fasteners

Table 3 shows the global export of Taiwanese automotive fasteners from 2018 to 2022. The global export value of Taiwanese automotive fasteners in 2022 was USD 6.629 million, with a slight decline (-0.4%) in 5-year compound export growth. The top three export destinations were the U.S., the Netherlands, and New Zealand. The top 10 export destinations accounted for 91.6% of the total export value. The United States on the top of the chart has a stable demand for Taiwanese automotive fasteners. The Netherlands ranked second and New Zealand ranked third have a smaller but significantly growing import demand from Taiwan's, indicating that Taiwan's export is gradually decentralized. The export destinations with a higher compound export growth rate were India (213.0%), Mexico (211.4%), the Netherlands (16.1%), New Zealand (15.3%) and they are still worth expanding sales for Taiwan.

Table 3. Global Export of Taiwanese Automotive Fasteners from 2018 to 2022.

Unit: USD 10 thousand; %

Countries	2018	2019	2020	2021	2022	Share in 2022	CAGR
USA	396.5	341.8	286.5	330.2	417.2	62.9%	1.3%
Netherlands	28.1	52.9	49.1	114.1	51.1	7.7%	16.1%
New Zealand	19.3	20.1	20.3	35.2	34.1	5.1%	15.3%
Japan	31.0	21.0	15.2	23.3	30.8	4.6%	-0.2%
Germany	20.1	18.7	19.9	36.4	17.4	2.6%	-3.5%
Indonesia	12.7	6.7	5.0	15.9	15.6	2.4%	5.3%
U.K.	9.0	21.5	13.2	21.0	12.2	1.8%	7.9%
Canada	21.9	14.6	12.5	11.4	10.1	1.5%	-17.6%
India	0.1	0.3	0.3	3.1	9.6	1.4%	213.0%
Mexico	0.1	0.2	0.0	0.0	9.4	1.4%	211.4%
Subtotal of Top 10 Export Destinations	538.8	497.8	422.0	590.6	607.5	91.6%	3.0%
Subtotal of Other Export Destinations	136.1	77.0	74.8	89.3	55.4	8.4%	-20.1%
Total Export from Taiwan to the World	674.9	574.8	496.8	679.9	662.9	100.0%	-0.4%

Source: ITC/MIRDC

## Global Import and Export of ASEAN Automotive Fasteners

### Import Analysis

Table 5 shows ASEAN automotive fastener importing countries and their import values from 2018 to 2022. In 2022, ASEAN imported USD 28.599 million worth of automotive fasteners from the world, with a 5-year compound growth rate at -0.1%. The amount of automotive fasteners imported by ASEAN accounted for 7.4% of the world's total (and higher than LAIA's share at 3.9%). The top three importing countries were Singapore, Thailand, and Malaysia, and these three countries altogether have accounted for more than 70% of the total ASEAN import. The importing countries with a higher compound growth rate were Cambodia (52.8%) and Indonesia (21.6%).

Singapore has a significant advantage in high-tech manufacturing, R&D and service industries, becoming one of the important hubs for global trade, transportation and finance. The Singapore government provides unmanned vehicle rides for the public to achieve the goal of smart country and create an intelligent transportation system. As such, NXP Semiconductors from the Netherlands worked along the Singapore smart nation project to set up a networked vehicle R&D center in Singapore. In addition, Singapore has a total of three unmanned automated light rail system. Singapore has potential in the demand for various types of vehicles in the industry.

Table 5. ASEAN Automotive Fastener Importing Countries and Their Import Values from 2018 to 2022

Unit: USD 10 thousand; %

Countries	2018	2019	2020	2021	2022	Share in ASEAN 2022	Share in the World 2022	CAGR
Singapore	1,314.0	1,358.5	1,248.1	1,386.8	1,099.2	38.4%	2.8%	-4.4%
Thailand	695.6	538.8	509.2	607.7	637.9	22.3%	1.6%	-2.1%



Countries	2018	2019	2020	2021	2022	Share in ASEAN 2022	Share in the World 2022	CAGR
Malaysia	398.6	243.3	1697.5	2136.1	432.4	15.1%	1.1%	2.1%
Cambodia	74.2	312.1	606.4	311.5	404.7	14.2%	1.0%	52.8%
Vietnam	121.0	161.2	202.7	219.8	122.7	4.3%	0.3%	0.3%
Philippines	102.0	98.2	104.4	153.9	109.2	3.8%	0.3%	1.7%
Indonesia	14.0	16.5	11.4	52.9	30.6	1.1%	0.1%	21.6%
Myanmar	122.6	124.6	8.6	88.2	16.1	0.6%	0.0%	-39.8%
Brunei	3.2	12.8	12.4	7.0	4.2	0.1%	0.0%	7.0%
Laos	27.6	20.7	15.3	8.0	2.9	0.1%	0.0%	-43.1%
Subtotal of ASEAN Importing Countries	2,872.8	2,886.7	4,416.0	4,971.9	2,859.9	100.0%	7.4%	-0.1%
Subtotal of Other Importing Countries	30,565.2	26,528.5	25,664.2	35,263.5	35,994.7	--	92.6%	4.2%
Total Global Import	33,438.0	29,415.2	30,080.2	40,235.4	38,854.6	--	100.0%	3.8%

Source: ITC/MIRDC

## Export Analysis

Table 6 shows ASEAN automotive fastener exporting countries and their export values from 2018 to 2022. **In 2022, ASEAN exported USD 49.773 million worth of automotive fasteners to the world**, with a 5-year compound growth rate at 29.4%. The export of automotive fasteners from ASEAN accounted for 16.8% (higher than LAIA at 0.6%) of the world's total export. **The top three exporting countries were the Philippines, Malaysia, and Singapore**, which accounted for more than 95% of the export of ASEAN countries. The ASEAN countries with a higher compounded growth rate were: Vietnam (212.1%) and the Philippines (130.0%).

**Table 6. ASEAN Automotive Fastener Exporting Countries and Their Export Values from 2018 to 2022**

Unit: USD 10 thousand; %

Countries	2018	2019	2020	2021	2022	Share in ASEAN 2022	Share in the World 2022	CAGR
Philippines	145.9	221.0	1,286.4	3999.8	4,082.0	82.0%	13.8%	130.0%
Malaysia	840.3	572.5	398.1	565.9	405.1	8.1%	1.4%	-16.7%
Singapore	571.8	533.6	437.4	386.4	280.8	5.6%	0.9%	-16.3%
Thailand	188.3	130.4	97.8	79.3	120.7	2.4%	0.4%	-10.5%
Vietnam	0.9	1.1	0.6	4.8	85.4	1.7%	0.3%	212.1%
Indonesia	29.9	1.8	29.1	6.8	3.3	0.1%	0.0%	-42.4%
Brunei	0.0	0.2	0.0	0.3	0.0	0.0%	0.0%	--
Cambodia	0.0	0.0	0.0	0.3	0.0	0.0%	0.0%	--
Subtotal of ASEAN Exporting Countries	1,777.1	1,460.6	2,249.4	5,043.6	4,977.3	100.0%	16.8%	29.4%
Subtotal of Other Exporting Countries	19,762.8	17,131.3	16,060.9	21,727.7	24,623.3	--	83.2%	5.7%
Total Global Export	21,539.9	18,591.9	18,310.3	26,771.3	29,600.6	--	100.0%	8.3%

Source: ITC/MIRDC

In 2022, the annual car sales in the Philippines were 356,000 units, up more than 30% from 2021. The sales of motorcycles were 1,564,000 units, up 9% from 2021. The Department of Trade and Industry of the Philippines launched the Automotive Industry Renaissance Strategic Plan in 2016, which encourages international automobile manufacturers to produce automobile bodies and automotive parts in the Philippines. **There are about 300 automotive part and component manufacturers in the Philippines, which have formed industrial clusters in the provinces of Laguna and Cavite. In 2023, the Philippine government lowered the tariffs for many types of electric vehicles to zero, so Taiwanese manufacturers can pay more attention to the business opportunities brought about by the demand of the country's automotive market.**



## Global Import and Export Analysis of Automotive Fasteners from LAIA (Latin American Integration Association)

### Import Analysis

**Table 7** shows LAIA automotive fastener importing countries and their import values from 2018 to 2022. In 2022, LAIA imported USD 15.318 million worth of automotive fasteners from the world, with a 5-year compound growth rate at 7.4%. The percentage of automotive fasteners imported by LAIA from the world was about 3.9% (lower than ASEAN at 7.4%). The top three importing countries were Mexico, Argentina, and Brazil, which altogether accounted for 65% of LAIA's share. The importing countries with a higher compound growth rate were Colombia (61.5%), Brazil (21.6%), and Mexico (19.9%).

**Table 7. LAIA Automotive Fastener Importing Countries and Their Import Values from 2018 to 2022**

Unit: USD 10 thousand; %

Countries	2018	2019	2020	2021	2022	Share in LAIA 2022	Share in the World 2022	CAGR
Mexico	295.1	238.9	314.9	415.7	609.4	39.8%	1.6%	19.9%
Argentina	286.9	143.9	195.8	262.3	269.8	17.6%	0.7%	-1.5%
Brazil	40.3	17.7	23.0	24.1	111.0	7.2%	0.3%	28.8%
Paraguay	76.2	64.9	43.5	81.5	97.2	6.3%	0.3%	6.3%
Peru	86.7	52.0	54.1	138.9	93.0	6.1%	0.2%	1.8%
Bolivia	62.0	78.3	35.9	82.3	87.9	5.7%	0.2%	9.1%
Colombia	12.7	20.3	34.8	25.9	86.5	5.6%	0.2%	61.5%
Ecuador	43.5	27.6	12.0	35.2	53.7	3.5%	0.1%	5.4%
Chile	37.2	39.3	49.6	44.2	53.5	3.5%	0.1%	9.5%
Uruguay	32.0	24.4	31.8	25.8	37.2	2.4%	0.1%	3.8%
Cuba	49.8	35.0	11.3	2.5	22.0	1.4%	0.1%	-18.5%
Panama	9.6	6.0	3.6	1.3	10.6	0.7%	0.0%	2.5%
Venezuela	120.8	0.4	0.4	4.1	0.0	0.0%	0.0%	-100.0%
Subtotal of LAIA Importing Countries	1,152.8	748.7	810.7	1,143.8	1,531.8	100.0%	3.9%	7.4%
Subtotal of Other Importing Countries	32,285.2	28,666.5	29,269.5	39,091.6	37,322.8	--	96.1%	3.7%
Total Global Import	33,438.0	29,415.2	30,080.2	40,235.4	38,854.6	--	100.0%	3.8%

Source: ITC/MIRDC

In 2022, Mexico manufactured about 3.5 million units of cars, making it the world's 7th largest automobile producer, with an annual output value of US\$29.01 billion, accounting for more than 30% of the total exports. The total exports of automobiles and their spare parts were about US\$101 billion in 2022, with the U.S. as the main export destination. The world's major automakers have deployed in the Mexican market, in places such as Leon, which is a center of the automobile industry in Mexico. Auto parts raised Mexican automotive localization rate to 75% under the U.S.-Mexico-Canada trade agreement. Taiwan fastener industry has been focused on the U.S. for many years. The automotive fastener demand market in the U.S. and Mexico is directly related. Taiwan's automotive fastener companies can expand sales and develop the U.S.-Mexico market.

### Export Analysis

**Table 8** shows LAIA automotive fastener exporting countries and their export values from 2018 to 2022. In 2022, LAIA exported USD 1.765 million worth of automotive fasteners to the world, with a 5-year compound growth rate at -1.7%. LAIA's global automotive fastener export accounted for approximately 0.6% of the world's total (lower than ASEAN at 16.8%). The top three exporting countries were Brazil, Mexico, and Chile, which altogether accounted for more than 95% of LAIA's exports. The LAIA country with a higher compound growth rate is Mexico (57.0%) but its export value was not high, mainly because the automotive fasteners produced in the country are mostly supplied to major local carmakers for assembly.



**Table 8. LAIA Automotive Fastener Exporting Countries and Their Import Values from 2018 to 2022**

Unit: USD 10 thousand; %

Countries	2018	2019	2020	2021	2022	Share in LAIA 2022	Share in the World 2022	CAGR
Brazil	152.5	88.3	172.5	150.9	123.1	69.7%	0.4%	-5.2%
Mexico	5.3	4.3	9.4	4.7	32.2	18.2%	0.1%	57.0%
Chile	12.5	3.2	2.7	10.9	17.2	9.7%	0.1%	8.3%
Panama	1.9	0.4	0.1	0.1	2.7	1.5%	0.0%	9.2%
Peru	0.0	0.0	0.0	5.7	0.8	0.5%	0.0%	--
Colombia	1.0	1.7	1.1	0.9	0.4	0.2%	0.0%	-20.5%
Uruguay	0.0	0.0	0.0	0.0	0.1	0.1%	0.0%	--
Argentina	15.7	7.0	6.2	0.0	0.0	0.0%	0.0%	-100.0%
Paraguay	0.0	0.0	0.0	72.6	0.0	0.0%	0.0%	--
Cuba	0.0	0.0	0.1	0.0	0.0	0.0%	0.0%	--
<b>Subtotal of LAIA Exporting Countries</b>	<b>188.9</b>	<b>104.9</b>	<b>192.1</b>	<b>245.8</b>	<b>176.5</b>	<b>100.0%</b>	<b>0.6%</b>	<b>-1.7%</b>
<b>Subtotal of Other Exporting Countries</b>	<b>21,351.0</b>	<b>18,487.0</b>	<b>18,118.2</b>	<b>26,525.5</b>	<b>29,424.1</b>	<b>--</b>	<b>99.4%</b>	<b>8.3%</b>
<b>Total Global Export</b>	<b>21,539.9</b>	<b>18,591.9</b>	<b>18,310.3</b>	<b>26,771.3</b>	<b>29,600.6</b>	<b>--</b>	<b>100.0%</b>	<b>8.3%</b>

Source: ITC/MIRDC

## Conclusion

The world has seen host of changes including the pandemic, the Russia-Ukraine War, the Israel-Palestine War among others which have affected the global auto market supply chain. For export-oriented Taiwanese fastener manufacturers, it is inevitable to create a resilient supply chain and find alternative markets. However, the automotive fastener markets of ASEAN including the Philippines and Singapore, as well as Latin American countries such as Mexico and Brazil, still have potential and business opportunities. Countries competing with Taiwan in automotive fasteners have deployed in these regions for many years. If Taiwan limits itself to the European and American markets, it will have to cross a higher hurdle entering potential markets in the future. Therefore, other potential markets with business opportunities can be evaluated to develop more orders. In summary, this article suggests as follows:

1. Production trend of automotive fasteners: Carmakers now adopt cost reduction strategies and automotive fasteners must be versatile and can be used among different car models. Therefore, suppliers having a large-scale, modular design, R&D and manufacturing capabilities, as well as strong service capabilities are more bonded with major carmakers. Taiwanese companies can tailor fasteners that meet the needs of the automotive industry in Southeast Asia or Central and South American countries according to the types and specifications of automotive fasteners required. Following the guidelines for sharing between different production lines and car models, automotive fasteners can be converted into modules or sub-assemblies to reduce production costs.

2. The impact of vehicle lightweighting on automotive fasteners: Environmental protection and carbon reduction are a shared global issue. Fuel-driven vehicle manufacturers are committed to lightweighting and reducing fuel consumption. For every 10% weight reduction of the vehicle body, fuel efficiency can be increased by 6% to 8%. Currently, there are three ways to reduce the weight of global automotive fasteners: changing the head shape of automotive screws (reduce volume and weight, increase strength), using aluminum fasteners (higher strength, heat resistance and corrosion resistance), reducing the weight of automotive fastener materials (carbon fiber composite materials, glass fiber, magnesium aluminum alloy, high-strength light steel, reinforced plastics, EN AW6056 aluminum alloy fasteners, double-layer carbon steel fasteners, special heat-treated 316 stainless steel fasteners).

3. The impact of green energy trend on automotive fasteners: With the development of new energy vehicles, more than 3,000 fasteners used in fuel vehicles are expected to be reduced by 30%, mostly power-related parts. This will have an impact on the automotive fastener supply chain. Taiwanese companies are suggested to contact battery, motor, control device, new energy and other related manufacturers to discuss the design of new automotive fasteners, set the tone for future automotive fastener R&D, pre-design products, evaluate investment resources and build capacity. ■

Copyright owned by Fastener World / Article by Dr. Arthur Hsu

