2022 日本扣件緊固工具產業發展現況與趨勢

2022 Status Quo and Trends of Japanese Fastening Tool Industry

1. Introduction

Japan is the third largest economy in the world, with the advantages of high consumption level and a huge market scale. Meanwhile, Japanese enterprises possess cutting-edge technologies and R&D talents and resources in the fields of functional materials, energy, automated vehicles, medical care, environment, AI and robotics, which have been playing a pivotal role in the global economy. The special and closed business model of Japan's domestic market has more administrative regulations. Since 1991 when the Japanese economy bubbled, and since 2000 when emerging countries such as China and India were catching up with Japan, Japan's economic environment has changed dramatically and is now focusing its industrial development on the fields of digitalization, environmental protection, artificial intelligence, quantum, bio-engineering, and the universe, which has brought achievements. However, Japan was impacted by the pandemic and strict immigration control measures have impacted its economic development. Although traditional industries such as fastening tools have an industrial power base, their export scale in the global market has been gradually replaced by competitors. In this article, we will review the development trend of the Japanese fastener and fastening tool industry in recent years, and put forward development suggestions as a reference for Taiwanese and Japanese fastener and fastening tool industries to respond to the global political and economic changes in the strategy.

2. Analysis of Japan's Global Economic and Trade Trends in the Fastening Tool Industry

Trade Analysis:

Table 1 shows the development trend of Japan's global import and export of d fastening tools from 2018 to 2022. In 2022, the import value of fastening tools from the world was 179 million US dollars, with a six-year compound growth rate of 1.0%, and the export value of fastening tools to the world was 124 million US dollars, with a six-year compound growth rate of -3.2%. The deficit was about USD55 million.

Table 1. Development Trend of Japan's Import and Export of Fastening Tools to the World, 2018~2022 Unit: USD 100 Million; %

	2018	2019	2020	2021	2022	CAGR
Import	1.72	1.73	1.52	1.79	1.79	1.0%
Export	1.42	1.30	1.19	1.44	1.24	-3.2%
Surplus / Deficit	-0.31	-0.43	-0.33	-0.34	-0.55	15.5%

Source: ITC/Taiwan Customs; Compiled by MIRDC
(Note): Based on the average exchange rate of US dollar to New Taiwan dollar (NTD9.78 for USD 1) in 2022.

Table 2. Major Import Sources and Trends of Fastening Tools in Japan, 2018~2022

Unit: USD 10,000; %

Ranking	Country	2018	2019	2020	2021	2022	2022 Share	CAGR
1	China	5308.3	5277.2	5006.4	5996.9	5982.9	33.4%	3.0%
2	Taiwan	4695.6	4950.2	4700.9	5536.4	5785.0	32.3%	5.4%
3	U.S.A	2314.8	2447.3	1830.1	1920.4	1575.4	8.8%	-9.2%
4	South Korea	1380.5	1439.3	1199.0	1255.0	1138.8	6.4%	-4.7%
5	Germany	1005.3	877.1	663.2	715.6	844.4	4.7%	-4.3%
6	Thailand	428.9	452.1	329.6	504.0	583.9	3.3%	8.0%
7	Switzerland	437.9	381.2	242.8	352.0	314.8	1.8%	-7.9%
8	Vietnam	16.1	19.2	18.8	181.4	252.6	1.4%	99.0%
9	Czech Rep.	113.6	144.3	147.5	165.1	183.4	1.0%	12.7%
10	Spain	40.3	32.5	25.6	54.7	163.0	0.9%	41.8%
11	Ireland	112.7	101.4	115.0	126.5	137.6	0.8%	5.1%
12	Italy	128.9	149.3	138.7	111.2	118.9	0.7%	-2.0%
13	India	93.6	105.5	91.4	108.2	94.4	0.5%	0.2%
14	Israel	93.7	100.4	94.8	81.7	91.1	0.5%	-0.7%
15	Sweden	220.7	50.3	38.9	61.6	80.2	0.4%	-22.4%
16	Denmark	4.2	11.3	5.2	26.3	70.6	0.4%	102.5%
17	Hungary	52.0	57.2	55.5	63.7	66.9	0.4%	6.5%
18	Indonesia	189.0	130.2	87.3	60.8	64.1	0.4%	-23.7%
19	Poland	32.4	8.2	24.9	54.0	64.0	0.4%	18.6%
20	Malaysia	84.6	93.1	61.4	83.1	52.8	0.3%	-11.1%
Subtotal of Top 20 Import Sources		16753.1	16827.3	14877.0	17458.6	17664.8	98.7%	1.3%
Subtotal of Other Import Sources		474.2	484.7	285.3	402.1	229.2	1.3%	-16.6%
Total		17227.3	17312.0	15162.3	17860.7	17894.0	100.0%	1.0%

Source: ITC; Compiled by MIRDC

Import Analysis

Table 2 shows the major import sources and trends of Japanese fastening tools from 2018 to 2022. In 2022, the import value of Japanese fastening tools was about USD179 million, and the import value of the top 20 import sources was USD177 million, which accounted for 98.7% of the global import value, representing the structure of a concentrated market. The import value and share of the top 5 import sources were, in order: China (USD59.82 million/33.4%), Taiwan (USD57.85 million/32.3%), the U.S. (USD15.75 million/8.8%), South Korea (USD11.38 million/6.4%), and Germany (USD8.44 million/4.7%). Although import and demand may not be the same thing, the ups and downs of imports reflect the trend of product demand. The compound growth rate of imports of the world's top 20 import sources in the past five years averaged 1.3%. Taiwan and China were still Japan's major import sources of fastening tools, accounting for a total of 65.7%, with a stable compound growth rate (3.0% for China and 5.4% for Taiwan). They have become the import sources of Japan's domestic fastening tools.

Export Analysis

Table 3 is the major export destinations and trends of Japanese fastening tools during 2018 and 2022. In 2022 Japan's fastening tools export value was USD124 million. The export value of the top 20 export destinations was USD116 million, accounting for 93.4% of the world's total exports, representing the structure of a concentrated export market. The top 5 export destinations in order of value and share are: South Korea (USD 24.493 million / 19.7%), China (USD 18.526 million / 14.9%), the United States (USD16.742 million / 13.5%), Thailand (USD10.475 million / 8.4%), Taiwan (USD 7.440 million / 6.0%). The compound aunual growth rates of Japan's top four fastening tool export destinations have all shown a decline in the last five years, and the decline in export scale should be due to the gradual replacement of the market by competitors.

Table 3. Major Export Destinations and Trends of Fastening Tools in Japan, 2018~2022

Unit: USD 10,000; %

Ranking	Country/Region	2018	2019	2020	2021	2022	2022 Share	CAGR
1	South Korea	3389.0	2952.30	2565.00	2897.90	2449.30	19.7%	-7.8%
2	China	1946.4	1631.0	1747.3	2066.9	1852.6	14.9%	-1.2%
3	U.S.A	1804.4	1586.5	1309.7	1712.9	1674.2	13.5%	-1.9%
4	Thailand	1179.0	1124.2	1014.1	1332.1	1047.5	8.4%	-2.9%
5	Taiwan	745.6	724.5	723.80	877.4	744.2	6.0%	0.0%
6	Vietnam	529.7	850.8	830.7	890.7	570.9	4.6%	1.9%
7	Hong Kong	610.2	516.6	440.5	629.4	472.2	3.8%	-6.2%
8	India	389.6	482.2	365.0	503.8	423.0	3.4%	2.1%
9	Indonesia	489.8	381.2	279.8	424.0	389.0	3.1%	-5.6%
10	Luxembourg	369.4	315.3	307.1	414.0	337.3	2.7%	-2.2%
11	Germany	239.0	223.7	199.5	331.1	274.2	2.2%	3.5%
12	Belgium	265.3	284.4	191.8	287.7	257.5	2.1%	-0.7%
13	Singapore	245.8	242.1	190.7	229.3	240.6	1.9%	-0.5%
14	Philippines	220.5	192.3	176.5	181.1	212.2	1.7%	-1.0%
15	Malaysia	200.1	173.1	178.5	159.2	163.1	1.3%	-5.0%
16	Mexico	258.5	261.9	403.8	240.4	138.2	1.1%	-14.5%
17	Czech Rep.	85.5	74.0	66.0	95.9	110.5	0.9%	6.6%
18	Australia	79.7	89.6	80.1	105.3	85.8	0.7%	1.9%
19	Saudi Arabia	83.5	93.9	65.4	69.3	78.3	0.6%	-1.6%
20	U.K.	138.8	94.1	57.7	86.5	75.2	0.6%	-14.2%
Subtotal of Top 20 Export Destinations		13269.8	12293.7	11193.0	13534.9	11595.8	93.4%	-3.3%
Subtotal of Other Export Destinations		880.6	748.0	675.2	895.2	825.1	6.6%	-1.6%
Total		14150.4	13041.7	11868.2	14430.1	12420.9	100.0%	-3.2%

Source: ITC; Compiled by MIRDC

3. Analysis of Japan's Fastening Tool Trade with the World by Product Category

Analysis of the Import Structure of Japan's Fastening Tools in Recent Years

Table 4 is the analysis of the import structure of Japan's fastening tools from 2018 to 2022; the import values and shares of Japan's fastening tools are in the following order: other interchangeable wrench sockets (USD71.891 million/40.2%), non-adjustable manual wrenches and spanners (USD51.171 million/28.6%), interchangeable wrench sockets (USD22.36 million/12.5%), and screwdrivers (USD16.964 million/9.5%). In the past five years, the compound annual growth rate of imports of Japan's interchangeable wrench sockets was 4.3% and 4.2% for non-adjustable wrenches & wrenches, which was the highest among all product categories, reflecting the demand for the fastening tools in Japan.

Analysis of the Export Structure of Japan's Fastening Tools in Recent Years

Table 5 shows the analysis of export structure of various types of fastening tools in Japan from 2018 to 2022. The export value and proportion of fastening tools in Japan are in the following order: other interchangeable wrench sockets (USD62.356 million/50.2%), non-adjustable manual wrenches and spanners (USD27.621 million/22.2%), interchangeable wrench sockets (USD12.948 million/10.4%), adjustable wrenches and spanners (USD11.124 million/9.0%), screwdrivers (USD10.16 million/8.2%). The compound annual growth rate of exports of Japan's various types of fastening tools in the past five years showed a downward trend, except for adjustable wrenches and spanners (4.6%) and interchangeable wrench sockets (0.2%).

Table 4. Analysis of the Import Structure of Japan's Fastening Tools by Type, 2018~2022 Unit: USD 10,000; %

Products	HS Code	2018	2019	2020	2021	2022	Share	CAGR
Other Interchangeable Tools	820790	7758.4	7671.9	6366.1	7489.8	7189.1	40.2%	-1.9%
Non-Adjustable Wrenches and Spanners	820411	4346.0	4648.0	4076.8	4850.8	5117.1	28.6%	4.2%
Interchangeable Wrench Sockets	820420	1887.2	2010.0	1866.0	2312.4	2236.0	12.5%	4.3%
Screwdrivers	820540	1638.2	1549.9	1534.9	1806.2	1696.4	9.5%	0.9%
Adjustable Wrenches and Spanners	820412	1597.5	1432.2	1318.5	1401.5	1655.4	9.3%	0.9%
Total Import Value		17227.3	17312.0	15162.3	17860.7	17894.0	100.0%	1.0%

Source: ITC; Compiled by MIRDC

Table 5. Analysis of the Export Structure of Japan's Fastening Tools by Type, 2018~2022 Unit: USD 10,000; %

Products	HS Code	2018	2019	2020	2021	2022	Share	CAGR
Other Interchangeable Tools	820790	7435.8	6875.7	6584.8	7698.1	6235.6	50.2%	-4.3%
Non-Adjustable Wrenches and Spanners	820411	3425.1	3105.9	2443.6	3000.9	2762.1	22.2%	-5.2%
Interchangeable Wrench Sockets	820420	1285.7	1161.7	1044.1	1607.0	1294.8	10.4%	0.2%
Adjustable Wrenches and Spanners	820412	927.8	909.1	815.4	953.4	1112.4	9.0%	4.6%
Screwdrivers	820540	1076.0	989.3	980.3	1170.7	1016.0	8.2%	-1.4%
Total Export Value		14150.4	13041.7	11868.2	14430.1	12420.9	100.0%	-3.2%

Source: ITC; Compiled by MIRDC

Table 6. Product Structure Analysis of Various Types of Fastening Tools Japan Imported from Taiwan, 2020~2022 Unit: USD 10,000; %

Products	HS Code	2018	2019	2020	2021	2022	Share	CAGR
Non-Adjustable Spanners and Wrenches	820411	1694.4	2054.9	2334.8	40.4%	17.4%	40.2%	-1.9%
Interchangeable Wrench Sockets	820420	1261.9	1560.7	1529.6	26.4%	10.1%	28.6%	4.2%
Other Interchangeable Tools	820790	928.4	1012.8	973.8	16.8%	2.4%	12.5%	4.3%
Screwdrivers	820540	501.3	576.2	510.9	8.8%	1.0%	9.5%	0.9%
Adjustable Wrench and Spanners	820412	314.9	331.8	435.9	7.5%	17.7%	9.3%	0.9%
Total Import Value		17227.3	17312.0	15162.3	17860.7	17894.0	100.0%	1.0%

Source: ITC; Compiled by MIRDC

Table 7. Product Structure Analysis of Japan's Exports of Various Fastening Tools to Taiwan, 2020~2022 Unit: USD 10,000; %

Products	HS Code	2018	2019	2020	2021	2022	Share	CAGR
Other Interchangeable Tools	820790	409.7	519.4	392.6	52.8%	-2.1%	40.2%	-1.9%
Non-Adjustable Spanners And Wrenches	820411	151.6	180.3	180.8	24.3%	9.2%	28.6%	4.2%
Adjustable Wrench and Spanners	820412	99.3	108.3	104.6	14.1%	2.6%	12.5%	4.3%
Screwdrivers	820540	49.9	51.5	51.5	6.9%	1.6%	9.5%	0.9%
Interchangeable Wrench Sockets	820420	13.3	17.9	14.7	2.0%	5.1%	9.3%	0.9%
Total Export Value		723.8	877.4	744.2	100.0%	1.4%	100.0%	1.0%

Source: ITC; Compiled by MIRDC

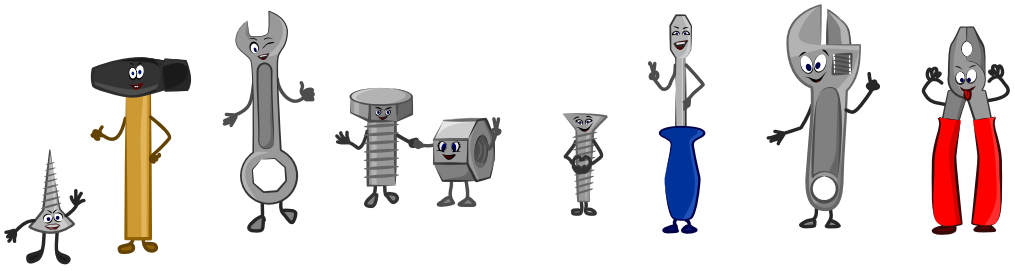
4. Analysis of the Product Categories of Various Fastening Tools Imported from Taiwan to Japan and Exported from Japan to Taiwan

Analysis of the Product Structure of Japan's Various Fastening Tools Import from Taiwan in Recent Years

Table 6 shows the product structure analysis of various types of fastening tools imported from Taiwan to Japan from 2020 to 2022. The import values and proportions of fastening tools are in the following order: non-adjustable wrenches and spanners (USD 23.348 million/40.4%), interchangeable wrench sockets (USD 15.296 million/26.4%), other interchangeable tools (USD 9.738 million/16.8%), screwdrivers (USD 5.109 million/8.8%), adjustable wrenches and spanners (USD 4.359 million/7.5%). Non-adjustable wrenches and spanners with the highest import value and share are stable in the import market, and are the main type of fastening tools that Japan imports from Taiwan. The compound annual growth rate of various types of fastening tools that Japan imported from Taiwan in the past five years was 10.9%, indicating that Japan's domestic demand was showing stable growth.

Structural Analysis of Various Fasteners and Fastening Tools Japan Exports to Taiwan in Recent Years

Table 7 shows the product structure analysis of various types of fastening tools that Japan exported to Taiwan from 2020 to 2022. The values and shares of Japan's fastening tools exported to Taiwan, in order, are as follows: other interchangeable wrench sockets (USD3.926 million/52.8%), non-adjustable wrenches and spanners (USD1.808 million/24.3%), adjustable wrenches and spanners (USD1.046 million/14.1%), screwdrivers (USD515,000/6.9%), and interchangeable wrench sockets (USD147,000/2.0%). Non-adjustable wrenches and spanners were exported at a compound annual growth rate of 9.2%, indicating that there is a certain demand for such Japanese tools in the Taiwanese market with a stable growth trend. In the past five years, Japan's exports of various types of fastening tools to Taiwan grew at a compound rate of 1.4%, showing a stable growth trend though not high.



5. Proposal on Supply and Future Development of Japanese Fastening Tool Industry

The global economy was still weak in the second half of 2022. The U.S. continues to raise interest rates and drive other countries to follow suit, which makes the global economic volatility continue and spread to more countries, and also affects the economic environment of Japan. In addition, Japan is also faced with the staggering changes in global geopolitics, trade conflicts, financial volatility (inflation and interest rate hikes), climate anomalies, the green economy, and emerging technologies, which have cast more variables on the sustainable operation of Japan's fastening tool industry; Japanese fastening tool industry is above the global standard both in terms of technology and quality. In addition to continuous active investment in smart manufacturing, Japan's business strategy is also more diversified. For example, some business owners set up primary production bases in China and Taiwan, or through the establishment of new business units, integrate diversified technologies onto a single product to strengthen the competitiveness in the market. These are the focus of the Japanese industry in the near future. The following are suggestions for Taiwanese fastening tool industry:

1. The export scale of Japan's fastening tool industry is not large, but Japan's industrial power is still strong, and its metal surface treatment technology and manufacturing tolerances reflect Japan's high-precision requirements for craftsmanship. Taiwan's fastening tool industry can take advantage of the Taiwan-Japan technological and economic exchanges to strengthen Taiwan's manufacturing technology.
2. The achievement of Japanese fastening tool industry in the introduction of intelligent and human-machine collaboration can be used as a reference to encourage Taiwanese manufacturers to introduce smart manufacturing and sustainable operation, and reduce the labor shortage in Taiwan in the future.
3. The guidance and assistance provided by the Japanese corporations to the industry can be used as a model for the development of Taiwan's domestic corporations in the future, so that the industry and R&D organizations can work together through the collaboration to reduce the cost of product development for manufacturers.
4. Since Taiwan and China are Japan's main import sources of fastening tools (taking up 65.7%), the Japanese companies can improve their own capital structure by incorporating funds from Taiwan and China, which is vital to corporate survival. Japanese companies, mostly small or medium sized, have special technology but lack capital or successors. Famous companies with brands and routes but are stuck with the funds for deployment are actively looking for overseas companies to seek mergers and acquisitions or collaboration. This is also an important opportunity for Taiwanese companies to tap into the Japanese fastening tool industry chain. ◘

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