

# Taiwan Fastening Tools Industry's 2022 Review and Future Prospects



## 2022年台灣扣件緊固工具產業回顧與未來展望

### Foreword

2022 will be a year of tremendous changes in the global political and economic situation. The major economies around the world have adopted loose monetary policies since 2020, and the low interest rate environment has stimulated the growth of the real estate and durable property markets. In 2021, the global supply chain was tight due to the impact of the epidemic, and China took measures to protect the supply and stabilize the price of coal due to the power shortage crisis, which affected the demand and prices of metal materials. The global economy was expected to continue to recover in 2022, but the military conflict between Russia and Ukraine broke out at the beginning of the year, which led to a sharp rise in global energy and raw material prices, and China took strict control measures due to the epidemic, causing the global supply chain to suffer another blow. Demand from the U.S., Europe and China has declined significantly, and Taiwan's export growth has slowed, resulting in conservative investment by manufacturers. In the second half of 2022, as the pandemic slowed down, domestic demand and related industries' export performance improved and shifted from export to domestic demand, maintaining the economic performance for the whole year.

The EU's proposed Carbon Border Adjustment Mechanism (CBAM) in 2021 reached a provisional

agreement in December 2022, which expanded the scope of regulated products from steel, cement, aluminum, fertilizer and electricity, as proposed by the EU Executive Committee, to include hydrogen, some indirect emissions and downstream products (including fasteners). Although fastening tools have not yet been directly included in the list, the relevant industries in Taiwan still need to pay attention to the subsequent development. This article will review the development trend of the fastening tools industry in and outside of Taiwan in 2022 and present the industry development outlook for 2023 as a reference for Taiwan's fastening tools-related industries to respond to the global political and economic changes in the future.

### Review and Analysis of Economic and Trade Development Trends of the Global Fastening Tools Industry

#### Import Analysis:

**Table 1** shows the main importing countries and import trends of global fastening tools from 2018 to 2021. The import value of global fastening tools products in 2021 was about USD 8.496 billion (about NTD 253.011 billion), and the import value of the top 20 importing countries was USD 6.141 billion, accounting for 72.3% of the global import value. **The top five importing countries in order of import value and share were: the U.S. (US\$1.433 billion/16.9%), Germany (US\$767 million/9.0%), China (US\$335 million/3.9%), France (US\$332 million/3.9%), and U.K. (US\$319 million/3.8%).** Although imports are not equal to demand, and the country's own production must



still be considered, the ups and downs of imports also reflect the trend of certain countries' demand for products, **the top 20 importers' import compound growth rate in the past five years averaged 4.1%, slightly higher than the global CAGR of 3.7%. The U.S. remains the world's leading fastening tool importer**, with the highest import value (US\$1.433 billion) and stable compound growth rate (5.6%), playing the role of driving the global fastening tool demand market.

**Table 1. Major Fastening Tools Importing Countries and Trends in 2018-2021**

Unit: 0.1 bn USD : %

| Ranking                               | Country     | 2018  | 2019  | 2020  | 2021  | % in 2021 | CAGR  |
|---------------------------------------|-------------|-------|-------|-------|-------|-----------|-------|
| 1                                     | USA         | 12.16 | 12.30 | 11.01 | 14.33 | 16.9%     | 5.6%  |
| 2                                     | Germany     | 6.57  | 6.34  | 5.99  | 7.67  | 9.0%      | 5.3%  |
| 3                                     | China       | 2.70  | 2.57  | 2.50  | 3.35  | 3.9%      | 7.5%  |
| 4                                     | France      | 3.63  | 3.25  | 2.59  | 3.32  | 3.9%      | -2.9% |
| 5                                     | UK          | 2.95  | 2.69  | 2.47  | 3.19  | 3.8%      | 2.6%  |
| 6                                     | Canada      | 2.52  | 2.73  | 2.53  | 2.90  | 3.4%      | 4.8%  |
| 7                                     | Netherlands | 2.05  | 2.12  | 2.14  | 2.66  | 3.1%      | 9.1%  |
| 8                                     | Thailand    | 2.59  | 2.53  | 2.10  | 2.57  | 3.0%      | -0.2% |
| 9                                     | Poland      | 1.96  | 1.76  | 1.70  | 2.35  | 2.8%      | 6.1%  |
| 10                                    | Russia      | 1.88  | 1.98  | 1.83  | 2.32  | 2.7%      | 7.2%  |
| 11                                    | Italy       | 1.99  | 1.98  | 1.88  | 2.26  | 2.7%      | 4.4%  |
| 12                                    | Mexico      | 2.22  | 2.18  | 1.72  | 2.26  | 2.7%      | 0.5%  |
| 13                                    | Japan       | 1.72  | 1.73  | 1.52  | 1.79  | 2.1%      | 1.2%  |
| 14                                    | Spain       | 1.62  | 1.41  | 1.30  | 1.75  | 2.1%      | 2.6%  |
| 15                                    | Belgium     | 1.52  | 1.49  | 1.38  | 1.75  | 2.1%      | 4.7%  |
| 16                                    | Australia   | 1.35  | 1.26  | 1.28  | 1.67  | 2.0%      | 7.2%  |
| 17                                    | India       | 1.83  | 1.72  | 1.26  | 1.55  | 1.8%      | -5.3% |
| 18                                    | Austria     | 1.54  | 1.31  | 1.09  | 1.49  | 1.8%      | -1.1% |
| 19                                    | Luxembourg  | 0.56  | 0.38  | 0.45  | 1.14  | 1.3%      | 26.6% |
| 20                                    | Switzerland | 1.01  | 1.03  | 0.91  | 1.10  | 1.3%      | 2.9%  |
| Subtotal of top 20                    |             | 54.38 | 52.77 | 47.65 | 61.41 | 72.3%     | 4.1%  |
| Subtotal of other importing countries |             | 21.86 | 20.95 | 19.25 | 23.56 | 27.7%     | 2.5%  |
| Total                                 |             | 76.23 | 73.72 | 66.90 | 84.96 | 100.0%    | 3.7%  |

Source: ITC/Compiled by MIRDC

Note: The base exchange rate of USD to NTD in 2022 is 29.78

## Export Analysis:

**Table 2** shows the major exporting countries and export trend of global fastening tools from 2018 to 2021. The export value of global fastening tools in 2021 was about USD 8.016 billion (TWD 238.716 billion), the export value of top 20 exporting countries was USD 7.268 billion, which accounted for 90.7% of the global total export value, and was a highly concentrated export market structure. **The top five exporting countries in order of export value and share were: China (US\$2.269 billion/28.3%), Germany (US\$1.135 billion/14.2%), Taiwan (US\$1.033 billion/12.9%), the United States (US\$492 million/6.1%), Italy (US\$274 million/3.4%). Taiwan is the third largest fastening tool exporter in the world, with a compound growth rate of 9.1% in the past four years**, a remarkable performance.

**The compound growth rate of the top 20 exporters in the world in the past five years was 5.2% on average, slightly higher than the global compound growth rate of 4.6%. China is still the world's leading fastening tool exporter**, and even under the multiple impacts of the U.S.-China trade war, the Russia-Ukraine war and the epidemic, it still ranks first with the highest export value (US\$2.269 billion) and a stable compound growth rate (11.1%). It is difficult to shake the fastening tool industry in China under the production advantage of economy of scale and various global variables, while German tools, known for their craftsmanship and quality, are in second place. It is worth mentioning that in recent years, **Vietnam's fastening tool exports have grown significantly, although the export amount is not high, the compound growth rate reached 49.6% in the past four years**, which is presumed to be related to China's relevant manufacturers in response to the impact of the U.S.-China trade war and the transfer of production bases to Vietnam by the relevant manufacturers in China, therefore, the subsequent development of the Vietnamese market deserves the continuous attention of Taiwanese manufacturers.

Table 2. Major Fastening Tools Exporters and Trends in 2018-2021

Unit: 10,000 USD ; %

| Ranking                               | Country     | 2018  | 2019  | 2020  | 2021  | % in 2021 | CAGR   |
|---------------------------------------|-------------|-------|-------|-------|-------|-----------|--------|
| 1                                     | China       | 16.54 | 16.65 | 17.08 | 22.69 | 28.3%     | 11.1%  |
| 2                                     | Germany     | 10.37 | 9.77  | 9.31  | 11.35 | 14.2%     | 3.1%   |
| 3                                     | Taiwan      | 7.96  | 8.31  | 8.04  | 10.33 | 12.9%     | 9.1%   |
| 4                                     | USA         | 5.29  | 5.22  | 4.16  | 4.92  | 6.1%      | -2.4%  |
| 5                                     | Italy       | 2.50  | 2.41  | 2.05  | 2.74  | 3.4%      | 3.2%   |
| 6                                     | India       | 1.87  | 1.71  | 1.52  | 2.25  | 2.8%      | 6.2%   |
| 7                                     | France      | 2.22  | 2.44  | 1.74  | 1.99  | 2.5%      | -3.5%  |
| 8                                     | Netherlands | 1.79  | 1.82  | 1.64  | 1.92  | 2.4%      | 2.3%   |
| 9                                     | Switzerland | 1.72  | 1.61  | 1.41  | 1.78  | 2.2%      | 1.1%   |
| 10                                    | Japan       | 1.42  | 1.30  | 1.19  | 1.44  | 1.8%      | 0.7%   |
| 11                                    | Belgium     | 1.19  | 1.19  | 1.17  | 1.43  | 1.8%      | 6.1%   |
| 12                                    | UK          | 1.57  | 1.48  | 1.25  | 1.42  | 1.8%      | -3.2%  |
| 13                                    | Singapore   | 1.89  | 1.56  | 1.52  | 1.42  | 1.8%      | -9.2%  |
| 14                                    | Poland      | 0.95  | 0.85  | 1.01  | 1.37  | 1.7%      | 13.0%  |
| 15                                    | Czech Rep.  | 1.12  | 1.04  | 1.05  | 1.33  | 1.7%      | 6.1%   |
| 16                                    | Spain       | 1.32  | 1.24  | 1.00  | 1.24  | 1.6%      | -2.0%  |
| 17                                    | Austria     | 0.68  | 0.64  | 0.53  | 0.84  | 1.0%      | 7.0%   |
| 18                                    | Vietnam     | 0.23  | 0.36  | 0.60  | 0.79  | 1.0%      | 49.6%  |
| 19                                    | S. Korea    | 1.15  | 0.93  | 0.65  | 0.73  | 0.9%      | -13.9% |
| 20                                    | Thailand    | 0.72  | 0.75  | 0.59  | 0.70  | 0.9%      | -1.0%  |
| Subtotal of top 20                    |             | 62.50 | 61.30 | 57.48 | 72.68 | 90.7%     | 5.2%   |
| Subtotal of other exporting countries |             | 7.52  | 6.84  | 6.40  | 7.48  | 9.3%      | -0.2%  |
| Total                                 |             | 70.02 | 68.14 | 63.88 | 80.16 | 100.0%    | 4.6%   |

Source: ITC/Compiled by MIRDC

Note: The base exchange rate of USD to NTD in 2022 is 29.78

### Taiwan's Top 20 Fastening Tools Export Destinations

Table 4 is an analysis of the top 20 export destinations of fastening tools from Taiwan in 2022; **the export amounts and shares of the top 5 export destinations of fastening tools from Taiwan were: the United States (NT\$14.299 billion/44.9%), China (NT\$2.364 billion/7.4%), Germany (NT\$1.782 billion/5.6%), Australia (NT\$1.195 billion/3.7%), and the Netherlands (NT\$1.186 billion/3.7%).** The main export destination was the United States, accounting for almost half of the export market, and the compound growth rate of exports to the United States reached 13.8% in the past four years. **In addition to the U.S., the top 20 export destinations with a compound growth rate of over 10%**

## Review and Analysis of Economic and Trade Development Trends of Taiwan Fastening Tools Industry

### Import & Export Analysis

Table 3 shows the global import & export trend of fastening tools of Taiwan in 2017-2022. In 2022, the fastening tools imported from the world was US\$72 million (about NT\$2.156 billion), representing a compound import growth rate of 6.4% over the six years, and **the fastening tools exported to the world was US\$1.070 billion (about NT\$31.865 billion). The export compound growth rate was 7.4%, and the surplus amounted to US\$998 million**, making it an important export product for China to generate foreign exchange.

Table 3. Development Trend of Taiwan Fastening Tools Import and Export from 2017 to 2022

Unit: 0.1 bn USD ; %

| Year    | 2017 | 2018 | 2019 | 2020 | 2021  | 2022  | CAGR |
|---------|------|------|------|------|-------|-------|------|
| Import  | 0.53 | 0.53 | 0.61 | 0.70 | 0.86  | 0.72  | 6.4% |
| Export  | 7.48 | 7.96 | 8.31 | 8.04 | 10.33 | 10.70 | 7.4% |
| Surplus | 6.95 | 7.43 | 7.70 | 7.34 | 9.47  | 9.98  | 7.5% |

Source: ITC/Taiwan Customs/Compiled by MIRDC

in the past four years included Australia (19.7%), Russia (16.4%), and Belgium (12.6%), all of which are potential countries for sustainable market expansion.

**Table 4. Taiwan's Top 20 Fastening Tools Export Destinations by 2022**

Unit: 0.1 bn NTD : %

| Ranking by Year 2022        | Country     | 2019   | 2020   | 2021   | 2022   | Share in 2022 | CAGR  |
|-----------------------------|-------------|--------|--------|--------|--------|---------------|-------|
| 1                           | USA         | 96.91  | 99.51  | 123.46 | 142.99 | 44.9%         | 13.8% |
| 2                           | China       | 20.75  | 22.42  | 27.04  | 23.64  | 7.4%          | 4.4%  |
| 3                           | Germany     | 16.47  | 15.20  | 17.07  | 17.82  | 5.6%          | 2.6%  |
| 4                           | Australia   | 6.97   | 6.67   | 9.24   | 11.95  | 3.7%          | 19.7% |
| 5                           | Netherlands | 10.17  | 9.14   | 11.82  | 11.86  | 3.7%          | 5.2%  |
| 6                           | Russia      | 6.88   | 5.40   | 8.63   | 10.85  | 3.4%          | 16.4% |
| 7                           | Japan       | 9.61   | 8.48   | 9.20   | 10.31  | 3.2%          | 2.4%  |
| 8                           | France      | 10.48  | 6.51   | 9.98   | 10.06  | 3.2%          | -1.4% |
| 9                           | UK          | 6.49   | 5.04   | 6.05   | 6.57   | 2.1%          | 0.4%  |
| 10                          | Italy       | 4.78   | 3.41   | 5.07   | 5.68   | 1.8%          | 5.9%  |
| 11                          | Sweden      | 6.42   | 4.30   | 4.94   | 5.27   | 1.7%          | -6.3% |
| 12                          | Canada      | 4.64   | 4.27   | 4.01   | 5.07   | 1.6%          | 3.0%  |
| 13                          | Belgium     | 2.79   | 3.07   | 3.27   | 3.99   | 1.3%          | 12.6% |
| 14                          | Poland      | 3.13   | 2.54   | 3.15   | 3.68   | 1.2%          | 5.6%  |
| 15                          | Indonesia   | 2.90   | 1.61   | 2.13   | 2.73   | 0.9%          | -2.0% |
| 16                          | Brazil      | 2.37   | 2.09   | 1.91   | 2.66   | 0.8%          | 3.9%  |
| 17                          | S. Korea    | 2.34   | 2.27   | 2.56   | 2.61   | 0.8%          | 3.7%  |
| 18                          | Vietnam     | 2.68   | 3.84   | 3.62   | 2.43   | 0.8%          | -3.2% |
| 19                          | Spain       | 3.04   | 2.04   | 1.73   | 2.40   | 0.8%          | -7.6% |
| 20                          | India       | 1.94   | 1.23   | 1.53   | 2.05   | 0.6%          | 1.8%  |
| Subtotal of top 20          |             | 221.78 | 209.06 | 256.42 | 284.61 | 89.3%         | 8.7%  |
| Subtotal of other countries |             | 34.54  | 27.17  | 31.66  | 34.12  | 10.7%         | -0.4% |
| Total                       |             | 256.31 | 236.23 | 288.08 | 318.73 | 100.0%        | 7.5%  |

Source: Taiwan Customs/Compiled by MIRDC

## Structure Analysis of Various Fastening Tools Export from Taiwan in Recent Years

Table 5 is a structural analysis of Taiwan's exports of various types of fastening tools from 2018 to 2022; **the export value and share of Taiwan's fastening tools were: interchangeable socket wrenches (NT\$13.838 billion/43.4%), non-adjustable hand operated wrenches (NT\$7.363 billion/23.1%), adjustable hand-operated wrenches (NT\$3.969 billion/12.5%), other interchangeable tools (NT\$3.380 billion/10.6%), screwdrivers (NT\$3.323 billion/10.4%), and screwdrivers (NT\$2.5 billion/10.4%).** The highest export value and share of interchangeable socket wrenches have a stable position in the global export market and are the main fastening tools exported by Taiwan. In the past five years, the compound growth rate of Taiwan's exports of various types of fastening tools was 7.4%, showing a stable growth trend.

**Table 5. Structure Analysis of Various Types of Fastening Tools Export in Taiwan in 2018-2022**

Unit: 0.1 bn NTD : %

| Product  | HS Code | 2018   | 2019   | 2020   | 2021   | 2022   | % of Export | CAGR  |
|--|---------|--------|--------|--------|--------|--------|-------------|-------|
| Non-adjustable Hand Operated Wrenches (Pliers) | 820411  | 54.08  | 57.56  | 51.10  | 61.22  | 73.63  | 23.1%       | 8.0%  |
| Adjustable Hand Operated Wrenches (Pliers)     | 820412  | 28.23  | 30.91  | 29.95  | 35.05  | 39.69  | 12.5%       | 8.9%  |
| Interchangeable Socket Wrenches                | 820420  | 107.79 | 112.74 | 101.31 | 129.52 | 138.38 | 43.4%       | 6.4%  |
| Screwdrivers                                   | 820540  | 21.97  | 23.54  | 23.13  | 28.45  | 33.23  | 10.4%       | 10.9% |
| Other Interchangeable Tools                    | 820790  | 27.16  | 31.56  | 30.74  | 33.83  | 33.80  | 10.6%       | 5.6%  |
| Total Export Value (0.1 bn NTD)                |         | 239.22 | 256.31 | 236.23 | 288.08 | 318.73 | 100.0%      | 7.4%  |

Source: Taiwan Customs/Compiled by MIRDC



## Review of Fastening Tool Issues in China and Measures to Address Them

In 2022, the pandemic stimulus program of 2021 and the transfer effect of the U.S.-China trade war on Taiwan drove the export value of fastening tools in Taiwan to grow significantly by 10.6%, which, of course, covers the factors of inflation and rising raw materials. Overall, it is clear that the U.S. and China are the world's leading importer and exporter of hand tools, respectively. The U.S. government has provided various incentives to encourage U.S. businesses to return to the U.S. in order to revitalize the local economy and employment. For example, the U.S. government passed the US\$1.2 trillion Infrastructure Act in 2021 to strengthen and rebuild the U.S. rail, highway, air, maritime, power and broadband networks, which are important growth drivers for Taiwan, a major exporter to the U.S. The following is a review of the key issues for Taiwan in 2022 and proposes measures to address them:

### Geopolitical Impact - Impact of Russia-Ukraine War

The main raw material for the production of fastening tools in Taiwan is steel, mostly sourced domestically, and the main suppliers include Taiwan CSC, Feng Hsin Steel, Yusco, etc. In 2021, Taiwan's upstream steel industry imported 17.6% and 0.004% of the total steel products (including steel billets and steel materials) from Russia and Ukraine respectively, and the steel billets are 85% self-produced, with Brazil, Vietnam, and Japan as alternative sources. Therefore, there is a low chance of shortage of domestic steel supply due to the conflict between Russia and Ukraine. In addition, Taiwan CSC gives priority to domestic steel demand in response to market variables, so the supply of steel raw materials

required by the fastening tool industry is not yet in shortage, but the industry can continue to introduce new technologies to improve material utilization rates and other technologies to reduce costs and respond to the variables in the global raw material market.

### The Impact of Low Carbon Transformation Issues on the Fastening Tool Industry

At present, there is a global consensus of net zero emissions by 2050. In addition to the aforementioned CBAM, carbon control regulations continue to be introduced in various countries, such as the U.S. and Japanese carbon tariff system, etc. Although Taiwan's fastening tools are mainly exported to the U.S. market and tool products have not yet been included in the list of controls, fastening tool manufacturers are mostly traditional industries, they cannot be ruled out as the U.S. will still fight with the EU for the right to speak about global carbon emission standards, and Stanley Black & Decker, a major hand tool manufacturer, will achieve the goal of no carbon emission by 2030, and



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will directly include carbon in the evaluation index of suppliers in the future. It is recommended that the domestic industry respond by carrying out carbon inventory ASAP, expanding the utilization rate of green energy & materials, setting up energy-saving equipment and waste heat and water recycling, and strengthening forging precision to reduce waste.

## Trends in the Flexible Industry Supply Chain

In recent years, the U.S.-China trade war and the impact of the epidemic have accelerated the restructuring of the global supply chain, with suppliers reconfiguring their sources of raw material procurement and the layout of their production bases. For instance, Stanley Black & Decker in the U.S. has invested some of its companies in China to set up new factories in Mexico, and U.S. Techtronics Industries has shifted its original focus in China to the U.S, Mexico, Vietnam, etc. Although the fastening tool industry is highly localized in manufacturing and raw material sources, the risk of material breakage is low, especially Taiwan has advantages in technology and quality, which is one of the options for foreign manufacturers to disperse manufacturing risks, strengthen the existing industrial advantages, expand the fastening tool industry chain to resist, withstand and recover from various variables.

## China's Fastening Tools Industry Outlook for 2023

Looking ahead to 2023, in addition to the continuation of the weakness of the global economy in the 2nd half of 2022, the U.S. continues to raise interest rates and drive other countries to follow suit, making economic fluctuations continue and expanding to more countries, also affecting the economic trends of various countries; in addition, it will continue to face global geopolitics, trade conflicts, financial fluctuations (inflation and interest rate increases), climate anomalies, green economy, emerging technologies and other intertwined variables, also making the timing of economic recovery more difficult. In addition, the war between Russia and Ukraine has not yet stopped. Whether the secondary impact on the global supply and demand of raw materials will also affect Taiwan's economic and trade performance, which is worthy of prior study and attention. Observing the trend of industrial ups and downs in the past 10 years, Taiwan fastening tool industry has been able to overcome several global political and economic variables and impacts smoothly because of its excellent and stable strong industrial structure. Looking ahead to 2023, Taiwan fastening tool industry should be able to steadily face global political and economic variables and show stable and optimistic results. ■

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