



# Impact Analysis of Russia-Ukraine Conflict on Taiwan's Fastening Tools Industry

## 俄烏衝突對台灣扣件緊固工具產業之影響分析

### 1 Overall Impact of the Russia-Ukraine Conflict

Since the COVID-19 pandemic outbreak in 2019, global political and economic situations have been disturbed and only slightly began returning to normal at the start of 2022. However, the conflict between Russia and Ukraine since February 4 is still continuing, which has resulted in a supply shortage of global metal materials and raw materials and soaring prices, and Taiwan's government, associations, and manufacturers have been keeping a close watch on the conflict and influences on the domestic industry so that they can take countermeasures at any time. According to the International Trade Administration's statistics, Taiwan's top 10 exported industrial products to Russia and Ukraine consist of several raw metal materials and associated products, and two fastener fastening tool items (socket wrenches and other hand tools) are included. Therefore, it is necessary to do further research, and discuss Taiwan's fastener and fastening tools and similar products. The amounts and ranking of goods among Taiwan's top 10 imported and exported industrial products from and to Russia and Ukraine are listed in **Table 1** below.

**Table 1. The Amounts and Ranking of Goods Among Taiwan's Top 10 Imported and Exported Industrial Products from and to Russia and Ukraine**

Unit: US\$ 0.1 bn ; %

	Russia					Ukraine				
	HS code	Product	Amount	Proportion	Rank	HS code	Product	Amount	Proportion	Rank
Import	76011000	Aluminum (non-alloyed steel)	11.31	13.53	3	74032100	Copper-zinc based alloy	1.062	31.25	1
	--	--	--	--	--	76012020	Aluminum alloy ingot	0.096	0.33	21
Export	82055990	Other hand tools	2.11	2.23	10	72193390	Other cold rolled products	0.437	0.55	30
	73181590	Steel screws and bolts	1.978	0.76	19	82055990	Other hand tools	0.427	0.45	24
	--	--	--	--	--	82042000	Replaceable socket wrenches	0.397	0.86	17

Data source: Bureau of Foreign Trade, MOEA/sorted by this research

Driven by the future political and economic environment, key topics will include how Taiwan will manage to reduce raw materials acquisition difficulty and costs in the future Russia-Ukraine conflict and how it will evade the impacts of international sanctions to consistently maintain its competitiveness after international market reformulation. This research proposes countermeasures for Taiwan industries and associative manufacturers for reference.

## 2 Taiwan's Fastening Tools Industry Development Trends in Recent Years

The production value of fastening tools in 2021 was about NT\$ 42.46 billion in total, among which, the import value was NT\$ 2.87 billion, the export value was NT\$ 36.51 billion, the domestic market sales were NT\$ 8.81 billion, and the export proportion was about 86.0%. The compound annual growth rate (CAGR) of the past six years has been 5.77%, the degree of dependence on import is 32.5%, and the degree of domestic self-sufficiency is 67.5%. However, the export performance in 2021 slowed down due to the epidemic, and with the influence of stimulus measures from various countries gradually fermented, domestic major manufacturers' orders had led export performance in 2021 to grow by 27.1% compared with 2020; the imports and exports of Taiwan's fastening tools industry in 2016-2021 are listed in **Table 2**.

**Table 2. Imports and Exports of Taiwan's Fastening Tools Industry in 2016-2021** Unit: NT\$ 0.1 bn; %

Items	2016	2017	2018	2019	2020	2021	CAGR
Output Value	383.0	366.8	383.6	387.3	346.2	424.6	2.08%
Import Value	19.5	19.2	20.3	22.5	24.1	28.7	8.04%
Output Value	275.9	291.6	308.8	317.7	287.2	365.1	5.77%
Domestic Market Demands	126.7	94.4	95.2	92.0	83.2	88.1	-7.00%
Degree of Dependence on Import	15.4%	20.3%	21.3%	24.4%	29.0%	32.5%	16.17%
Export Proportion (%)	72.0%	79.5%	80.5%	82.0%	83.0%	86.0%	3.61%
Self-Sufficiency Rate (%)	84.6%	79.7%	78.7%	75.6%	71.0%	67.5%	-4.43%

Data source: R.O.C. Statistics Database Query/sorted by this research

## 3 Situation and Analysis of Impact from Russia-Ukraine Conflict on Fastening Tools Industry

### (A) Steel Materials Export from Russia-Ukraine to the World

The global crude steel output in 2021 was about 1.95 billion MT, of which Russia accounted for about 76 million MT (or 3.9%) and globally ranking No. 5, while Ukraine was about 21.4 million MT, accounting for 1.1% and globally ranking 14, with both countries accounting for 5% of the global total; among the rest, Russia's export sales amount every year is about 30 million tons, and that of Ukraine is 15 MT, a total of 45 million MT.

The Russia-Ukraine conflict is spreading, and their domestic steel plants are destroyed or blocked for export; furthermore, Tangshan in mainland China is closed due to the epidemic, all of which results in a shortage of the global steel supply by more than 100 million tons. Although affected by steel prices soaring and market transaction rising due to Russia-Ukraine conflict, the global crude steel rate of capacity utilization in 2021 was about 78.4%, so it can promote output and handle the deficiency, thus avoiding excessive shortage in the short term.

The volume of Taiwan's crude steel import from Russia in 2021 reached 1.45 million tons, occupying 34.8% of the total, while about 116,000 tons of iron ore were imported from Ukraine, occupying 0.5% of the total, so it is easy to see that the steel industry is mainly affected under the conflict as Taiwan mostly imports billet steel semi-finished products from Russia and Ukraine for output adjustment in the peak season. However, such steel billets have already been under self-production through domestic blast and electric furnace plants with an annual output achieving 23.23 million tons. According to survey data from the Iron and Steel Association, various kinds of alternative raw materials are available for such billet steels and may also be imported from Vietnam, Indonesia, Brazil, etc., to reduce the impact on supply and demand.

Moreover, raw materials for Taiwan's fastening tools are mainly from Taiwan CSC, which has a self-production ability for domestic steel products. As for the rise in prices, Taiwan CSC may be requested to consider downstream practitioners' competitiveness and cooperate with government policy, thus keeping such impacts under control.

### (B) Russia & Ukraine's Fastening Tools Import from the World

The combined value of fastening tools Russia and Ukraine imported from the world in 2020 was nearly US\$0.6 billion (about NT\$ 16.8 billion) in total, accounting for 2.7% of the market, with Russia accounting for the value more than Ukraine's in terms of import amounts, namely US\$0.51 billion (about NT\$ 14.3 billion), occupying 2.3% of the global, and with a compound annual growth rate (CAGR) from 2017 to 2021 at 1.6%. Nevertheless, Ukraine's import amount of fastening tools was US\$80 million (about NT\$ 2.25 billion), occupying 0.4% of the total, also with a compound annual growth rate (CAGR) from 2017 to 2021 at 11.9%. Imports of Russia and Ukraine's fastening tools from the world are listed in **Table 3** below:

**Table 3. Imports of Russia & Ukraine’s Fastening Tools from the World in 2017-2020**

Unit: US\$ 0.1 bn; %

	2017	2018	2019	2020	2020 Proportion	CAGR
Russia’s Imports	4.9	5.2	5.0	5.1	2.3%	1.6%
Ukraine’s Imports	0.6	0.6	0.7	0.8	0.4%	11.9%
Global Total Import Value	203.4	223.2	220.1	222.6	100.0%	3.1%

Data source: ITC Trade statistics /sorted by this research

**(C) Impact from the Russia-Ukraine Conflict on Global Shipment and Lead Time**

The Russia-Ukraine conflict has disrupted the global metal materials and associated seaborne trades and may also trigger bulk carriers and oil tankers’ freight rise in prices. Provided that trade is interrupted by the conflict, substitutes for imported goods, as well as demands for long-range transportation and more vessels, all depend on the duration of the Russia-Ukraine conflict. With Europe and America’s sanctions on Russia fermenting and the blockade of Russia’s export trade, in addition to avoiding Ukraine’s ports for freight handling, bulk carriers shall note that banks refuse to open a L/C, that vessel or chartering practitioners are unable to pay, and that shipowners and carriers’ assets are tied up; while the further negative effect is that if Europe and America continue to expand the sanction scope in the future, namely embargoing energies and bulk supplies, such as petroleum, iron ore, coals, etc., some fastening tools manufacturers in Taiwan will be unable to make deliveries and be paid on time because of blocked shipping.

**4 Situation and Analysis of Taiwan’s Fastening Tools Export to Russia & Ukraine**

Taiwan’s fastening tool products exported to Russia in 2021 amounted to NT\$ 960 million, with a compound annual growth rate (CAGR) of 12.6% over the past six years and occupying 2.6% of the global exports; meanwhile, its fastening tools exported to Ukraine in the same year amounted to NT\$ 240 million, also with a compound annual growth rate (CAGR) of 8.7% and occupying 0.7% of the global exports. Therefore, it can be seen that Taiwan’s fastening tools to Russia and Ukraine all have lower export values and proportions, as shown in the following Table 4 from 2016~2021.

Taiwan’s fastening tools are exported mostly to U.S. market, while the export to Russia and Ukraine account for only NT\$ 1.2 billion, occupying 3.3% of the global exports, which is unlikely to have much impact on the economy and trade or through market transfer to reduce such impact.

**Table 4. Taiwan’s Fastening Tools Export to Russia & Ukraine in 2016-2021**

Unit: NT\$ 0.1 bn; %

	2016	2017	2018	2019	2020	2021	2021 Market Proportion	CAGR
Taiwan’s Exports to Russia	5.3	8.1	7.0	8.0	6.2	9.6	2.6%	12.6%
Taiwan’s Exports to Ukraine	1.6	1.9	2.0	2.7	1.9	2.4	0.7%	8.7%
Taiwan’s Global Exports	275.9	291.6	308.8	317.7	287.2	365.1	100.0%	5.8%

Data source: Taiwan’s Statistics Database Query / Customs tariff of each country / Sorted by this research

Regarding exports to Russia, Taiwan’s exported fastening tools to Russia in 2021 amounted to NT\$ 965 million, and the top three products were interchangeable socket wrenches (NT\$ 441 million, 45.7%), adjustable spanners and wrenches (NT\$ 0.14 bn, 14.5%), and pliers, tweezers, and other similar products (NT\$ 94 million, 9.7%). As for the exports to Ukraine, Taiwan’s exported fastening tools to Ukraine amounted to NT\$ 240 million, and the top three products were interchangeable socket wrenches (NT\$ 111 million, 46.2%), non-adjustable spanners and wrenches (NT\$ 38 million, 16.0%), and adjustable spanners and wrenches (NT\$ 32 million, 13.1%). It is observed that two of the same items appear in Taiwan’s top three products exported to Russia and Ukraine, demonstrating that such products are competitive in the Russia-Ukraine markets; Taiwan’s export amounts and proportions for each fastening tools to Russia and Ukraine in 2021 are listed in Table 5.

**5 Conclusions and Future Suggestions**

**(A) Conclusions**

1. Raw metal materials: Taiwan’s import volume of crude steel from Russia reaches 1.45 million tons, occupying 34.8% of total import volume, but since it can produce domestically or import from other countries, there is no need to worry about supply chain disruption or insufficiency in effective demand. Furthermore, the nickel material for fastening tools manufacturing and electroplating process that are imported from Russia are ten percent more than the aforementioned, but in this case also, Taiwan has other substitute source countries and no supply failure risk.

**Table 5. Amount and Proportion of Taiwan’s Export to Russia and Ukraine for Each Fastening Tool in 2021**

Unit: NT\$ 0.1 bn; %

HS code	Product name	Russia	Export Proportion	Ukraine	Export Proportion
8203200000	Pliers, pincers, tweezers	0.94	9.7%	0.24	10.0%
8203400010	Bolt removers and similar tools	0.01	0.1%	0.01	0.2%
8204110000	Hand-held spanners and wrenches (non-adjustable)	0.93	9.6%	0.38	16.0%
8204120000	Hand-held spanners and wrenches (adjustable)	1.40	14.5%	0.32	13.1%
8204200000	Interchangeable socket wrenches	4.41	45.7%	1.11	46.2%
8205100020	Tools for drilling, cutting, or tapping	0.01	0.1%	0.00	0.0%
8205200000	Hammer and sledgehammers	0.05	0.5%	0.01	0.3%
8205400000	Screwdrivers	0.57	5.9%	0.15	6.1%
8205592000	Office punches, nail pullers	0.07	0.8%	0.01	0.3%
8205599010	Emission nailers	0.17	1.7%	0.01	0.6%
8205700000	Pincer pliers, clamps	0.25	2.6%	0.03	1.1%
8467112000	Portable pneumatic screwdrivers	0.02	0.2%	0.00	0.0%
8467113000	Portable pneumatic wrenches	0.82	8.5%	0.14	5.9%
8467293000	Power socket wrenches	0.01	0.1%	0.00	0.1%
<b>Total</b>		<b>9.65</b>	<b>100.0%</b>	<b>2.40</b>	<b>100.0%</b>

Data source: Taiwan Statistics Database Query / Customs tariff of each country / Sorted by this research

- Taiwan’s fastening tools are mainly exported to the U.S., while the export amounts to Russia and Ukraine are only NT\$ 1.22 billion, occupying 3.3% of its global sales, which has little influence on Taiwan’s overall trade layout and also can be transferred to reduce via export sales.
- Taiwan’s fastening tools practitioners are mainly OEM, and although Russia and Ukraine are not major export markets, some OEM firms as well as practitioners with Russian clients are affected. However, as their sales turnover proportions to Russia and Ukraine are not high, the overall impact is also slight.

**(B) Suggestions**

- 1. Stabilize domestic demands:** Implement forward-looking plans, reshoring of Taiwanese manufacturers, and other metal-related policies in order to expand each domestic steel application demand, guide fastening tools practitioners in continuously developing high value-added products, and take advantage of wind power, green energy, EV, and other market opportunities.
- 2. Enhance supply and demand price monitoring mechanisms:** The government has set up a metal material supply and demand price monitoring platform for metal-related practitioners’ references in order to promote their sensitivities to metal materials supply, demand, and price, and maintains contact with associations and manufacturers to take countermeasures for any possible variables that may be triggered by the Russia-Ukraine conflict.
- 3. Control scraps export and improve recycling and reusing:** If the Russia-Ukraine conflict continues to spread, steel metal outputs and export sales from Russia will be reduced sharply, which may result in fluctuations in global prices. Therefore,

in case of global steel metal prices rising due to the conflict, the government shall consider controlling domestic scraps export through recycling and reusing in order to improve the recovery rate and stabilize the price of metals.

- 4. Turn to purchase from other countries or boost domestic procurement:** If Taiwan restricts its metal products to Russia, it may also suffer anti-sanctions on its economy and trade, and on such an occasion, Taiwan may introduce a flexible output adjustment, namely turning to purchase from other countries or boosting domestic procurement.
- 5. Assist in expanding export sales:** Continuously intensify Taiwan’s engagement in economic and trade cooperation systems (such as CPTPP) and strive to get the United States 232 steel and aluminum tariffs exemption in order to promote the diversification of trade and production bases as well as emerging market layout, thus assisting industry practitioners in potential market development.
- 6. Steadily develop high value-added fastening tools products:** Conduct fastening tools industry value chain gap analysis to solve the industry’s technical problems and enhance the industry chain’s R&D momentum by integrating development in the upper, middle, and lower reaches for high value-added products development in order to guarantee competitive advantages in future high-quality goods markets, thus breaking away from low price competition in low-end markets. □