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Trend Analysis of Taiwan's Fastener Hand Tools

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Overview of Taiwan's Hand Tool Industry

The production value of metal products of Taiwan in 2013 stood at NTD 724.9 million, accounting for 6.2% of its manufacturing sector with an average growth rate of 4.2% in recent years, being one of the main forces in the manufacturing industry. The export ratio of the metal products industry was 47% in 2013 with the export value amounting to NTD 358.8 billion and the import value was NTD 62.3 billion with an import dependency ratio of 14.5%. Most metal products can be produced independently in Taiwan, and this has become the recent focus for traditional industries in Taiwan. In 2013, none of the major metal products gained significant growth in export, and some items even showed decline. The reasons include: (1) international steel prices continued to fall, so competition among low-grade metal products became even more intense and Taiwan's competitiveness waned relatively; (2) The EU, a market taking up as high as 30% of Taiwan's fastener export value, is still sluggish in economic growth, but Taiwan's export to the EU has been seeing a slow recovery in terms of unit prices to gradually reduce the decline of export value; (3) Moreover, the decreased Chinese market demand has slowed down the pace of the global economic recovery, resulting in the failure of Taiwan's hand tool industry to reach the expected amount of orders. These factors all contributed to the decline in metal products export in 2013.

Taiwan's major metal products include screws and nuts, hand tools, surface

treatment and molds while the rest of the products belong to some sub-industries which have smaller export values. Among these products, screws and nuts are the largest group in import and export. In 2013, the export value of screws and nuts totaled about NTD 123.9 billion. However, there is still room to grow for the export as compared to the past performance. This article will explore on hand tools for screws and nuts. The import and export of these hand tools have a lot to do with the ups and downs of the fastener industry. The study covers six items of spanners and wrenches (HS code: 8204110000, 8204120000), interchangeable socket wrenches (HS code: 8204200000), drilling/threading/tapping tools (HS code: 8205100010, 8205100020), screwdrivers (HS code: 8205400000), hand-held pneumatic screwdrivers (HS code: 8467112000), and electric socket wrenches (HS code: 8467293000).

Change in Import/Export of Fastener Hand Tools in Recent Five Years

1. Import Value: (Table 1) shows the import of fastener hand tools from 2008 to 2013 with the hand-operated spanners and wrenches taking up the highest import value for a total of NTD 713 million in 2013, followed by screwdrivers with a peak export value of NTD 104 million in 2013. For these two major imported products, the import value of hand-operated spanners and wrenches, except for the sharp drop in 2009 due to the financial turmoil, stood between NTD 600 million and

Table 1. Import of Fastener Hand Tools from 2008 to 2013

Unit: NTD 0.1 billion

Product	2008	2009	2010	2011	2012	2013
Hand-operated spanners and wrenches	6.71	3.91	5.86	7.13	6.60	6.54
Interchangeable socket wrenches with or without handles	0.34	0.42	0.69	0.91	0.80	0.91
Drilling, threading or tapping tools	0.41	0.28	0.34	0.24	0.41	0.14
Screwdrivers	0.83	0.44	0.72	0.87	0.64	1.04
Hand-held pneumatic screwdrivers	0.21	0.13	0.18	0.21	0.42	0.22
Electric socket wrenches	0.20	0.11	0.29	0.36	0.46	0.29

Source: TIER import/export statistics; compiled by MII-ITIS, MIRDC

700 million while the import value of screwdrivers was between NTD 80 million and 110 million from 2008 to 2013.

1. Export Value: (Table 2) shows the export of fastener hand tools from 2008 to 2013. The interchangeable socket wrenches with or without handles had the biggest share of the export, amounting to NTD 9.694 billion in 2012, the highest figure of the past 5 years and accounting for 16.4% of the annual export value of hand tools, followed by hand-operated spanners and wrenches with an export value of NTD 7.891 billion in 2012 for the past five years, taking up 13.4% of the total export value of the year. For these two main exported products, the interchangeable socket wrenches with or without handles, after the setback due to the financial crisis in 2009, the export value after 2012 has surpassed NTD 9 billion, a very impressive growth as compared to NTD 6.26 billion in 2008 while the export value of hand operated spanners and wrenches was between NTD 6 to 7.5 billion from 2008 to 2013; the hand held pneumatic screwdrivers had the lowest export value of NTD 236 million only. The export value of drilling, threading or tapping tools was NTD 257 million in 2003, not very high either. These two products should be the focus for strengthening export and continuous development direction towards high value.

Table 2. Export of Fastener Hand Tools from 2008 to 2013

Unit: NTD 0.1 billion

Product	2008	2009	2010	2011	2012	2013
Hand-operated spanners and wrenches	61.30	40.86	52.08	68.09	78.91	74.00
Interchangeable socket wrenches with or without handles	66.26	52.52	67.90	89.94	96.94	96.07
Drilling, threading or tapping tools	4.07	2.27	3.78	2.73	2.29	2.57
Screwdrivers	18.10	12.91	16.59	16.69	16.03	15.01
Hand-held pneumatic screwdrivers	1.58	1.02	2.04	2.24	2.19	2.36
Electric socket wrenches	1.44	1.43	2.32	2.98	2.99	3.35

Source: TIER import/export statistics; compiled by MII-ITIS, MIRDC

An Analysis on Unit Prices of Fastener Hand Tools in Recent Five Years

1. Import Unit Price: (Table 3) shows the unit prices of fastener hand tools from 2008 to 2013, the average unit price of imported hand operated spanners and wrenches was about NTD 130-135 per kilogram, remaining mostly flat over the years; the average import unit price of interchangeable socket wrenches with or without handles was about NTD 100-160 per kilogram with no significant increase over the years, but the unit price gap was

relatively large over the years; the average import unit price of drilling, threading or tapping tools was about NTD 600-750 per kilogram. The reason for such a large price gap in 2012 and 2013 was the over concentration on certain types of imported products; the average import unit price of screwdrivers was about NTD 110-210 per kilogram; the average import unit price of hand held pneumatic screwdrivers was about NTD 700-1,300 per kilogram and stabilized around nearly NTD 1,000 per kilogram in 2013; the average import unit price of electric socket wrenches was about NTD 700-1,100 per kilogram. Take 2013 for example, for the overall average import price range, the electric socket wrenches were at the top, followed by hand-held pneumatic screwdrivers, screwdrivers, drilling/threading/ tapping tools, hand-operated spanners and wrenches, socket wrenches and interchangeable socket wrenches with or without handles.

Table 3. Import Unit Prices of Fastener Hand Tools from 2008 to 2013

Unit: NTD/kg

Product	2008	2009	2010	2011	2012	2013
Hand-operated spanners and wrenches	129.1	140.0	132.4	128.2	131.8	133.8
Interchangeable socket wrenches with or without handles	106.3	163.7	114.6	126.8	92.7	107.0
Drilling, threading or tapping tools	608.2	519.8	738.5	744.1	1095.8	170.7
Screwdrivers	109.8	142.6	154.0	178.1	201.4	206.8
Hand-held pneumatic screwdrivers	1279.8	770.6	828.1	905.4	1161.5	984.6
Electric socket wrenches	1046.7	750.4	1158.0	823.3	969.9	1009.3

Source: TIER import/export statistics; compiled by MII-ITIS, MIRDC

2. Export Unit Price: (Table 4) shows the export unit prices of fastener related hand tools from 2008 to 2013. The average export unit price of hand operated spanners and wrenches was NTD 250-300 per kilogram, showing a growing trend over the years. In 2013, the unit price surpassed NTD 300 per kilogram for the first time; the export unit price of interchangeable socket wrenches with or without handles was about NTD 180-200 per kilogram. Except for the year 2009 when the economy was in turmoil, the export unit prices showed a slight growth over the years; the average export unit price of drilling, threading or tapping tools was NTD 1,100 to 1,200 per kilograms, sliding over the last three years, which deserves further attention; the average export unit price of screwdrivers was approximately NTD 260-300 per kilogram, showing a slight and slow growth over the years in general; the average export unit price of hand held pneumatic screwdrivers was about NTD 850-1,050, exceeding the NTD 1,000 mark for the first time in 2012; the average export unit price of electric socket wrench

was about NTD 400 to 800 per kilogram, the large price gap can be attributed to the numerous types of exported products. However, the unit price had grown from NTD 435.9 per kilogram in 2008 to NTD 864.4 per kilogram in 2013 with an annual compound growth rate of 14.7 %, an indication that the high-value strategy adopted by hand tool manufacturers in recent years has begun to show concrete results. The average unit prices of the following six products in 2013 in decreasing order are drilling/threading/tapping tools, hand-held pneumatic screwdrivers, electric socket wrenches, hand-operated spanners and wrenches, screwdrivers and interchangeable socket wrenches with or without handles.

Table 4. Export Unit Prices of Fastener Hand Tools from 2008 to 2013 Unit: NTD/kg

Product	2008	2009	2010	2011	2012	2013
Hand operated spanners and wrenches	253.4	266.7	257.5	267.0	294.8	303.4
Interchangeable socket wrenches with or without handles	179.2	192.5	177.4	180.6	197.7	195.5
Drilling, threading or tapping tools	1177.2	877.4	1212.6	1271.5	1214.6	1118.5
Screwdrivers	267.9	289.7	293.0	292.3	287.0	297.3
Hand-held pneumatic screwdrivers	895.3	899.0	867.3	929.1	1056.8	1050.3
Electric socket wrenches	435.9	602.1	618.7	757.8	801.5	864.4

TIER import/export statistics; compiled by MII-ITIS, MIRDC

Top 5 Export Destinations of Taiwanese Fastener Hand Tools and Export Values in 2013

(Table 5) lists top five destinations to which Taiwanese fastener hand tools are shipped in 2013. The biggest destination in hand-operated spanners and wrenches export was the U.S. with an export value of NTD 1.769 billion, followed by Germany with NTD 503 million; the major export destination of socket wrenches with or without interchangeable handles was the U.S. with an export value of NTD 2.85 billion, followed by China with NTD 1.251 billion; the largest export destination of drilling/threading/tapping tools was Thailand with an export value of NTD 94 million; the top export destination of screwdrivers was the U.S. with an export value of NTD 473 million, followed by China with NTD 85 million; in the export destinations of hand held pneumatic screwdrivers China dragged the other countries behind, however, its export value was only NTD 69 million; the U.S. also had the largest share in the export of electric socket wrenches with a value of NTD 184 million (not a very large scale, either). Overall, the U.S. was the largest export destination in four of the six products. Therefore, the U.S. remains the key factor affecting Taiwan's exports of hand tools.

Table 5. Top 5 Export Destinations of Taiwan's Fastener Hand Tools and Export Values in 2013

Unit: NTD0.1 billion

Product	Country/Value	1	2	3	4	5
Hand operated spanners and wrenches	Country	USA	Germany	Australia	Canada	France
	Value	17.69	5.03	4.77	4.54	4.53
Interchangeable socket wrenches with or without handles	Country	USA	China	Russia	France	Germany
	Value	28.50	12.51	7.88	4.65	3.98
Drilling/threading/tapping tools	Country	Thailand	Japan	Germany	Korea	Singapore
	Value	0.94	0.36	0.14	0.12	0.11
Screwdrivers	Country	USA	China	Australia	Russia	Sweden
	Value	4.73	0.85	0.81	0.70	0.62
Hand-held pneumatic screwdrivers	Country	China	Hong Kong	Belgium	USA	Brazil
	Value	0.69	0.30	0.17	0.13	0.09
Electric socket wrenches	Country	USA	France	China	UK	Japan
	Value	1.84	0.30	0.18	0.18	0.11

TIER import/export statistics; compiled by MII-ITIS, MIRDC

High-value Development Strategy of Taiwan's Metal Products Industry

Looking back at the past few years, due to the cooling down of China's economy, the continuous effect of European debt problems on the global economy, and unclear European and U.S. market demands, there remain some uncertainties for Taiwan's hand tool industry. Against the backdrop of concerns about the European debt crisis and weak U.S. economic data, as well as the market anxieties over the global economic growth concern, if the European sovereign debt crisis further aggravates, severe credit crunch or an even worse situation could be triggered. Due to the recent global economic downturn, the export value of Taiwan's hand tool industry declined to only NTD 58.3 billion, falling about 1.2% as compared to 2012.

The government is promoting high-value screws for professional applications and special purposes. This will give a boost to the hand tool export of Taiwan. Therefore, the development towards the high value of the metal industry is another opportunity for the development of the hand tool industry. The value-adding rate of metal materials industry is obviously linked with the downstream metal product application industries (such as screws, nuts and hand tools). As compared with other countries, Taiwan's value-adding rate of metal products is 29.0%, 26.1% for South Korea, 41.0% for Japan, 37.9% for Germany, and 40.4% for the U.S. The value adding rates of the metal products of Taiwan and South Korea are low mainly due to the reliance on imported metallic materials with high added values. Therefore, in order to invigorate the export of metal products such as screws, nuts, and hand tools, the upgrade to high-value products is the transformation strategy for the industry. This article is concluded with a few suggestions on the high-value development of the metal products industry as follows:

- 1. Independent development of metallic materials:** combine with the new energy industry to develop all types of special alloy materials and realize manufacturing process on their own.
- 2. A policy focus of the public sectors on high-value metals:** with the transportation/livelihood industry in mind, promote the development of advanced high-strength steels, magnetic materials, high purity stainless steel, high-purity aluminum and high-value metals.
- 3. Assistance to leading manufacturers of each sub-industry:** assist domestic leading manufacturers in developing key process technologies of new high value materials, and expand the scale of the current applications.
- 4. A sound development of high-value metals industry:** enhance the soundness of the high-value metal materials industry through cooperation with the Materials Application Engineering Research and Development Center, industry alliances, international cooperation, etc.
- 5. Incubation of professional talent:** promote workshops in colleges and businesses, provide incentives to attract metal experts working overseas to come back to Taiwan and train the domestic talent and introduce foreign experts for realizing the vision of deepening the development of Taiwan's metal industry.