



Co-opetition Analysis of Taiwan and China Fasteners Industries

by Kristy Chi, Industrial Analyst of MIRDC

Foreword

In 2014, the fasteners industry benefited from the recovery of global manufacturing industry and prolonged the prosperity of 2012 and 2013. Global fasteners sale amounts to USD 77 billion in 2014. The compound annual growth rate of global fastener sale reached 5% from 2012 to 2014. The compound annual growth rate of global fastener sale is estimated to reach 9% from 2012 to 2018, and the amount will reach USD94.6 billion. To cope with the annual 5% growth demand for fasteners, the industry experiences changes, including M&A of different departments from the same industry, integration of different production lines from the same plant, applications of intelligent logistics that enhance regional delivery. Main fasteners manufacturing countries spend time and energy on materials, manufacturing processes and applications. This co-opetition relationship encompasses the establishment of trade barriers, stipulation of protective tariffs intended to protect its own makers, control of material export volumes and prices as well as leverage on purchase orders. Though military defense products require signing supply chain localization contracts, fasteners for civil auto or aerospace heavily rely on outsourcing to increase production efficacy. For instance, auto

Table 1. Analysis and Comparison of the Production of Taiwan and China Fastener Industry

Item	Item	Taiwan	China
Production Element	Management	Excellent	To be improved
	Manpower	Excellent management, high labor quality, labor shortage	Poor management, slightly inferior labor quality, gradually losing advantage in wage and manpower
	Land	High land price, strict environmental evaluation, land is hard to acquire	Land in coastal areas are inadequate, policy turns to the development of central-western China
	Raw Material	China Steel, Feng Hsing, Yieh Hsing and Quintain Steel have excellent quality and sufficient quantity, yet price is higher.	Baosteel and Hebei Iron & Steel are equipped with price and quality competitive advantage.
	Transportation	Convenient, reasonable price	Higher transportation price
Market	Target Market	Domestic demand is small in scale at about USD500 million. Export rate reaches 90%. Main export markets are the United States and European Union.	Domestic demand is large in scale at about USD10 billion focusing on both domestic sale and export. Main export markets include the United States, Japan and European Union.
	Import & Export Value	In 2014, export amount was USD4.25 billion, and import amount is USD16 million.	In 2014, export amount was USD6.8 billion, and import amount is USD3.6 billion.
	Market Position	Export volume ranks the second place globally.	Export volume ranks the first place globally.
Industrial Scale	Number Of Manufacturers	1,275 manufacturers	About 10,000 manufacturers
	Production	About 1.6 million metric tons	About 7.9 million metric tons
	Concentrated Area	Tainan, Kaohsiung	Yung Nien, Haiyan, Wenzhou
Peripheral Industries	Heat Treatment, Acid Wash, Electroplating, Forming Machine, Mold & Die	Mature technique, complete and sound service.	Technique has large room for improvement, service needs to be strengthened.
Product Level	Quality	Steady	Slightly inferior
	After Sale Service	Excellent	Slightly inferior
	Delivery	Make to order. Delivery is rapid and accurate.	Large inventory for standard fasteners in various types.
	Main Products	Industrial and auto fasteners	Standard fasteners
	Production Capability	Requirements on production and quality are strict.	Manufacturing management needs to be improved.
Manufacturer	Marketing Ability	Excellent	Fair
	Technical Ability	Abundant experience. Technology takes the lead.	Foreign investment. Taiwanese manufacturers introduce the technology.
Government	Scale of Support	Subsidy of R&D budget	Policy leads industrial development. Tax incentives.

Sources: compiled by MIRDC MII, March 2015

fasteners in Mexico experienced 10% growth for the last three years. The export of French aerospace fastener showed an increase of 25% in 2013.

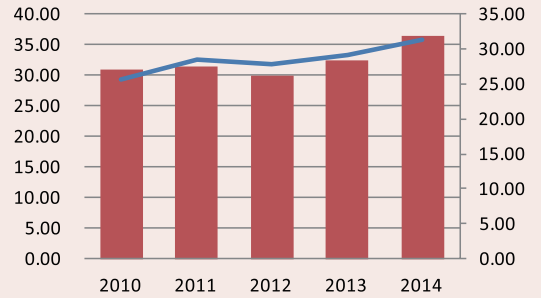
Taiwan fastener export ranks the third place in the world, China is the second largest market in the world, just second to the United States. Both China and Taiwan are fastener exporting countries that the world relies on. Additionally, China and Taiwan share a similar cultural background. With the intense exchange of techniques and talents, the co-opetition between Taiwan and China is intricate yet interesting to outsiders. **This article intends to compare Taiwan and China under the world market, and analyze their import and export as well as the influence of critical international fastener trade incidents on co-opetition in the emergence of manufacturing industry wave.**

Comparison Between Taiwan and China Fastener Industry

Fastener is dubbed as "the source that feeds the manufacturing industry" and is a part of industrial components production. Fasteners play an important role in aerospace, aircraft, energy equipment, auto engine and mobile phone components. The fastener industry is labor intensive, capital intensive, serious about credibility, and extremely focused on providing buyers with safety/quality assurance and building trust with the supply chain.

Currently, China is the largest fastener manufacturing country

China Fastener Import Trend from 2010 to 2014



China Fastener Export Trend from 2010 to 2014

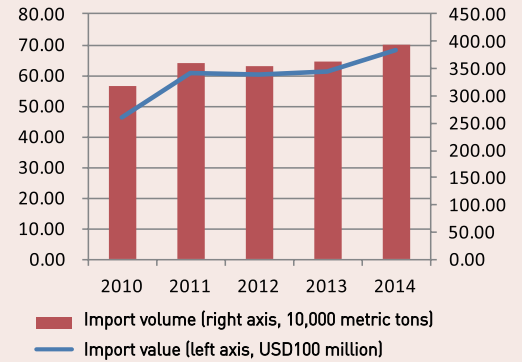



Chart 1. Import & Export Trend of China's Fasteners from 2010 to 2014

Sources: China Customs Database of Taiwan Institute of Economic Research/compiled by MIRDC MII, March 2015




UNICORN SCREW CO
www.unicornscrewco.com

Multi-Purpose PT-SS Wood Screws

(deck, floor, lumber, timber structure)
ACQ compatible coating available.


Max Length: 24 inch
Min Length: 3/8 inch



Knurling Mill
Minimizing screw-in force
Shoulder Protection



Pentacle blade cut
Extra Cutting Blade
Dramatically reducing driving force
Reduce Torque force
Less tendency of wood splitting

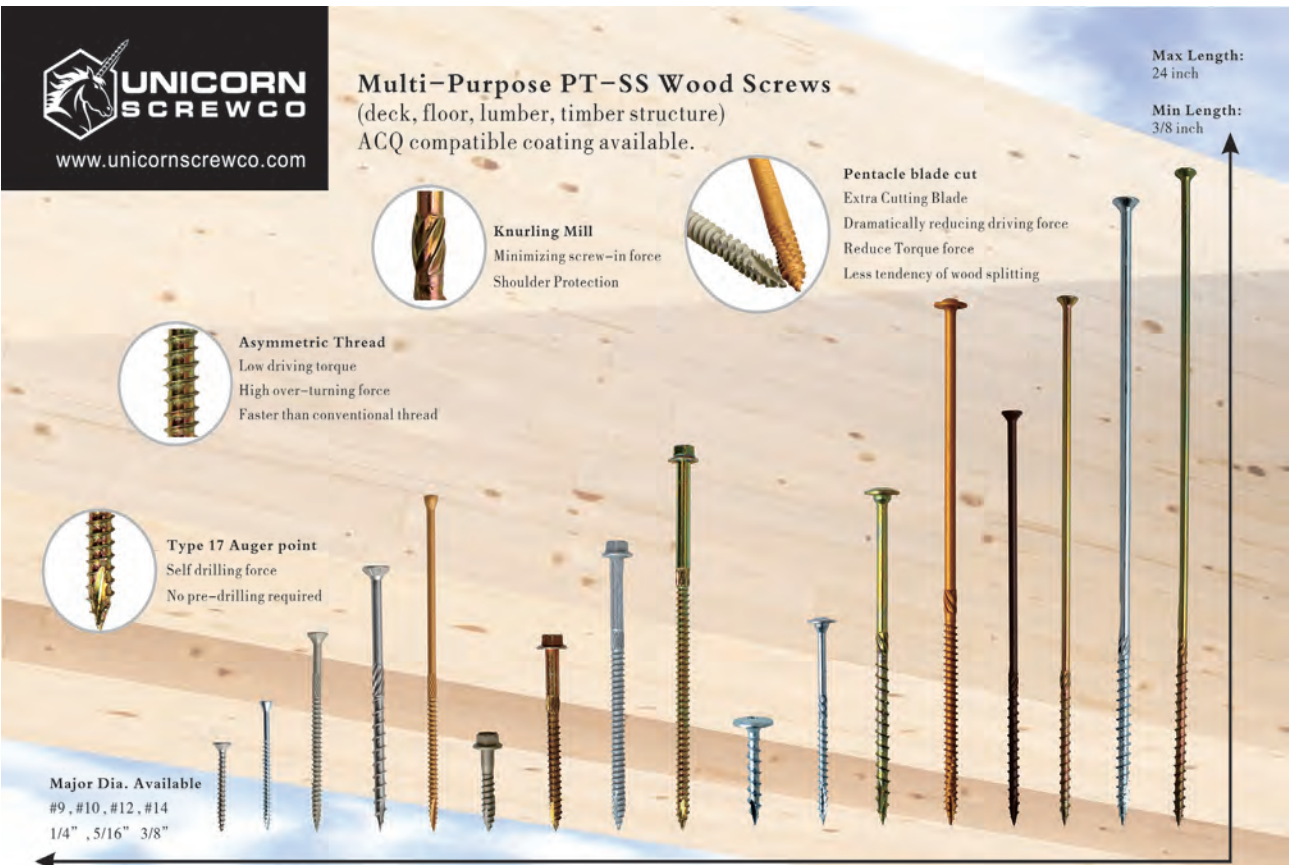


Asymmetric Thread
Low driving torque
High over-turning force
Faster than conventional thread



Type 17 Auger point
Self drilling force
No pre-drilling required

Major Dia. Available
#9, #10, #12, #14
1/4", 5/16", 3/8"



Asia Pacific & other region: James Zhang Managing Director Asia Tel: +8618601662077 james@unicornscrewco.com
American Region: Sean Scales Director US Operations 1-844-SCREWCO(727-3926) sean@unicornscrewco.com



in the world, while the United States and European Union are the main regions with the largest fastener demand. Taiwan is the main regions with the largest fastener demand. A comparison between Taiwan and China fastener industry indicates that there are nearly 10,000 fastener makers and traders in China with more than one million employees. Taiwan has about 1,300 fastener makers and traders with nearly 30,000 employees. China mainly produces low grade fasteners used in machinery, equipment, construction and industrial purposes, and it imports fasteners of high strength and precision applied in the auto industry, electronic products and electronic equipment. Thirty years ago, Taiwan started from making low carbon steel fasteners. Now Taiwan is able to export high grade fasteners used by European and American auto makers and construction companies. In addition, Taiwan continuously develops new alloys applied in aerospace fasteners. After years of dedication, a few manufacturers have obtained accreditation and trial orders from Boeing, which is really admirable.

Table 1 (P.370) compares various elements of Taiwan and China fastener industries, including production, market scale, industry scale, peripheral industries, product level, manufacturers and government. Table 1 indicates that China fastener industry outruns Taiwan by quantity, but its quality and technical ability needs to be strengthened. Taiwan works very hard on product upgrade. In addition to stable quality and continuous technical innovation, Taiwan's next goal is to establish complete one-stop service for customers.

Import and Export Analysis of Taiwan and China Fastener Industry

(1) China

In China, the construction and automotive industries have been experiencing rapid development in recent years, and demand for high grade fasteners is increasingly huge in China. Fastener import shows a slight growth in China. In terms of export, lower grade, lower price and unsteady quality still exist in China's fasteners. China relies on mass quantity to expand its market share. The United States is the largest fastener export destination for China, accounting for 20% of China's

export market. The other export destinations are Japan (6%), Russia (4%), South Korea (3%) and Germany (3%). Import and export trend of China's fasteners from 2010 to 2014 are displayed in **Chart 1**.

(2) Taiwan

Affected by the business recovery of American manufacturing industry and EU nations, Taiwan's fastener export exhibited excellent performance in 2014 which hit a new peak in the last five years. Since the global industry is developing toward specialized division of labor, auto makers in Europe outsource the production of auto fasteners, which leads to significant performance for Taiwanese auto fastener makers. The United States is still the largest export destination for Taiwan, accounting for 40%. The other destinations are Germany (9%), Netherlands (5%), Japan (5%) and United Kingdom (4%) respectively. Please refer to **Chart 2** for import and export trend of Taiwanese fasteners from 2010 to 2014.

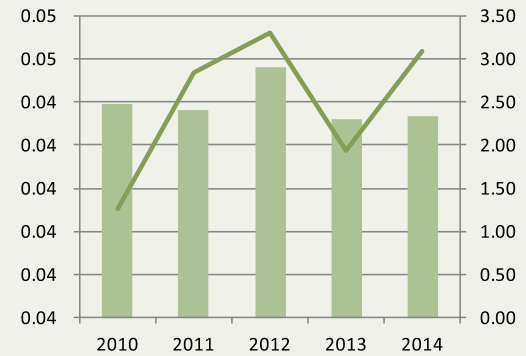


In 2014, total global fasteners export value amounted to USD 40.8 billion. China's export value made up 17% (USD 6.8 billion) of the global export value, showing a nearly 10% growth against 2013 and ranking the first place worldwide. Taiwan export value represented 11% (ranked 3rd) of the global export value, and the export value totaled USD 4.3 billion, the highest amount exported to the United States in the last five years, as shown in **Table 2**. Affected by the financial crisis and anti-dumping tax levied by the EU in 2010, China's fasteners experienced a sharp decrease in export. Though the influence of EU's anti-dumping tax still prevails, **Table 2** indicates that China's export value starting from 2011 has recovered to the level before the financial crisis. China fasteners industry shows its flexibility in adaptation that cannot be underestimated.

(3) Analysis of China's Trade with Taiwan

China's Trade with Taiwan is displayed in **Table 3**. In 2014, the export amount of China to Taiwan was about USD 39 million, with the average export unit price at USD 1.87/per kilo. China imported about USD 210 million worth of fasteners from Taiwan, with the average import unit price at USD 8.2/per kilo. Significant trade deficit exists in China's fastener trade with Taiwan. The average unit price also indicates that China exports low grade products to Taiwan and imports higher grade products from Taiwan.

Taiwan Fastener Import Trend from 2010 to 2014



Taiwan Fastener Export Trend from 2010 to 2014

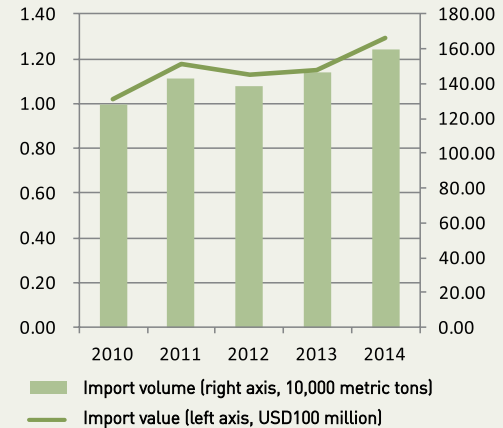


Chart 2. Import & Export Trend of Taiwan Fasteners from 2010 to 2014

Sources: China Customs Database of Taiwan Institute of Economic Research/compiled by MIRDC MII, March 2015



Table 2. Export Market Share Comparison of Taiwan and China Fastener Industries from 2010 to 2014

Year	Global Export Value (USD 100 Million)	China's Export Value (USD 100 Million)	Global Market Share (%)	Taiwan's Export Value (USD 100 Million)	Global Market Share (%)
2010	315	46	15	32	10
2011	387	61	16	40	10
2012	381	60	16	38	10
2013	394	62	16	39	10
2014	408	68	17	43	11

Sources: China Customs Database of Taiwan Institute of Economic Research/compiled by MIRDC MII, March 2015

Table 3. Comparison of Top Five Products and Values of Fasteners Traded from China to Taiwan in 2014

Items Imported from Taiwan to China		Value (USD10,000)	Percentage in total items %	Items Exported from China to Taiwan		Value (USD10,000)	Percentage in total items %
1	73181590 Other screws and bolts, whether or not with their nuts or washers, of iron or steel	970	25%	1	73181590 Other screws and bolts, whether or not with their nuts or washers, of iron or steel	5451	26%
2	73181600 Nuts, of iron or steel	642	16%	2	73182200 Nuts, of iron or steel	5410	25%
3	73181510 Screws and bolts for rail, whether or not with their nuts or washers, of iron or steel	640	15%	3	73181600 Screws and bolts for rail, whether or not with their nuts or washers, of iron or steel	3572	17%
4	74153390 Other screws of copper, bolts & nuts of copper	525	13%	4	73170000 Other screws of copper, bolts & nuts of copper	957	5%
5	73182200 Other washers, of iron or steel	367	9%	5	73181510 Other washers, of iron or steel	940	4%
Total Amount of All Imported Items		USD 39 million		Total Amount of All Exported Items		USD 210 million	

Sources: China Customs Database of Taiwan Institute of Economic Research/compiled by MIRDC MII-ITIS, March 2015



China/Taiwan Co-opetition Viewed from Two Major Trade Incidents

(1) China Cancels Export Rebate on Boron Steel

1. Where there is a policy, there is a countermeasure?

On the last day of 2014, China announced to cancel the export rebate on boron steel. Since the boron rods & wires accounted for 80% of the boron steel export from January to November in 2014 and the alloy steel rods & wires from China to Taiwan made up 90% of all the import of rods & wires, the elimination of export rebate on boron steel exerted a remarkable influence on rods & wires required by fastener production. Take boron wire for example, boron wires could have had 9% rebate, about RMB 230/ton. As soon as this policy is implemented, boron steel will be imposed with 25% a export tariff.

Before the cancellation of export rebate was announced, the news had been spread across Taiwan's and China's fastener industries. In China's customs statistics, four items are included in boron steel tariff: (1) Hot rolled boron alloy steel (72254091) with the width larger or equal to 600mm originally had a 13% export rebate. The export volume was 4.79 million tons from January to November 2014, accounting for 5.7% of the total export volume; (2) Hot rolled boron alloy steel

(72269191) with the width smaller than 600mm originally had a 9% export rebate. The export volume was 90,000 tons from January to November 2014, accounting for 0.1% of the total export volume;(3) Bars & rods made of hot rolled boron alloy steel (72279010), in irregularly wound coils, originally had a 13% export rebate. The export volume was 11.97 million tons from January to November 2014, accounting for 14.3% of the total export volume; (4) Bars & rods made of hot rolled boron alloy steel (72279010) originally had a 9% export rebate. The export volume was 9.36 million tons from January to November 2014, accounting for 11.2% of the total export volume.

Since China's fasteners industry has heard of the rebate withdrawal before its announcement, they have their own counter-measures. Chinese government only cancelled the export rebate on boron steel, yet the export rebate policy of alloy steel remains. Since China does not comprehensively cancel the export rebate on alloy steel, the industry thinks that the cancellation is a fake issue. If Chinese steel makers substitute other elements for boron, they can still have rebate subsidy. For instance, "substituting chromium for boron" could become the export alternative for Chinese steel makers in the future.

2. "Material price" is a double-edge sword. Cost discount or good order price?

The addition of other alloy elements chromium for example can increase resistance against corrosion and



rust, but there is another problem if the material can conform to molds & dies used by Taiwanese fastener factories. Secondly, the cost of alloy steel must have slightly increased. Chromium reinforced steel entered Hong Kong market at the end of 2014, with a quotation price at USD 410/ton (CFR). Before the end of 2014, China's boron square billet were exported to Thailand and ASEAN. Since China's industry is well prepared, the export rebate withdrawal does not impose a substantial influence. On the other hand, if chromium reinforced steel and billet continuously take the market share at low prices, the prices of fasteners will not easily increase and the fastener industry may be probably engaged in a price war to obtain orders.

3. A blessing in disguise for Taiwanese makers?

The decline of China's iron ore price still continues and the export rebate is cancelled. The export cost of China's steel will slightly increase and will definitely affect the export volume this year. When the Chinese government cancelled the export rebate, it did not implement peripheral policies or measures to promote the export of high value-add steel products. In addition, the new policy was announced on the last day of 2014 and was immediately implemented on January 1, 2015. The enterprises lack enough time to be well-prepared, which undoubtedly brings another blow to the already weak China's steel industry. In a short term, the policy will impose negative impact on the steel export. Since export is one of the measures to deal with the excessive steel capacity, China may possibly implement the policy to encourage the export of high value-added steel. Taiwanese fastener makers may have had enough inventory for production before the news of

rebate withdrawal leaked. With sufficient materials, Taiwanese fastener makers still have the chance to wait for another new export rebate implemented by the Chinese government. Taiwanese fastener makers still have another blessing as China Steel Corp finally announced to decrease the price of bars & rods to NTD 1,000/ton in April and May 2015 after Taiwanese fastener makers frequently commented that the difference between CSC and the international steel price was too large. The price is much less than it was before so that it can slightly compensate the cost burden on Taiwanese fastener makers.

(2) EC announced to continuously levy anti-dumping duties on China's carbon steel fasteners

1. The EU has noticed China's low-priced dumping due to imbalanced production structure

Though China's fastener production and export volume both rank the first place worldwide, repeated investment in low grade products causes unreasonable industrial structure to further facilitate oversupply of China's fasteners. Standard fasteners below 8.8 grade account for 50% of the total export. Though the export volume is large, the



unit price is low. China lacks enough ability to producing high strength special fasteners used in automobile, infrastructure, aircraft, aerospace, construction, machinery and military industries, so China has to rely on import, which indicates that it is the biggest problem for fastener industrial development in China. Other problems include slow technical upgrade, continuous price hike of domestically made equipment and manufacturing cost.

In the aspect of export, the largest influence comes from protective measures on import of China's fasteners, adopted by many countries, such as the EU, the United States, Canada, Mexico, New Zealand, South Africa and Russia. These countries impose anti-dumping duties on fasteners imported from China. EU, in particular once levied the highest anti-dumping duty of 85% on carbon steel fasteners from China, seriously striking the export of Chinese fasteners. Afterwards, WTO ruled that EU violated international trade

regulations in July 2011. Then EU lowered the anti-dumping duty on China's carbon steel fasteners in October 2012, which decreased from 77.5% and 85% to 54.1% and 74.1% respectively.

2. EU continues to levy anti-dumping duties on China; Malaysia is also included

On March 27, 2015, the EU made a final determination of the anti-dumping duty review on China's carbon steel fasteners and started to implement a five-year anti-dumping measure on involved products, including 73181290, 73181491, 73181499, 73181559, 73181569, 73181581, 73181589, 73181590 (certain parts), 73182100 (certain parts) and 73182200 (certain parts). Since a part of China's fastener makers intended to circumvent the anti-dumping duties and transship to Malaysia, the EU discovered the circumvention of some Malaysian makers. As a result, anti-dumping duties are also imposed on Malaysian involved products. The highest duty reaches 74.1%.

3. Waiting for WTO's action, the last chance for survival

Since the EU levies anti-dumping duties on China, the export volume from China to the EU has declined from 60,000 tons to 8,000 tons on a yearly basis, and the market share has decreased from 26% to 0.5%. China's customs statistics indicate that China exported about USD 0.7 billion to Europe in 2014, and five products involved were less than USD 0.1 billion. China imported about USD 1.1 billion worth of fasteners from Europe with focus on high strength fasteners. The import price was USD 10,000/ton, while the average export unit price was USD 1,800/ton, showing that the trade deficit exists in China's trade with the EU. After WTO ruled that the EU violated international trade regulations in July 2011, the EU lowered anti-dumping duties on many China fastener makers. In 2015, China submit an application to WTO, demanding the EU completely eliminate anti-dumping measures. In July or August 2015, the experts in WTO will make the determination on whether the EU violates the trade regulations if the EU continues to levy anti-dumping duties on China.



~ Screws, Hardware, Fasteners, and Suitcase ~



Customized solutions for plastic packaging containers

More than 20 years of experience in mold-making, plastic injection & IML decoration.
ODM & OEM are welcome!



**International Screw Company
Appointed Packing**

~ 螺絲、五金、緊固件、手提箱 ~
客製化塑膠包裝容器專家
20年以上開模、塑膠射出、IML模內貼經驗
歡迎OEM、ODM!



**Earth-Friendly.
Impact-Resistant
Waterproof**

RICH PAK ENT. CO., LTD.

6F-6, No. 31, Songjiang Rd., Taipei City 104, Taiwan
Tel: +886-2-2502 9838 Fax: +886-2-2502 9839
<http://www.RichPAK.com.tw>
<http://www.fastener-world.com.tw/rich-pak>
▶ pack@richpak.com.tw





4. Opportunities for Taiwanese fastener makers after the EU levies anti-dumping duties on China

When China is kind of held back from the EU market, Made-in-Taiwan products become the major beneficiary in the EU import market. The EU successively imports fasteners from Taiwan and ASEAN to replace China. Currently, Taiwan has become the largest import origin for the EU, accounting for 30% of EU's import volume. In terms of products from China influenced by anti-dumping duties, the EU imported 560,000 tons from Taiwan in 2014 and the compound annual growth rate from 2010 to 2014 reached 7%.

Though Taiwanese fastener industry should hold an optimistic attitude toward receiving orders originally made to other countries, the industry should also take prudent consideration toward anti-dumping investigation by the EU. Taiwanese government has adopted strict requirement on the certificates of origins for fasteners exported to the EU since July 21, 2014 to prevent Taiwan from falling into the same situation of Malaysia. By doing so, Taiwan expects to eliminate the suspicion on Taiwan's fasteners exported to the EU. In the short term, Taiwanese fastener makers can expect to receive more orders from the EU originally made to other countries. In the long term, there are changes for the EU to levy anti-dumping duties on China's fasteners. Taiwanese fastener makers should think that if the EU does not impose anti-dumping duties on China, Taiwan must establish excellent credibility and interaction with EU purchasers, facilitating EU customers to think highly of MIT products. Additionally, Taiwan should treasure the fact that Taiwanese fasteners have been well-received in the international market. If Taiwanese fastener makers only focus on short term interests such as re-export, they may be involved in the trade disputes among large neighboring countries. This short-sighted action will impose an unfair treatment to other fastener makers that have been working very hard for a long time to protect their reputation. Taiwanese fastener makers should be very cautious when they take any action.

Conclusions

China's fastener industry usually follows its national development strategies, such as the development of "The 13th Five Year Plan" and "One Belt and One Road" as well as the opportunities brought by the international strategy of high speed railway industry facilitating the strong domestic demand in industrialization and urbanization. The automotive industry is estimated to continue the growth of more than 6%. Investment growth on railway construction is more than 20% and will bring about the development of the manufacturing and emerging industries. China will transform from the largest manufacturing nation to the most powerful one. China will maintain its cost advantage, and it can increase the technology of fastener industry through the demand in the downstream, such as automotive, wind turbines, engineering machines, aerospace and nuclear power plants. **In 2015, China's fasteners production is estimated to increase from 6.6 million tons to 8 million tons.**

Competition and cooperation exist between China and Taiwan. Previously Taiwanese makers were optimistic about low production cost in China and made investment in China. China's fastener plants relied on Taiwanese mold & die for production in earlier stage. Then, situations evolved again China transformed from a world factory to the world's market, indicating that Chinese market has a strong domestic demand. Additionally, foreign investment is very active in China, facilitating Taiwanese makers with the opportunity to enter the international supply chain. On the other hand, China can learn industrial technologies through cooperative opportunities.

Taiwanese fastener makers depend on export, and their main customers are from the United States and the EU. The United States is the main customer to Taiwan and China. However, the exported items and unit prices of Taiwan and China are different. Taiwan still takes the lead in high grade fasteners temporarily. In the future, China has the opportunity to become Taiwan's large customer. If China's fastener technology continues to develop, China has the opportunity to challenge the quality of Taiwanese fasteners. In the co-opetition between Taiwan and China, **Taiwan should maintain an excellent interaction with China, and that will be a topic for Taiwan fasteners industry in the next ten years.** ■