



THE PERFORMANCE OF THAILAND'S MANUFACTURING EXPORT COMPETITIVENESS WITH SIX SELECTED EAST ASIAN COUNTRIES USING SHIFT-SHARE ANALYSIS

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ABSTRACT

It goes without saying that exports competitiveness and trade growth are direct contributions to sustainable economic growth. The move of export competitiveness becomes international when it pertains to two or more countries accordingly. As such, manufacturing exports in the East Asian countries have been exploited the comparative advantage and the opportunities for economic development through trade. Thailand, as a market challenger, has been facing strong competition from the powerful global competitors who can steer through the turbulent trade environment. This study attempts to investigate the performance of Thailand's manufacturing export competitiveness in the EU market as compared to the six selected East Asian countries' performance (i.e. Korea, China, Indonesia, Malaysia, the Philippines and Singapore,) by using shift-share analysis. The main findings reveal that Thailand's precious stone and jewelry exports had high competitiveness in the EU market, followed by the rubber products, machinery and equipment and road vehicle. However, Thailand did not perform well in the organic chemical, iron and steel, artificial and plastic material, office machines and automatic data processing and electrical machinery. In order to remain competitive in the world economy, the government continues to place emphasis on research and development and to increase the nation capability between the foreign buyers and the Thai jewelers. This effort has certainly propelled the precious stone and jewelry industry from Thailand into the forefront of global competitiveness.

Keywords: export, competitiveness, manufacturing, East Asian, shift-share

1. INTRODUCTION

Nowadays, international trade has become more competitive. Each country has been trying to export to the global markets in order to gain from trade. In the past, developing countries exported agricultural products. Later, they shifted to exporting manufacturing products instead. In doing so, several Asian countries have benefited from export-oriented policy (Ketels, 2010). Especially since 1980s, East and Southeast Asia's economic growth have been advocated by rapid expansion in manufacturing export (Jongwanich, 2007). Moreover, International Monetary Fund (IMF) (1993) reported that since 1970, developing Asian economy growth performance has been higher than other regions. In addition, IMF (2017) reported that since 1978 China has formulated an inclusive reform policy to redesign the nation's trade policy, it has led China to the world economy and achieved the rapid growth in GDP. The global economy is not only driven by the established advanced economic systems, but it is also helped drive by the developing economies, especially East Asian countries. Nevertheless, the export competitiveness between East Asian countries are inescapable in the current years. Thailand, one of the developing countries in the East Asian regions, specifically emphasises on manufacturing exports to enhance economic growth and economic development. Thailand is faced with global *competition*, particularly from *surrounding* strong competitors who have different comparative advantages. Export competitiveness amongst these countries has become more intense *not only* more of the *same products*, *but also* more of the same market that is the EU market. The EU market is considered a major trading partner of Thailand and East Asian countries. The EU's importance as a trade destination for Thailand's



export has occupied the top spot for a long time. Thus, this study focuses on manufacturing exports competitiveness between Thailand and six selected East Asian countries to the European Union (EU) market. In this study, Korea and Singapore are selected as a representative of developed countries. In addition, Malaysia, Indonesia, and the Philippines are taken. Finally, China is chosen as one of emerging successful countries in economic development during this time.

2. LITERATURE REVIEW

One of the methodologies used to measure the export competitiveness among countries is shift-share technique. Even though this technique looks simple, it is effective in comparing the export competitiveness between countries and considered as one of ideal methods. Herschede (1991) was an earliest economist who studied on export competition using the shift-share technique. Later, Ahmad and Mak (1996), Voon (1998), Wilson and Hsien (1998), Monetary Authority of Singapore (1998) (2002), Wilson (2000), Voon and Yue (2003), Chandran et al. (2004), and Wilson et al. (2005) also used shift-share technique to analyze the export competitiveness between countries. The findings revealed that the export competitiveness of nations has been developing and changing position all the time. With regard to Thailand's manufacturing export competitiveness, there are also few current literature of Thailand's direct assessment. The most recent one indicated Thailand as a strong competitor against powerful multinational rivals. Therefore, the objective of this study is to assess Thailand's manufactured export competitiveness against Asian economy by using shift-share technique.

• METHODOLOGY

The shift-share analysis is a remarkable technique utilized for regional economic analysis. The regional growth of each sector can be categorized into three components; national growth, industry mix, and competitive effect. (Esteban-Marquillas, 1972). After that, the economists adapted the shift-share technique to evaluate the international trade. The shift-share analysis was widely adopted to assess the export competitiveness between countries such as the study by Wilson and Hsien (1998), Wilson and Mei (1999), Wilson et al (2005), Voon (1998), and Voon and Yue (2003). The shift-share is an effective tool for outlining the direction of economic trend as compared to the effectiveness of the reference economy as a whole (the combination export of all reference economies). The shift effect or the export differential are accounted for by three sources: the industry mix effect (IME), the competitive effect (CE) and the interactive effect (IE). Due to the difference between the competing economy and the reference group, the industry mix effect indicates how much of the export differential is. However, owing to the difference between the export growth rate of competing country and the group, the competitive effect shows the amount of export differential could be. Lastly, the interactive effect assesses the extent to which the export differential could be due to the interaction of both industry mix and competitive effect.

The shift-share formulas are as follows;

$$\text{Industry mix effect; } m_{ij} = r_{i0} (e_{ij} - e'_{ij})$$

(1)

$$\text{Competitiveness effect; } c_{ij} = e'_{ij} (r_{ij} - r_{i0})$$

(2)

$$\text{Interactive effects; } a_{ij} = (e_{ij} - e'_{ij}) (r_{ij} - r_{i0}) \quad (3)$$

$$\text{Net shift } NS = m_{ij} + c_{ij} + a_{ij} \quad (4)$$

Whereas; r_{i0} = the growth rate of product i from the reference group export to the EU market

r_{ij} = the growth rate of product i from the competing country export to the EU market

e_{ij} = the export of product i from the competing country to the EU market

e'_{ij} = structure of export of competing country follows the reference group

$$e'_{ij} = e_{i0} * e_{0j}/e_{00}$$

e_{i0} = export of product i from the reference group to the EU market

e_{0j} = total export from competing country to the EU market



e_{00} = total export from from the reference group to the EU market

3.1 Data

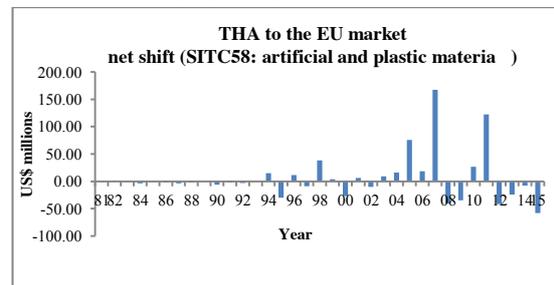
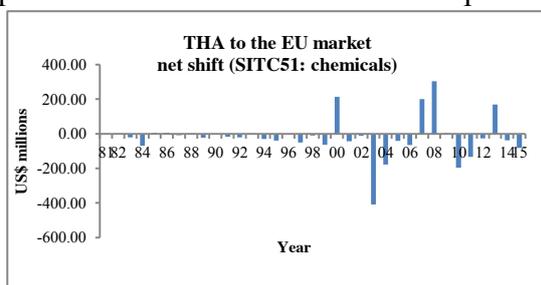
This study employed the dynamic shift-share analysis to assess Thailand's manufacturing export competitiveness with six selected East Asian countries. The annual data between 1980-2015 was used in this study. The reference economies are Singapore, Korea, China, Indonesia, Malaysia, and the Philippines and the markets is the EU. In this study, Thailand's manufacturing export data was grounded on the United Nations, Standard International Trade Classification (SITC). The SITC data were obtained from the UNComtrade. By using the shift-share technique, this study examined SITC 2 digits of eight categories that are SITC 51 (organic chemicals), SITC 58 (artificial and plastic material), SITC 62 (rubber products), SITC 67 (iron and steel), SITC 74 (machinery and equipment), SITC75 (office machines and automatic data processing equipment), SITC 77 (electrical machinery), SITC 78 (road vehicles); and SITC 3 digits for precious stone and jewellery that is SITC(667+897).

4. RESULTS

This section is to explain the net shift and the decomposition of the net shift for Thailand and the competitive economies in EU market.

4.1 Net shift

Figure 1 shows that Thailand's chemical export (SITC 51) could well assume less competitive and was not favourably predisposed in the EU market compared to the reference economies. The exports of artificial and plastic material (SITC 58) accounted for a great volume of artificial and plastic material export to the EU market since the mid-1990s to the 2000s. Thailand's rubber product (SITC 62) export performed well in the EU market. Despite seemingly having shown quite a small volume, Thailand's rubber product export compared to other competitive countries, still revealed a competitive advantage in the EU market. In contrast, the net shift for iron and still (SITC 67) disadvantage in the EU market and there were underlying weaknesses since the 1980s. Thailand's machinery and equipment (SITC 74) export has achieved sustainable growth in the EU market. Especially, it showed a great performance during 1990s-2000s. The net shift of office machines and automatic data processing equipment (SITC 75) export performed poorly in the EU market. Thailand's electric machinery (SITC 77) performed unpleasing, as it was less competitive in the EU market. According to the road vehicles (SITC 78) accelerated considerably well in the EU market in the second half of 1990s and the first half of the 2010s. Showing a great performance in the EU market, the net shift of precious stone and jewellery (SITC 667+897) was mainly positive. In general, Thailand's precious stones and jewellery export performed satisfactorily and was highly competitive in the EU market when compared to the reference economies.



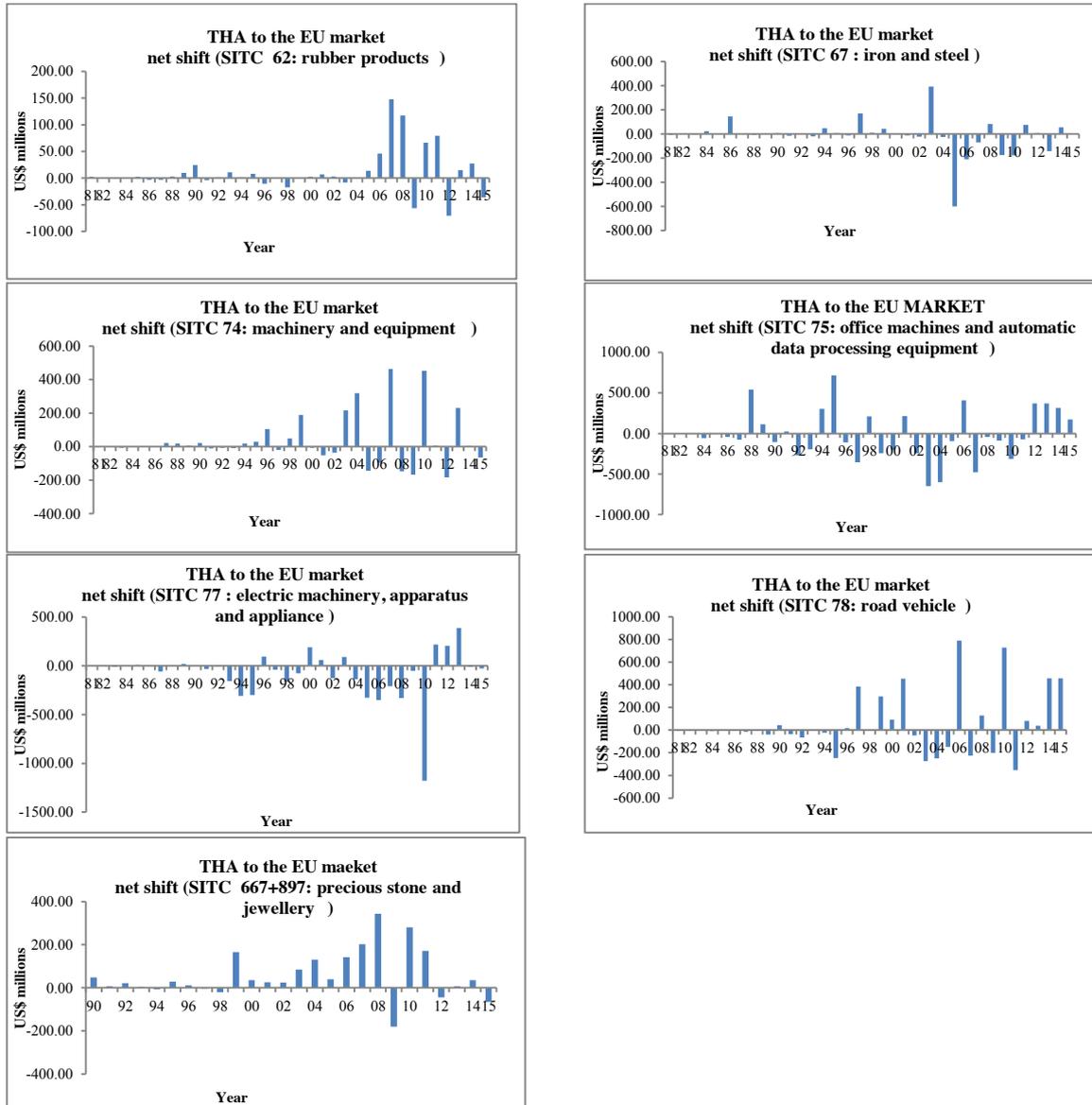


Figure 1: Thailand's Net Shifts to the EU Market (1981 -2015)

4.2 Decomposition of the net shift

The decomposition of the net shift are accounted by three sources: the industry mix effect (IME), the competitive effect (CE) and the interactive effect (IE). Thailand's chemical (SITC 51), there was a mainly negative in IME, CE and also IE, it resulted in a negative net shift throughout the period of the study. The artificial and plastic material (SITC 58), the IME remained negative while the CE became positive. Therefore, the strong CE supported the positive net shift during 1990s. In 2000s, the IME performed well along with a positive CE and IE, this resulted in a positive net shift. For the rubber products (SITC 62), in the 1990s, the IME showed a strong positive while the CE and IE displayed a moderate performance. Thus, it resulted in a positive net shift due to a favorable IME. For this reason, Thailand's rubber products export had a significant performance and more competitive in the EU market. The iron and steel (SITC 67) had a high performance in IE, but the IME and CE were inconsistent. Noticeably, a fluctuation in net shift may have caused by the weakness of IME and CE. Overall, Thailand's iron and steel export performed poorly and less competitive in the EU market. The machinery and equipment (SITC 74) had a strong IME and the showed a satisfactory performance since 1980s, while the IE was inconsistent. All of these led to a positive net shift. It indicates that Thailand's machinery and equipment export showed a crucial



performance and strong competitiveness in the EU market. For the office machines and automatic data processing equipment (SITC 75), there was an insignificant IME and CE since 2000 while the IE had a positive performance. Nevertheless, the strong IE could not offset for a negative IME and CE. Then, there was a negative net shift throughout the period. According to the electric machinery (SITC 77), the IME and CE showed a negative performance while the IE revealed positively. The favorable IE could not compensate for a negative IME and CE, which showed in a negative net shift throughout the period of the study. For the road vehicles (SITC 78), since 2010, there was a positive IME, CE and IE, which resulted in a positive net shift. Overall, the road vehicle performed satisfactory in the EU market. The last category, the precious stone and jewellery (SITC667+897), the IME showed a strong positive combined with a moderate CE and IE. A strong IME affected to a positive net shift since 1990s. In conclusion, the precious stone and jewellery export revealed a great performance and high competition in the EU market.

4.3 The export competitiveness in the EU market comparison between Thailand and its competitors

This section compares Thailand's export competitive position against that of its competitors for each category in the EU market. For organic chemical (SITC51), Thailand, Malaysia and Indonesia did not perform well in this category. Before 1994 China had a competitiveness in the EU market, but after that, China lost its competitiveness to Korea and Singapore. In addition, the Philippines signified an increase consistently in organic chemical export to the EU market since 2008 onward. The artificial and plastic material (SITC 58), China, Indonesia, Malaysia, the Philippines, Singapore and Thailand recorded slow growth over the years. Korea was the top performer with positive net shifts that exceeded the other reference economies in this category. The rubber product (SITC 62), Malaysia, Indonesia, the Philippines and Singapore did not perform well in rubber product export to the EU market. Thailand was able to register positive net shifts since 1988 while China gained a positive net shift since 2002 onwards. However, China gained more in the rubber product export with large and growing positive net shifts since 2009 onward. For the iron and steel products (SITC 67), almost all countries did not do well in this category. China was the only economy among the reference group to experience persistently as the top spot in the iron and steel products export to the EU market. The industrial machinery and equipment (SITC 74), China performed well while others did not do well. Especially, China achieved a greater volume of positive net shifts since 2000 onwards. For the office machines and automatic data processing equipment (SITC 75), Korea, Indonesia, Malaysia, the Philippines and Thailand did not have their competitive advantages in this category. Singapore had a positive net shift since 1981 until 1995, before falling off since 1996 onwards. Since 2000, China's lead has been most pronounced in the EU market compared to the other reference economies. The electrical machinery (SITC 77), Thailand, Korea and Indonesia performed poorly in this category. Malaysia's net shifts started to record highly positive net shifts during 1989-1993 and 2009 onwards. Singapore performed generally well before 1997 while China appeared to have gained a competitive advantage since 1980s. Furthermore, China's high export growth was well head of the other reference economies. The road vehicle (SITC 78), Thailand recovered well to achieve positive net shifts showing a good signal for export performance since 2006. Korea was regarded as the top performer and well head of the other reference economies. Lastly, it was evitable that the poor performance of the precious stone and jewellery (SITC667+897) export experienced in almost all countries. Since 1990, Thailand has been taking the leading role of exporting higher-end precious stone and jewellery.

5. CONCLUSIONS

Thailand's precious stone and jewellery export had the competitiveness in the EU market, followed by the rubber product, the machinery and equipment and road vehicle. In comparison to the other selected East Asian countries, China was the top performer in rubber products, iron and steel, machinery and equipment, office machines and automatic data processing and electrical machinery.



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Korea was the top performer in artificial and plastic material, organic chemical and road vehicle. Thailand was the top performer in precious stone and jewellery. In order to create competitive advantages for Thailand, the government has put an emphasis on research and development as well as played an invaluable role in coordinating communication between foreign buyers and Thai jewelers. Certainly, this effort helped to boost Thailand to the forefront of the precious stone and jewellery industry.

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