Malaysia's Export Market: Trends, Prospects and Challenges

by

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ABSTRACT

This study examines the trends, prospects and challenges of Malaysia's export market growth between 1990-2001 using the dynamic shift-share method. Two prevalent regional issues in the recent years that have been the concern of the policy makers in Malaysia have been investigated. First, realizing that Malaysia is highly dependent on its export as the engine of growth, the study analyzed the growth of each export product and international market access of these products at 2-digit SITC level for four major categories of manufactured exports. The results indicated that overall, Malaysia has a strong net shift in the chemical (SITC 5) and machinery and transport equipments (SITC 7) especially in office machinery (SITC 75) and electrical (SITC 77) products in the major markets. Secondly, due to the growing competition in international trade, the study also assessed the degree of competition between Malaysia, China and ASEAN-4 countries exporting to the major markets. In general the results revealed that China and other ASEAN countries have an impact on the position of Malaysia as an exporter of manufactured products. It was concluded that China poses stiff challenges to Malaysia in the major markets such as EU, US and Japan. However, China also promises opportunities for Malaysia to export certain products to its own market.

Keywords: Trade, Competitiveness, Net Shift, and Export Structure

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1. INTRODUCTION

Over the three decades Malaysia has shown remarkable economic performance as a result of its outward looking strategies. Malaysia like other first-generation tigers (Korea, Taiwan, Singapore and Hong Kong) has used exports as its engine of growth and development since the 1970. Malaysia's economic growth continued to improve after the economic crisis in 1997 within an environment of low inflation and unemployment. Malaysia made a shift from the largely import-substitution prior to the 1970's to liberal outward oriented trade regime. (Shazali Abu Mansor et al, 2000) The most prominent sector contributing to the export earnings was manufacturing which accounted for 79% of the total export earning and nearly 29% of Malaysia's Gross Domestic Product (GDP). (Chandran V.G.R. et al, 2003b)

Recent developments in trade flows and foreign direct investment (FDI) has a remarkable impact on the Malaysian direction of trade and structure. The major advancement was the rise of China to a position of economic dominance in Asia as well as the world. The second wave of this advancement comes within the ASEAN members as trade liberalization and the implementation of ASEAN Free Trade Agreement (AFTA), has made the international trade more competitive. A number of studies have analyzed the export market growth using the shift share method. For example, Peter Wilson (2000) noted that apart from Singapore, Thailand has emerged as a new dynamic ASEAN economy, which became more competitive across a broad range of manufactured goods. Thailand is clearly seen to have switched from a low profile producer to a higher value-added manufacturing producer between 1983-1995. On the other hand, research by Herschede Fred (1991) suggested that ASEAN as a whole suffers the most in the Japanese market because of China's entry. In addition, Khalifah (1996) has studied the export market growth of Malaysia. However, most of the studies have focused on the export market growth as a whole without any specific reference to Malaysia or the implication of China towards the export market growth of Malaysia. This study therefore, is a probe for further insights, in an attempt to fill the research gap in this area by assessing the export market growth of Malaysia.

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2. OBJECTIVES

The main purpose of this study is to examine Malaysia's market access and product competitiveness for each market and to assess the impact of ASEAN-4 and new entry of China on the export performance of Malaysia. In specific the objectives of the study are as follows

1. To assess the effect of differences in growth of various export products to a market compared to other markets
2. To identify which export market are of growing or diminishing significant to Malaysia's overall export growth
3. To assess the degree of competition in different market access of Malaysia, ASEAN-4 and China

3. METHODOLOGY

Two version of shift share method were used in this study. The first version[1] of shift share follows the national average growth rate and the second version compares changes in Malaysia's exports with the corresponding exports of a selected group of reference economies[2]. Shift share analysis requires measurements on a variable of interest (in our case the exported product) for each market (imported countries) at the beginning and end of a specific period of analysis. For each of the

[1] For a mathematical representation of both the method refer to Appendix A

[2] Reference economies are the total exports of Malaysia, China and ASEAN-4. Due to the space constraints the explanation of the second version was limited to its mathematical expression that can be found in the appendix. However it is similar to that of the first version and the only differences was it uses the reference economies growth rate (total of all competing economies). Net shift is attributed to three source of divergence namely industry mix effect, the competitive effect and the interaction effect.

export market an expected growth figure known as share effect is computed based on the average growth. The share effect shows the value of export of a particular market as if the market has grown at the rate of the overall export of Malaysia. The share effect figure will then be compared with the actual growth of a market to identify the differences. The differences will then be labeled as **net shift**. If a country gain market shares over the period then the net shift will be positive and vice versa for countries losing market share. The net shift may have been caused by three source of divergence know as Industry Mix Effect, Regional Effect and Interaction Effect.

Industry Mix Effect (IME) shows the difference between the products or composition of export to a market and the composition of the Malaysian total exports. If a particular export market is growing faster than the national average it may be due to the concentration of a rapid growth in certain products. A positive effect will occur when the proportion of the export to a market in a fast growing product is greater than the proportion of Malaysia's overall export in these products.

Regional Effect (RE) shows the divergence in growth of various export products to a market compared to other markets. The difference in growth rate of individual products between the markets can contribute to an overall growth in the export market share. Positive regional effect means that the rate of growth in individual products to a market is higher than the country's overall export growth in these products and vice versa for the negative regional effect.

Interaction Effect (IE) combines both the industry mix effect and regional effect. It measures the differences in mix products to various markets interacting with difference in growth of product exports to these markets. A positive effect results when exports are either concentrated in fast moving products or not concentrated in with those slow moving products.

3.1 DATA AND TIME FRAME

The estimation of the shift share analysis model for the Malaysian export market requires data on export of Malaysia for each market. Export data was obtained from the Department of Statistics. The export data included in this study was at 2 digits Standard International Trade Category (SITC) level. The time frame selected for the study is from 1990 to 2001. In addition data was also obtained from the International Trade Center (COMTRADE), United Nation in order to make comparison on the export competitiveness of Malaysia and the reference economies. The time frame applied for this purpose was from 1993-2001. Since this study uses the shift share analysis the growth rates were calculated yearly[3]. Six major markets was selected from the purpose of the study namely European Union[4] (EU), Newly Industrials Economies[5] (NIE), United States of America (US), Japan, China and four Association of South East Asian Nations[6] (ASEAN-4)

4. TRENDS AND PROSPECTS OF MALAYSIA'S MANUFACTURED EXPORTS

This section aims to estimate the contribution of export by industry[7]/product section. High export growth of Malaysia is attributed to the presence of certain industry/product when it has outperformed its counterparts at the national scale (known as positive net shift), whereas export decline in another industry is attributed to performance, which has been weaker than at the national scale (known as negative net shift).

[3] Year by year changes were only used to analyze the performance of each products by industry and the performance of Malaysia to that of the reference economies. In analyzing the performance of products to the major markets two timeframe were captured namely from 1990-1996 and 1996-2001 due to the availability of data.

[4] EU includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden & United Kingdom

[5] NIE includes Korea, Hong Kong and Taiwan

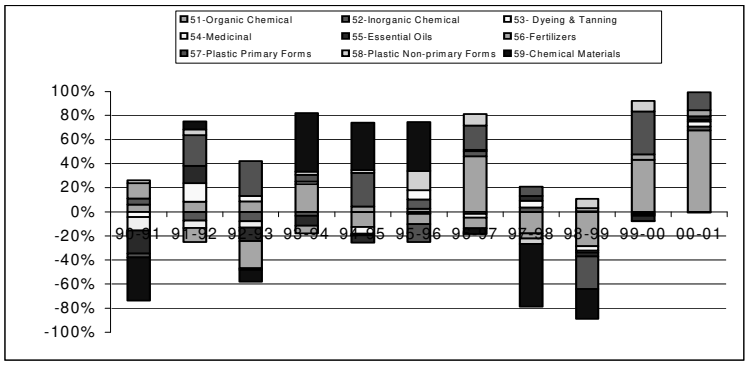
[6] ASEAN includes Singapore, Thailand, Indonesia and the Philippines

[7] For the purpose of convenience the term industries and products are used interchangeably. Both implies the same meaning

4.1 Chemical Industry

Chart 1 decomposes Malaysia's net shifts[8] in export of the chemical products. As is evident Malaysia's chemical products have maintained a largely positive net shifts from the year 1990-2001 with exception of 1991, 1993 and 1998-1999 (Asian economic crisis). Among the top performing chemical products are organic chemical (SITC 51) and plastic primary forms (SITC 57). It is noteworthy that organic chemical (SITC 51) in particular alcohols/phenols/derives (SITC 512) has a brighter future, as its performance is better off compared to the national scale and future development of this industry should be emphasized. Another industry, which has maintained a strong positive net shift during the study period, is plastic primary forms (SITC 57) especially styrene primary polymers (SITC 572). Indeed better support and policy development should be stream lined to these products. For example, Malaysia could learn from Singapore where it has launched a multimillion-dollar research center and managed to attract six of the world's top multinational pharmaceutical companies. (Business Monitor International, 2004) This was done in anticipation that electronics industry will be replaced by chemical[9] and biomedical (pharmaceuticals and medical science) as the real engine of growth in the future.

CHART 1: NET SHIFTS OF CHEMICAL INDUSTRIES



Source: Author's calculation

One peculiarity was the emergence of chemical materials (SITC 59) especially during the year 1993-1996, however in recent years (after 1996) its performance has declined as it was outperformed by organic chemical (SITC 51). On the other hand, fertilizers (SITC 56) and medicinal (SITC 54) products are below the performance level of the national scale.

TABLE 1: CHEMICAL INDUSTRIES NET SHIFT BY MAJOR MARKETS

PRODUCT (SITC)	EU	NIE	US	JAPAN	CHINA	ASEAN
51-Organic Chemical	GAINER	GAINER	GAINER	SURVIVOR	SURVIVOR	GAINER
52-Inorganic Chemical	LOSER	GAINER	LOSER	SURVIVOR	LOSER	SURVIVOR
53-Dyeing & Tanning	GAINER	SURVIVOR	GAINER	LOSER	LOSER	GAINER
54-Medicinal	LOSER	LOSER	LOSER	LOSER	LOSER	LOSER
55-Essential Oils	GAINER	LOSER	SURVIVOR	LOSER	SURVIVOR	LOSER
56-Fertilizers	LOSER	LOSER	GAINER	LOSER	LOSER	LOSER
57-Plastic Primary Forms	GAINER	LOSER	GAINER	GAINER	GAINER	GAINER
58-Plastic Non Primary	GAINER	LOSER	SURVIVOR	SURVIVOR	GAINER	GAINER
59-Chemical Materials	LOSER	LOSER	LOSER	GAINER	GAINER	LOSER

Source: Author's Calculation

Losers - industries that suffered through declines in net shift or gains earlier on but declines in the end; **Survivors** - industries which experiences no change in net shift or experienced declined initially and sharp increase later on; **Gainers** - industries, which experienced increasing net shift throughout the period of study. **Note:** Net shift is calculated on two intervals namely 1990-1996 and 1996-2001

In terms of market access (Table 1), NIE has been an unfavorable market for the chemical products as most of the industries have performed below the national growth rate. The only gainers in the

[8] The chart shows percentage of net shift which is calculated by dividing the net shift for each industry with the total shift of the chemical industries and multiply by 100

[9] Research identified chemical industries as a potential sector for Singapore. Further information refer to, Ting Su Chern et al., Assessing Singapore's Export Competitiveness Through Dynamic Shift-Share Analysis.

NIE are organic chemical (SITC 51) and inorganic chemical (SITC 52). However, in the Chinese market, plastic primary forms (SITC 57), plastic non-primary (SITC 58) and chemical material (SITC 59) are the most promising products with high positive improvement of net shift between 1990-1996 and 1996-2001. Malaysia's overall chemical exports recorded strong positive net shift to the market of EU, US and China. This was due largely to the overwhelming positive industry mix effect and positive regional effect. This suggests that Malaysia has a favorable structure to all the major markets where export to a market was concentrated on those products with faster than average overall export growth.

4.2 Semi Manufacturers[10]

Overall semi manufacturers performed the worst among the manufacturing products compared to the growth rate at the national scale. This is evidenced by the negative net shift in most of the products in SITC 6 throughout the year of the study except for the year 1992,1993, 1996 and 2001. The prospects for the export of semi manufactures in Malaysia are not any brighter especially for soft manufactured product such as paper and articles of paper (SITC 64) and textile & fabric (SITC 65) as these items have relatively low price tags. In addition to this many of the developed countries levy quotas[11] on most of these soft manufactures. The situation will be made worst, when US and European Union drops all textile quotas (covered under the Multi-Fiber Arrangement) for the World Trade Organization (WTO) members on January 2005 especially in textile industries[12](Matthias Knappe, 2003). Further Malaysia will face a stiff competition as this industry only depends on unskilled workforce where China has the cost advantage[13]. Proper strategies should be taken by the Malaysian government and exporters to reap the benefit of the US and EU market by keeping in mind that late entry would flood these markets with the products of China and other major exporters. Another strategy that Malaysia could focus on is to target the low trade barrier countries to boost the export of these products. It is evident that in average the first tier NIEs and some of the developed nation such as New Zealand applied on average a lower tariff. It is also important to note that in developing countries, protection is on average much higher than the developed nations and if developing countries could integrate their trade amongst themselves, significant improvement could be made in most of the labor-intensive products. As such the implementation of AFTA would be seen as an opportunity for Malaysia to penetrate the ASEAN markets especially in textile. However all these can only be done if Malaysia could enter the markets earlier and improve its product differential in terms of quality and design.

Based on Chart 2, in the year 1992, 1993 and 1996, cork and wood (SITC 63) shows a positive shift indicating that this industry has grown faster than the average manufactured export growth. The best performing products are veneer/plywood/etc (SITC 634) and wood manufactures (SITC 635). In recent years the trend has shown a different picture where in the year 2001 exports of iron and steel (SITC 67)[14] and manufactures of metal (SITC 69) performed exceptionally well as it has contributed to the overall positive net shift. This might be the result of the increase in world demand for iron, steel and metal during that particular year.

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[10] Including Iron and Steel and Textile

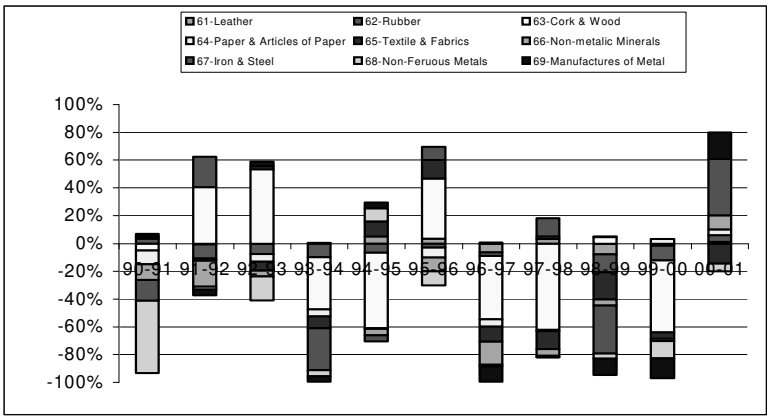
[11] Textiles, clothing, leather and rubber products, footwear and travel goods are subject to tariff peaks in Canada and the United States; and leather, rubber, footwear and travel goods in Japan. In the EU, tariff peaks concern mainly agricultural products, but leather, rubber, footwear and travel goods are the most affected categories within manufactures

[12] In Malaysia in terms of the share of manufacturing export in total merchandise export; 65-Textile is the second largest industry within SITC 6 after 63-Cork and Wood manufacturers. This is followed by 69- Manufactures of metals. However in recent years contribution of these industries are declining. (Chandran V G R, et al.)

[13] World Bank estimated that China's export share of apparel to jump to 45% once all quotas are lifted. In addition, China will be a major player as in average the labor cost in apparel industries are $73 per month followed by a quicker delivery of its goods with the help of Taiwan and Hong Kong's trading companies. In an anticipation of end of the quotas, companies like Gap and Nike are searching for new suppliers in China. (Business Week, December 15, 2003)

[14] However the net trade balance indicated a high portion of imports in Iron and Steel suggesting the industry's high reliance on imports. For further information refer to Chandran V.G.R. et al., Export Specialization, Concentration And Intra-Industry Trade: Evidence From Malaysia.

CHART 2: NET SHIFTS OF SEMI MANUFACTURERS



Source: Author's Calculation

At first glance, it is noticeable in Table 2 that performance of the semi manufacturers in the ASEAN and NIE was declining as all the products performed below the national growth level. This was due to the poor performance of SITC 63 (-28.3%), SITC 65 (-33.2%) and SITC 67 (-13.68%) to the market of NIE and SITC 67 (-44.19), SITC 65 (-37.1%) and SITC 63 (-31.1%) to the market of ASEAN.

TABLE 2: SEMI MANUFACTURERS NET SHIFT BY MAJOR MARKETS

PRODUCT (SITC)	EU	NIE	US	JAPAN	CHINA	ASEAN
61-Leather	GAINER	LOSER	LOSER	SURVIVOR	LOSER	LOSER
62-Rubber	LOSER	LOSER	LOSER	LOSER	LOSER	LOSER
63-Cork & Wood	GAINER	LOSER	LOSER	LOSER	SURVIVOR	LOSER
64-Paper & Articles of Paper	SURVIVOR	LOSER	SURVIVOR	GAINER	LOSER	LOSER
65-Textile & Fabric	LOSER	LOSER	LOSER	LOSER	GAINER	LOSER
66-Non-Metalic Minerals	LOSER	LOSER	SURVIVOR	LOSER	LOSER	LOSER
67-Iron & Steel	SURVIVOR	LOSER	LOSER	LOSER	GAINER	LOSER
68-Non-Feruous Metals	LOSER	LOSER	LOSER	LOSER	GAINER	LOSER
69-Manufactures of Metal	SURVIVOR	LOSER	LOSER	GAINER	SURVIVOR	LOSER

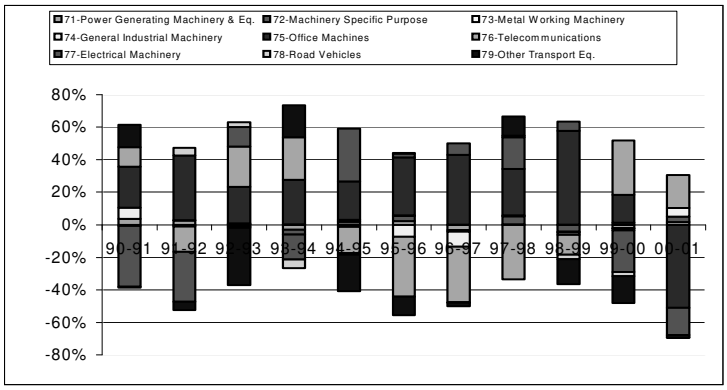
Source: Author's Calculation

In addition breakdown of the net shift of Malaysia's semi manufacturers export shows that Malaysia has an unfavorable overall industry mix effect to all the major markets. In contrast SITC 63, 65, 67 and 68 was well established with positive gain in the Chinese market providing a new opportunity for semi manufactures to explore. Indeed China's accession into WTO implies greater opportunities for Malaysia in exports of these products, as China's protection will fall rapidly. However greater competition may come within ASEAN namely Indonesia which has an abundance of natural resources.

4.3 Machinery and Transport Equipments Industry

It is interesting to note that in SITC 7, office machines (SITC 75) have been one of the most important industry as reflected in its significant positive net shift in 2-digit SITC category. From Chart 3 it can be noted that office machines maintain positive net shift through the period of study except in 2001. Even during the Asian economic crisis office machines (SITC 75) remain robust with strong positive net shift. The main contributors in office machine industries are office machines (SITC 751), computer equipments (SITC 752) and office equipment parts and accessories (SITC 759).

CHART 3: NET SHIFTS OF MACHINERY AND TRANSPORT EQUIPMENT INDUSTRY



Source: Author's calculation

Secondly, electrical machinery (SITC 77) shows a better performance compared to other products. The electrical machinery industry maintains the positive net shift following the contribution of electrical power transmission equipment (SITC 771), electric circuit equipments (SITC 772). Besides office machine (SITC 75) and electrical machinery (SITC 77), the telecommunication (SITC 76) shows strong growth from 1990-1994 and from 1999-2001. The contributing factor is that these two products are the world's fastest growing products. The above serves the evidence that Malaysian manufacturing sector especially in SITC 7 is reoriented away from unskilled labor intensive towards technology intensive and skill based industries. Indeed the Malaysian total export of high technology industries[15] has shown dramatic improvement from 39.4% in 1993 to 57.38% in 2001 whereby 21.4% comes from the computer industry and 33.33% of telecommunication industry in the year 2001. (Chandran V.G.R, 2003)

These industries are highly vulnerable as Malaysia relies highly on the Japanese FDI. Two immediate threat may post Malaysia; Firstly, if Japanese decides to redirect their investment elsewhere.[16] Secondly, is the emergence of old NIE's especially Korea and Taiwan whose competitiveness are improving and treating the position of Japanese manufactures[17]. However Malaysia has the first mover advantage in computer-office machines industries relative to China and other ASEAN economies except Singapore. It is also important to note that these industries have higher prosperity in the near future with the establishment of the Multimedia Super Corridor flagship as more know-how and research and development would supplement the industries. Even the increased market globalization and rapid advances in telecommunications and information technology have given a boost to the volume of computer and telecommunication parts.

To continuously maintain the competitiveness of these products some important measures should be taken by the government of Malaysia. Firstly, these products are relatively low priced which means there is an urgent need to achieve economies of scale to be a survivor. Secondly, more effort is needed in attracting FDI in these industries as many firms such as Seagate, Motorola and Solectron are planning to shift its production elsewhere in Asia[18](Business Monitor International). Thirdly, the government should play a bigger role in encouraging the potential industries by

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[15] The grouping of high technology industries were done based on the OECD classification that includes Aerospace, Chemistry, Computers-Office Machine, Electrical, Non-Electrical Machinery, Pharmacy, Scientific and Telecommunication. (Percentage shown are out of total manufactured exports)

[16] However key Japanese companies such as Fujitsu, Hitachi, Matsushita, NEC and Sony still prefer Malaysia as an attractive location due to the fact that technology decision may be costly to reverse and long years of human resource development in Malaysia that are not easy to substitute elsewhere. Despite that Malaysia may face severe competition within ASEAN especially Singapore.

[17] Companies like Samsung of Korea and others have managed to penetrate the market for microchips and flat panel display, which was previously dominated by Japanese.

[18] Penang once the pillar of Malaysian electronic industries has seen a slow down. Example, Solectron, equipments makers for Cisco Systems has already transferred assembly of computers and mobile phone to China.

halving the import duties for materials and equipments needed for the production of computer and telecommunication parts. Fourthly more specific products should be identified to streamline the policy development to encourage these industries. For example, Korea has now identified the rechargeable batteries industry and pumped 1.5 billion, as one of their 10 strategic products that it hopes will drive the country's economic growth.

From Table 3, the key players in all the major markets of Malaysia are office machines (SITC 75) followed by machinery for specific purpose (SITC 72). Due to the current economic downturn telecommunications (SITC 76) is losing its ground to the market of EU, NIE, US and ASEAN. China emerges as a new potential market for a broad range of machinery and transport products namely SITC 72, 74, 75, 76, 77 and 79.

TABLE 3: MACHINERY & TRANSPORT EQ. NET SHIFT BY MAJOR MARKETS

PRODUCT (SITC)	EU	NIE	US	JAPAN	CHINA	ASEAN
71-Power Generating Machinery & Eq.	LOSER	GAINER	LOSER	LOSER	LOSER	LOSER
72-Machinery Specific Purpose	GAINER	GAINER	GAINER	LOSER	GAINER	GAINER
73-Metal Working Machinery	SURVIVOR	LOSER	GAINER	LOSER	LOSER	LOSER
74-General Industrial Machinery	LOSER	LOSER	LOSER	LOSER	GAINER	LOSER
75-Office Machines	GAINER	GAINER	GAINER	GAINER	GAINER	GAINER
76-Telecommunications	LOSER	LOSER	LOSER	SURVIVOR	SURVIVOR	LOSER
77-Electrical Machinery	SURVIVOR	GAINER	LOSER	LOSER	GAINER	GAINER
78-Road Vehicles	LOSER	LOSER	LOSER	LOSER	LOSER	LOSER
79-Other Transport Eq.	LOSER	GAINER	LOSER	GAINER	GAINER	LOSER

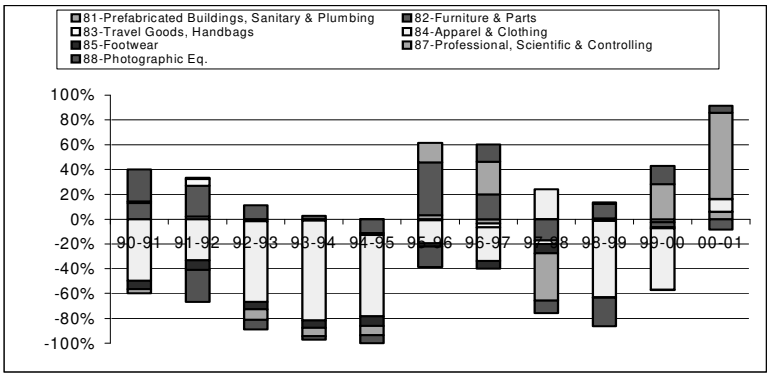
Source: Author's Calculation

Two highest net shifts were for 75 (46.6%) and 77 (48.45%). The overall positive net shift for the market of EU, NIE, and Japan was attributed to the positive IME and detailed examination of the net shift suggested that favorable overall IME were due to the strong performance of SITC 75 (120.6%) and SITC 77(238%) to the market of EU, SITC 75(48.2%) and SITC 77(15.8%) to NIE, SITC 75(253%) to Japan.

4.4 Clothing and Other Consumer Products

It can be said that the furniture industries (SITC 82) have maintained a positive net shift relative to the performance of other industries in 1991–94, 1996-97 and 1999 (Chart 4). This can be attributed to the government's effort in shifting the wood based industry from low value raw materials to high value-added products such as furniture under the Industrial Master Plan (IMP) which was launched in 1986.

CHART 4: NET SHIFTS OF CLOTHING AND OTHER CONSUMER PRODUCTS



Source: Author's calculation

Indeed government has made every effort[19] to promote downstream processing activities especially in manufacturing of furniture in order to meet the demand from overseas as well as the domestic

[19] Furniture manufacturing is subject to a minimum set of procedures and regulations, moving towards deregulation. The government have also encourage the participation of indigenous people by establishing six furniture village which is equipped with machinery, kiln

market. However the future performance of the furniture industries does not look good as in recent years its performance has been below the national growth rate.

An interesting trend to be noted is that Professional, Scientific and Controlling (SITC 87) are improving over time especially in recent years(Chart 4). Most of these industries are more of the high technology intensive and have also shown a great improvement in the contribution to the total manufactured exports.

TABLE 4: CLOTHING AND OTHER CONSUMER PRODUCTS: NET SHIFT BY MAJOR MARKETS

PRODUCT/SITC	EU	NIE	US	JAPAN	CHINA	ASEAN
81-Prefabricated Build, Sanitary & Plum	LOSER	LOSER	GAINER	LOSER	LOSER	SURVIVOR
82-Furniture & Parts	GAINER	LOSER	LOSER	LOSER	GAINER	LOSER
83-Travel Goods, Handbags	LOSER	LOSER	LOSER	LOSER	LOSER	LOSER
84-Apparel & Clothing	LOSER	LOSER	LOSER	LOSER	GAINER	LOSER
85-Footwear	LOSER	LOSER	LOSER	LOSER	LOSER	LOSER
87-Professional, Scientific & Controlling	SURVIVOR	GAINER	GAINER	GAINER	GAINER	GAINER
88-Photographics	SURVIVOR	LOSER	SURVIVOR	LOSER	SURVIVOR	SURVIVOR
89- Misc.	LOSER	LOSER	LOSER	LOSER	SURVIVOR	LOSER

Source: Author's Calculation

Based on Table 4, it is not a surprise to find that SITC 87 performed well in all the markets as noted earlier. This technology intensive industry should therefore be given considerable attention as it has the potential of being the export leader of Malaysia. Overall the clothing and other consumer goods do not promise a good future for Malaysia except in the Chinese market where it maintains a positive net shift that was due to strong positive regional effect. In total 5 out of 9 industries performed well in the Chinese market. The poor performance of this industry to the other markets is due to the negative industry mix effect.

4.5 OVERALL MARKET PROSPECTS

Malaysia like any other developing country, which relies on export, can benefit from international economic integration if integration policies and creation of an environment of equal competition for all forms of Malaysian enterprise are implemented in a sound manner. The cost and benefit will largely depend on the competitiveness of the Malaysian industries. Effort to increase the competitiveness should indeed be focused and reoriented towards those industries mentioned earlier in the study. In addition creating a favorable incentive based environment for export of the dynamic industries should obviously be the first priority of the government. Indeed China has promised many opportunities for a number of industries as mentioned in the earlier section. In fact China as a whole has become one big market with a large overall net shift[20] compared to the other markets in the 1996-2001.

In addition Malaysia should take advantage of China's interest in multilateral agenda settings, proposing free trade agreement with ASEAN.[21] The identified industries in EU, US, Japan, NIE and ASEAN market should be further enhanced if Malaysia wanted to maintain its competitiveness.

4. EXPORT COMPETITIVENESS BETWEEN MALAYSIA, CHINA AND ASEAN- 4

This section summarizes the results of the dynamic shift share analysis of Malaysian export performance compared with the reference economies namely China, Singapore, Thailand, Indonesia and the Philippines. The need for this section was triggered due to the fact that recent development such as trade liberalization, globalization, China's accession into WTO and

drying plants, finishing center, furniture showrooms and marketing support to encourage the small scale industries to involve in the export market

[20] Overall net shift refers to the total net shift of all industries (total manufactured exports)

[21] Chinese Prime Minister, Wen Tiabao said that by 2005 China's trade with ASEAN would more than double to reach or surpass $120 billion, the level of US-ASEAN trade in the year 2002. China feels less vulnerable internationally nowadays than their predecessors as they are witnessing the rise of China from actively involving in international arena.

knowledge economy, has forced Malaysia to face increasing competition especially from the ASEAN countries and China (Chandran V.G.R. et al., 2003a). For example, Singapore has successfully attracted foreign makers of semiconductors and liquid crystal displays. Indonesia serves as an assembly base, highly competitive in most of the labor-intensive industries while the Philippine has jumped into the bandwagon of technology intensive products. Thailand has also attracted investment recently and become established as a production base for consumer-electronics products. On the other hand, China has become prominent as the number one destination for investors. As China becomes the world's leading supplier of mass-produced goods, Malaysia will have to be opting for niche products of high quality and prestige. This section will evaluate the level of competition between these countries by analyzing the export performance of each country to a specific market. The evaluation is done by examining the evolution over time of the net shift for each country in each one-digit product categories to the markets of the EU, US, and Japan. Indeed this study also evaluates the performance of ASEAN countries to the Chinese market as China promises huge demand with expanded purchasing power and the population advantage.

5.1 Net shift to European Union, US and Japan

Southeast Asia has been improving its position as the emerging manufacturing exporters in recent years. During the 1980s and 1990s, Malaysia, China and other ASEAN countries (especially Singapore, Thailand, Philippines and Indonesia) became more interdependent in trade in similar products and in markets such as the EU, USA and Japan The export performance of the competing nation to a market is partly determined by how well the nation has performed if it has participated in the reference economy. Appendix B, C and D shows the net shift of each nation in the EU, US and Japan market.

5.1.1 European Union

As shown in Appendix B, Malaysia shows worrying trends of export to the EU market as its performance is mainly under the ability of the reference economies except that it shows positive improvements in the chemicals (SITC 5) and machinery and transportation equipments (SITC 7) between 1998-1999. It has been noted that as a whole China has outperformed the other countries in recent years in the EU market. This is indicated by the positive overall net shift in SITC 6 and 7 from 1996-2001 and SITC 8 from 1993-2001. It appears that as a whole Malaysia is losing ground, at least at the one digit level, in the EU markets. She was finding it difficult to maintain her competitive position as an emerging manufacturing exporter in these categories, a position that was subsequently made even more difficult with the presence of China as the world factory. Many previous studies showed that China has the comparative advantage in the labor-intensive industries. However by looking at the data we can conclude that China is becoming stronger in the overall manufacturing industries and it is also building its capability in medium and higher technology industries. (Shown by a positive net shift in SITC 7) It is difficult to pinpoint as which industries are significantly contributing to China's dominant presence in SITC 7 since the data is aggregated at one digit level, however in the initial investigation it was found that China's export of high technology products[22] significantly improved from merely 5.76% in 1993 to 20.46% in 2001.

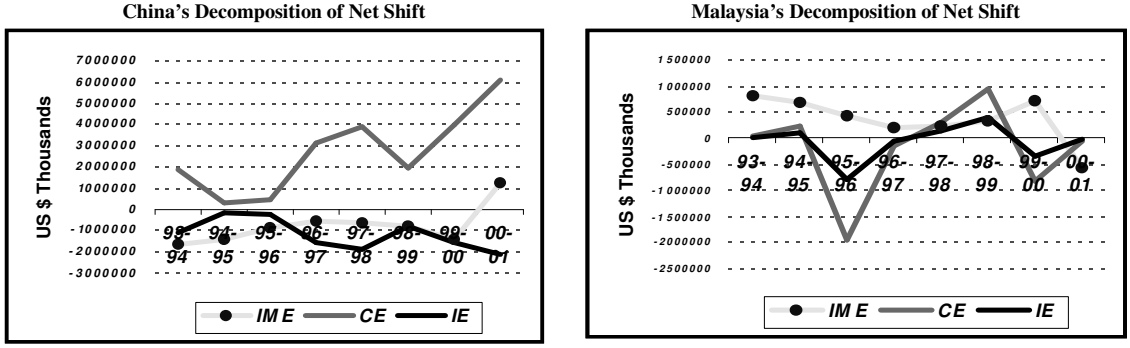
5.1.2 United States of America

Our results showed that Malaysia's main challenge is China and to certain extent Philippines as their manufactured exports to the USA were expanding. The main rival over the period of analysis has been China, which achieved significant positive export deferential (net shift). The worst performer in the USA market is Singapore where it obtains most negative net shift (except in 1993-1996 in SITC 7 and 1997-1998 in SITC 5). (Appendix B)

[22] High Technology Industries includes Aerospace, Chemistry, Computer, Electrical, Non-electrical, Pharmacy, Scientific and Telecommunication.

Malaysia appears to have achieved some limited success especially in SITC 7 from 1993-1995 and 1996-2000 whereas other manufactured exports have a negative net shift. Although China's exports of SITC 7 have been growing at a faster rate than the reference economies with high positive competitive effect (CE), her IME has generally been lower as her SITC 7 is not well established compared to other reference economies. Malaysia on the other hand enjoys a stronger IME suggesting that the exports structure of Malaysia is concentrated on the fast growing SITC 7 in her exports compared with reference economies. **(Chart 5)**

CHART 5: DECOMPOSITION OF NET SHIFT: SITC 7



Source: Author's calculation

5.1.3 Japan

In the Japanese market, China dominates the SITC 8 as a whole compared with other reference economies. China's strong IME and CE in SITC 8 basically attributed to the positive net shift in SITC 8. The pattern of Malaysia's export of SITC 7 is in favour as the net shift shows a positive sign during the years of study except in 1996-1998 and 2001. However one distinguish pattern between Malaysia and China are that during the Asian economic crisis China has performed well compared with others economies. Another economy that has done well is the Philippines as it has grown to be a new rivalry for Malaysia in SITC 7 to Japan especially during 1995-2000 periods. (Appendix C)

5.2 Key Remarks

Three key conclusions emerge from the above findings. Firstly the challenge posed to Malaysia by China. China has become the prominent rivalry for Malaysia in exporting to the US market in particular for SITC 5,6 and 8.To the market of EU again China is performing better than Malaysia in SITC 6, 8. Only after 1996 in both the markets (USA and EU), China shows a great improvement in SITC 7 except between the years 1998-1999 where Malaysia's net shift is far better off than China.

Secondly, the emergence of Philippines in SITC 7 poses a new threat to Malaysia. Philippines manufactured exports have performed impressively (shown by a positive net shift) in the US, EU and Japanese market from 1994-1998. Realizing that Malaysia and Philippines specialize in the same product category the presence of Philippines should be viewed crucial. Indeed many of the same Multi National Corporations (MNCs) such as Intel, Texas Instruments, NEC, Fujitsu and others invested in physical facilities, training and technology activity in both countries. However, Philippines export competitiveness are very narrow, dominated by one product group especially semiconductors. Philippines's industry mix effect (IME) was exceptionally weak compared with Malaysia. This suggests that Philippines's exports have a lower concentration in the fast growing industries. In addition, Malaysia has a much longer record of SITC 7 exports compared to the Philippines and this provides some initial advantage for Malaysia in attracting FDI (The FDI flows in Malaysia are much higher than in Philippines). Indeed the infrastructure and political stability which is vital for the development of Machinery and Transportation Equipments like electrical,

electronics, telecommunication are well established in Malaysia However, Malaysia should be extra cautious of the performance of Philippines since Philippines is relatively better off in terms of labor cost, improving value added, skilled labor, English speaking workforce and availability of engineers and scientist. For example, shop floor average wages are $200-250 per month compared to $300-350 in Malaysia. New graduate engineer earns an average of $400-500 in the Philippines compared with Malaysia $800-1000. (Sanjaya Lall, 2000)

Thirdly, the dominance of Indonesia especially in resource based industries of SITC 6 and Singapore in SITC 7 have to a certain extend poses challenges for Malaysia in the EU, US and Japanese markets.

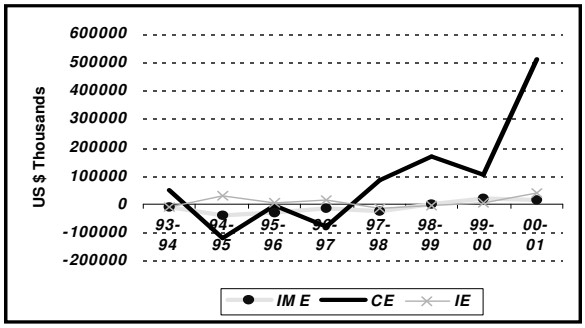
5.3 Net shift to Chinese Market

Given the recent economic development and with the accession of China into WTO many have viewed China as a threat to the other nations due to China's cost advantage in manufacturing industries. However with the huge market in China, one could also view China as the potential market to boost exports especially with the rapid growth of income in China. Numerous studies have shown that industrial countries are likely to benefit from China's accession into the WTO. In addition, Malaysia could also play a significant role if Malaysia's export serves as a complement to the ever-growing industries in China. Malaysia would be able to create opportunities to capture the fast expanding market of China. The former Prime Minister of Malaysia, Mahathir Mohamed once quoted; "Malaysia will have a share in the wealth that will be generated in China. It's up to us to identify how we can benefit from China's new found wealth". From the analysis, several interesting observation can be made;

The analysis suggested that Malaysia's SITC 7 (Machinery and Transport Equipments) exports have performed exceptionally well between 1997-2001 and gained positive net shifts compared with the other reference economies such as Singapore, Thailand, Indonesia and Philippines. (Appendix C) This may indicate Malaysia's capability in exploring the Chinese's market especially with the ever growing demand for electrical and electronics products to supplement the other industries. Thus, the ability to capitalize on this opportunity is important to enable Malaysia to gain a foothold as an important export center for machinery and transportation. Indeed at this moment, high technology based industries like office machines could gain more market access in China due to their low competitiveness and high concentration of China's production on low-level manufacturing. In comparison, Indonesia was the worst performer in SITC 7 during the entire period of study. The close competitors of Malaysia to the Chinese market are Singapore and Thailand, which also show a positive net shift except in the year 1995-96, 1997-1998 for Singapore and 1998-1999 for Thailand. Another rivalry that may threaten the Malaysian position is Philippines that enjoyed positive net shift during 1997-2001.

The decomposition of the overall net shift (net shift) into its source of divergence helps to identify the sources of changes in export competitiveness of SITC 7. Malaysia's positive net shift during 1997-2001 is mainly due to the contribution of the Competitive Effect. Meaning to say that Malaysia's growth rate in SITC 7 is more dynamic and Malaysia has the competitive advantage in SITC 7 in relation to the reference economies. **(Chart 6)**

CHART 6:BREAKDOWN OF MALAYSIA'S NET SHIFT TO CHINA (SITC 7: MACHINERY AND TRANSPORT EQUIPMENTS)



Source: Author's Calculation

In SITC 6 and 8, Malaysia performed relatively badly compared to other reference economies until 1998 but slightly narrowed the gap during 1998-2001. Thailand has emerged as a leading export performer in SITC 6 and Singapore has better position than the reference economies until 1998 in the export of SITC 8 to the China market.

Destination for Malaysian investors are more concentrated in Singapore, United States, the United Kingdom, Northern Ireland and Hong Kong. Investment in China constituted 1.5% of total Malaysian investment abroad in 1992 and 6.8% and 1.9% in 1996 and 1999 respectively. A way to improve performance of Malaysian export is to tap the opportunity in China by seeking cooperation with China. Cooperation should be established by identifying the degree of complementarities between Chinese and Malaysian industries. Focus should be directed to SITC 7 especially in high technology based industries such as electronics and telecommunication realizing that China will take several years to fully calibrate its policies and enjoy the benefits of WTO. Indeed China still has many of its own problems such as barriers to the distribution of goods, regulatory issues and difficulties in establishing joint ventures with local partners, domination of State Owned Enterprises (SOE) (Palanca Ellen H., 2001). However, Malaysia should be selective, as many companies have encountered constraints such as choosing the right partner, limited managerial talent, and difficulties in finding appropriate local input, bureaucracy, and an underdeveloped legal infrastructure

6. CONCLUSION

This research has provided some insights on the performance of Malaysia's export industries from 1990-2001. It is evident that Chemical and Machinery equipments especially Office machineries such as computer parts and other electronic and electrical products have maintained a better market access in the major markets such as US, EU, China and Japan. On the other hand the clothing and semi manufacturers such as leather, rubber, paper and others experience a declining market share suggesting a change in the pattern of export structure as a whole. The findings also indicated that China's accession into the WTO has strongly increased its market share threatening the position of Malaysia in the major markets. In addition most of the labor-intensive products such as clothing and apparel relatively face higher competition not only from China but also from other ASEAN countries especially Indonesia. Despite the challenge that China poses there is also evidence that China can be a potential market for Malaysia especially for the high technology products and certain resource based industries. However the opportunities that China promises can only be utilized if Malaysia can facilitate the sourcing strategies by supporting regional trade initiatives. Regional cooperation to strengthen supply chain could benefit by enabling Malaysia to take maximum advantage of preferential market access. Further policy improvements as suggested in the research are essential in maintaining the survival of the exporting industries especially concerning the high technology industries.

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APPENDIX A

This appendix provides a simplified equation of the **first version** of shift share analysis which analyses product and market growth.

$$\underset{\text{AC}}{\mathbf{1}} = \underset{\text{SE}}{\mathbf{2}} + \underset{\text{IME}}{\mathbf{3}} + \underset{\text{RE}}{\mathbf{4}} + \underset{\text{IE}}{\mathbf{5}}$$

Mathematical exposition of the above is;

$$\underset{\mathbf{1}}{X_t^{ij} - X_{t-1}^{ij}} = \underset{\mathbf{2}}{X_{t-1}^{ij}.\left(\frac{X_t}{X_{t-1}} - 1\right)} + \underset{\mathbf{3}}{X_{t-1}^{ij}.\left[\left(\frac{X_t^i}{X_{t-1}^i}\right) - \left(\frac{X_t}{X_{t-1}}\right)\right]} + \underset{\mathbf{4}}{X_{t-1}^{j}.\frac{X_{t-1}^i}{X_{t-1}}.\left\{\left(\frac{X_t^{ij}}{X_{t-1}^{ij}}\right) - \left(\frac{X_t^i}{X_{t-1}^i}\right)\right\}} +$$

$$\underset{\mathbf{5}}{\left\{X_{t-1}^{ij} - X_{t-1}^{j}.\frac{X_{t-1}^i}{X_{t-1}}\right\}.\left\{\left(\frac{X_t^{ij}}{X_{t-1}^{ij}}\right) - \left(\frac{X_t^i}{X_{t-1}^i}\right)\right\}}$$

Where

X_t^{ij} = Export of product i to market j.

$X_t^j = \sum_i X_t^{ij} = \text{Exports of all product to market } j$

$X_t^i = \text{Export of product } i \text{ to all markets}$

$X_t = \text{Total Exports}$

Note:
1- Actual Export Change
2- Share Effect
3- Industry Mix Effect
4- Regional Effect
5- Interaction Effect

The simplified **second version** of shift share analysis follows the reference economies growth rate, which is the modified version of the Esteban-Marquillas shift-share model. It is defined as:

$$\text{AC} = \text{SE} + \text{IME} + \text{CE} + \text{IE}$$

AC = Actual Change
Share Effect: $SE = X_{0j}\, P_{ir}\, G_{ir}$
Industry Mix Effect: $ISE = X_{0j}(P_{ij} - P_{ir})\, G_{ir}$
Competitive Effect: $CE = X_{0j}\, P_{ir}\, (G_{ij} - G_{ir})$
Interactive effect: $IE = X_{0j}(P_{ij} - P_{ir})\, (G_{ij} - G_{ir})$

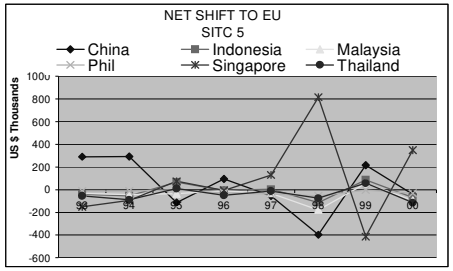
Where

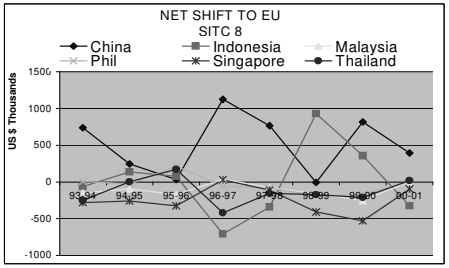
X_{0j} = total exports to US from competitor (country) j
P_{ij} = proportion of total exports to the specific market from country j accounted for by exports in industry category i of country j
G_{ij} = growth rate of exports from industry category i in country j
P_{ir} = proportion of total exports to specific market from the reference economies (combined Malaysia, China, and ASEAN-4)
G_{ir} = growth rate of exports to specific market from industry category i of the reference economies
AC= actual exports change of country j during the period

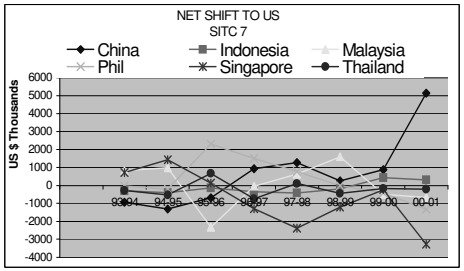
Share effect is the change in a particular export product that would have been experience if these exports had grown at the same rate as the reference economies (Total exports of Malaysia, China and ASEAN-4). Any difference in the actual export growth and the share effect is the attributed to three possible source of export divergence; The Industry Mix Effect (IME), Competitive Effect (CE) and Interaction Effect (IE). The summation of these three sources of divergence is called as **Net Shift or Export Differential. IME** shows how much of the export differential is due to a divergence between the competing economy's structure compared to the reference economies. **CE** shows how much of the export differential is due to a difference between the export growth rate of the particular country and the reference economies. **IE** shows how much of the export differential is attributed to a combination of the IME and CE. In short IME measures economic structure of a nation and CE measures the competitiveness of a nation compared with the reference economies.

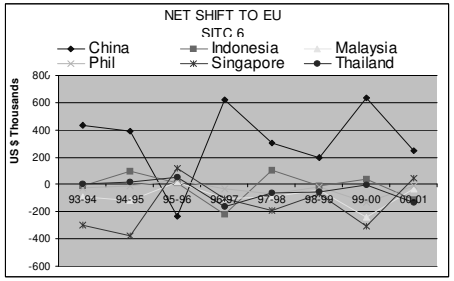
APPENDIX B

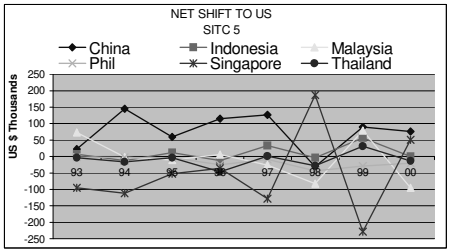
ONE-DIGIT SITC MANUFACTURED EXPORTS NET SHIFT[a] to EUROPEAN UNION [b] and US 1993-2001

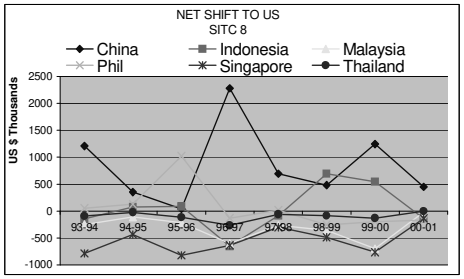


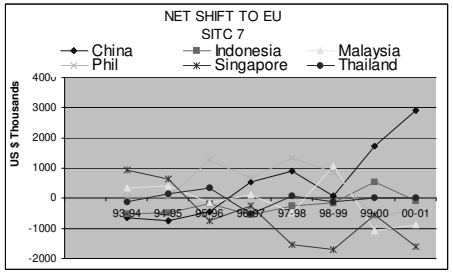


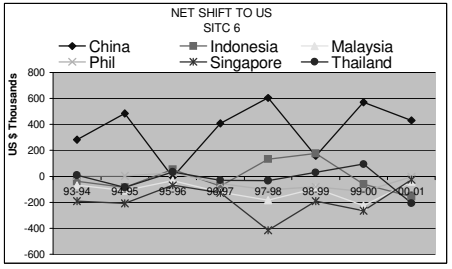












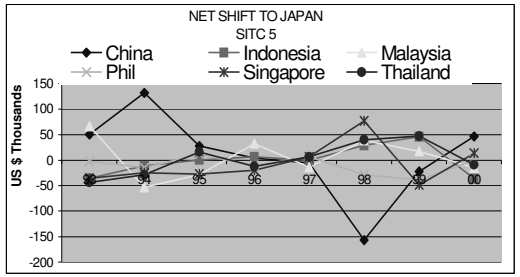
Source: Based on author's calculation (SITC International Trade Center Database)

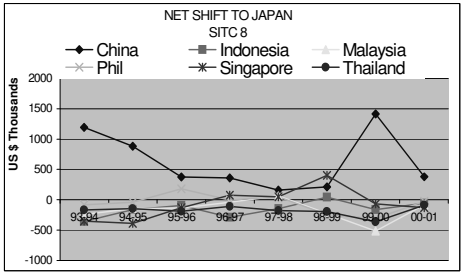
a. Actual change in exports minus the change that would have occurred had the competing economy/country been a small version of the reference economy (Combine China, Indonesia, Malaysia, Philippines, Singapore & Thailand)

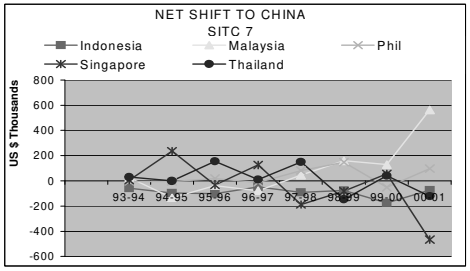
b. EU: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden & United Kingdom

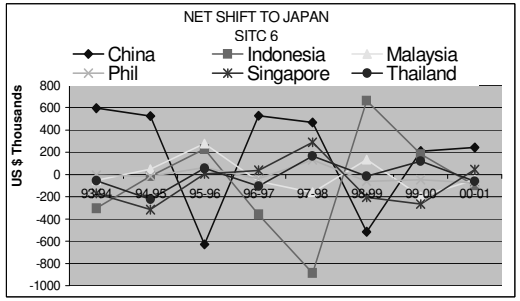
APPENDIX C

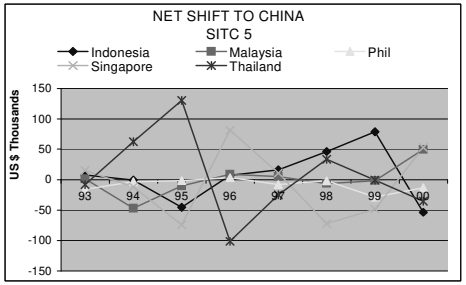
ONE-DIGIT SITC MANUFACTURED EXPORTS NET SHIFT to JAPAN and CHINA 1993-2001

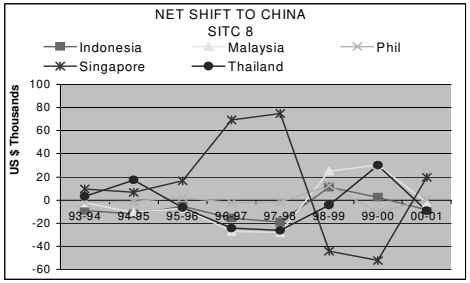


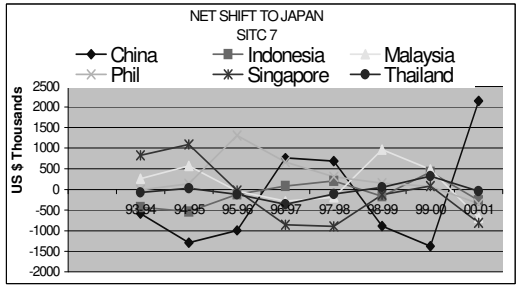


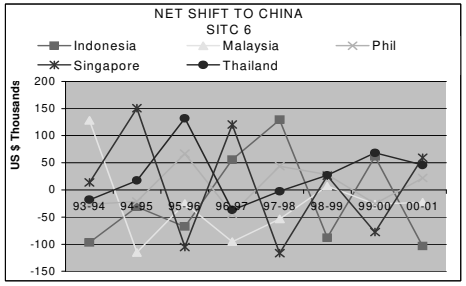












Source: Based on author's calculation (SITC International Trade Center Database)