
Revealed Comparative Advantage of Malaysian Exports: The Case for Changing Export Composition

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Abstract

Since 2000, Malaysian-manufactured exports performance has been declining. The downturn of the global electronic industry and the rise of China's economy are the two major causes of this decline. To improve export performance, Malaysia participates in multilateral, regional, and bilateral trade liberalization. The competitiveness of Malaysian manufactured exports can be improved by examining the pattern of revealed comparative advantage (RCA). Within the non-resource-based manufactured exports, Malaysia still has comparative advantage for electrical and electronic goods and machinery (its largest export item), even though it has been on a decline. Malaysia's export strength has also gradually shifted from non-resource-based to resource-based manufactured exports. The RCA estimates also suggest that trade liberalization must not only lower or eliminate tariffs on final products, but also reduce import duties if exports were to increase their competitiveness.

I. Introduction

Since the late 1980s, Malaysia's robust economic growth has been backed by a strong exports performance, particularly by the manufacturing sector, which constituted about 80 percent of Malaysia's total exports. For example, from 1996–2000, manufacturing exports grew by 15.1 percent per year. In 2005, resource-based exports made up 18 percent of total manufacturing exports and non-resource-based exports constituted 73.8 percent. The major components of resource-based exports are chemical and chemical products, wood, petroleum, and rubber products. Non-resource-based manufacturing exports are dominated by electrical and electronic products (65.8 percent).

The major markets for Malaysia's exports are ASEAN, the United States, Japan, and the EU. The high export share to ASEAN is due largely to the use of Singapore as a transport channel to third countries. In recent years, China has emerged as an important market, for example between 2001 and 2005 exports to China increased by 25.1 percent annually. The other markets that registered recent high annual growth rates are Thailand, Indonesia, India, and Hong Kong.

In recent years, however, the growth of manufacturing exports in Malaysia is below its past performance. From 2001–05, manufacturing exports grew at only 6.2 percent annually, far below its annual growth rate of 16.6 percent in the 1996–2000 period. Coincidentally, the share of electrical and electronic products in total manufacturing exports also declined from 72.5 percent in 2000 to 65.8 percent in 2005. In particular, electrical and electronic exports had a low growth rate of 4.2 percent during this period. Because this industry constitutes the largest share of manufacturing exports, its lackluster performance is a major concern.

The downturn of the global electronics industry is the major cause of the electrical and electronic industry's low growth rate. In addition, many Malaysian exports are meant for further processing in regional production networks that produce for the world market. In other words, because Malaysian electrical and electronic exports are not for final consumption, the demand for them is dependent on the economic situation in the final market destination (outside East Asia), which has slowed significantly due to the fear of a U.S. economic recession.

Besides the uncertain world economic situation, Malaysia's manufacturing exports are also facing a number of challenges; the most important one is China's growing dominance in the global export market of manufactured goods. Malaysia's exports are mainly in low value-added activities and the Malaysian manufacturing industries are having difficulties in moving up the value-added chain. Moreover, manufacturing exports are dependent on low-level technology and there is little innovation or creation of new technology that can give these industries a new competitive edge. The lack of new development of local-based technology is due to the dichotomous nature of the manufacturing sector. Foreign companies mainly produce export products and local industries concentrate on the domestic market.

As a measure to sharpen its competitiveness and to improve market access for its exports, Malaysia has embarked on trade liberalization at the multilateral, regional, and bilateral levels. At the WTO level, liberalization covers a broad area of tariff reductions. Malaysia has strong market access for key export products because of the low tariff rates imposed by its trading partners. However, there are still market ac-

cess barriers for selected products, particularly resource-based manufactured products in the form of tariff peaks and quantitative import quotas. For the ASEAN Free Trade Agreement (AFTA), Malaysia is meeting its commitments of reducing tariff rates to less than 5 percent for most manufacturing products. Malaysia signed a bilateral free trade agreement (FTA) with Japan in 2005, and is negotiating to complete four others. The Malaysia–Japan FTA provides that most manufactured products will have a 0–5 percent tariff rate within 10 years. Malaysia has a longer period to reach tariff targets for sensitive products, such as steel and automobiles. The Malaysia–Japan FTA opened up automotive imports from Japan, particularly for high-powered engine vehicles and parts and components. This FTA was a significant breakthrough in terms of trade liberalization agreements for Malaysia because highly protected automotive and manufacturing-related services industries were liberalized.

The objective of this paper is to analyze the pattern of competitiveness of Malaysia's exports by estimating their revealed comparative advantage (RCA). This pattern of competitiveness will then be the basis to propose a change in the structure of Malaysian manufactured exports. Additionally, trade liberalization analysis will be linked to the pattern of Malaysia's export competitiveness and examine whether it can be a catalyst for changing its export structure.

The paper is organized as follows. Section 2 analyzes the structure and destination of Malaysian exports. Malaysian trade liberalization initiatives are discussed in section 3. Section 4 estimates the RCA indices and examines their implications on export potential. Section 5 provides concluding remarks.

2. Structure and destination of Malaysia's exports

Table 1 shows the structure of Malaysia's exports for 1995, 2000, and 2005. Malaysia's export of manufactured goods is dominated by non-resource-based exports, which constituted 73.8 percent of total exports in 2005. In contrast, resource-based manufactured exports only formed 18 percent of total manufactured exports. Whereas the share of non-resource-based manufactured exports decreased from 79.4 percent in 2000 to 73.8 percent in 2005, the share of resource-based manufactured exports increased from 13.9 percent in 2000 to 18 percent in 2005. This change may reflect the shifting competitive position of Malaysian exports to a producer of resource-based goods, which is an advantage. In contrast, rising labor costs and limited technological capacity may be limiting factors for Malaysia to sustain its leading position as an exporter of non-resource-based manufactured exports. China is

Table 1. Structure of manufactured exports: 1995, 2000, 2005

Industry	% of total			Average annual growth rate (%)	
	1995	2000	2005	1996–2000	2000–2005
Resource-Based	15.5	13.9	18.0	13.4	11.8
Food	2.2	1.4	2.0	7.0	13.5
Beverages & Tobacco	0.3	0.4	0.4	24.9	7.1
Wood Products	3.4	2.1	2.1	6.5	5.4
Paper & Paper Products	0.5	0.4	0.5	13.4	8.2
Petroleum Products	2.1	2.6	3.9	21.1	15.5
Chemical & Chemical Products	4.2	4.7	6.9	19.1	14.6
Rubber Products	2.2	1.5	1.6	7.5	7.6
Non-Metallic Mineral Products	1.1	0.8	0.7	8.9	2.7
Non-Resource-Based	76.9	79.4	73.8	17.4	4.7
Textiles, Clothing & Footwear	4.4	3.3	2.4	9.9	0.1
Manufactures of Metal	3.2	2.7	4.0	13.1	14.8
Electrical & Electronic Products	65.7	72.5	65.8	19.0	4.2
Transport Equipment	3.6	0.9	1.6	-11.2	19.2
Others	7.6	6.7	8.2	15.1	10.6
Total	100.0	100.0	100.0	16.6	6.2

Source: Bank Negara Malaysia Annual Report, 1995–2005.

now the world-leading electronic exporter and Vietnam is emerging as a stronger competitor.

The largest component of manufacturing exports is electrical and electronic products. The contribution of this subsector increased steadily from 65.7 percent of manufactured exports in 1995 to 72.5 percent in 2000, but it then dropped to 65.8 percent in 2005. However, the shift toward a bigger share of electrical and electronic products during 1995–2000 did not mean that Malaysia had moved from unskilled labor-intensive manufacturers to higher value-added activities. This is because Malaysia still engages in relatively labor-intensive segments of component production and assembly activities (Devadason 2007). Other important subsectors in the non-resource-based exports are manufacturers of metal (4 percent in 2005) and textiles (2.4 percent in 2005).

In 2005, the chemical and chemical products subsector, the largest contributor in resource-based export products, supplied 6.9 percent of total manufactured exports. The other significant subsectors are petroleum, wood, and food products.

From 1996–2000, manufactured exports recorded a high annual growth rate of 17 percent as shown in Table 2. This excellent performance was the result of the expansion in the global demand for electronic goods as well as the sharp depreciation of the ringgit during the 1998 Asian financial crisis. However, since 2001 exports

Table 2. Performance of Malaysia's manufactured exports, 1996–2006 (RM millions)

Products	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Electronics, electrical machinery, and appliances	104,272	119,025	160,653	194,221	230,425	199,195	208,949	223,548	257,051	282,805	300,849
Semiconductors	35,509	40,887	54,493	65,459	71,070	60,778	72,554	85,184	89,297	89,969	93,494
Electronic equipment and parts	29,124	39,889	59,534	79,425	95,737	78,995	81,505	82,436	99,312	118,266	127,752
Machinery and electrical products	39,639	38,249	46,715	49,338	63,618	59,507	54,889	55,927	68,441	74,570	79,602
Chemical & chemical products	7,355	9,228	11,683	12,287	16,745	16,815	19,271	23,470	30,513	32,974	36,896
Petroleum products	3,306	3,777	3,577	5,334	9,642	9,755	8,918	10,914	15,560	19,714	24,542
Iron, steel, and metal products	5,051	5,741	8,348	8,005	8,696	8,680	8,869	11,383	16,292	17,323	22,968
Wood products	7,715	8,524	8,773	10,119	13,251	8,578	9,522	10,224	12,565	12,998	14,874
Textiles, clothing, and footwear	6,963	7,616	9,441	9,375	10,433	9,033	8,571	8,771	10,348	10,519	10,925
Transport equipment	4,658	4,959	8,070	5,091	2,894	2,455	2,994	3,208	5,324	6,997	8,670
Food, beverages, and tobacco	3,897	4,473	5,520	5,564	5,677	5,939	6,633	7,813	9,401	10,187	11,407
Rubber products	3,608	3,987	5,747	5,126	4,727	4,497	4,552	5,195	6,184	6,986	9,333
Non-metallic mineral products	1,641	1,709	2,096	2,244	2,571	2,482	2,861	2,761	3,106	2,934	3,505
Other manufactured goods	10,515	11,153	13,902	15,286	18,937	19,504	20,518	23,051	28,784	32,307	35,705
Total	159,081	180,192	237,810	272,653	323,998	287,018	301,658	330,337	395,128	435,742	479,674
Annual change (%)	7.8	13.3	32.2	14.7	18.9	-10.5	5.1	8.3	19.6	10.3	10.1

Source: Ministry of Finance, Malaysia—Economic Report 1996–2007.

Table 3. Percent of Malaysia's market destinations for manufactured exports: 1995, 2000, 2005

Destination	1995	2000	2005
ASEAN	27.8	26.8	25.8
United States	24.9	23.3	23.3
EU	14.8	14.5	12.4
Japan	10.3	11.3	7.4
China	1.6	2.5	6.0
China, Hong Kong, SAR	6.2	5.0	7.0
Sub-total	85.6	83.5	81.9
World	100	100	100

Source: Bank Negara Malaysia Annual Report, 2006.

Table 4. Destination for Malaysian electrical and electronics exports, 2004

Destination	Value (US\$)	Share (percent)
China	2,421,005,571	5.6
China, Hong Kong, SAR	5,212,470,273	12.0
Japan	3,660,090,162	8.4
Singapore	8,397,231,370	19.4
Thailand	1,658,097,243	3.8
USA	9,046,400,714	20.9
Sub-total		70.0
World	43,391,188,591	100

Source: UN COMTRADE database.

slowed considerably—the annual growth rate for 2000–06 was only 7 percent. A major factor that pulled down the export performance was the electrical and electronic products subsector. From 2000–06, this subsector grew only at 4.9 percent annually. The weak performance of this subsector diminished the overall performance of the non-resource-based group (at 4.7 percent) as compared to the resource-based group (11.8 percent) as shown in Table 1.

Table 3 reports the major destinations of Malaysia's exports. The largest share of Malaysia's manufactured goods is exported to other ASEAN countries, most notably to Singapore because of its role as an entrepot, followed by the United States, and the EU. Manufactured exports to China have increased significantly in recent years (25.1 percent per year for 2001–05) and in 2005 contributed 6 percent to total exports. Exports to non-traditional markets have also been on the rise.

Table 4 reports the major destinations for Malaysian electrical and electronics exports in 2004. The three largest recipients were United States (21 percent), Singapore (19 percent), and Hong Kong (12 percent). Exports of electrical and electronic products to Singapore and Hong Kong are likely to be further processed in other stages in the regional production network.

3. Malaysia's trade liberalization commitments

3.1 World Trade Organization

As Malaysia is an open economy, the WTO is an important platform to expand its exports. Malaysia has pursued extensive liberalization under various WTO rounds of negotiations. Presently, the average bound tariff is 14.9 percent and 64 percent of the tariff lines are bound. The bound tariffs cover 6,741 tariff lines comprising 5,531 non-agricultural and 1,210 agricultural products. In addition, import duties of 528 items were reduced. Notwithstanding the liberalization commitments made under the WTO, Malaysia has a number of industries that still have high tariff rates (such as automotive) and significant non-tariff barriers (import quotas for the automotive industry).

For the services sector, the liberalization efforts were made more gradually as compared to the goods sector. In the General Agreement on Trade in Services (GATS), Malaysia offers a total of 64 activities, 20 activities in the financial sector and 44 activities in the non-financial sector. Commitments were made in the following areas: business services, financial services, education, health, tourism, and professional services (accounting, legal, integrated engineering, architectural and engineering services, construction, and related engineering services).

These GATS commitments were made on the basis of standstill position when Malaysia entered into the agreement in 1994, with the horizontal commitments of maximum 30 percent foreign equity allowed in commercial presence (Mode 3) and land acquisition, and for movement of natural persons (Mode 4) is subjected to restrictions on intra-corporate transferees. Malaysia has implemented autonomous liberalization in services such as telecommunications, health, and education. This autonomous liberalization is primarily in the relaxation of foreign equity holdings and movement of natural persons.

The equity participation rule was autonomously liberalized in 2003 where foreign ownership was allowed to increase to up to 70 percent. Multimedia Super Corridor¹ companies, which are granted special status, are allowed to have 100 percent foreign ownership and an unlimited number of foreign workers.

¹ Multimedia Super Corridor is a government initiative from 1996 to leapfrog Malaysia into the information and knowledge age. It originally included an area of approximately 15 x 50 km² from the Petronas Twin Towers to the Kuala Lumpur International Airport and also included the towns of Putrajaya and Cyberjaya. It was expanded to include the entire Klang Valley on 7 December 2006.

Table 5. Country breakdown ASEAN-6: Status of inclusion list

Country	Percent of total tariff lines
Brunei	93.64
Indonesia	100
Malaysia	99.48
The Philippines	99.34
Singapore	100
Thailand	99.84

3.2 ASEAN Free Trade Area (AFTA)

The primary objective of AFTA is to enhance ASEAN's position as a competitive production base for the regional and global markets. This is to be achieved through the promotion of intra-ASEAN trade and industrial linkages, specialization and economies of scale, and promoting the region as an efficient and competitive production base for investments. AFTA tariff reductions occur through the Common Effective Preferential Tariff (CEPT) mechanism. This tariff reduction schedule for manufacturing, processed agriculture, and non-processed agriculture goods, was signed in 1992.

The target is to achieve a tariff between 0–5 percent in 2003 for the six original member countries of ASEAN (Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand; collectively known as the ASEAN-6), 2006 for Vietnam, 2008 for Lao People's Democratic Republic (Lao PDR) and Myanmar, and 2010 for Cambodia. Quantitative restrictions and other non-tariff barriers will be eliminated as well. In 2007, for ASEAN-6, a total of 61,345 or 98.7 percent of total tariff lines (products) were in the Inclusion List, which mandated the tariff to be reduced to 0–5 percent (see Table 5).

For Malaysia, 81.42 percent of tariff lines are already at zero duty. Although the tariff reduction programs for the automotive industry were postponed during the 1998 Asian financial crisis, these tariffs were reduced in 2006.

3.3 ASEAN–China Free Trade Area

An ASEAN–China FTA in goods was signed in 2005. The free trade area is to be realized by 2010 for ASEAN-6 and by 2015 for Cambodia, Laos PDR, Myanmar, and Vietnam. The agreement includes an early harvest package of zero tariffs on imports from ASEAN. The package covered many agriculture products such as live animals, meat and meat products, fish, dairy, produce, other animal products, live trees, edible vegetables, and edible fruits and nuts, and selected products like palm kernel oil, vegetable fats and oils, margarine, cocoa products, coffee, soap, stearic acid, erasers, and window envelopes.

The improved market access will increase Malaysia's manufactured exports because of the strengthened intra-industry trade (parts and components trade) between ASEAN and China (see Athukorala 2006). As Kwek and Tham (2007) show, Malaysia has lower tariffs than China (in 2004, the average tariff rate for Malaysia was 9.2 percent whereas that of China was 17 percent) and thus the ASEAN–China FTA is expected to increase market access for Malaysian exporters in general. However, Malaysia will have to compete with other ASEAN members such as Indonesia and Thailand because their trade structure is more competitive rather than complementary to Malaysia's.

3.4 The Malaysian–Japan Economic Partnership Agreement

The main elements in the Malaysian–Japan Economic Partnership Agreement are:

- Reducing tariffs comprehensively for industrial goods, and tariffs on most goods will be eliminated within ten years;
- Reducing automotive industry tariffs is expected to be a catalyst in increasing the industry's competitiveness—tariffs for completely knocked down (CKD) parts are eliminated, tariffs for auto parts other than CKD will be reduced to 5 percent or less in 2008 and will be eliminated by 2010, tariffs for vehicles with large engine capacity will be gradually eliminated by 2010 and tariffs for all other completely built units will be gradually eliminated by 2015. To help cushion the impact of the extensive opening of the automotive industry, Japan and Malaysia will undertake cooperation initiatives to further promote the capacity-building and competitiveness of the Malaysian automotive industry;
- Eliminating tariffs on most agricultural, forestry, and fishery products within ten years. In addition, Japan agreed to increase the import quota for selected agriculture products;
- Increasing foreign equity-holding thresholds for selected intermediate services industries in Malaysia while Japan offers market access for most of its services industries;
- Creating a framework to expand and facilitate freer flow of investment between the two countries through commitments on national treatment and enhanced protection of investors and investment;
- Collaborating closely in the areas of technical regulations, standards, and conformance to assessment procedures, including the establishment of a framework for negotiation for possible mutual recognition arrangements;
- Establishing a mechanism to improve the business environment; and
- Cooperating in areas such as developing capacity for the automotive industry, education, human resources development, information and communications technology (ICT), research and development (R&D), and science and technology.

4. Estimation of revealed comparative advantage (RCA)

In theory, when a country possesses a comparative advantage in producing a particular commodity over another country, it means that this country can produce its commodity at lower opportunity costs than the latter could. To measure comparative advantage, information on autarkic prices (i.e., price levels where there is no trade between countries) is required. Obviously, this is empirically impossible because prices prevailing in the statistics are those that occur after trade has taken place.

To solve this problem, Balassa (1965) assumed that the comparative advantage of a country is reflected or revealed in its trade pattern, and introduced the revealed comparative advantage (RCA) index which is given by:

$$RCA_{ij} = (X_{ij}/X_i) / (X_{wj}/X_w),$$

where X_{ij} = value of country i 's export of commodity j ;
 X_i = value of country i 's total exports;
 X_{wj} = value of world exports of commodity j ;
 X_w = value of world exports.

The RCA index shows the extent of commodity specialization in a country's exports relative to the share of that commodity in world exports. A high value indicates comparative advantage of a country in the production of a particular good. When the RCA index of a country has a value greater than 1, this means that the share of that commodity in the country's exports is higher than the world's average.

4.1 RCA pattern in non-resource-based manufactured goods (2001–05)

Malaysia's RCA indices for non-resource-based manufactured exports and one selected resource-based manufacturer of wood and wood products were estimated for the 2001–05 period, using data from International Trade Statistics.² Estimation is made on five non-resource-based manufactured sub-groups: (i) manufacturers of machinery (except electrical); (ii) manufacturers of electrical and electronics; (iii) manufacturers of metal; (iv) manufacturers of textile, clothing, and footwear; and (v) transport equipment. In some electrical and electronics goods, data are available for comparison with Malaysia's RCA in 1993.

Table 6 reports the overall RCA pattern. In general, there is no significant change in the RCA pattern between 2001 and 2005. The RCA is higher than the world's aver-

² The SITC three-digit level data are obtained from www.intracen.org/tradstat

Table 6. Malaysia's RCA in non-resource-based manufactures, 2001–05

Product Group	2001	2002	2003	2004	2005
Manufactures of machinery (except electrical)	1.47	1.60	1.39	1.51	1.11
Manufactures of electrical products and electronics	2.82	2.95	2.97	3.01	3.19
Manufactures of metal	0.43	0.41	0.49	0.52	0.54
Textile, clothing, and footwear	0.55	0.53	0.51	0.55	0.70
Transport equipment	0.05	0.05	0.05	0.07	0.11

Table 7. Malaysia's RCA in electrical and electronics products, 1993–2005 (selected years)

Product group	1993	1997	2001	2002	2003	2004	2005
761—TELEVISION RECEIVERS	5.56	5.44	4.46	5.01	3.64	3.48	5.01
762—RADIO BROADCAST RECEIVER	9.46	11.84	8.49	5.92	6.54	7.29	8.61
763—SOUND/TV RECORDERS ETC	6.55	8.88	6.07	3.98	3.20	2.62	2.94
764—TELECOMMS EQUIPMENT NES	2.21	2.22	2.02	1.69	1.66	1.64	2.08
771—ELECT POWER TRANSM EQUIP	2.48	1.56	1.19	1.00	0.87	0.86	0.82
772—ELECTRIC CIRCUIT EQUIPMT	1.41	1.86	2.04	2.21	2.38	2.82	3.66
773—ELECTRICAL DISTRIB EQUIP	0.85	0.8	0.64	0.66	0.57	0.68	0.78
774—MEDICAL ETC EL DIAG EQUI	0.02	0.05	0.12	0.14	0.13	0.26	0.19
775—DOMESTIC EQUIPMENT	0.51	0.59	0.55	0.60	0.73	0.90	0.98
776—VALVES/TRANSISTORS/ETC	6.05	5.81	4.67	5.82	6.10	7.46	5.86
778—ELECTRICAL EQUIPMENT NES	0.56	0.7	0.93	0.95	0.92	1.02	1.13
Electrical and Electronics			2.82	2.95	2.97	3.01	3.19

Note: Data for years 1993, 2001 to 2005 are authors' own computations. Data for year 1997 was sourced from Amir (2000).

age for manufacturers of machinery (except electrical) and manufacturers of electrical and electronics industries. However, RCA for manufacturers of metal, manufacturers of textile, clothing, and footwear, and manufacturers of transport equipment have been consistently low in the same period.

Table 7 reports the RCA indices for electrical and electronics goods. Although these RCA indices are high by world standards between 2001 and 2005, a comparison with the RCA values in the 1990s shows that Malaysia is gradually losing its comparative advantage in the production of electrical and electronics goods.

Almost all product groups in this industry either recorded a decline in their RCA index or increased minimally. Among these product groups, the "SITC 763—Sound/TV Recorders etc." product group has recorded the sharpest fall in the RCA index, from a peak of 8.9 in 2001 to only 2.9 in 2005. Another product group that experienced a significant decline in its RCA index is "SITC 762—Radio Broadcast Receiver." Its RCA index was 11.8 in 1997 and fell to 8.6 in 2005. The declining pattern suggests that Malaysia's specialization in this industry has gradually diminished.

There are, however, two exceptions to the overall declining RCA index in the product group. These include "SITC 772—Electric Circuit Equipment" and "SITC 778—

Table 8. Malaysia's RCA in manufacturers of machinery (except electrical)

Product group	2001	2002	2003	2004	2005
711—STEAM GENERATING BOILERS	0.37	0.41	0.56	0.49	0.56
712—STEAM/VAPOR TURBINES	0.21	0.32	0.14	0.38	0.25
713—INTERNAL COMBUST ENGINES	0.15	0.23	0.12	0.13	0.23
714—ENGINES NON-ELECTRIC NES	0.29	0.21	0.16	0.22	0.23
716—ROTATING ELECTRL PLANT	0.75	0.84	0.67	0.49	0.54
718—POWER GENERATING EQU NES	0.03	0.05	0.12	0.09	0.11
721—AGRIC MACHINE EX TRACTR	0.09	0.07	0.08	0.08	0.13
722—TRACTORS	0.01	0.02	0.02	0.02	0.02
723—CIVIL ENGINEERING PLANT	0.12	0.10	0.18	0.18	0.17
724—TEXTILE/LEATHER MACHINERY	0.16	0.13	0.13	0.15	0.26
725—PAPER INDUSTRY MACHINERY	0.10	0.08	0.09	0.08	0.09
726—PRINTING INDUSTRY MACHNY	0.64	0.67	0.68	0.76	0.84
727—FOOD PROCESSING MACHINES	0.66	0.41	0.55	0.68	0.68
728—SPECIAL INDUST MACHN NES	0.43	0.46	0.49	0.49	0.58
731—MACH-TOOLS REMOVE MTRIAL	0.15	0.23	0.33	0.26	0.20
733—MTL M-TOOLS W/O MTL-RMVL	0.33	0.43	0.42	0.49	0.86
735—METAL MACHINE TOOL PARTS	0.17	0.29	0.24	0.23	0.71
737—METALWORKING MACHINE NES	0.24	0.26	0.21	0.24	0.38
741—INDUST HEAT/COOL EQUIPMT	1.03	0.82	0.91	0.98	1.26
742—PUMPS FOR LIQUIDS	0.07	0.06	0.06	0.06	0.11
743—FANS/FILTERS/GAS PUMPS	0.46	0.51	0.54	0.74	2.14
744—MECHANICAL HANDLING EQUI	0.18	0.15	0.21	0.29	0.37
745—NON-ELECTR MACHINES NES	0.17	0.23	0.15	0.16	0.24
746—BALL/ROLLER BEARINGS	0.49	0.47	0.48	0.47	0.54
747—TAPS/COCKS/VALVES	0.17	0.16	0.15	0.22	0.55
748—MECH TRANSMISSION EQUMNT	0.12	0.12	0.11	0.15	0.30
749—NON-ELEC PARTS/ACC MACHN	0.57	0.54	0.52	0.57	0.61
751—OFFICE MACHINES	1.18	0.71	0.67	0.75	0.73
752—COMPUTER EQUIPMENT	2.97	3.35	3.16	4.33	0.11
759—OFFICE EQUIP PARTS/ACCS.	4.14	5.27	4.33	4.69	12.58
Machinery (except electrical)	1.47	1.60	1.39	1.51	1.11

Electrical Equipment N.E.S.” product groups, which rose during this period. This may suggest that Malaysia’s specialization might have shifted toward these two product groups within the industry.

Amir (2000) examined Malaysia’s export specialization pattern between 1994 and 1998. He noted that whereas overall electronic and electrical manufacturers remained the most important contributors in the manufacturing sector, the downward trends in the RCA index in some product groups in this category (e.g., “Office Machines” and “Radio Broadcast Receiver”) suggest that rising competition resulting from regionalization (AFTA) and globalization is eroding Malaysia’s strong position.

Table 8 shows Malaysia’s RCA in manufacturers of machinery (except electrical) goods between 2001 and 2005. The overall RCA index was slightly above 1 during this period with a small indication of a falling pattern. This means that the share of manufacturers of machinery goods in the country’s exports was slightly above the world’s average.

Table 9. Malaysia's RCA in textile, clothing, and footwear

Product group	2001	2002	2003	2004	2005
651—TEXTILE YARN	1.01	1.05	0.99	1.03	1.40
652—COTTON FABRICS, WOVEN	0.36	0.29	0.30	0.30	0.33
653—MAN-MADE WOVEN FABRICS	0.70	0.51	0.50	0.61	0.67
654—WOVEN TEXTILE FABRICS	0.02	0.02	0.02	0.02	0.02
655—KNIT/CROCHET FABRICS	0.60	0.47	0.41	0.39	0.46
656—TULLE/LACE/EMBR/TRIM ETC	0.10	0.12	0.09	0.11	0.12
657—SPECIAL YARNS/FABRICS	0.16	0.17	0.19	0.30	0.36
658—MADE-UP TEXTILE ARTICLES	0.09	0.09	0.10	0.11	0.14
831—TRUNKS AND CASES	0.08	0.07	0.07	0.06	0.11
841—MENS/BOYS WEAR, WOVEN	0.52	0.41	0.34	0.36	0.76
842—WOMEN/GIRL CLOTHING WVEN	0.24	0.26	0.24	0.28	0.46
843—MEN/BOY WEAR KNIT/CROCH	1.09	1.12	1.10	1.10	1.88
844—WOMEN/GIRL WEAR KNIT/CRO	0.80	0.82	0.75	0.80	1.35
845—ARTICLES OF APPARELS	0.37	0.37	0.30	0.29	0.37
846—CLOTHING ACCESSORIES	0.50	0.46	0.52	0.50	0.57
848—HEADGEAR/NON-TEXT CLOTHG	4.34	4.21	4.08	4.35	5.02
851—FOOTWEAR	0.13	0.13	0.17	0.31	0.18
Textile, Clothing, and Footwear	0.55	0.53	0.51	0.55	0.70

However, a closer examination of Table 8 indicates that Malaysia does not possess a comparative advantage in most of the product groups within this industry. The majority of RCA index values are below one for many product groups. Product groups "SITC 741- Industrial Heat/Cool Equipment," "SITC 743—Fans/Filters/Gas pumps," "SITC 752—Computer Equipment," and "SITC 759—Office Equipment Parts/ Accessories" are exceptions. These four product groups have an RCA index greater than 1 in most years with "SITC 759—Office Equipment Parts/ Accessories" recording the highest RCA index. The share of this product group in Malaysia's exports has been 4 times above the world's average and in 2005, its share was approximately 12 times higher.

Table 9 reports the RCA indices for textile, clothing, and footwear. In general, Malaysia does not possess a comparative advantage in these three industries. The country's export share was less than the world's average for most of the product groups and was just about the same as the world's average for "SITC 651—Textile Yarn" and "SITC 843—Men/Boy Wear Knit." The one exception is "SITC 848—Headgear/ Non-Text Clothing" where its RCA index was approximately 4 above the world average from 2001 to 2004, reaching 5 in 2005.

Table 10 reports the RCA indices for the manufacturing of metal, and they indicate that Malaysia does not have a comparative advantage in these products. The RCA index was mostly below 1 for many product groups (indicating revealed comparative disadvantage). "SITC678—Iron/Steel Wire," "SITC679—Iron/Steel Pipe/Tube/ etc." and "SITC693—Wire Prod Excluding Instrumental Electrical" are exceptions with an approximate RCA of 1.

Table 10. Malaysia's RCA in manufacturers of metal

Product group	2001	2002	2003	2004	2005
671—PIG IRON ETC FERRO ALLOY	0.40	0.47	0.52	0.35	0.09
672—PRIMARY/PRODS IRON/STEEL	0.02	0.04	0.75	0.56	0.53
673—FLAT ROLLED IRON/ST PROD	0.05	0.14	0.18	0.43	0.43
674—ROLLED PLATED M-STEEL	0.45	0.40	0.48	0.47	0.43
675—FLAT ROLLED ALLOY STEEL	0.09	0.09	0.11	0.13	0.20
676—IRON/STEEL BARS/RODS/ETC	0.27	0.17	0.35	0.32	0.33
677—IRON/STEEL RAILWAY MATL	0.05	0.16	0.04	0.03	0.06
678—IRON/STEEL WIRE	0.41	0.40	0.77	0.98	1.00
679—IRON/STEEL PIPE/TUBE/ETC	1.25	1.12	1.22	1.24	1.13
691—IRON/STL/ALUM STRUCTURES	0.60	0.55	0.62	0.61	0.72
692—METAL STORE/TRANSPT CONT	0.67	0.69	0.70	0.77	0.82
693—WIRE PROD EXC INS ELECTR	1.03	0.80	0.78	0.84	1.24
694—NAILS/SCREWS/NUTS/BOLTS	0.82	0.89	0.77	0.82	0.92
695—HAND/MACHINE TOOLS	0.25	0.23	0.26	0.39	0.38
696—CUTLERY	0.37	0.30	0.56	0.28	0.31
697—BASE METAL H'HOLD EQUIPM	0.18	0.19	0.17	0.28	0.15
699—BASE METAL MANUFAC NES	0.43	0.44	0.46	0.49	0.57
Manufactures of Metal	0.43	0.41	0.49	0.52	0.54

Table 11. Malaysia's RCA in the automobile industry

Product group	2001	2002	2003	2004	2005
781—PASSENGER CARS ETC	0.01	0.02	0.01	0.02	0.03
782—GOODS/SERVICE VEHICLES	0.01	0.01	0.02	0.02	0.06
783—ROAD MOTOR VEHICLES NES	0.02	0.01	0.01	0.02	0.05
784—MOTOR VEH PARTS/ACCESS	0.07	0.07	0.09	0.10	0.14
785—MOTORCYCLES/CYCLES/ETC	0.45	0.42	0.44	0.53	0.59
786—TRAILERS/CARAVANS/ETC	0.25	0.27	0.14	0.30	0.31
Transport Equipment	0.05	0.05	0.05	0.07	0.11

Table 12. Malaysia's RCA in wood and wood products

Product group	2001	2002	2003	2004	2005
247—WOOD IN ROUGH/SQUARED	4.57	5.03	5.53	4.88	9.18
248—WOOD SIMPLY WORKED	2.37	2.19	2.20	2.01	4.08
634—VENEER/PLYWOOD/ETC	5.54	5.15	4.88	4.98	8.48
635—WOOD MANUFACTURES N.E.S.	1.29	1.25	1.20	1.32	2.35

Table 11 reports the RCA indices for the automobile industry. Malaysia does not have comparative advantage in this class of products. Most of the RCA index values were near zero, except for "SITC 785—Motorcycles/Cycles/etc."

Table 12 reports the RCA pattern for wood and wood products in the 2001–05 period. All the product groups show increases in their RCA index values. For example, the products group that experienced the highest rise in RCA index was "SITC 247—Wood in Rough/Squared," which doubled its RCA value from 4.6 in 2001 to 9.2 in 2005. This indicates that Malaysia is developing a comparative advantage in this industry.

We make four observations to summarize the RCA analysis in Tables 6 to 12:

1. Within the non-resource-based manufacturers, Malaysia has an RCA for electrical and electronics goods and machinery (except electrical) and a revealed comparative disadvantage for metal, textile, clothing and footwear, and transport equipment.
2. Malaysia's comparative advantage in the electrical and electronics manufacturing industry has eroded significantly since the late 1990s. Although its RCA index is still high, there has been an overall decline over the past 12 years.
3. There is an indication that Malaysia's export strength has gradually shifted from the non-resource-based manufacturers toward resource-based manufacturers such as wood and wood products. This can be seen from the declining RCA in the electrical and electronics industry and the inability of other product groups within the non-resource-based industry (such as the manufacturers of metal and transport equipment) to improve their RCA.
4. Despite the heavy protection and extensive incentives given by the Malaysian government to the transport equipment industry for the past 20 years, the industry has not been able to improve its comparative advantage, and particularly the RCA for passenger cars, which are the main component of the Malaysian automotive industry, is very low. This performance supports the criticism that the national car project³ is unlikely to succeed in the long term because of the small size of the domestic market and the high degree of protection given. Athukorala (2005) estimated that the Effective Rate of Protection (ERP) for motor vehicles in 2002 was 57.16, the highest among all tradable industries in Malaysia.

The heavy dependence on exports of electrical and electronic products has rendered the Malaysian economy vulnerable to the vagaries of the global electronics demand. In addition, most of the new MNC investments in the global electronic industry are increasingly concentrated in China. Rising wages in Malaysia that are not matched by a corresponding increase in productivity are an additional factor that has made electrical and electronic producers relocate from Malaysia to other cheaper destinations (as shown in Table 1 by the declining share of exports of electrical and electronic goods).

Notwithstanding these concerns, the electrical and electronic industry still has the highest RCA among manufactured exports and it is relatively competitive with the ERP of its sub-industries ranging from -0.12 to 8.82 (see Table 13). The RCA indices

³ In 1981, Malaysia launched a national car project to develop automotive industry by heavily protecting the production of Proton, the national car.

Table 13. Malaysia: Effective rate of protection for import competing production

IO code	Manufacturing products	Value added (%)	NRP	ERP
12	Meat & meat products	0.2	0.4	0.19
13	Dairy production	0.4	1.8	-0.32
14	Preserved fruit & vegetables	0.2	3.3	1.59
15	Preserved seafood	0.2	3.1	12.74
16	Oils and fats	2.4	2.8	5.78
17	Grain mills products	0.2	0.0	-2.10
18	Bakery products	0.5	13.0	24.98
19	Confectionery	0.1	15.0	40.87
21	Other foods	0.7	3.5	3.77
22	Animal feeds	0.2	0.0	-0.99
23	Wine and spirits	0.1	29.5	34.56
24	Beef, soft drinks	0.8	17.0	23.43
25	Tobacco	0.6	5.0	5.25
26	Yarns and cloth	1.4	14.5	17.35
27	Knitted fabrics	0.4	11.9	13.88
28	Other textiles	0.2	16.4	21.93
29	Wearing apparel	2.0	18.7	22.70
30	Leather industries	0.1	1.5	-0.75
31	Footwear	0.0	19.9	24.60
32	Sawmills products	2.7	5.6	9.56
33	Other wood products	0.1	17.0	32.44
34	Furniture & fixtures	0.6	19.7	34.14
35	Paper & board industries	1.3	6.7	7.79
36	Printed products	1.6	0.9	0.43
37	Industrial chemicals	3.7	1.7	1.55
38	Paints & lacquers	0.3	7.7	9.70
39	Drugs & medicines	0.2	0.0	-1.69
40	Soap and cleaning preparations	0.5	9.4	11.31
41	Other chemical products	0.3	3.8	4.11
42	Petrol & coal industries	0.6	4.5	-9.61
43	Processed rubber	0.5	15.9	17.46
44	Rubber products	2.5	32.7	46.69
45	Plastic products	1.3	17.6	26.38
46	China & glass industries	0.8	15.2	19.90
47	Clay products	0.7	16.3	22.80
48	Cement, lime, & plaster	1.2	5.5	7.15
49	Other non-metal products	0.8	9.7	15.75
50	Iron & steel	1.9	5.5	6.59
51	Non-ferrous metal	0.3	11.9	18.04
52	Metal furniture & fixtures	0.2	17.8	27.22
53	Structural metal industries	0.8	19.7	27.68
54	Other metal products	1.8	11.9	15.97
55	Industries machinery	0.3	2.9	2.30
56	Household machinery	1.8	1.2	0.44
57	Radio, TV, & com. equipment	12.4	7.9	8.82
58	Electric appliance	0.3	4.3	5.29
59	Other electrical machinery	0.3	1.0	-0.13
60	Ships & boats	0.7	2.4	2.08
61	Motor vehicles	5.8	47.5	57.16
62	Cycles & motorcycles	0.6	24.3	28.93
63	Other transport equipment	0.9	0.7	-1.27
64	Instruments & clocks	0.2	0.8	-0.32
65	Other products	0.3	4.0	3.97
	All tradable sectors	100	7.7	9.6

Source: Athukorala (2005).

suggest that there are other industries that might be able to export more. They are wood and wood products (SITC 247, 248, 634, and 635), industrial heat/cooling equipment (SITC 741), fans/filter/gas pumps (SITC 743), office equipment parts/accessories (SITC 759), textile yarn (SITC 651), knit wear (SITC 842 and 843) and headgear/non-textile clothing (SITC 848), which all have an RCA index greater than 1, and should be considered for expansion. However, these other products have an ERP in the range from 17 to 27, which is higher than that of the electrical and electronics industries. Therefore, the potential for these products to expand will be enhanced only if they become more competitive with reduction in their levels of protection.

5. Conclusion

The emergence of China as an exporting powerhouse has caused deep anxiety among many countries including Malaysia, specifically concerning the competitiveness of their exports. Trade liberalization has been identified by ASEAN as one of the measures that can be taken to induce their producers to increase their efficiency (hence competitiveness). The proliferation of FTAs in recent times shows that ASEAN is also forging closer economic relationships in order to improve market access for their exports. In this regard, Malaysia has embarked in a similar route albeit at a slower pace than many other countries such as Singapore and Thailand.

The question posed is whether trade liberalization could expand Malaysia's exports. The RCA estimates suggest that in negotiating multilateral and bilateral trade liberalization, Malaysia should push for further improvement in market access in clothing and wearing apparel, selected manufacturers of machinery and metal and wood and wood products. Resource-based manufactured exports, with their inherent comparative advantage in raw material, could be expanded to play to bigger role for Malaysian exports.

An important point to note is that trade liberalization must address the issue of lowering the cost of domestic production, which is the ultimate factor that determines competitiveness. If trade liberalization is not comprehensive and only has lower tariffs for final goods but not for intermediate goods, lower costs of production and consequently improved competitiveness will not occur. In most trade agreements, the focus is on lowering or eliminating tariffs on final products rather than intermediate ones. Those manufactured export products to be promoted still have some degree of protection (as shown by their ERPs) and therefore it would increase their competitiveness if trade liberalization also reduces import prices.

Trade liberalization alone is not sufficient to increase the market share of Malaysia's exports. Other structural factors need to be addressed such as technology and productivity. As McKibbin and Woo (2003) have pointed out, Malaysia's capability to derive maximum benefits from China's greater integration into the world depends crucially on the country's ability to boost technological capacity. This will mean policies should aim to increase human capital formation and to enhance technology transfer and innovation so that the country can improve its comparative advantage.

References

- Amir, Mahmood. 2000. Export Specialization and Competitiveness of the Malaysian Manufacturing: Trends, Challenges and Prospects. Paper presented at the 5th Annual Conference on International Trade Education and Research, 26–27 October 2000, Melbourne.
- Athukorala, Prema-chandra. 2005. Trade Policy in Malaysia: Liberalization Process, Structure of Protection, and Reform Agenda. *ASEAN Economic Bulletin* 22 (1):19–34.
- . 2006. Product Fragmentation and Trade Patterns in East Asia. *Asian Economic Papers* 4 (3):1–28.
- Balassa, Bela. 1965. Trade Liberalization and Revealed Comparative Advantage. *Manchester School of Economics and Statistics* 33 (2):99–124.
- Bank Negara Malaysia *Annual Report, 1995–2005*. Kuala Lumpur: Bank Negara Malaysia.
- Devadason, Evelyn Shyamala. 2007. *Labor Demand and Trade in Manufacturers: Issues and Evidence from Malaysia*. Kuala Lumpur: University of Malaya Press.
- Kwek, Kian Teng, and Siew Yean Tham. 2007. Trade between Malaysia and China: Opportunities and Challenges for Growth. In *Emerging Trading Nation in an Integrating World: Global Impacts and Domestic Challenges of China's Economic Reform*, edited by Kok Kheng Yeoh and Evelyn Devadason, pp. 123–137. Kuala Lumpur: Institute of China Studies, University of Malaya.
- McKibbin, Warwick J., and Wing Thye Woo. 2003. The Consequences of China's WTO Accession on its Neighbors. Working Paper No. 2003/17. Canberra: Australian National University.
- Ministry of Finance. *Malaysia—Economic Report, 1996–2007*. Kuala Lumpur: Percetakan Nasional Malaysia Berhad.

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