Trade Costs in Malaysia: Pattern and Challenges

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Abstract: Transportation costs have been shown to affect international trade, both in theory and empirical evidence. It is an important component of trade costs. As tariff barriers have been progressively lowered through unilateral, regional as well as multilateral efforts over the years, non tariff trade costs, which include transportation, play an increasingly important role in affecting a country's trade. The purpose of this paper is two-fold: (i) to profile and analyse trade costs in Malaysia using available data, and (ii) to ascertain the main challenges faced in lowering trade costs in the country. The study covers the period from 1996 – 2009 with a focus on Malaysia's exports to the US and Australia.

1. Introduction

Malaysia considers itself a trading nation as international trade occupies an increasing percentage of its Gross Domestic Product (GDP). In 2007, international trade as a percentage of the Gross Domestic Product (GDP) of the country registered 173 per cent while the World Trade Organization (WTO) ranked Malaysia as the 19th largest exporter and the 25th largest importer in world merchandise trade. Capital flows also play an important part in the international trade of the country. Inward capital flows, for example, accounted for 21 per cent of the Gross Fixed Capital Formation (GFCF) in the country while outward capital flows comprised 27 per cent of the GFCF in 2007. The close links between international trade and capital flows are due to the fact that Malaysia is part of the regional production networks of multinational corporations (MNCs) operating throughout the East Asian region.

Trade cost, which is defined as the cost incurred in moving a good from a producer to a final user other than the cost of producing the good itself, plays a vital role in the international movement of goods and services. Consequently unlocking the magnitude of trade costs and the challenges in reducing trade costs of Malaysia has important bearings

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on the country's position in international trade and its linkages with the global economy. Key components of trade costs include transportation, trade facilitation, logistics costs as well as tariff and non tariff barriers. As tariff barriers have been progressively lowered through unilateral, multilateral, regional and bilateral efforts, other components of trade costs play an increasingly important role in determining the volume of trade of a country. Transportation costs have been shown to affect international trade, both in theory and empirical evidence (De 2009a: 73; Shepherd and Wilson 2009: 369). Similarly, logistics costs are also a strategic source of competitive advantage as the quality of logistics can have a significant influence on a firm's location decision, including the firm's sources of supply and demand (World Bank 2007: 3).[1] Lowering trade costs of a country can therefore contribute toward increasing her export propensity as well as facilitating the entry of small and medium enterprises into export markets.

However, data on trade costs and their determinants are sparse, both for developed and especially for developing countries like Malaysia despite the ongoing research interest in this issue. The objectives of this paper are to profile and analyse the trade costs in Malaysia based on available data and to ascertain the main challenges faced in reducing the trade costs in the country, primarily in the export of electronics goods as it is the major manufactured export good of the country. Recognising the already numerous empirical cross-country studies using econometric analysis in the literature on trade costs and their determinants, this study aims to complement by looking into the case of an individual country, Malaysia. We believe that this study is the first to compile time series data on trade costs for Malaysia. The estimation of trade costs is divided into two parts; port to port costs are estimated using the difference between free-on-board (fob) and the cost, insurance and freight (cif) values while the input-output table is used to estimate the costs from factory to port. Due to the lack of data, especially time series data, the main challenges in reducing the trade costs of the country are identified qualitatively through the literature and interviews.

The paper is organised as follows: the profile of the trade costs in the country is analysed in Section 2. Section 3 discusses the main challenges faced in reducing trade costs in the country. The conclusion in Section 4 summarises the main findings of the paper and the way forward for further research in trade costs for the country as well as the main policy lessons from this study.

2. Understanding Trade Costs in Malaysia

2.1 Definition, Measurement and Data Sources

Anderson and van Wincoop (2004) define trade costs as all costs incurred in moving a good from a producer to a final user other than the cost of producing the good itself. Such costs include transportation costs (freight costs and time costs), trade policy barriers (tariffs and non tariff barriers), information costs, contract enforcement costs, costs

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[1] There is no agreement as yet on the precise definition of logistics costs. Some definitions have included certain aspects of transportation and trade facilitation, such as customs within the domain of logistics costs. So there is an overlap between transportation, trade facilitation and logistics costs definitions as well as their estimations.

associated with the use of different currencies, legal and regulatory costs, local distribution costs (i.e. wholesale and retail costs). Our focus in the present study is on estimating mainly transportation costs and wholesale and retail costs. An illustration on the flow of goods from a factory to a final user either in the same country (i.e. for domestic consumption) or in another country (i.e. for exports) and types of trade costs incurred is shown in Appendix 1.

Anderson and van Wincoop (2004) also discuss three main sources of data for transport costs: (i) Industry/shipping firm information – this is the most direct source where shipping or air freight rates are obtained (Limao and Venables (2001), Hummels (2001) and De (2009b)), (ii) The US Census Bureau - this source provides a useful time series database on imports of merchandise from various countries in the world to the US. Information on imports valued at fob. (i.e. cumulative cost of goods up to the port of departure) and imports valued at cif (i.e. cost of goods including insurance and freight charges incurred in shipping the goods from country of origin to the US). The difference between imports fob. and imports cif is the insurance and freight charges incurred, and (iii) International Monetary Fund (IMF) – this source provides cif/fob ratios and is reported to be most widely available but unfortunately suffers severe quality problems. One of the problems is the discrepancy in the report of importer or reporter of trade values in different yearbook reports. While such discrepancies are small relative to trade values, they are nevertheless large relative to cif/fob ratios. The cif/fob ratio for a certain year varies greatly depending on which edition of the yearbook is referred to (Hummels 1999).

To estimate wholesale and retail distribution costs, national input-output tables are widely used in many studies as a source of data (for example, Curtis and Chen 2003). In the present study, we estimated port-to-port transportation costs (i.e. freight and insurance charges) based on data sourced from the US Census Bureau. We used data for US imports from Malaysia, which is equal to Malaysia's exports to the US. Estimation of transport cost from factory to port and wholesale and retail distribution costs were based on data sourced from Malaysia's Input-Output tables.

These two sources were chosen for two main reasons. First, these were published data, hence they were relatively easy to obtain. Second, since the bulk of Malaysia's exports go to the US, the US Census Bureau data source on Malaysia's exports and the freight and insurance charges thus served as a good representation. Data sourced directly from shipping firms such as the database of Maersk Sealand were not adopted in the present study mainly because at least half of Malaysia's electrical and electronic exports to the US are transported by air (Tham *et al*. 2009:169). Using Maersk Sealand database that provides only sea freight rates will leave out air freight charges completely.

There are limitations to these two approaches. As pointed out by De (2009b), using exports, which tend to be concentrated in a few specific goods, may lead to a bias in transport costs estimation. This is likely in the present case as Malaysia's exports to the US is concentrated in the electrical and electronic goods. As is shown in Figure 3, freight and insurance charges are generally lower for these goods (SITC 76 and 77). The average freight and insurance costs estimated are therefore likely to be biased downwards. If we were to use Malaysia's input-output tables, one limitation to our analysis would be the absence of a time series analysis since input-output tables are not published annually. In addition, the appropriate method to estimate transport and wholesale rates is to obtain the difference between exports valued at producers' price (representing factory gate price) and exports at

purchasers' value (Curtis and Chen 2003: 976).We, however, have to use exports at basic values (which show the income received by producers), instead of at producers' values for our estimation due to lack of data on exports at producers' price.

2.2 Profile of Trade Costs in Malaysia

We examined Malaysia's trade costs (the non tariff components) in three ways. First, time trend analyses were made on freight and insurance costs from 1996 – 2009. A comparison was made between exports to the US and exports to Australia. In 2008, the USA and Australia were, respectively, the second and ninth largest export destinations of Malaysia. Apart from the reason that the US and Australia are Malaysia's major export destinations, Australia was chosen for a comparison with the US due to the available computed data for Australia in a recent study by Pomfret and Sourdin (2009a). Comparison with other ASEAN-5 countries was also made. Second, analyses were made to examine if freight and insurance costs vary by type of goods. Finally, we compared the transport costs and wholesale and retail distribution costs incurred among three movements of goods: (i) moving home goods locally, (ii) moving goods to ports for exports, and (iii) moving imported goods from ports to inland. To our knowledge, there has been no prior study nor has data been compiled on non tariff trade costs for the case of Malaysia.

2.2.1 Average Freight and Insurance Costs Over Time

Table 1 shows the average insurance and freight charges of Malaysia's exports to the US and Australia for the time period 1996 - 2009. The trend of the average insurance and freight charges can be analysed by dividing the time period into three phases: (i) first phase: 1996 – 98, (ii) second phase: 1999 – 2004 and (iii) third phase: 2005 – 2009. Three observations can be made. First, for both the US and Australia, average insurance and freight charges appeared to fall during the first phase. The charges appeared to have increased in the second phase, particularly for the US. The rates were then found to revert to the first phase rates in the third phase. The higher charges during the second phase (1999 – 2004) could be possibly attributed to the rise in insurance costs in 2001 after the September 11 incident and the oil price hike beginning around 2004.

Second, throughout all the three phases, average insurance and freight charges were lower for exports to the US than those to Australia. This could be due to the different composition of export goods to the two countries. As stated earlier, exports to the US is concentrated in electrical and electronic (E&E) goods (see Table 2; exports of SITC 7, in which E&E goods falling under this group, was 77 per cent of total exports in 2007 (76% in 1997)) and costs were generally lower in these goods. Hence the average freight and insurance charges to the US is expected to be lower. While exports to Australia are also mainly E&E goods (32% in 2007 and 45% in 1997), the overall composition is more diversified. Exports of other goods such as SITC 3 (minerals, fuels, lubricants and related materials constituting 36% in 2007) are significant too.

Third, average freight and insurance charges for exports to Australia declined at a faster rate than those to the US during this entire time period.

Table 3 (graph plotted in Figure 1) shows average insurance and freight charges of ASEAN-5's exports to the US. Among the five ASEAN countries, Singapore has the lowest

Table 1. Average insurance and freight charges of Malaysia's exports to the US and Australia (1996-2009) (%)

Year	USA	Australia*
1996	2.84	5.4
1997	2.81	5.2
1998	2.72	5.2
1999	3.09	4.6
2000	3.23	4.8
2001	3.29	5.1
2002	3.01	4.3
2003	2.96	4.5
2004	3.07	5.3
2005	2.89	4.8
2006	2.71	4.5
2007	2.79	4.0
2008	2.71	n/a
2009**	2.64	n/a

Source: Authors' computation based on data from the US Census Bureau
Note: * Data was sourced from Pomfret and Sourdin (2009a), Appendix 1: 27. The authors computed weighted average *ad valorem* trade costs (cif – fob)/fob using the Australian Bureau of Statistics data.
** Data for year 2009 is based on cumulative exports up to October 2009.

Table 2. Malaysia's exports to Australia and the USA (1997 & 2007)(%)

| SITC	1997		2007	
	Australia	USA	Australia	USA
0	4.10	0.74	2.61	1.26
1	0.01	0.01	0.17	0.02
2	4.97	1.35	1.08	0.61
3	9.66	1.31	36.39	1.07
4	4.68	0.94	2.39	2.81
5	6.28	1.87	6.11	1.40
6	10.94	3.15	9.44	3.24
7	45.33	76.00	31.55	77.05
8	12.31	14.35	7.85	11.74
9	1.71	0.28	2.41	0.80
Total	100	100	100	100

Source: UN Comtrade database

Table 3. Average insurance and freight charges of ASEAN5's exports to the US (1996-2009) (%)

Year	Malaysia	Singapore	Thailand	Indonesia	Philippines
1996	2.84	1.51	4.08	6.44	4.09
1997	2.81	1.50	3.66	6.14	3.47
1998	2.72	1.62	3.99	6.81	3.23
1999	3.09	1.96	5.81	7.97	3.69
2000	3.23	1.93	6.01	7.98	3.71
2001	3.29	1.89	5.69	7.94	3.92
2002	3.01	2.03	5.97	7.69	4.06
2003	2.96	2.19	6.10	7.89	4.32
2004	3.07	1.88	6.08	8.04	4.78
2005	2.89	1.78	5.75	7.74	4.82
2006	2.71	1.64	5.40	6.99	4.55
2007	2.79	1.61	4.57	6.32	4.31
2008	2.71	1.74	4.51	5.78	4.34
2009	2.64	1.21	4.15	5.48	3.84

Source: Authors' computation based on data source from US Census Bureau
Note: Data for year 2009 is average charges up to October 2009
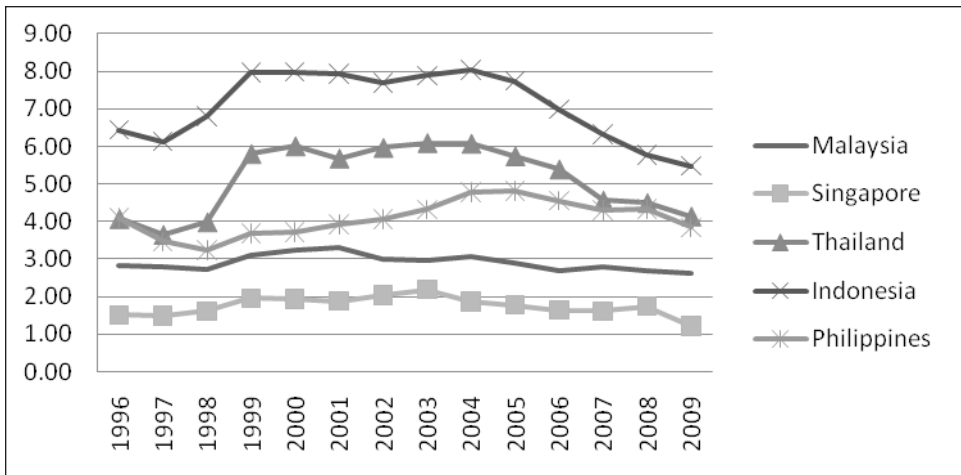
Source: Authors' computation based on data source from US Census Bureau
Note: Data for year 2009 is average charges up to October 2009
Figure 1: *ASEAN5- Average insurance and freight charges of exports to the US (1996-2009)*
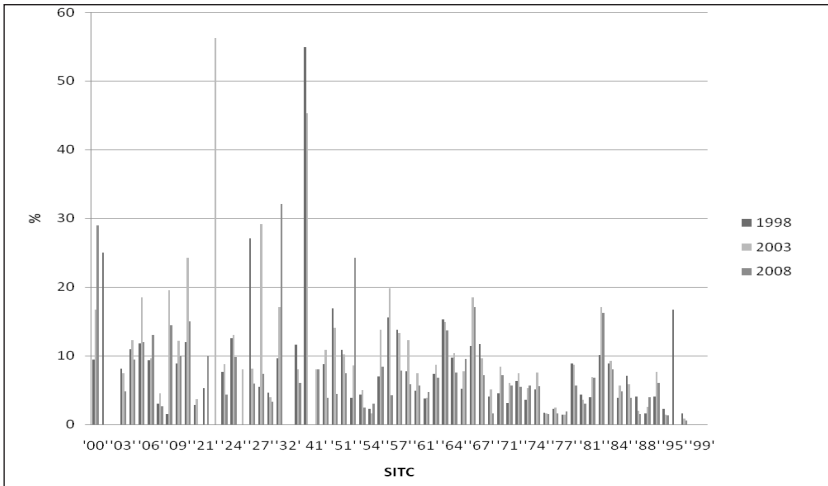
Figure 2: *Average insurance and freight charges by type of goods (%)*
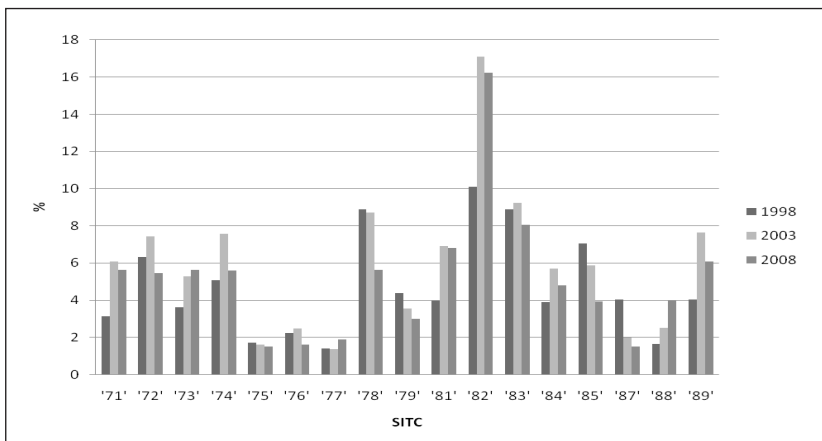
Figure 3: *Average insurance and freight charges by type of goods (SITC 7 and 8)*

average freight and insurance charges, followed by Malaysia. Indonesia has the highest costs among the five countries. In addition, the experience of Malaysia of having declining charges in the first phase, followed by a rise during the second phase and then finally reverting to the first phase levels, is also experienced by other ASEAN countries.

2.2.2 Freight and Insurance Costs by Type of Goods

Figure 2 gives an overall picture on the average insurance and freight charges for goods exported to the US at SITC-2 digit. Average insurance and freight charges varied across the product groups. We investigated further into product group SITC 7 and 8 in Figure 3 since

these two product groups constituted 86 per cent of Malaysia's exports to the US in 2008 (US Census Bureau). Insurance and freight charges continue to vary within SITC 7 and 8, with SITC 75,76 and 77 recording lowest rates (see Appendix 2 for list of product descriptions).

In the case of Malaysia, average freight and insurance costs tend to be lowest for product groups SITC 7 (Machinery and transport equipments) and SITC 8 (Miscellaneous manufactured articles). The average costs were mostly below 8 per cent of the cost of goods. Average costs for other product groups were significantly higher, particularly for product groups SITC 0 – 4. The average costs for these product groups fluctuated greatly for the three years chosen for comparison (1998, 2003 and 2008).

Since electrical and electronics products constituted 38 per cent of the total exports of the country in 2008, we examined further into these goods at SITC 3 digit. Table 4 (graph plotted in Figure 4) shows average freight and insurance rates for Malaysia's exports of electrical and electronic (E & E) goods at SITC 3 digit to the US over time.

The average freight and insurance costs have declined over time for all E& E goods except for product groups of SITC 774 and 778 during the time period 1996 - 2009. Some of the goods experienced a hike in the average costs after 2001, possibly due to a rise in insurance costs after the September 11 incident, while others experienced an increase in the average costs of around 2004 – 2006, possibly as a result of oil price hike during that period. By 2009, all E&E goods had less than 5 per cent of average freight and insurance costs. Some of these goods had average costs of less than 2 per cent of the cost of goods.

2.2.3 Trade Costs of Moving Goods Inland

We also analysed the transport costs and wholesale and retail costs for moving goods within the country. These goods can be divided into three types: home goods for domestic consumption, goods produced for exports and goods imported into the country. Table 5 shows the transport and wholesale rates for years 1978, 1987 and 2000.

We note three interesting observations. First, while all the rates have declined over time, transport and wholesale rates are always higher than import duties for all the three years. Second, wholesale rates are higher than transport rates for all the years for home goods and imports.[2] Third, goods that are imported into the country experienced notable higher transport and wholesale rates than the other two goods, due to significant higher wholesale costs incurred. This suggests that distribution of imported goods face higher business and regulatory costs than distribution of home goods in the country. Since Malaysia's imports comprise a lot of intermediate imports for further production, a reduction in wholesale and retail costs for moving imported goods inland in the future will lower total production costs of goods that use such intermediate imported goods for production.

Further to the above three observations, we also note that the decline in transport and wholesale rates between 1987 and 2000 was a lot more intense, compared to between 1978 and 1987. While further detailed investigations would be needed to pin point the exact causes for this, two possible contributing factors are noted here. First, a sharper drop in the rates between 1987 and 2000 could be due to the decline in transport charges experienced in the haulage industry following increased competition beginning in 1997 when the Malaysian government decided to allow an increase in the number of hauliers in the industry (Lee 2004

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[2] For exports, separate values for transport and wholesale rates are not available.

Table 4. Average freight and insurance rates for Malaysia's E&E exports to the USA(1996-2009) (%)

SITC	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
'761'	2.412	2.906	3.231	4.798	5.812	5.248	5.250	5.800	5.148	7.505	8.447	6.379	2.393	1.852
'762'	2.170	2.176	2.302	3.111	4.049	4.532	3.049	3.879	3.906	3.288	3.371	2.550	2.623	2.031
'763'	1.447	1.415	1.631	2.450	3.540	2.154	2.439	2.613	2.266	2.211	2.247	3.612	2.812	1.006
'764'	2.585	2.172	2.201	2.687	1.886	1.520	1.656	1.283	1.583	0.947	0.936	1.182	1.392	0.996
'771'	4.392	3.234	2.408	2.191	4.034	3.265	3.109	3.184	2.753	3.033	2.831	3.057	2.703	2.692
'772'	4.063	3.649	3.372	3.238	3.233	3.045	4.285	3.810	3.603	3.658	4.485	3.963	3.830	3.173
'773'	6.052	4.967	4.505	5.432	6.519	5.500	8.018	6.346	6.161	7.474	6.709	7.050	5.194	4.841
'774'	1.939	1.506	1.156	1.818	2.197	2.322	1.589	2.687	2.255	1.826	3.045	3.361	3.082	3.229
'775'	4.734	4.414	4.884	7.583	9.086	7.466	6.068	6.689	6.930	6.160	5.984	5.345	5.476	4.092
'776'	1.197	1.212	1.083	1.055	1.005	1.025	0.935	0.853	0.793	0.735	0.844	0.926	0.942	1.011
'778'	2.994	2.157	2.344	3.224	2.954	3.161	3.196	3.549	3.673	3.788	3.675	3.769	4.209	3.421

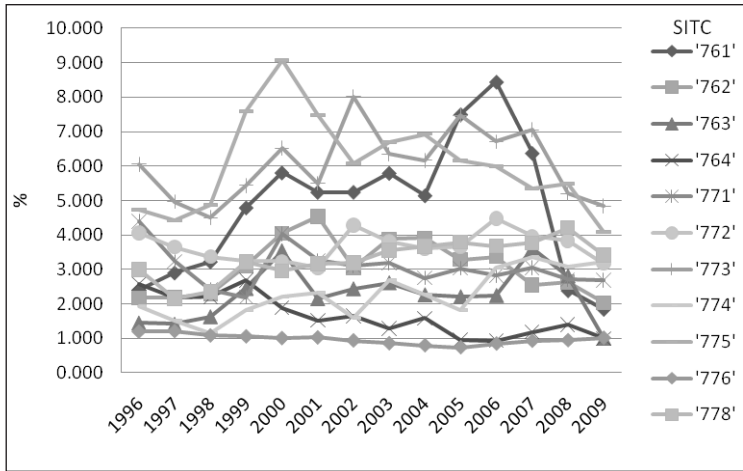*Source:* Authors' computation based on data from US Census Bureau.

Figure 4: *Average freight and insurance rates for Malaysia's E&E exports to the USA(1996-2009) (%)*

:12-13). Second, the onset of the 1997/98 Asian financial crisis could have also led to reduced demand for transport and wholesale services, hence forcing prices downward. Demand for oil and thus its price fell during this crisis period, hence lowering the operation costs of transport and wholesale service providers. This has also made lower charges possible during that period.

Given that transport charges have declined significantly, and goods meant for exports do not engage wholesale and retail service since they are transported directly to ports, a more significant decline in charges for exports (from 11.56 to 1.94%) than those for home goods (from 6.09 to 3.32%) and imports (from 12.64 to 9.10%) is observed.

3. Challenges in Reducing Trade Costs in Malaysia

While the pattern of trade costs and their composition are helpful in understanding the trade costs of a country, policy decisions require further information on their determinants and barriers. The unfolding literature on this issue indicates infrastructure plays an important role in influencing the variations in trade costs between countries (Limao and Venables (2001) as cited in Pomfret and Sourdin 2009a: 3). Direct monetary outlays, timeliness, risk of damaged cargo and resulting losses and insurance costs as well as accessibility are the four main factors that drive infrastructure's impact on trade costs (Brooks 2009: 5). Haveman *et al* (2009: 57) provide empirical evidence to support the relationship between infrastructure and trade costs for Asian ports. Specifically, they found that different types of infrastructure investments are highly correlated with reductions in port costs for the selected Asian ports sampled in their study. Other factors that can affect trade costs include logistics efficiency, distance, scale economies, unbalanced trade, number of shipping lines or airlines as well as their market power and institutional and policy factors such as corruption (Pomfret and Sourdin 2009a: 6-7).

Table 5. Transport and wholesale rates in Malaysia's home goods for domestic consumption, exports, imports and custom duties for Malaysian imports (%)

Year	Home goods for domestic consumption			Exports	Imports			
	Transport rates	Wholesale rates	Transport and wholesale rates	Transport and wholesale rates	Transport rates	Wholesale rates	Transport and wholesale rates	Duties
1978	1.20	5.06	6.26	~	1.06	14.04	15.10	10.25
1987	1.09	5.00	6.09	11.56	1.03	11.61	12.64	5.83
2000	0.66	2.66	3.32	1.94	0.70	8.40	9.10	1.63

Source: Authors' computation based on Malaysia's input-output tables - Table 1 for home goods and imports and Table 1 and 3 for exports. Input-output tables for 1978, 1987 and 2000 were published in 1987, 1994 and 2005 respectively.

Table 6. Logistics indicators for selected countries, 2007 & 2010

Country	LPI Rank		Infrastructure		Customs	
	2007	2010	2007	2010	2007	2010
China	30	27	30	27	35	32
Indonesia	43	75	45	69	44	72
Philippines	65	44	86	64	53	54
Malaysia	27	29	28	28	23	36
Thailand	31	35	32	36	32	39
Singapore	1	2	2	4	3	2

Source: World Bank 2007 & 2010

Current empirical evidence on the determinants of trade costs are based mainly on cross-country evidence. Using disaggregated Australian import data, Pomfret and Sourdin (2009a: 11) found that distance, bulk and the volume of trade affect trade costs as expected. Good institutions, as measured by the Transparency International Corruption Index, are associated with lower trade costs, especially for air freight. Similar results were also obtained for a subset of the Australian data, namely East Asia (Pomfret and Sourdin 2009b: 262). Moreover, the institutional variable is commodity-specific as it is important for manufactured goods but not for primary products. As logistics costs are also part of trade costs, Hollweg and Wong (2009: 29) found evidence of a negative relationship between logistics regulatory restrictiveness and the performance of the logistics sector for the ASEAN Plus Six economies.

In the case of Malaysia, the main manufactured exports, namely electrical and electronics goods are exported to both the USA and Australia. It is the main manufactured goods exported to both these countries. While electrical goods are mainly exported by sea due to their bulkiness and durability, electronics goods are exported mainly by air as these goods have higher value to weight ratio and require greater storage care. We therefore focus on the export of electronics goods by air in our discussion in this section.[3]

The main electronics hub in Malaysia is in Penang and the electronics goods leave the factories in Penang and the northern part of Malaysia via the Penang airport, the Kuala Lumpur International Airport (KLIA) as well as Changi airport in Singapore (Tham *et al.* 2009: 171). Malaysia's investment in infrastructure has placed the country in a relatively better position compared to her ASEAN-5 neighbours, with the exception of Singapore (Table 6). This investment, especially in highways and airports, has contributed to the lowering of transportation costs for the movement of goods from the electronic factories to airports. As shown in Table 6, Malaysia is ranked 27th in the World Bank's Logistics Performance Indicator (LPI), in 2007, behind Singapore which is ranked the best in the world and ahead of its other competitors in the ASEAN-5 as well as China.

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[3] The information in this section is based on in-depth interviews conducted over 2007-2008 with five respondents, namely the Airfreight Forwarders Association of Malaysia, Maskargo, DHL, Intel and an anonymous respondent who works for a multinational in Penang and also sits on the Logistics Council in Malaysia.

Based on Tham *et al.* (2009: 171), infrastructure development in roads and highways such as the North-South Highway facilitates the movement of goods, especially for the factories that are located at the Kulim Hi Tech Park, for a few reasons. First, the factories have easy access to the highway; second, the highway has shortened the transportation time to the Penang airport by about approximately half the time (45 minutes); third, it is a more direct route compared to the old trunk road; and finally it is a safer route to take as the highways are patrolled. Hence, factories are willing to pay the toll to take the highway as opposed to the old trunk road. The highway also provides an alternative for the goods to be shipped out via the KLIA in the event of any problem on the Penang Bridge or for the flexibility of better timing or flight connectivity since timeliness is of paramount importance in the delivery of these goods to the importers. Travelling time from Penang to KLIA has been shortened from eight to about five hours by this highway instead of the old trunk road (see Appendix 3 for map of Peninsular Malaysia).

Similarly, the building and upgrading of the Penang airport and the KLIA has also contributed to the export of these goods. There are no data on the electronic goods going through these airports. Data that are available indicate a steady increase in the total cargo handled by the Penang airport and the KLIA. In the case of the former, total cargo handled has increased from 30.3 to over 200,000 thousand tonnes from 1990 to 2006 before dropping to just around 200,000 thousand tonnes in 2008 due to the global financial crisis (Ministry of Transport 2009). Similarly, the total number of passengers handled has increased from 1.9 million to 3.4 million from 1990 to 2008. For KLIA, the total cargo handled has increased from 159.6 to more than 650,000 thousand tonnes from 1990 to 2006 before dropping to less than 650,000 thousand tonnes in 2008. Total number of passengers handled by the airport has increased from 6.4 million to about 27 million in the same period.

Recent expansion plans for Penang's infrastructure includes a Second Bridge that will link Batu Kawan at Seberang Perai to Batu Maung near Penang airport that will enable cargo moving to Penang airport as well as to the mainland to KLIA to bypass the traffic congestion in the city. Construction works for the Second Bridge are reportedly being undertaken currently. The Prime Minister has also announced an allocation of RM250 million for the expansion of the airport in the mini-budget announced in March 10, 2009.

However, the availability of good infrastructure needs to be supported by other factors in order to attain efficient trade costs. Maskargo, an air cargo transportation company that is a wholly owned subsidiary of Malaysia Airlines (MAS) and the Airfreight Forwarders Association of Malaysia (AFAM) are of the view that it is the processing of documents that needs improvement in order to lower trade costs in the country. Although Malaysia has offered e-trade facilitation services since 1994, it is operated by a monopoly that has exclusive electronic linkage to the Royal Customs Department on matters involving import and export declaration as well as clearance. This may not necessarily increase productivity without some competition in the provision of such facilities. Even though the National Single Window (NSW) systems, where all traders can submit the information only once at one time and place to satisfy all the regulatory requirements of the many different agencies involved, has been implemented since 2008 in line with the ASEAN Single Window initiative, its usage is still limited, though the Ministry of Finance (MOF), that is in charge of customs, announced a reduction in tariffs in September 2009 to boost its implementation. It is expected

to take time for the Single Window to be fully operational. UNESCAP has found that the effectiveness of national single window systems still depends essentially on strong political leadership and effective inter-agency and public-private sector collaboration (UNESCAP 2009: 134).

Regulatory restrictions are also present as customs brokers need a license to operate and face equity constraints (51% bumiputera equity).[4] Hollweg and Wong (2009: 20) found Malaysia to be among the most restricted economies for logistics services in the ASEAN Plus Six region, along with China, Indonesia, Lao PDR, the Philippines as well as Vietnam. This is unlike Singapore that has no licensing requirements, a fully functional EDI as well customs facilities that operate round the clock.

Apart from customs, the need to export electronics goods from the factories in Penang through Changi also indicates the need for better connectivity for the Penang airport and the KLIA. It is reported that as much as 25-30 per cent of airfreight throughput is channeled through neighboring airports (Malaysia 2006: 727). Changi is favoured due to its better connectivity so that port-to-port charges for flying out of Changi can be lower than even flying the goods out of Penang airport or the KLIA. This is despite the cost of trucking the goods down to Singapore (map in Appendix 3 provides the locations of Penang airport, KLIA and Singapore's Changi Airport) and the lower labour costs in Malaysia relative to Singapore. Changi Airport has established itself as a major aviation hub in the Asia Pacific region with more than 80 airlines serving more than 180 cities in over 50 countries and an annual handling capacity of more than 70 million passengers. In contrast, KLIA services slightly more than 50 airlines, offering connectivity to around 90 destinations worldwide. Penang airport is even smaller with 15 passenger airlines serving limited destinations mostly in the region.

Last but not least, security is an issue as trucks carrying valuable cargo such as semiconductors have been hijacked in the country. Cases of cargo theft in warehouses have compounded the security risks in the country. It was reported that from 1999 to 2001, there were 49 cases of hijacking of trucks and 69 incidences of warehouse break-ins. Although these incidences have reduced over time, there is continued need to be vigilant, especially when neighbouring competitors do not face such problems.

Table 6 shows the drop in the ranking of Malaysia in World Bank's LPI in 2010 (World Bank 2010) while China has improved in its ranking. Consequently, Malaysia is no longer ahead of China although it remains ahead of the rest its competitors in the ASEAN-5, with the exception of Singapore. Although Malaysia has maintained its ranking in terms of infrastructure, its ranking in terms of customs has dropped substantially such that it ranks behind China in terms of both infrastructure and customs. It is therefore important to take appropriate policies to address the challenges outlined in this paper if Malaysia is to lower its trade costs as lowering trade costs can be a source of competitive advantage for the country.

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[4] While the Prime Minister has announced that equity restrictions in all service sectors, with the exception of strategic sectors, will be relaxed with the rationalisation of the investment guideline that was formerly administered by the Foreign Investment Committee (FIC) in his speech at Invest Malaysia in June 2009 (Najib 2009), it is still too early to assess the effectiveness of its implementation.

4. Conclusion

Malaysia has experienced an overall decline in non tariff trade costs over the past fifteen years. Among ASEAN-5, Malaysia is among the lowest in its average freight and insurance charges. While there has been an overall decline in the transportation costs over time, further examination shows that there is still room for further reduction. This is especially so for transport of goods other than the electrical and electronic products and also for the movement of imported goods inland.

Further research in understanding trade costs and their determinants would require substantially better data in terms of both quantity and quality. Improvements in the input-output tables can help in capturing the components in trade costs in the country while the collection of trade data in both fob and cif will provide some indication of the trade costs of the country. Disaggregated data on insurance and freight will help policy makers detect the changes in freight costs over time. Improved data banks will also encourage further investigation on the impact of trade costs on the pattern and volume of trade and investment. Ultimately, it will contribute toward informed policy choices in terms of improving the competitiveness of an economy that is as trade dependent as that of Malaysia.
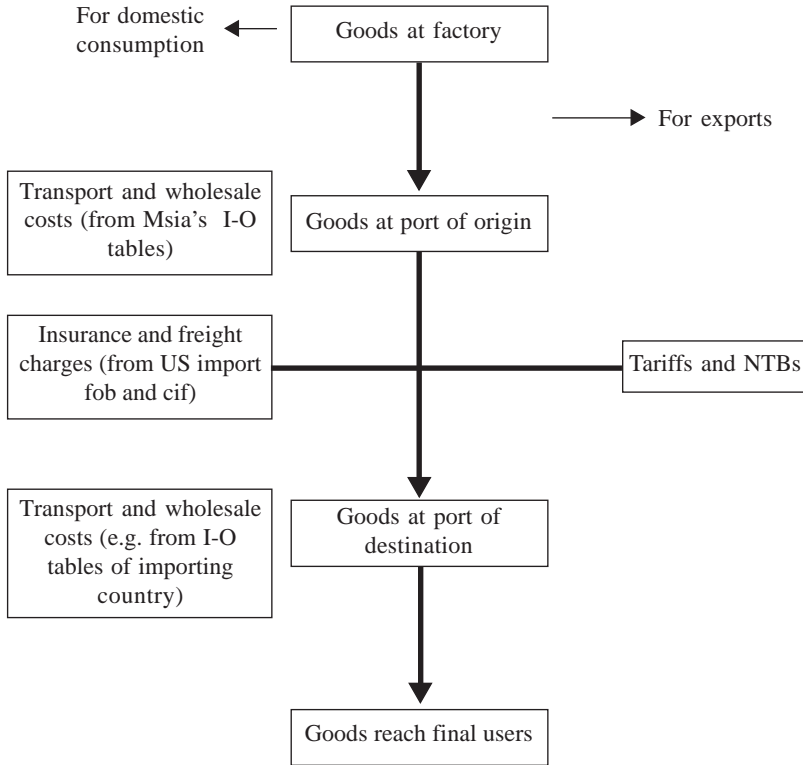
Infrastructure spending in Malaysia has resulted in relatively good infrastructure in the country that has facilitated the movement of goods through the provision of highways and airports. However, the main policy lesson in this paper is that although Malaysia has done relatively well in terms of providing these 'hardware' for improving the trade costs in the country, there is substantial work that needs to be done in terms of the 'software'. Thus, improvements in processing documents can be accelerated through an enhanced and more comprehensive usage of information and communications technology (ICT). Attracting more planes to fly through our airports is another important factor. While the government has provided incentives for this, improving the economic and political climate in the country is of paramount importance in order to attract more people to invest and to build their businesses in this country. In particular, appropriate policies need to be in place to ensure that the Penang electronics cluster does not go into further decline. Similarly, policies need to be in place to foster the deepening of this cluster. In this regard, reversing the brain drain and importing skilled labour as a short-to medium-term measure will help to alleviate the shortage of human capital that is needed to deepen the cluster and at the same time, enable Malaysia to move up the value chain in the electronics industry.

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Appendix 1. Flow of goods from factory to final user and types of trade costs incurred at various stages

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                                        ┌─────────────────────┐
              For domestic    ◄─────────│   Goods at factory  │
              consumption              └─────────────────────┘
                                                 │
                                                 │          ──────►  For exports
                                                 ▼
┌───────────────────────────┐       ┌─────────────────────────┐
│ Transport and wholesale   │       │  Goods at port of origin│
│ costs (from Msia's I-O    │       └─────────────────────────┘
│ tables)                   │                    │
└───────────────────────────┘                    │
┌───────────────────────────┐                    │              ┌──────────────────┐
│ Insurance and freight     │────────────────────┼──────────────│ Tariffs and NTBs │
│ charges (from US import   │                    │              └──────────────────┘
│ fob and cif)              │                    ▼
└───────────────────────────┘       ┌─────────────────────────┐
┌───────────────────────────┐       │  Goods at port of       │
│ Transport and wholesale   │       │  destination            │
│ costs (e.g. from I-O      │       └─────────────────────────┘
│ tables of importing       │                    │
│ country)                  │                    ▼
└───────────────────────────┘       ┌─────────────────────────┐
                                     │ Goods reach final users │
                                     └─────────────────────────┘
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Appendix 2. SITC trade classification and product description

SITC 2 digit	Description
'00'	Live animals other than fish, crustaceans, molluscs and aquatic invertebrates of division 03
'01'	Meat and meat preparations
'02'	Dairy products and birds' eggs
'03'	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof
'04'	Cereals and cereal preparations
'05'	Vegetables and fruit
'06'	Sugars, sugar preparations and honey
'07'	Coffee, tea, cocoa, spices and manufactures thereof
'08'	Feeding stuff for animals (not including unmilled cereals)
'09'	Miscellaneous edible products and preparations
'11'	Beverages
'12'	Tobacco and tobacco manufactures
'21'	Hides, skins and furskins, raw
'22'	Oil seeds and oleaginous fruits
'23'	Crude rubber (including synthetic and reclaimed)
'24'	Cork and wood
'25'	Pulp and waste paper
'26'	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)
'27'	Crude fertilisers (imports only), except those of division 56, and crude minerals (excluding coal, petroleum and precious stones)
'28'	Metalliferous ores and metal scrap
'29'	Crude animal and vegetable materials, n.e.s.
'32'	Coal, coke and briquettes
'33'	Petroleum, petroleum products and related materials
'34'	Gas, natural and manufactured
'41'	Animal oils and fats
'42'	Fixed vegetable fats and oils, crude, refined or fractionated
'43'	Animal or vegetable fats and oils processed; waxes and inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.
'51'	Organic chemicals

SITC 2 digit	Description
'52'	Inorganic chemicals
'53'	Dyeing, tanning and coloring materials
'54'	Medicinal and pharmaceutical products
'55'	Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations
'56'	Fertilisers (exports include group 272; imports exclude group 272)
'57'	Plastics in primary forms
'58'	Plastics in non primary forms
'59'	Chemical materials and products, n.e.s.
'61'	Leather, leather manufactures, n.e.s., and dressed furskins
'62'	Rubber manufactures, n.e.s.
'63'	Cork and wood manufactures other than furniture
'64'	Paper, paperboard, and articles of paper pulp, paper or paper board
'65'	Textile yarn, fabrics, made-up articles, n.e.s., and related products
'66'	Non metallic mineral manufactures, n.e.s.
'67'	Iron and steel
'68'	Non ferrous metals
'69'	Manufactures of metals, n.e.s.
'71'	Power generating machinery and equipment
'72'	Machinery specialised for particular industries
'73'	Metalworking machinery
'74'	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.
'75'	Office machines and automatic data processing machines
'76'	Telecommunications and sound recording and reproducing apparatus and equipment
'77'	Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including nonelectrical counterparts of household type, n.e.s.)
'78'	Road vehicles (including air-cushion vehicles)
'79'	Transport equipment, n.e.s.
'81'	Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.
'82'	Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings
'83'	Travel goods, handbags and similar containers

Appendix 2. Continued

SITC 2 digit	Description
'84'	Articles of apparel and clothing accessories
'85'	Footwear
'87'	Professional, scientific and controlling instruments and apparatus, n.e.s.
'88'	Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks
'89'	Miscellaneous manufactured articles, n.e.s.
'93'	Special transactions and commodities not classified according to kind
'95'	Coin, including gold coin; proof and presentation sets and current coin
'96'	Coin (other than gold coin), not being legal tender
'97'	Gold, nonmonetary (excluding gold ores and concentrates)
'98'	Estimate of import items valued under S251 and of other low valued items nonexempt from formal entry
'99'	Estimate of non Canadian low value shipments; compiled low value shipments to Canada; and various export shipments not identified by kind

Appendix 3. Map of Peninsular Malaysia