Chapter 3

Trade Facilitation toward the ASEAN Economic Community

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March 2010

This chapter should be cited as
Sourdin, P. and R. Pomfret (2010), 'Trade Facilitation toward the ASEAN Economic Community', in Urata, S. and M. Okabe (eds.), *Tracing the Progress toward the ASEAN Economic Community*, ERIA Research Project Report 2009-3, Jakarta: ERIA. pp.125-161.

Trade Facilitation toward the ASEAN Economic Community

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Establishment of the ASEAN Economic Community (AEC) hinges largely on successful and on-time implementation of the AEC Blueprint. A monitoring system is a vital component of effective implementation. This paper contributes to the monitoring debate by (1) developing a composite indicator of trade costs for each individual ASEAN member country, which indicates success in trade facilitation and can be used to assess proximity to regional best practice, and (2) comparing the composite indicator with the AEC Scorecard approach endorsed by ASEAN member countries.

The Index of Trade Costs is based on the gap between cif and fob values of ASEAN exports to third countries using import data from the USA, Australia, Brazil and Chile for 1990-2008. We conduct econometric analysis to better understand why trade costs vary across countries and to compare the ASEAN members' record to the global average. Trade costs vary between ASEAN members, but the results indicated substantial reduction, converging on the lowest-cost trader (Singapore) and coinciding with increased attention to trade facilitation in ASEAN during the 1990s.

The Index of Trade Costs and the Scorecard approach are complementary. The Index of Trade Costs is a simple scalar measure of trade costs, which indicates success in trade facilitation and can be used to assess proximity to regional or global best practice. The Scorecard approach indicates whether governments have implemented specific measures, such as mutual recognition agreements, or ratified ASEAN decisions that are critical to establishing the AEC.

1. Introduction

Establishment of the ASEAN Economic Community (AEC) hinges largely on successful and on-time implementation of the AEC Blueprint. A monitoring system is a vital component of effective implementation. This paper contributes to the monitoring debate in two ways. First, we develop a composite indicator of trade costs for each individual ASEAN member country. Second, we compare and contrast the composite indicator with the AEC Scorecard approach to monitoring.

The indicator of trade costs in Sections 2-4 is based on the gap between cif and fob values of ASEAN exports to third countries. The cif/fob gap is a commonly used aggregate measure of trade costs, i.e. the difference between the costs of a domestic and an international transaction apart from tariffs and behind-the-border costs. In an earlier paper (*ERIA Discussion Paper Series ERIA-DP-2009-12***,** April 2009), we set out the case for using such a measure of trade costs and reported results using Australian import data. Although there are many definitions of trade costs and of trade facilitation, the cif/fob gap is suitable as an operational definition, using universally acceptable concepts and approximating the cost of international as opposed to domestic trade. It includes transport and logistics costs which may be driven by technical improvements as well as by improved policies and procedures. The cif/fob measure should be treated as a benchmark rather than a perfect way to capture the impact of trade facilitation commitments.

We conducted econometric analysis of the cif/fob measure to better understand why trade costs vary across countries and to compare the ASEAN members' record to the global average during the period 1990-2007. The results indicated variation in trade costs between ASEAN members, but also substantial reduction of trade costs, converging on the lowest cost trader (Singapore) and coinciding with increased attention to trade facilitation in ASEAN during the 1990s. The present paper aims to establish whether any biases arose from using Australian data, and to refine the measure further.

The next section reports cif/fob trade cost measures for ASEAN countries based on import data from the USA, Australia, Brazil and Chile. Section 3 conducts econometric analysis of the determinants of trade costs and Section 4 reports an Index of Trade Costs.

Section 5 compares and contrasts the Index approach to the AEC Scorecard approach. Section 6 draws some conclusions.

2. Trade Costs in ASEAN Member Countries

This section uses cif/fob data for 1990-2008 from four major importing countries: USA, Australia, Brazil and Chile to examine ASEAN countries' trade costs. These countries' customs agencies collect detailed information on their imported goods at the HS6 digit level of aggregation and are among the few countries which report fob and cif values as well as mode of transport (sea, air, road, river, parcel post, etc.).[1] The usable dataset contains more than 8 million observations from the four importing countries for 242 exporting countries, including the 10 ASEAN member economies.

Table 1 reports average import-weighted ad valorem trade costs (trade costs as a proportion of import value) for all four importers. On average, trade costs for all importers and over all exporters fell from 5.5% ad valorem in 1990 to 4.2% in 2008, a 24% decline. Ad valorem trade costs for imports arriving by air are lower than by sea reflecting the fact that higher value goods are generally shipped by air freight. Trade costs for air-freighted imports fell slightly faster at 25% as compared to imports arriving by sea at 22% over the same period. For ASEAN members, trade costs declined over the same period, but at a slightly lower rate at 19%. This pattern of falling trade costs over time can be clearly seen in Figure 1.

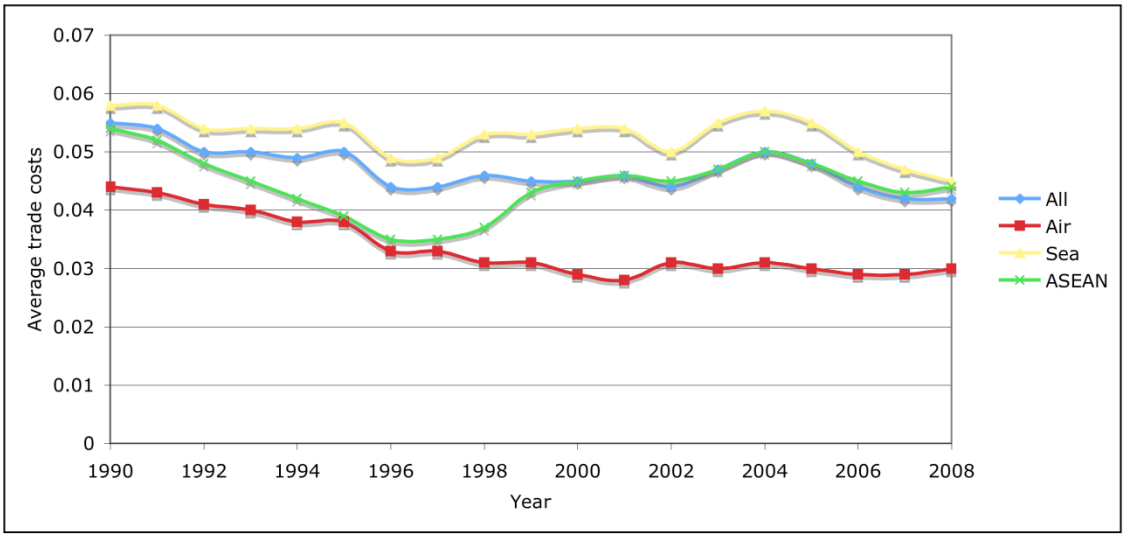
[1] Because of the need to distinguish between modes of transport and to adjust for the commodity composition of trade at a disaggregated level, use of the cif/fob gap is time- and data-intensive. More constraining, few countries report the fob and cif values of trade data in sufficient detail to be useful (e.g. to allow for commodity composition effects). The US data are the most detailed, but may be contaminated by some imports arriving by land, which is difficult to monitor; e.g. imports from ASEAN may be shipped through Vancouver before entering the USA overland. We are grateful to ALADI for assistance obtaining data for Brazil and Chile. The Chilean results revealed problems with a smaller trading nation's data having commodity groups with few observations producing an excessively volatile Index.

Table 1: Average trade costs. All importers.

Year	All	Air	Sea	ASEAN		Year	All	Air	Sea	ASEAN
1990	0.055	0.044	0.058	0.054		**2000**	0.045	0.029	0.054	0.045
1991	0.054	0.043	0.058	0.052		**2001**	0.046	0.028	0.054	0.046
1992	0.050	0.041	0.054	0.048		**2002**	0.044	0.031	0.050	0.045
1993	0.050	0.040	0.054	0.045		**2003**	0.047	0.030	0.055	0.047
1994	0.049	0.038	0.054	0.042		**2004**	0.050	0.031	0.057	0.050
1995	0.050	0.038	0.055	0.039		**2005**	0.048	0.030	0.055	0.048
1996	0.044	0.033	0.049	0.035		**2006**	0.044	0.029	0.050	0.045
1997	0.044	0.033	0.049	0.035		**2007**	0.042	0.029	0.047	0.043
1998	0.046	0.031	0.053	0.037		**2008**	0.042	0.030	0.045	0.044
1999	0.045	0.031	0.053	0.043						

Note: import weighted ad valorem trade costs; ad valorem trade costs = $\left(\frac{\sum cif}{\sum fob} - 1\right)$

Figure 1: Average Trade costs, all importers, 1990-2008.



Since we have four importing countries, it is instructive to examine how trade costs vary by importing country. Sourdin and Pomfret (2009) using only Australian import data found average weighted trade costs ranging from 8% in 1990 to 5% in 2007. Table A1 in the Appendix reports average trade costs by importing country. Imports into the USA exhibit the lowest ad valorem trade costs followed by Australia, Brazil and Chile, with Australia and Brazil experiencing the largest fall since 1990 and little change over the period for Chilean imports. Since the USA is the largest of the four markets, the higher volume of trade to the USA contributes to lower trade costs when the data are aggregated.

The variation in trade costs across importing country points to the importance of both the exporting and importing country in the determination of trade costs.

Turning to ASEAN member countries, Table 2 highlights the variation in ad valorem trade costs among the individual ASEAN countries' exports to Australia, USA, Chile and Brazil from 1990-2008. Weighted average ad valorem trade costs for individual Asian trading partners in 1990-2008 are reported in Appendix Table A2. The final column in Table 2 presents the ASEAN average. While there is a large variation in trade costs in 1990, by 2008 the ASEAN economies' trade costs appear to be converging. Graphically, Table 2 results are presented in Figures 2 and 3 along with the global (i.e. for all exporters) averages. For the original five ASEAN members there is a substantial decline in trade costs during the 1990s and convergence towards the lowest cost country, Singapore, although in the 2000s there is no clear trend. For the other five ASEAN member countries it is harder to identify a trend due to the higher volatility – especially for Laos and Cambodia – reflecting the small number of trade items.

Table 2: Average import weighted trade costs ASEAN countries. 1990-2008.

Year	BRN	IDN	KHM	LAO	MMR	MYS	PHL	SGP	THA	VNM	ASEAN
1990	0.072	0.102	0.176	0.104	0.049	0.05	0.074	0.03	0.059	0.072	0.054
1991	0.073	0.102	0.013	0.033	0.084	0.047	0.071	0.028	0.057	0.127	0.052
1992	0.056	0.085	0.029	0.075	0.046	0.041	0.063	0.025	0.055	0.085	0.048
1993	0.056	0.083	0.096	0.065	0.042	0.038	0.059	0.023	0.054	0.076	0.045
1994	0.036	0.079	0.067	0.074	0.046	0.035	0.055	0.023	0.05	0.087	0.042
1995	0.045	0.073	0.077	0.08	0.048	0.032	0.052	0.021	0.046	0.067	0.039
1996	0.042	0.067	0.064	0.073	0.053	0.031	0.042	0.017	0.043	0.077	0.035
1997	0.04	0.066	0.066	0.057	0.057	0.031	0.036	0.018	0.039	0.073	0.035
1998	0.063	0.07	0.062	0.051	0.058	0.031	0.033	0.019	0.043	0.079	0.037
1999	0.069	0.081	0.072	0.053	0.061	0.033	0.038	0.022	0.059	0.065	0.043
2000	0.062	0.082	0.066	0.076	0.051	0.035	0.039	0.022	0.062	0.069	0.045
2001	0.072	0.08	0.057	0.066	0.043	0.036	0.04	0.023	0.059	0.084	0.046
2002	0.058	0.074	0.07	0.06	0.044	0.032	0.041	0.024	0.061	0.071	0.045
2003	0.061	0.074	0.058	0.072	0.043	0.032	0.043	0.027	0.061	0.077	0.047
2004	0.07	0.081	0.063	0.088	0.048	0.035	0.049	0.027	0.062	0.084	0.050
2005	0.047	0.079	0.061	0.033	0.054	0.032	0.05	0.028	0.059	0.08	0.048
2006	0.043	0.069	0.064	0.029	0.045	0.03	0.047	0.026	0.055	0.072	0.045
2007	0.035	0.064	0.055	0.051	0.045	0.031	0.045	0.026	0.047	0.067	0.043
2008	0.036	0.059	0.056	0.048	0.05	0.032	0.047	0.028	0.047	0.066	0.044

Figure 2: Average trade costs for exports to USA, Australia, Chile and Brazil, 1990-2008. Indonesia, Malaysia, Philippines, Singapore, and Thailand.

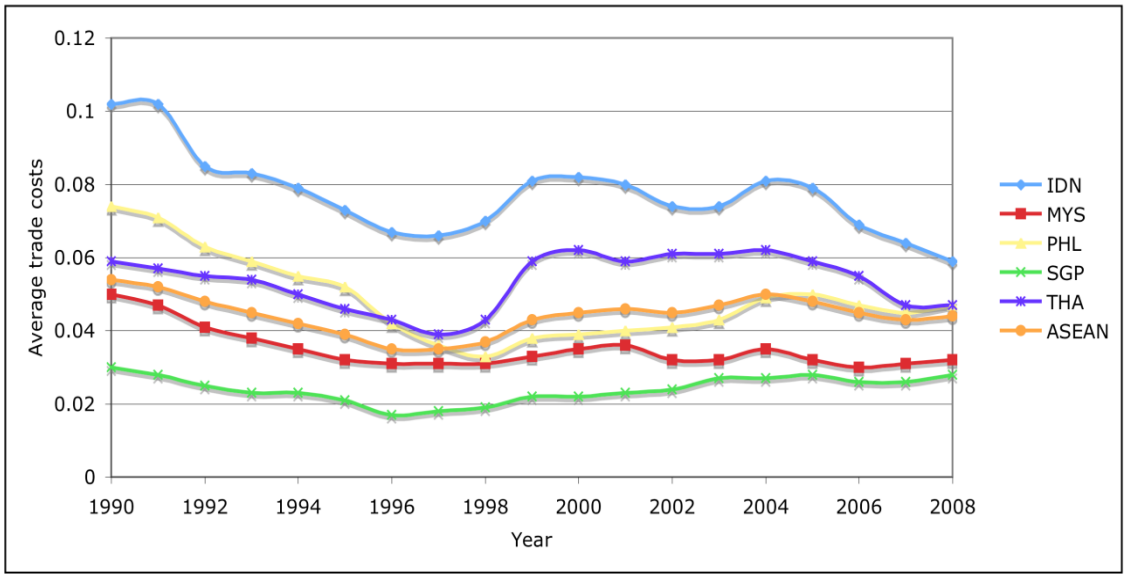
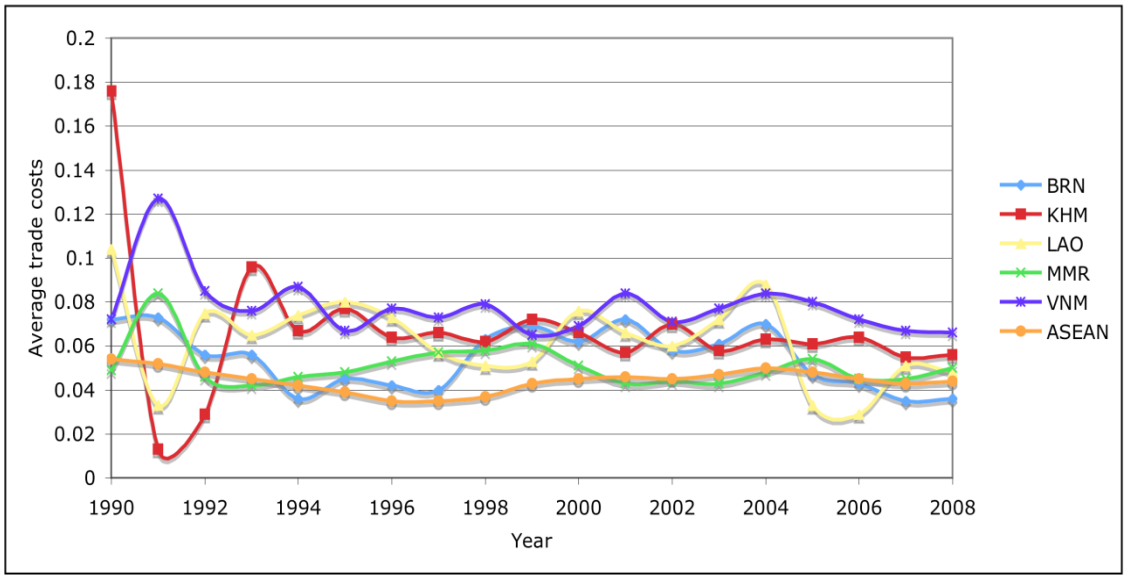


Figure 3: Average trade costs for exports to USA, Australia, Chile and Brazil, 1990-2008. Brunei, Cambodia, Lao PDR, Myanmar, Viet Nam.



3. Why Do Trade Costs Vary? Econometric Analysis of Trade Cost Determination

In this section we analyze econometrically the determinants of ad valorem trade costs. There are many factors contributing to the level of ad valorem trade costs. Our modeling strategy follows earlier studies in that we model trade costs as a function of exogenous factors such as distance or landlockedness and endogenous factors such as trade volumes and institutional variables that are directly thought to influence trade costs.[2] For ASEAN member countries for 2008 we estimate trade cost functions based on the following:

$$\left((cif - fob)/fob\right)_{ij}^{k} = f\left(dist_{ij}, imports_{ij}, VW_{ij}^{k}, llock_{i}, institutions_{i}\right) \quad (1)$$

in which ad valorem trade costs $\left((cif - fob)/fob\right)_{ij}^{k}$ for commodity *k* from country *i* to country *j* depend on the distance between the two countries $\left(dist_{ij}\right)$, a dummy for landlocked exporting countries to proxy added border crossings $\left(llock_{i}\right)$, the value to weight ratio for commodity *k* from exporting country *i* to importing country *j* $\left(VW_{ij}^{k} = cif \text{ value divided by weight in kilograms}\right)$ since for a given weight, a higher value good will have lower ad valorem trade costs, *total* bilateral imports from the exporting country to the importing country $\left(imports_{ij}\right)$ to capture scale effects, and measures of either institutional quality or indicators capturing trade facilitation measures in the exporting country.

We use three measures of general institution or infrastructure quality aimed at capturing any trade-enabling or trade-cost-reducing factors present in the exporting country. The first measure is the Enabling Trade Index (ETI) from the World Economic Forum. The ETI is designed to measure the "institutions, policies, and services facilitating the free flow of goods over borders and to final destinations".[3] The index is composed of four

[2] For example, Korinek and Sourdin (2009), Sourdin and Pomfret (2009), Clark, Dollar and Micco (2004), Fink, Mattoo and Neagu (2002), Wilmsmeier and Hoffmann (2008), Hummels (2007), Hummels, Lygovysky and Skiba (2009), Micco and Perez (2002), Mirza and Habib (2009), Moreira, Volpe and Blyde (2008) and Wilmsmeier, Hoffmann and Sanchez (2006).

[3] *The Global Enabling Trade Report* 2009, World Economic Forum. Of the importing countries, Australia ranks 14th overall, USA 16th, Chile 19th and Brazil 87th out of the 121 countries included in the survey. For the ASEAN economies, Singapore ranks 1st place overall followed by Malaysia (28), Thailand (50), Indonesia

subindexes to capture the main enablers of trade; (1) market access, (2) border administration, (3) transport and communications infrastructure, and (4) the business environment. We use the 2009 index which is the latest available and relates to the year 2008. A higher value of the index indicates higher quality trade enabling measures in place and therefore we expect a negative relationship between the ETI and ad valorem trade costs.

The second institutional variable we use is a measure of overall infrastructure quality from the World Economic Forum's *Global Competitiveness Report*. The infrastructure index is one of the components of the Global Competitiveness Index and is made up of indexes relating to the quality of port infrastructure, telephony, electricity supply, air transport infrastructure, roads and railroad infrastructure.[4] A higher index is indicative of higher quality infrastructure and we therefore expect a negative relationship between ad valorem trade costs and the infrastructure quality index.

The third measure is the Corruptions Perceptions Index from Transparency International which indicates the degree of public sector corruption as perceived by the business community and country analysts.[5] This index is measured on a scale from 0 – 10, with a higher number indicating less corruption.

For 2008, we rank the ASEAN countries according to the level of average ad valorem trade costs for sea and air and by each of the indexes outlined above. Tables 3 and 4 report the rankings for ASEAN-6 countries for air and sea freighted exports respectively. Spearman rank correlation tests for airfreighted goods confirm that the rankings are not independent and are statistically significant for all ranking pairs except for the CPI ranking. On the other hand, for sea-transported goods, the rankings are statistically independent only for the CPI – trade costs pair of rankings. [6]

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(62), Philippines (82), Viet Nam (89) and Cambodia (91). Laos, Myanmar and Brunei were not included in the survey and therefore not included in the econometric analysis.

[4] Of the ASEAN countries, Singapore ranks 2nd overall, Malaysia (19), Thailand (35), Brunei (39), Cambodia (82), Philippines (94), Indonesia (96) and Viet Nam (98). Laos and Myanmar were not represented.

[5] Singapore ranks 4th, Thailand (40), Malaysia (47), Viet Nam (121), Indonesia (126), Philippines (141), Laos (151), Cambodia (166) and Myanmar (178).

[6] Results of the tests are available upon request.

Table 3: 2008 Rankings for air freighted goods.

Country	Ad valorem Trade costs	Enabling Trade index	Overall infrastructure	Corruptions Perceptions Index	Air infrastructure
SGP	1	1	1	1	1
MYS	2	2	2	2	2
PHL	3	5	4	6	5
THA	4	3	3	3	3
IDN	5	4	5	5	4
VNM	6	6	6	4	6

Table 4: 2008 Rankings for sea freighted goods.

Country	Ad valorem trade costs	Enabling Trade index	Overall infrastructure	Corruptions Perceptions Index	Port infrastructure
SGP	1	1	1	1	1
MYS	2	2	2	2	2
VNM	3	6	8	4	8
THA	4	3	3	3	4
PHL	5	5	6	6	6
IDN	6	4	7	5	7

Table 5 presents regression results using 2008 data for ASEAN countries. Three models are estimated each of which take the different institution/infrastructure variables into consideration. For each model, three different equations are estimated; one which includes the full sample and two models where the sample is split into goods arriving by sea and goods arriving by air.[7] The results show that distance has the expected positive sign and is statistically significant at the one percent level in all specifications, but has a larger impact on goods arriving by air than on sea-shipped imports. The value to weight ratio, which captures the degree of bulkiness of an imported product, is also statistically significant in all equations, but has a larger impact on ad valorem trade costs for goods

[7] The reported data does not include 6-digit product groups which are not traded (zero flows) and as such the omitted trade flows may represent goods whose trade costs are prohibitively high. If this is correct, then our estimates are likely biased downwards.

arriving by sea. The size of bilateral imports is statistically negative in all models, pointing to the presence of scale effects.[8] For a 10 percent rise in bilateral imports, estimated trade costs decrease by between 0.8 and 0.9 percent. This scale effect captures reduced transport costs from higher volumes on a particular route as well as enhanced trade facilitation efforts of important trading partners. The mode of transport, captured by a dummy variable equal to unity for sea and zero for air indicates that sea transport is less expensive than air transport, on average on a per value basis. The differences in coefficient values and in goodness of fit measures (R^2) indicate that not only the level of trade costs but also their determinants differ according to mode of transport.

In columns 1 to 3, we find that the Enabling Trade Index is negatively related to trade costs for seaborne imports but not for airborne imports. This suggests that trade-enabling measures may be better directed toward trade arriving by sea since the vast majority of trade occurs by containerized vessels, and appears to not matter for goods arriving by air. For the models where infrastructural quality is included, there are mixed results. While it matters for seaborne trade, the sign is unexpectedly positive for airborne trade. The simple correlation between *infr* and *log(adval)* is negative suggesting there may be some multicollinearity in the model. Using the Transparency International measure, *cpi*, the quality of institutions matters for seaborne trade but not for airborne, which is in contrast to Sourdin and Pomfret (2009) who found that for all exporters into Australia institutional quality mattered for airborne trade but not seaborne.

[8] It is possible that the volume of imports is endogenous in a trade cost equation since higher trade volumes act to reduce trade and transport costs and higher trade costs reduce the volume of trade. Due to the lack of a suitable instrument we were not able to deal with this potential source of endogeneity bias. In addition, GMM estimation was performed with not appreciable differences in results.

Table 5: Baseline regressions, 2008. Dependent variable: $\text{Log}\left((cif - fob)/fob\right)$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Sea only	**Air only**	**Full sample**	**Sea only**	**Air only**	**Full sample**	**Sea only**	**Air only**	**Full sample**
Log(distance)	0.267***	0.445***	0.345***	0.276***	0.445***	0.350***	0.280***	0.475***	0.357***
	(0.024)	(0.055)	(0.023)	(0.024)	(0.056)	(0.023)	(0.024)	(0.056)	(0.023)
Log(imports)	-0.090***	-0.086***	-0.083***	-0.086***	-0.086***	-0.080***	-0.080***	-0.077***	-0.076***
	(0.005)	(0.007)	(0.005)	(0.005)	(0.007)	(0.005)	(0.005)	(0.007)	(0.005)
Log(val/wgt)	-0.451***	-0.269***	-0.352***	-0.451***	-0.271***	-0.353***	-0.449***	-0.269***	-0.352***
	(0.013)	(0.016)	(0.010)	(0.013)	(0.016)	(0.010)	(0.013)	(0.016)	(0.010)
ETI	-0.078***	0.015	-0.036***						
	(0.011)	(0.015)	(0.009)						
sea			-1.400***			-1.401***			-1.406***
			(0.021)			(0.020)			(0.020)
infr				-0.030***	0.026***	-0.009*			
				(0.006)	(0.009)	(0.005)			
cpi							-0.027***	0.001	-0.014***
							(0.004)	(0.005)	(0.003)
Constant	-2.301***	-3.719***	-2.205***	-2.686***	-3.766***	-2.427***	-2.863***	-4.132***	-2.575***
	(0.284)	(0.564)	(0.264)	(0.284)	(0.567)	(0.265)	(0.280)	(0.570)	(0.262)
R-squared	0.212	0.111	0.306	0.208	0.109	0.304	0.210	0.107	0.304
N	16202	11337	27539	16252	11374	27626	16302	11403	27705

Notes: * p<0.1, ** p<0.05, *** p<0.01. 2008. ASEAN exports to all importers in the sample. All models estimated with product fixed effects. Robust standard errors in parentheses.

We next estimate a model which includes the full sample and control for country and product unobserved heterogeneity, scale captured by imports and bulkiness accounted for by the value to weight ratio. Table 6 reports panel fixed effects regression for the entire panel for 1990-2008. Controlling for country-pair-product fixed effects will capture any country-pair-product related characteristic – the fact that a particular country-pair-product combination will be unique. The estimating equation includes as explanatory variables the value/weight ratio of each commodity and the total exports of each country to the importing country, as well as year fixed effects. The negative and statistically significant time dummies in Table 6 indicate the declining trade costs associated on average with exports to the USA, Australia, Chile and Brazil over the period 1990-2008. In general, the year dummy coefficients are becoming more negative over time which is evidence that ad valorem trade costs on average are decreasing over time.

Table 6: Panel Regressions,1990-2008: Dependent variable: $\text{Log}((cif - fob)/fob)$

	sea	air	all
Log(value/weight)	-0.383***	-0.266***	-0.315***
	(0.001)	(0.001)	(0.000)
Log(imports)	-0.057***	-0.062***	-0.069***
	(0.000)	(0.000)	(0.000)
1991	0.003	0.020***	0.010***
	(0.003)	(0.003)	(0.002)
1992	-0.026***	0.016***	-0.008***
	(0.003)	(0.003)	(0.002)
1993	-0.058***	-0.009***	-0.033***
	(0.003)	(0.003)	(0.002)
1994	-0.071***	-0.003	-0.036***
	(0.003)	(0.003)	(0.002)
1995	-0.085***	0.013***	-0.034***
	(0.003)	(0.003)	(0.002)
1996	-0.147***	-0.070***	-0.110***
	(0.003)	(0.003)	(0.002)
1997	-0.185***	-0.075***	-0.127***
	(0.003)	(0.003)	(0.002)
1998	-0.222***	-0.079***	-0.146***
	(0.003)	(0.003)	(0.002)
1999	-0.240***	-0.085***	-0.157***
	(0.003)	(0.003)	(0.002)
2000	-0.222***	-0.120***	-0.165***
	(0.003)	(0.003)	(0.002)
2001	-0.228***	-0.122***	-0.168***
	(0.003)	(0.003)	(0.002)
2002	-0.294***	-0.098***	-0.189***
	(0.003)	(0.003)	(0.002)
2003	-0.297***	-0.047***	-0.165***
	(0.003)	(0.003)	(0.002)
2004	-0.250***	-0.033***	-0.133***
	(0.003)	(0.003)	(0.002)
2005	-0.213***	-0.023***	-0.110***
	(0.003)	(0.003)	(0.002)
2006	-0.255***	-0.020***	-0.129***
	(0.003)	(0.003)	(0.002)
2007	-0.271***	0.055***	-0.098***
	(0.003)	(0.003)	(0.002)
2008	-0.242***	0.128***	-0.045***
	(0.003)	(0.003)	(0.002)
sea			-1.145***
			(0.001)
Constant	-1.500***	-0.910***	-0.512***
	(0.004)	(0.004)	(0.003)
R-squared	0.036	-0.047	0.226
N	3006474	3059572	6066046

Notes: Full sample 1990-2008. Country pair-product fixed effects. * p<0.1, ** p<0.05, *** p<0.01. Robust standard errors in parentheses.

4. An Index of Trade Costs

In this section we estimate an Index of Trade Costs based on the gap between cif and fob values of ASEAN exports to third countries. In an earlier ERIA paper we set out the case for using such an Index as a measure of trade costs, and reported results for ASEAN countries using Australian import data from 1990 to 2007.[9] The Index indicated variation in trade costs between ASEAN members as well as substantial reduction of trade costs, converging on the lowest cost trader (Singapore) and coinciding with increased attention to trade facilitation in ASEAN during the 1990s. Australia is a useful benchmark for ASEAN countries because it is a large trading partner whose major ports of entry are roughly equidistant from the ASEAN countries, but reliance on a single country as a benchmark raises a question of whether features specific to that country's trade with ASEAN countries influence the results.

The aim of the present section is to establish whether biases arise from using Australian data, and to refine the measure further. We extend the earlier Index by including Australian data for 2008, and additionally include results based on imports into the USA, Chile and Brazil. Our data spans 1990-2008 for imports arriving by both air and sea and contain more than 8 million observations. The Index, based on the total import data described earlier, is calculated by regressing ad valorem trade costs on year and commodity-country-pair dummies and weight/value. This approach allows us to control for changes in trade composition over time. We refine the measure further by performing this calculation for each importing country individually and pooled and for each ASEAN member country for air and sea freighted goods and then weight the resulting predicted values by ASEAN countries' exports. These resulting adjusted predicted ad valorem trade costs are then converted to an index where we use Singapore 2008 as the benchmark of best practice (i.e. Singapore 2008 Index = 100).

[9] Patricia Sourdin and Richard Pomfret **Monitoring Trade Costs in Southeast Asia** *ERIA Discussion Paper Series ERIA-DP-2009-12***,** April 2009**.**

Table A3 reproduces the Index using **Australian** data.[10] For the five founder members of ASEAN there is a clear pattern of falling trade costs over the period 1990-2008, with convergence towards the least-cost country, Singapore (Figure A2), although relative to Singapore in 2008 the Philippines exhibits a level that is significantly higher than the rest. The ranking among the ASEAN5 differs slightly by mode, with Indonesia and Philippines having the highest costs for both air and maritime transport and Malaysia jumping to first-ranked for air freight. Surprisingly, after very high and volatile levels in the 1990s, the index for Vietnam exhibits relatively low levels in 2008. Generally, air trade costs are more volatile than maritime trade costs and they have a very high level initially relative to Singapore 2008. They eventually settle down but remain significantly higher than the reference period. The Index was unable to be calculated for the newer, smaller ASEAN members, Brunei, Laos and Myanmar, which reflects the disadvantage of smaller datasets and fewer trade flows.

Table A4 reports the Index using **US** data for 1990-2008. The trade flows are largest in the US dataset and, apart from Myanmar, this is reflected in more plausible Index numbers for the other nine ASEAN countries as well as being able to calculate an index for the smaller nations. For Brunei, Cambodia and Vietnam the Index is volatile in the 1990s when trade with the USA was low, but it indicates a steady and substantial reduction in trade costs by both modes after the turn of the century when larger and more stable trade links become established.[11] For airborne freight the ASEAN5 the US-based Index gives similar results to those reported above. Singapore has the lowest trade costs, followed by Malaysia, while Indonesia has the highest trade costs and Thai and Philippine trade costs lie between those of Malaysia and Indonesia (Figure A3).

Table A5 reports the Index using **Chilean** data for 1990-2008. The results for some ASEAN members are extremely high and volatile, (e.g. costs for Indonesia in the early 90s associated with exporting by sea and air) and sometimes implausibly

[10] Table A3 is comparable to Appendix Table A2 in our earlier paper, apart from that the base is now 2008 instead of 2007 and we distinguish between air and sea because the econometric analysis reported in the previous section indicates significant differences in the size and determinants of trade costs according to the mode of transport.

[11] The only exception to this generalization is the Index of Laotian trade costs associated with airborne exports which increases sharply between 2005 and 2008.

low (e.g. the cost of exporting by sea from Thailand, Vietnam and Malaysia are more than half those of Singapore in 2008). Even for the ASEAN5 the Index exhibits larger year-on-year fluctuations than are desirable in an index of the ASEAN countries trade costs (Figure A4).

Table A6 reports the Index using **Brazilian** data for 1990-2008. For the smaller ASEAN countries (Cambodia, Laos and Myanmar) the problem of too few observations is pronounced as seen earlier. For the ASEAN5, however, the Brazil-based Index presents a similar picture to the Australia-based Index, especially after the mid-1990s when Brazil's outward-oriented economic reforms became firmly-entrenched and Brazil emerged as one of the fast-growing large economies (BRICs). For the ASEAN5 as a group the variance is much smaller in the 2000s than in the 1990s (Figure A5).

Two conclusions emerge from the above results. First, because reported cif-fob gaps on individual transactions contain much "noise" from misreporting or idiosyncratic features, the Index for an individual ASEAN country becomes more useful when based on a larger number of observations in each commodity category. The Index numbers for the five more recent members are less firmly based than those for the ASEAN5, but they are becoming more useful as trade of the smaller ASEAN countries increases and are more reliable guides post-2000 than before 2000 and for Vietnam than for Cambodia, Laos or Myanmar. Second, in selecting an appropriate importing country, there is little choice because few countries collect the required data and the trade flows of even a mid-sized trading nation such as Chile appear to be too small for our purposes.

An alternative approach to using individual importing country data is to pool the over eight million observations in our dataset.[12] Table 7a and 7b present the Index of trade costs for air and sea freight with Singapore 2008 as the base. The values indicate the falling trend of trade costs in ASEAN countries by both transport modes (apart from air freight from Cambodia and Laos), which can be seen as convergence to regional best practice, represented by Singapore. The pattern is clearest for the five original ASEAN members (Figures 4a and 5a) and for Viet Nam.

[12] An observation is the exports of goods in an HS 6-digit category from a country to one of the four reporting countries. Each observation has equal weight; more US observations enter into the Index and there are fewest Chilean observations.

For the four smaller trading ASEAN nations, the Index is more volatile (Figures 4b and 5b) and less reliable due to the smaller volume of exports for those countries.

Table 7: Index of Trade Costs, adjusted for country and product effects and weight/value (Singapore 2008 = 100).

Table 7a: Import-weighted Sea Freight index

Year	BRN	IDN	KHM	LAO	MMR	MYS	PHL	SGP	THA	VNM
1990	2302	1433	454	700	768	462	540	258	447	555
1991	606	1060		744	1443	381	504	212	447	1723
1992	60	864	517	476	666	347	471	233	401	483
1993	249	904	509	410	523	301	434	257	419	280
1994	201	907	402	536	345	287	402	245	393	689
1995	123	777	829	84	367	295	418	204	355	479
1996	232	692	537	350	462	289	400	174	332	924
1997	155	585	327	299	331	289	355	190	301	481
1998	1714	648	314	187	246	325	373	227	341	593
1999	1865	688	344	244	265	316	384	212	453	402
2000	829	719	308	344	213	337	423	229	437	301
2001	734	557	291	374	318	311	394	177	413	402
2002	367	527	261	368	287	271	377	177	381	320
2003	576	531	252	252	348	281	381	132	398	333
2004	409	615	270	462	461	320	415	129	434	381
2005	347	574	260	413	385	316	411	136	427	383
2006	320	506	256	264	389	285	367	108	385	327
2007	234	480	251	434	255	272	370	114	322	306
2008	39	449	243	341	222	255	398	100	312	302

Table 7b: Import-weighted Air freight index

Year	BRN	IDN	KHM	LAO	MMR	MYS	PHL	SGP	THA	VNM
1990	143	444	439	180		148	191	113	153	159
1991	266	498		162		149	197	115	157	574
1992	141	482	26	353		138	178	109	164	335
1993	172	514	172	119		145	165	115	157	50
1994	122	484	169	295		134	153	106	159	314
1995	260	390	648	457	1446	116	137	104	150	542
1996	237	377	835	314	351	113	130	99	153	520
1997	252	322	325	185	139	112	125	94	156	291
1998	108	215	379	144	12	99	98	97	145	500
1999	370	282	420	233	1	90	99	94	156	454
2000	348	272	386	284	1	88	95	90	155	467
2001	435	241	320	325	36	101	99	88	155	531
2002	377	257	530	298	41	108	114	96	188	505
2003	477	190	529	259	3	101	101	93	158	492
2004	378	255	532	179	23	96	121	94	149	511
2005	408	256	540	48	28	97	119	88	149	462
2006	168	241	459	47	18	90	118	75	147	413
2007	292	247	522	81	37	118	128	84	161	445
2008	130	251	568	455	85	121	143	100	157	418

Notes: Index controls for commodity-country-pair effects (commodity composition) and weight/value. The index is weighted by the value of bilateral ASEAN exports.

Figure 4a: Index of Trade Costs for Air Freight, adjusted for country and product effects, 1990-2008, ASEAN 5 (Singapore 2008=100)

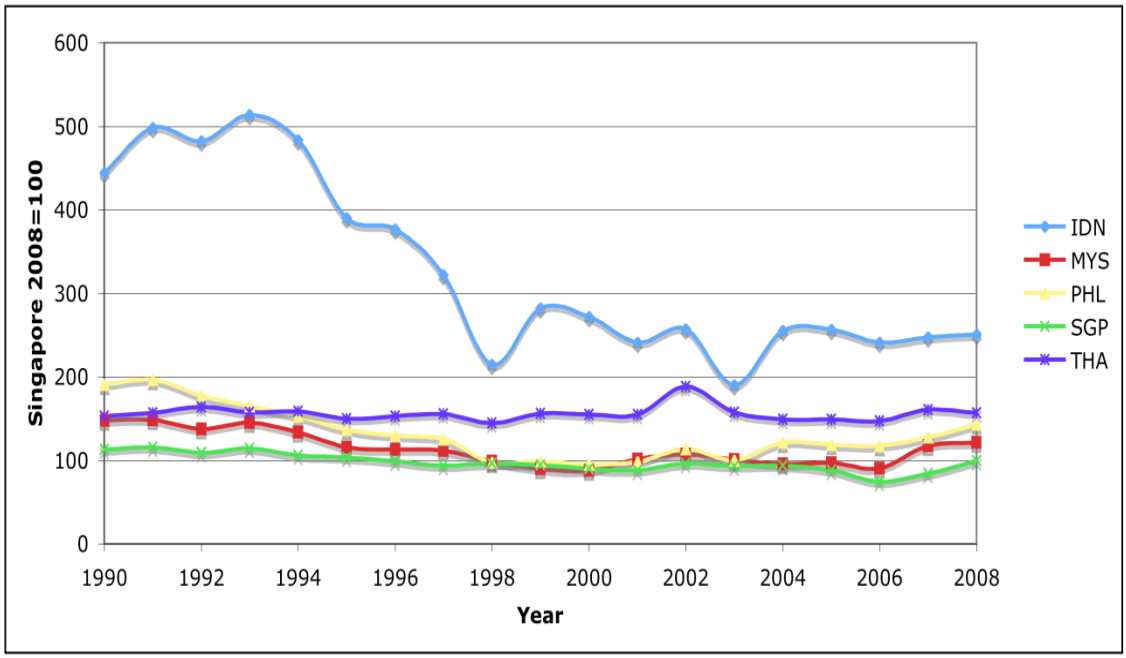


Figure 4b: Index of Trade Costs for Air Freight, adjusted for country and product effects, 1990-2008, CLMV & Brunei (Singapore 2008=100)

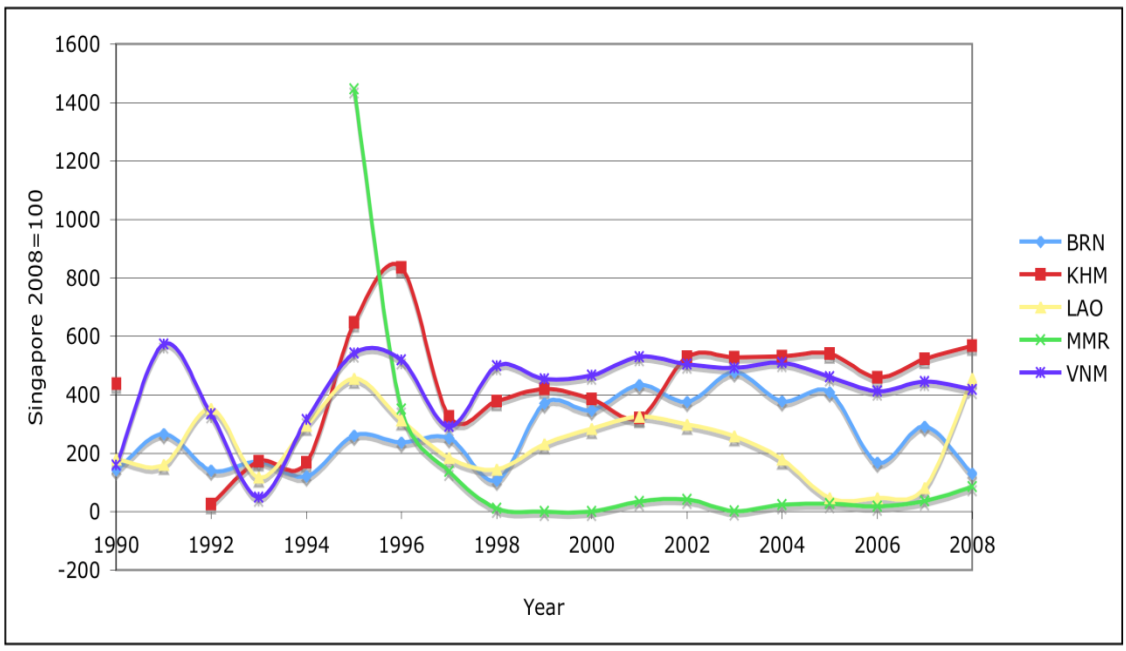


Figure 5a: Index of Trade Costs for Sea Freight, adjusted for country and product effects, 1990-2008, ASEAN 5 (Singapore 2008=100)

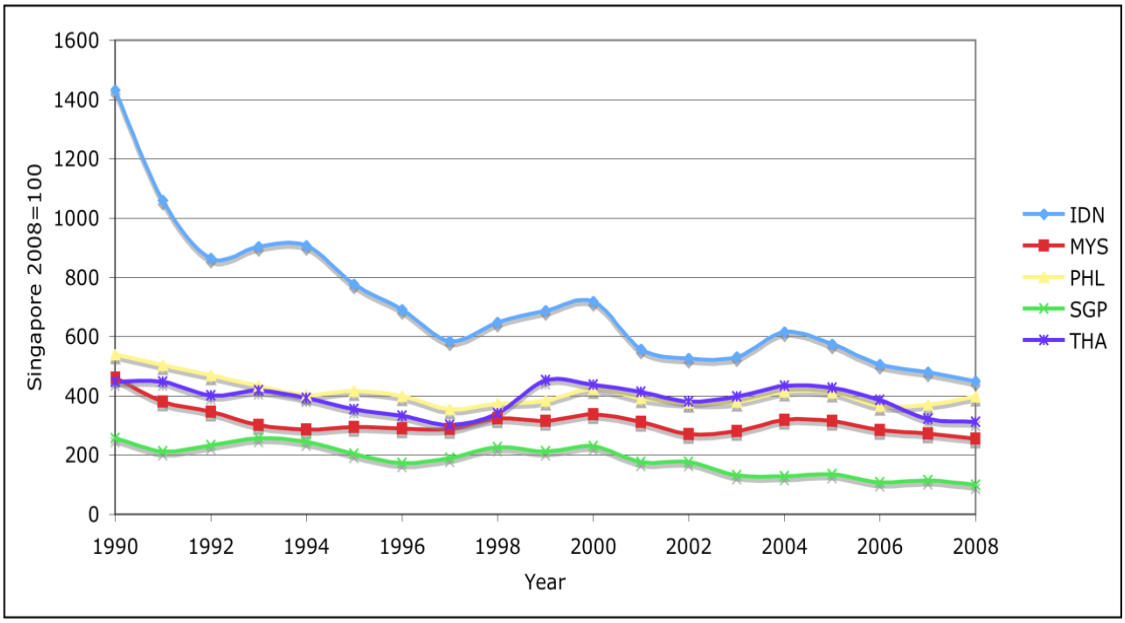
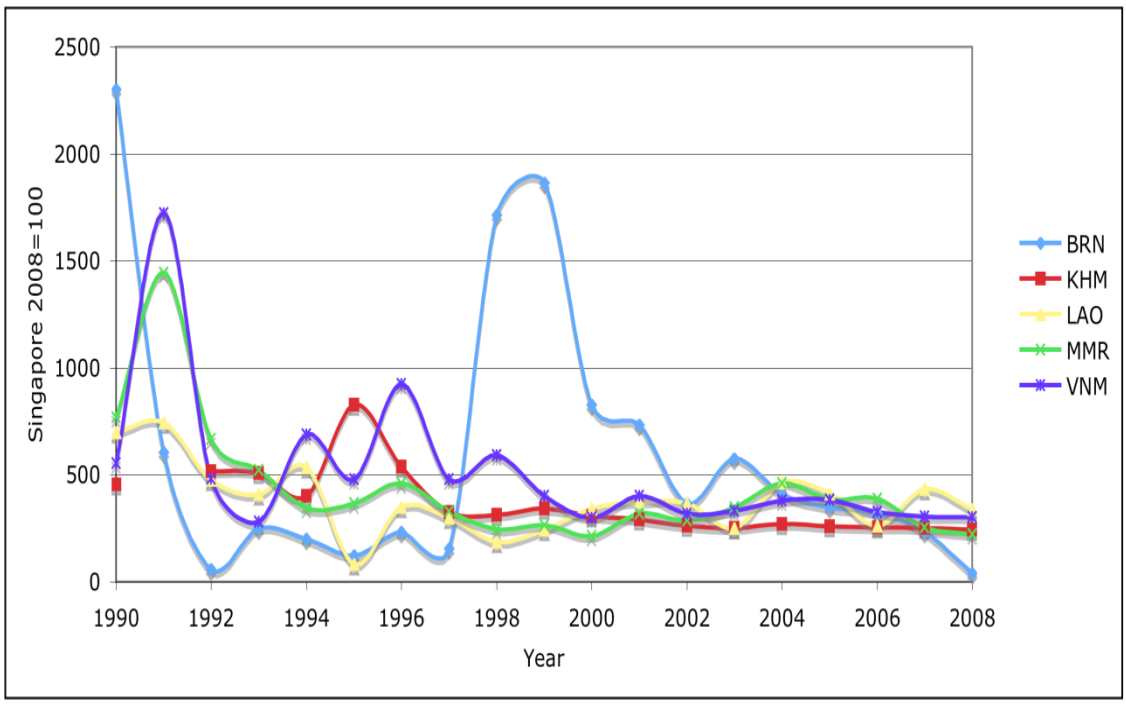


Figure 5b: Index of Trade Costs for Sea Freight, adjusted for country and product effects, 1990-2008, CLMV & Brunei (Singapore 2008=100)



5. The Scorecard Approach and the Index of Trade Costs Compared

At the January 2007 Cebu Summit ASEAN members committed to creating an AEC by 2015. The AEC was given more concrete form in November 2007 with approval of the AEC Blueprint and signing of the ASEAN Charter which enhances the legal status of the AEC. ASEAN members agreed to a Scorecard approach to checking their individual progress in meeting targets and deadlines set out in the Blueprint.

In establishing the AEC, agreements need to be concluded and ratified, institutions must be established, infrastructure put in place, and so forth. Individual member countries must be accountable for completing actions at the appropriate time, and some kind of Scorecard or account-keeping is essential. The Scorecard indicates whether governments have implemented specific measures, such as mutual recognition agreements, or ratified ASEAN decisions. Such legal or administrative decisions are critical to establish a solid foundation for the kind of integration envisaged in the AEC, and the target date of 2015 requires fairly rapid progress.

The broad categories identified in the AEC Blueprint (creating a single market, creating a competitive region, fostering equitable economic development and working towards ASEAN-centrality in external economic relations) provide a reasonable taxonomy for dividing up the Scorecard. To become operational, however, more specific measures must be identified which can checked off as they are completed. Not all measures will be equally important, and they will not be identified with equal precision, introducing some subjectivity in reporting when a measure has actually been fully implemented.

These characteristics define the strengths and weaknesses of the Scorecard approach. A Scorecard provides an essential checklist of measures completed, providing a reminder to countries that are not keeping up. At the same time, if countries become concerned about achieving good scores, there is endless opportunity for disputing the results. Any appearance of a "league table“ is likely to lead to argument especially by countries scoring below average, who can point to the measures they have achieved being the more important ones or can imply that other countries' completion of an action is superficial rather that fully realized.

An overarching problem with the Scorecard approach in the ASEAN context is that it challenges ASEAN traditions of consensus and avoidance of finger-pointing. Publishing a Scorecard, with the inevitable summaries and adding up percentage success rates for each country, is confronting for countries which score below average - as some must. A low score may be the result of very specific implementation failures, even if a country has made substantial progress in trade facilitation, while a relatively high-scoring country may retain practices that are inimical to the AEC concept, but are not on the list of measures to be implemented during the year in question. Because the definition of successful implementation is imprecise for some measures, time will be wasted arguing about the numbers, rather than addressing substantive integration issues.

The Index of Trade Costs developed in the previous sections is complementary to the Scorecard approach. The Index provides a simple indicator of trade costs, which can be used to show progress in trade facilitation and assess proximity to regional or global best practice. As a single measure, it has the political advantage over any aggregate score derived from the Scorecard in that the Index is calculated from an independent external source with little scope for manipulation by national policymakers to improve their country's standing.[13]

6. Policy Implications

The Index of Trade Costs developed in this paper and the Scorecard approach endorsed by ASEAN member countries are complementary. Each has a strength, which can be used in monitoring progress in creating the AEC, but neither is adequate on its own.

The Index of Trade Costs provides a scalar measure of trade costs, which over time indicates success in trade facilitation and can be used to assess proximity to regional or global best practice. It is an excellent, best of its type, simple indicator. However, as with all simple measures it must be treated with care, because the

[13] There is scope for subjectivity in selecting which trading partner to use in calculating cif-fob rations and which factors (distance, commodity composition, and so forth) to control for, but the tables suggest that such design choices will not influence the results greatly.

results vary depending on precisely how commodity composition and so forth are controlled for and on which importing country dataset is used. The econometric analysis in Section 2 indicates the need to distinguish between trade costs associated with different modes of transport, but beyond that the qualitative results about the determinants of trade costs are robust.

The Index measures reported in Section 3 highlight the need for very large datasets in order to produce trustworthy results. Pooling data from all available importing-country sources may be the best way to address this requirement, but that is data-intensive work. For ASEAN purposes our conclusion is that the Australian data are sufficiently plentiful and unbiased to provide a good foundation for an Index of Trade Costs.

The Index has the political advantage of being from an independent source. The currently usable datasets are from Australasia, Latin America and the USA and calculating the Index is a technical exercise. There is, as just mentioned, some variation depending on the choice of data and the specific technique, but the results do not change much. In sum, there is little scope for manipulation by national policymakers to improve their country's standing.

The strength of the Scorecard approach lies in revealing whether governments have implemented specific measures, such as mutual recognition agreements, or ratified ASEAN decisions. Such legal or administrative decisions are critical to establish a solid foundation for the kind of integration envisaged in the AEC, and the target date of 2015 requires fairly rapid progress.

The Scorecard approach is, however, poorly suited to providing a simple measure of progress in implementation. As it stands the four categories identified in the Blueprint, and their sub-categories, provide a reasonable list, but once these are replaced by more specific measures for implementation there is a serious problem of heterogeneity; not all measures are equally important, and some may be reported having been implemented when the action is superficial. Any attempt to synthesize the Scorecard into a single grade, such as 40/67 (or 60% or B+) will be controversial, because no country wants to be below-average. To avoid being below-average countries can focus on scoring easy points or exaggerate their progress on less

concrete measures, but this undermines the whole purpose of a Scorecard as an objective indicator of actions completed.

The Scorecard should be used as a checklist of measures completed, avoiding any appearance of a "league table" and providing a reminder to countries that are not keeping up with the group. This kind of monitoring is essential as ASEAN moves towards creation of the AEC. The Scorecard is, however, not a measure of overall progress in integration. Any confusion could perhaps have been pre-empted by referring to the approach as a Checklist rather than a Scorecard.

It is desirable to have an indicator of which member country provides the benchmark of best practice in reducing trade costs, and of the extent to which other countries are converging towards best practice and of movements in the benchmark. The desire for an aggregate indicator of progress towards integration lies behind the natural instinct to summarize the Scorecard into an aggregate grade, despite the conceptual and political flaws in such aggregation. That is precisely where the Index of Trade Costs is useful. The Index provides an objective measure of progress in trade facilitation, which is a reasonable proxy for economic integration.

Future research in monitoring ASEAN progress in trade facilitation should investigate the role and policy implications of the quality of logistics services since these can be directly influenced by policy. In addition, analysis of the existence of restrictive and anti-competitive practices in the transport services sector and their impact on trade costs for maritime and air services should be an important focus.

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APPENDIX

Table A1: Average trade costs by importing country. Import weighted. 1990-2008.

	USA				BRAZIL				AUSTRALIA				CHILE			
YEAR	**ALL**	**ASEAN**	**AIR**	**SEA**	**ALL**	**ASEAN**	**AIR**	**SEA**	**ALL**	**ASEAN**	**AIR**	**SEA**	**ALL**	**ASEAN**	**AIR**	**SEA**
1990	0.05	0.05	0.04	0.053	0.087	0.181	0.068	0.1	0.08	0.085	0.066	0.086	0.093	0.142	0.087	0.096
1991	0.049	0.048	0.039	0.052	0.092	0.158	0.071	0.105	0.076	0.079	0.058	0.084	0.101	0.098	0.089	0.107
1992	0.045	0.045	0.037	0.048	0.084	0.149	0.064	0.097	0.075	0.073	0.062	0.08	0.096	0.105	0.083	0.101
1993	0.045	0.042	0.036	0.049	0.081	0.086	0.073	0.089	0.073	0.071	0.061	0.077	0.093	0.1	0.08	0.096
1994	0.045	0.04	0.034	0.049	0.074	0.111	0.074	0.079	0.07	0.066	0.058	0.075	0.088	0.104	0.083	0.091
1995	0.044	0.036	0.032	0.05	0.083	0.081	0.104	0.082	0.067	0.058	0.056	0.072	0.086	0.106	0.082	0.089
1996	0.04	0.033	0.029	0.045	0.065	0.074	0.069	0.066	0.066	0.055	0.053	0.071	0.081	0.108	0.082	0.082
1997	0.039	0.032	0.029	0.045	0.061	0.069	0.067	0.063	0.066	0.057	0.054	0.071	0.08	0.101	0.081	0.081
1998	0.042	0.034	0.028	0.049	0.059	0.075	0.059	0.062	0.064	0.057	0.047	0.072	0.083	0.126	0.072	0.084
1999	0.043	0.042	0.028	0.052	0.054	0.074	0.056	0.055	0.056	0.049	0.041	0.063	0.084	0.128	0.067	0.084
2000	0.043	0.043	0.027	0.053	0.055	0.073	0.053	0.057	0.057	0.055	0.04	0.064	0.081	0.135	0.065	0.083
2001	0.043	0.044	0.025	0.052	0.057	0.067	0.052	0.059	0.057	0.06	0.04	0.064	0.085	0.13	0.065	0.085
2002	0.042	0.044	0.029	0.049	0.053	0.059	0.055	0.052	0.051	0.046	0.038	0.056	0.082	0.136	0.065	0.08
2003	0.046	0.045	0.028	0.055	0.053	0.045	0.056	0.051	0.051	0.052	0.037	0.057	0.078	0.108	0.066	0.074
2004	0.048	0.047	0.029	0.056	0.058	0.062	0.058	0.057	0.055	0.06	0.04	0.062	0.082	0.136	0.065	0.084
2005	0.046	0.046	0.028	0.054	0.055	0.056	0.054	0.055	0.055	0.054	0.039	0.061	0.075	0.16	0.064	0.075
2006	0.043	0.044	0.026	0.049	0.049	0.048	0.055	0.047	0.051	0.047	0.037	0.057	0.071	0.122	0.063	0.068
2007	0.04	0.042	0.026	0.046	0.05	0.052	0.059	0.048	0.049	0.043	0.036	0.054	0.073	0.129	0.066	0.072
2008	0.038	0.043	0.026	0.043	0.053	0.054	0.065	0.051	0.049	0.042	0.036	0.053	0.078	0.135	0.087	0.076

Figure A1a: Average trade costs, US imports, 1990-2008

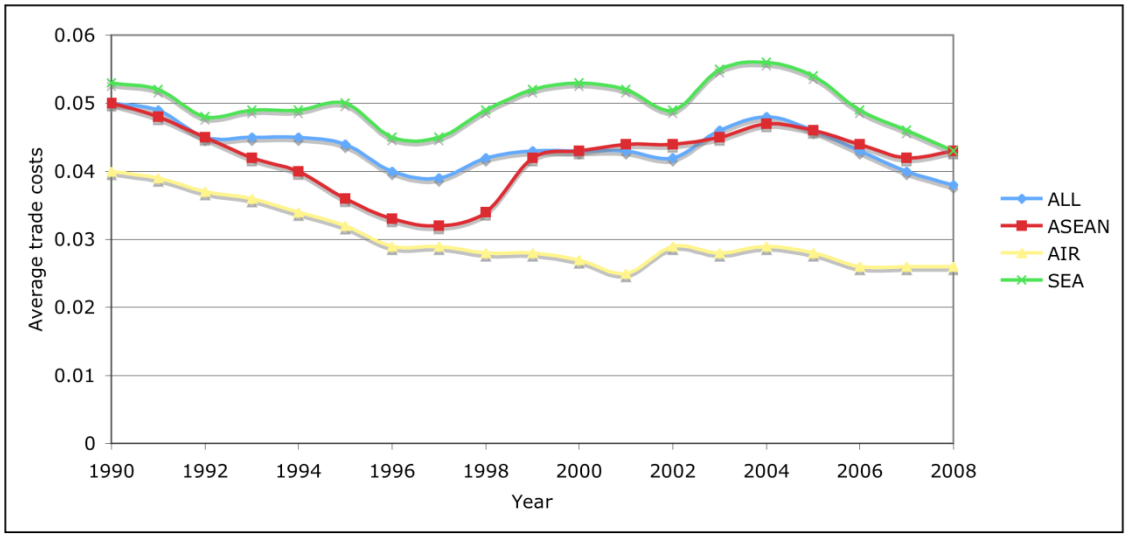

Figure A1b: Average trade costs, Brazil imports, 1990-2008.

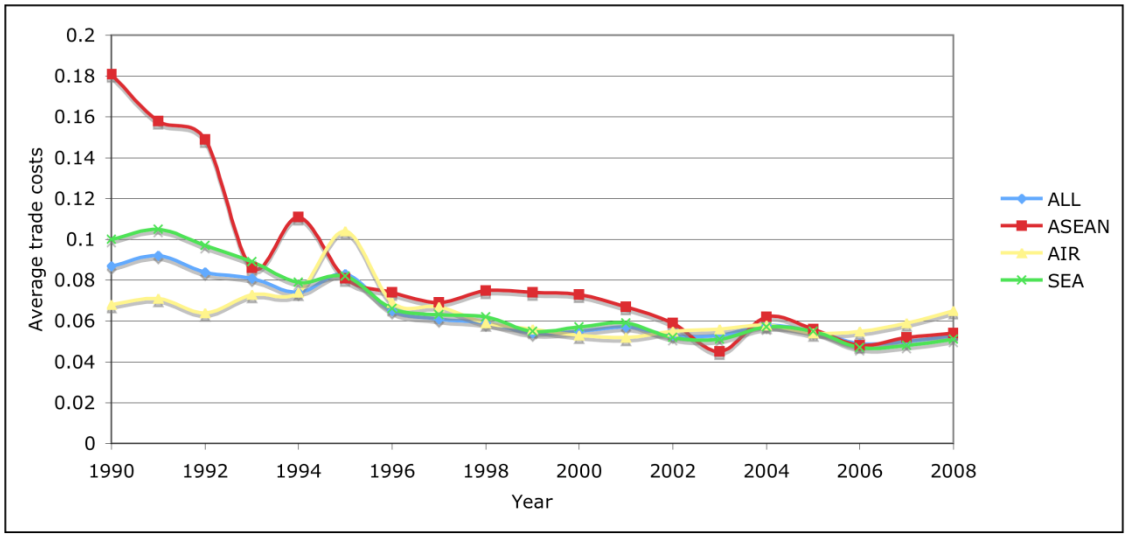

Figure A1c: Average trade costs, Australian imports, 1990-2008

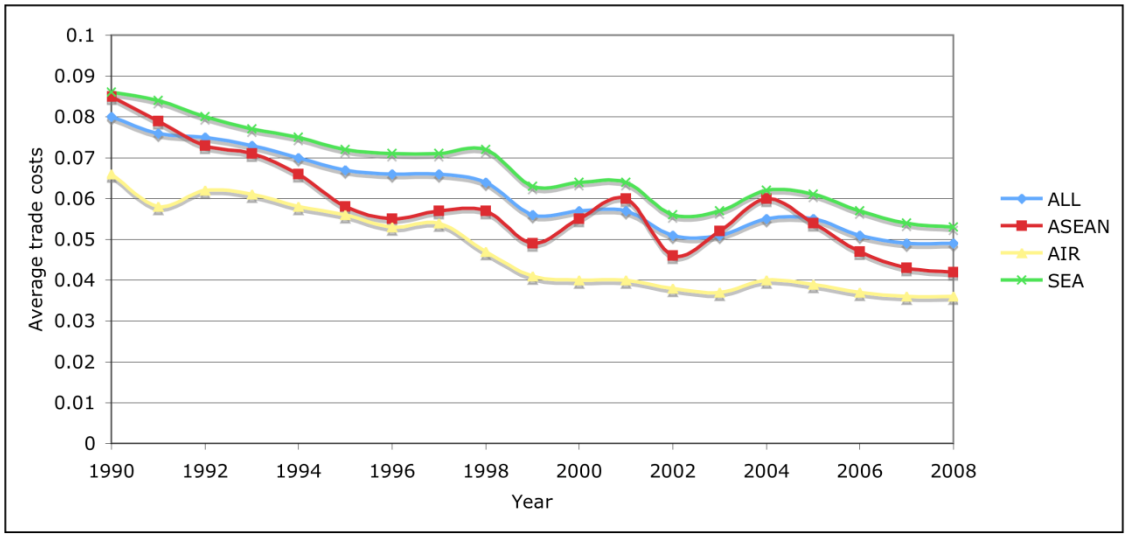

Figure A1d: Average trade costs, Chilean imports, 1990-2008

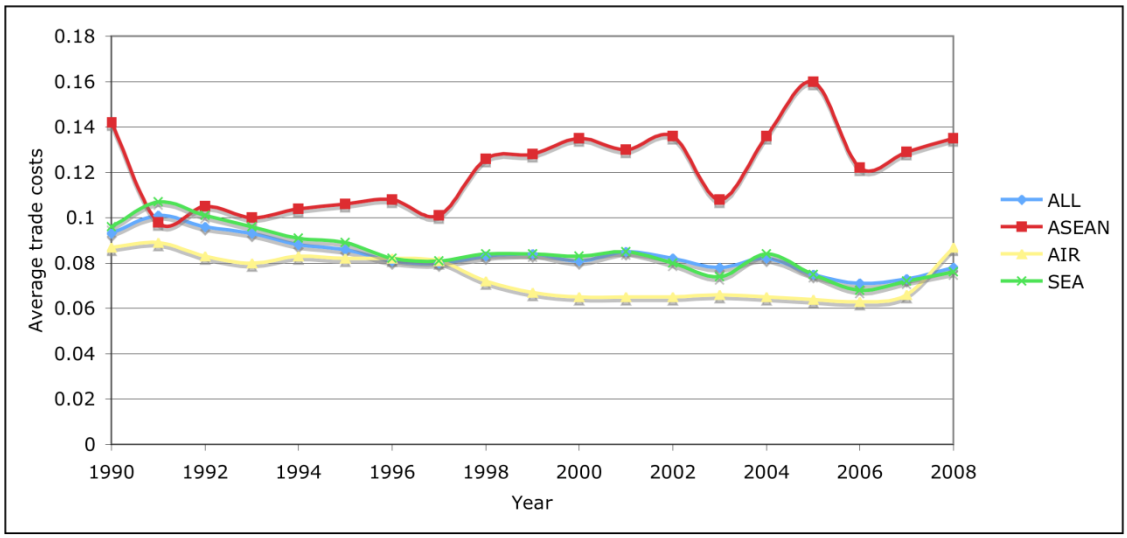

Table A2: Average ad valorem Trade Costs; Selected Asian Economies, 1990-2008

Exporter	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AFG	0.068	0.029	0.053	0.072	0.043	0.059	0.086	0.132	0.059	0.114	0.244	0.080	0.207	0.118	0.010	0.005	0.014	0.030	0.029
BGD	0.104	0.095	0.085	0.077	0.076	0.072	0.060	0.062	0.056	0.072	0.077	0.063	0.072	0.069	0.072	0.072	0.070	0.059	0.064
BRN	0.072	0.073	0.056	0.056	0.036	0.045	0.042	0.040	0.063	0.069	0.062	0.072	0.058	0.061	0.070	0.047	0.043	0.035	0.036
BTN	0.050	0.173	0.053	0.080	0.185	0.118	0.106	0.046	0.077	0.085	0.079	0.095	0.153	0.038	0.060	0.085	0.039	0.030	0.101
CHN	0.074	0.073	0.070	0.071	0.069	0.067	0.059	0.055	0.058	0.074	0.076	0.071	0.067	0.072	0.072	0.069	0.064	0.061	0.058
HKG	0.051	0.051	0.050	0.049	0.050	0.050	0.044	0.042	0.042	0.047	0.048	0.046	0.049	0.051	0.053	0.049	0.045	0.046	0.044
IDN	0.102	0.102	0.085	0.083	0.079	0.073	0.067	0.066	0.070	0.081	0.082	0.080	0.074	0.074	0.081	0.079	0.069	0.064	0.059
IND	0.075	0.076	0.078	0.076	0.071	0.065	0.061	0.057	0.056	0.057	0.060	0.060	0.056	0.057	0.058	0.058	0.055	0.047	0.049
IRN	0.091	0.132	0.117	0.141	0.085	0.083	0.069	0.059	0.074	0.068	0.042	0.045	0.046	0.049	0.037	0.036	0.047	0.038	0.054
IRQ	0.094	0.105		0.514	0.018		0.228	0.109	0.134	0.076	0.066	0.086	0.055	0.071	0.079	0.066	0.056	0.042	0.045
ISR	0.030	0.029	0.027	0.026	0.026	0.024	0.022	0.022	0.021	0.020	0.021	0.018	0.019	0.022	0.023	0.019	0.017	0.017	0.018
JOR	0.101	0.132	0.088	0.145	0.164	0.174	0.125	0.232	0.250	0.060	0.072	0.057	0.062	0.047	0.048	0.043	0.048	0.041	0.041
JPN	0.042	0.042	0.036	0.034	0.032	0.033	0.027	0.028	0.030	0.030	0.031	0.028	0.029	0.030	0.032	0.031	0.031	0.031	0.034
KAZ			0.146	0.068	0.122	0.047	0.055	0.023	0.057	0.051	0.043	0.038	0.042	0.044	0.057	0.059	0.042	0.033	0.030
KGZ			0.059	0.065	0.032	0.023	0.020	0.034	0.064	0.141	0.090	0.045	0.135	0.066	0.060	0.149	0.079	0.082	0.061
KHM	0.176	0.013	0.029	0.096	0.067	0.077	0.064	0.066	0.062	0.072	0.066	0.057	0.070	0.058	0.063	0.061	0.064	0.055	0.056
KOR	0.045	0.045	0.043	0.043	0.041	0.035	0.034	0.035	0.042	0.043	0.039	0.041	0.040	0.040	0.039	0.043	0.043	0.042	0.043
LAO	0.104	0.033	0.075	0.065	0.074	0.080	0.073	0.057	0.051	0.053	0.076	0.066	0.060	0.072	0.088	0.033	0.029	0.051	0.048
LBN	0.042	0.052	0.054	0.061	0.069	0.055	0.050	0.045	0.035	0.056	0.047	0.042	0.083	0.052	0.079	0.071	0.070	0.060	0.045
LKA	0.083	0.085	0.089	0.077	0.075	0.068	0.062	0.058	0.053	0.067	0.072	0.059	0.063	0.066	0.064	0.065	0.065	0.056	0.057
MAC	0.057	0.058	0.051	0.052	0.052	0.051	0.046	0.043	0.039	0.050	0.052	0.047	0.062	0.055	0.059	0.057	0.050	0.045	0.045
MDV	0.072	0.059	0.070	0.082	0.089	0.073	0.082	0.090	0.112	0.056	0.065	0.054	0.069	0.038	0.047	0.048	0.420	0.613	0.115
MMR	0.049	0.084	0.046	0.042	0.046	0.048	0.053	0.057	0.058	0.061	0.051	0.043	0.044	0.043	0.048	0.054	0.045	0.045	0.050
MNG	0.059	0.061	0.057	0.089	0.096	0.073	0.078	0.068	0.072	0.102	0.083	0.063	0.063	0.062	0.057	0.063	0.063	0.053	0.046

MYS	0.050	0.047	0.041	0.038	0.035	0.032	0.031	0.031	0.031	0.033	0.035	0.036	0.032	0.032	0.035	0.032	0.030	0.031	0.032
NPL	0.205	0.208	0.225	0.213	0.176	0.134	0.121	0.115	0.105	0.098	0.106	0.091	0.090	0.090	0.097	0.088	0.090	0.087	0.091
PAK	0.078	0.077	0.078	0.078	0.072	0.067	0.065	0.059	0.058	0.075	0.080	0.076	0.077	0.080	0.076	0.075	0.079	0.071	0.067
PHL	0.074	0.071	0.063	0.059	0.055	0.052	0.042	0.036	0.033	0.038	0.039	0.040	0.041	0.043	0.049	0.050	0.047	0.045	0.047
PNG	0.017	0.009	0.013	0.027	0.033	0.032	0.033	0.035	0.041	0.036	0.025	0.034	0.022	0.019	0.018	0.018	0.020	0.015	0.013
PRK	0.097	0.100	0.098	0.090	0.225	0.149	0.084	0.086	0.104	0.097	0.073	0.080	0.070	0.066	0.053	0.077	0.070	0.067	0.069
RUS			0.086	0.066	0.067	0.064	0.057	0.060	0.051	0.040	0.034	0.046	0.050	0.059	0.066	0.061	0.051	0.048	0.046
SGP	0.030	0.028	0.025	0.023	0.023	0.021	0.017	0.018	0.019	0.022	0.022	0.023	0.024	0.027	0.027	0.028	0.026	0.026	0.028
SYR	0.097	0.097	0.093	0.116	0.122	0.172	0.082	0.084	0.060	0.066	0.075	0.056	0.082	0.091	0.110	0.088	0.074	0.078	0.064
THA	0.059	0.057	0.055	0.054	0.050	0.046	0.043	0.039	0.043	0.059	0.062	0.059	0.061	0.061	0.062	0.059	0.055	0.047	0.047
TJK			0.054	0.053	0.040	0.033	0.052	0.026	0.019	0.039	0.064	0.059	0.117	0.053	0.037	0.033	0.024	0.056	0.023
TUR	0.081	0.074	0.070	0.074	0.078	0.073	0.062	0.063	0.055	0.053	0.067	0.068	0.071	0.073	0.079	0.080	0.077	0.065	0.069
TWN	0.054	0.054	0.051	0.050	0.048	0.044	0.040	0.037	0.040	0.047	0.045	0.044	0.042	0.046	0.048	0.047	0.044	0.043	0.043
UZB			0.007	0.071	0.039	0.031	0.045	0.048	0.040	0.057	0.073	0.058	0.056	0.047	0.022	0.020	0.012	0.005	0.004
VNM	0.072	0.127	0.085	0.076	0.087	0.067	0.077	0.073	0.079	0.065	0.069	0.084	0.071	0.077	0.084	0.080	0.072	0.067	0.066

Notes: Average trade costs for all four importers by exporting partner; import weighted.

Table A3: Index of Trade Costs. Australian imports (Singapore 2008=100).

Table A3a: Sea freight

year	IDN	MYS	PHL	SGP	THA	VNM
1990	878	844	1194	411	1366	2855
1991	635	727	1055	308	1377	2090
1992	559	756	883	364	1024	586
1993	696	933	903	356	1127	383
1994	796	795	827	322	1061	600
1995	642	689	683	261	921	577
1996	561	635	847	205	790	283
1997	595	587	633	267	748	323
1998	675	552	736	340	760	282
1999	642	424	590	291	572	181
2000	659	372	653	299	526	138
2001	449	420	472	226	560	120
2002	385	394	453	201	415	116
2003	479	354	307	180	449	160
2004	551	356	393	196	572	241
2005	400	368	501	175	452	190
2006	345	301	372	128	298	114
2007	337	291	554	133	262	126
2008	339	257	668	100	316	137

Table A3b: Air freight

year	IDN	MYS	PHL	SGP	THA	VNM
1990	2846	2335	688	884	484	2155
1991	2109	1830	3059	859	367	16230
1992	1329	693	1482	841	546	10498
1993	1732	739	1857	628	1259	1333
1994	1893	962	846	443	742	3577
1995	2170	871	1178	316	744	10563
1996	1064	889	601	448	679	4037
1997	842	292	629	380	797	3339
1998	91	174	292	267	986	3199
1999	238	78	252	156	646	952
2000	391	102	223	190	621	615
2001	111	142	163	141	578	478
2002	101	144	106	226	447	363
2003	46	109	134	250	420	302
2004	186	75	90	258	562	211
2005	595	58	112	132	424	198
2006	225	55	308	96	228	199
2007	343	82	502	121	205	263
2008	335	78	761	100	164	108

Notes: include exporter-product effects, value/weight.

Figure A2a: Index of Trade Costs, Sea, ASEAN5 (Australian imports; Singapore 2008=100)

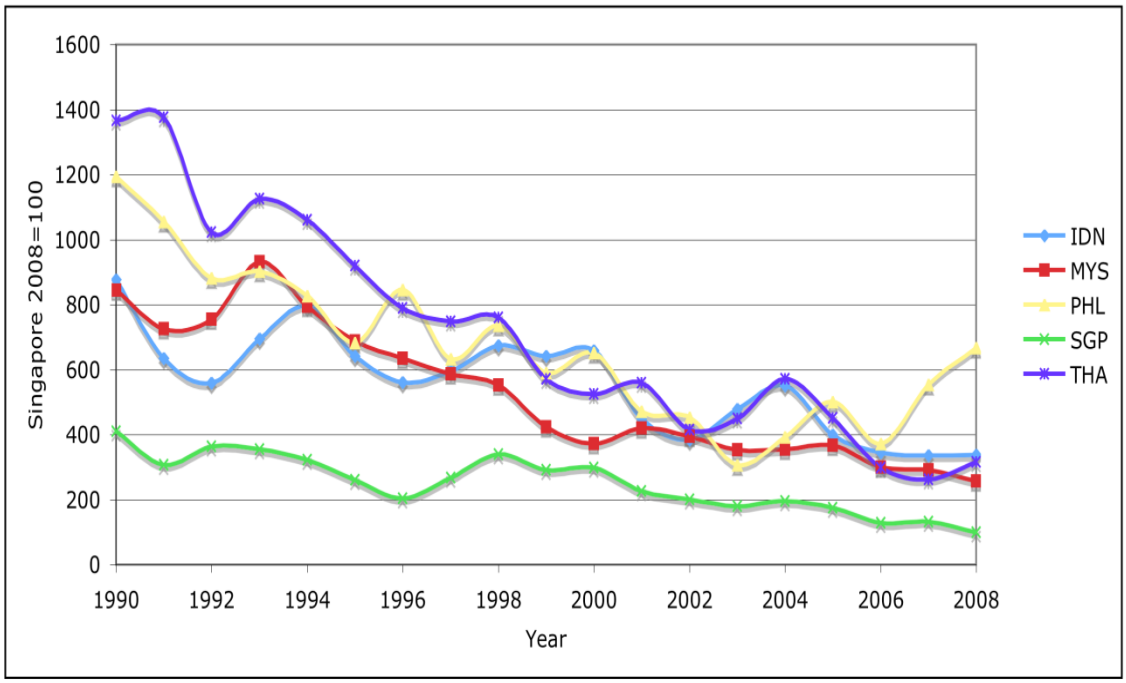

Figure A2b: Index of Trade Costs, Air, ASEAN5 (Australian imports; Singapore 2008=100)

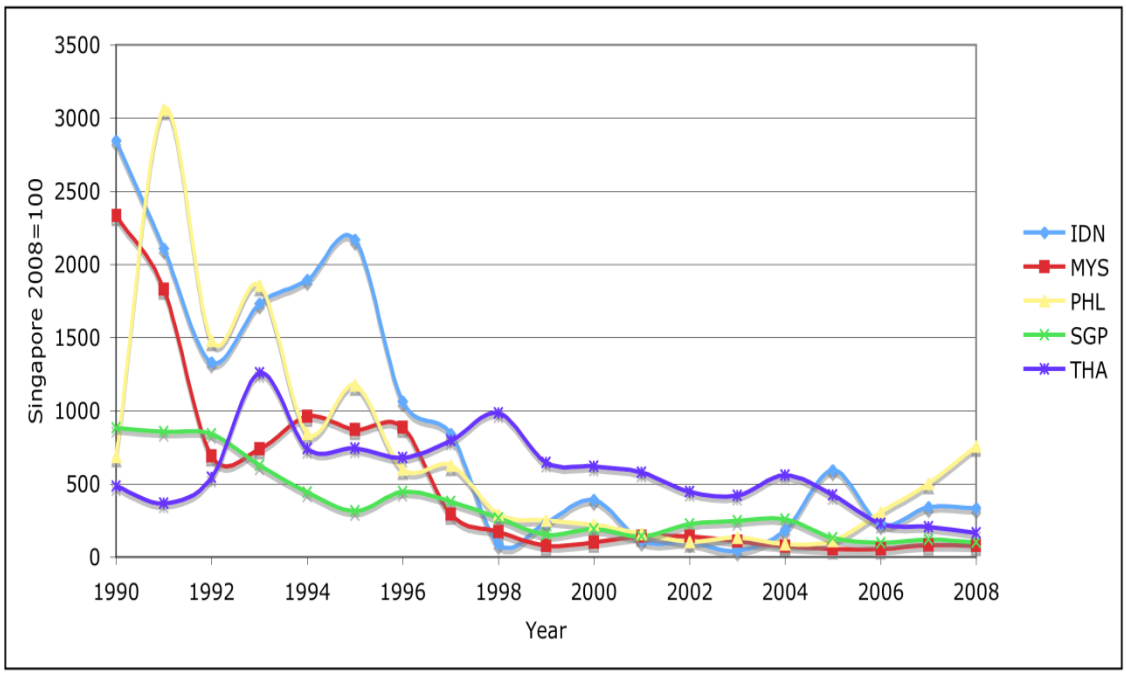

Table A4: Index of Trade Costs. USA imports (Singapore 2008=100).

Table A4a: Sea freight

year	BRN	IDN	KHM	LAO	MYS	PHL	SGP	THA	VNM
1990	2545	672	n/a	403	301	306	162	261	n/a
1991	1521	520	n/a	469	223	290	122	247	n/a
1992	165	428	826	347	195	277	130	229	79
1993	320	416	441	292	173	249	141	232	n/a
1994	122	416	487	328	164	233	145	215	978
1995	111	354	610	47	167	246	127	200	552
1996	136	310	292	211	156	221	105	182	904
1997	96	267	221	218	168	198	117	161	592
1998	1424	304	199	138	198	205	137	191	823
1999	1732	360	229	166	228	235	159	288	740
2000	927	354	199	239	258	256	190	292	547
2001	824	300	191	291	228	242	139	252	627
2002	647	307	174	260	194	241	147	246	348
2003	848	333	171	188	227	255	120	277	310
2004	703	336	180	309	266	266	122	287	325
2005	512	312	172	279	257	259	150	283	333
2006	610	277	169	220	235	228	135	273	302
2007	591	254	168	271	229	223	139	238	252
2008	284	240	153	222	219	231	100	224	238

Table A4b: Air freight

year	BRN	IDN	KHM	LAO	MYS	PHL	SGP	THA	VNM
1990	153	496	557	233	158	219	108	170	n/a
1991	276	463	n/a	182	157	214	120	171	n/a
1992	137	483	44	421	147	198	110	181	n/a
1993	205	479	146	147	153	180	110	166	n/a
1994	139	451	142	312	134	169	105	168	759
1995	294	371	296	587	121	151	101	156	893
1996	253	355	1079	391	116	146	94	150	684
1997	284	339	373	217	116	132	85	153	448
1998	116	312	450	181	99	102	82	140	727
1999	422	332	491	290	97	104	93	171	714
2000	415	290	456	390	96	101	91	167	779
2001	483	289	380	410	108	111	93	161	812
2002	426	328	613	313	119	128	92	208	688
2003	575	306	577	354	107	112	92	172	628
2004	428	294	605	253	102	132	87	158	605
2005	436	268	620	204	105	121	88	155	525
2006	327	282	523	417	90	123	74	153	482
2007	344	265	568	346	122	138	83	167	529
2008	165	269	586	704	118	150	100	162	489

Figure A3a: Index of Trade Costs, Sea, ASEAN5 (USA imports; Singapore 2008=100)

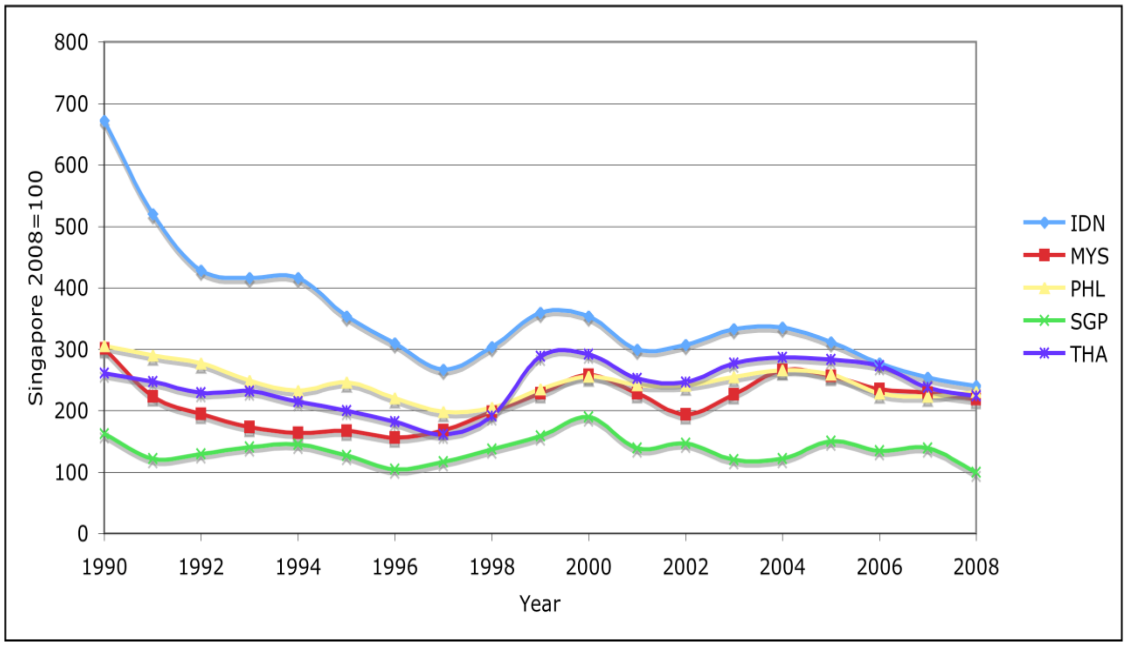

Figure A3b: Index of Trade Costs, Air, ASEAN5 (USA imports; Singapore 2008=100)

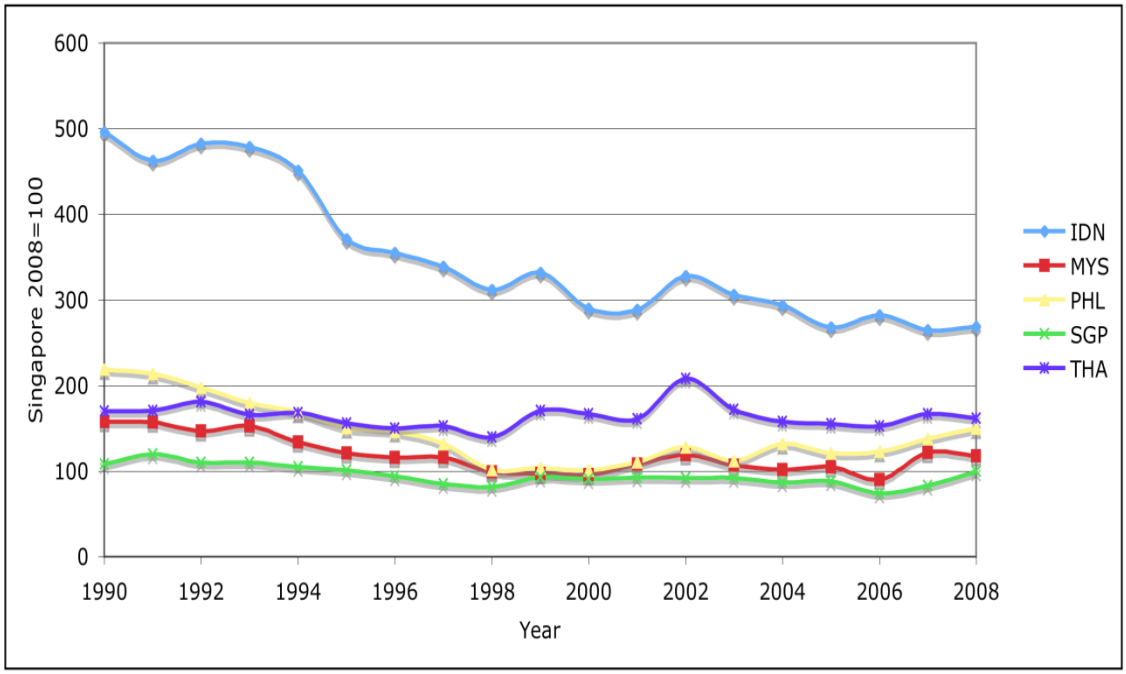

Table A5: Index of Trade Costs. Chilean imports (Singapore 2008=100).

Table A5a: Sea freight

year	IDN	MYS	PHL	SGP	THA	VNM
1990	1036	191	157	107	195	63
1991	454	303	153	81	236	12
1992	313	317	138	70	136	80
1993	197	97	136	76	108	427
1994	224	94	123	118	118	350
1995	434	95	108	65	102	123
1996	387	76	84	60	90	236
1997	364	69	70	55	87	245
1998	428	135	95	103	114	136
1999	621	36	47	44	125	74
2000	1103	46	60	13	74	16
2001	364	23	45	17	92	21
2002	405	117	91	42	109	28
2003	212	76	55	37	119	25
2004	325	30	78	27	95	36
2005	453	94	69	56	71	60
2006	427	68	43	43	80	51
2007	431	38	166	133	64	47
2008	248	42	191	100	33	25

Table A5b: Air freight

year	IDN	MYS	PHL	SGP	THA	VNM
1990	919	478	337	228	385	530
1991	891	410	2213	290	538	687
1992	897	453	1295	216	509	n/a
1993	997	436	666	332	272	200
1994	809	436	507	285	477	118
1995	865	220	422	265	430	66
1996	801	552	256	345	366	823
1997	637	273	227	240	422	578
1998	1023	323	308	203	435	399
1999	280	96	237	174	255	531
2000	444	27	12	23	312	82
2001	420	33	24	15	200	274
2002	221	32	44	32	144	86
2003	210	19	40	40	241	48
2004	13938	9	49	121	175	39
2005	118	11	116	42	128	148
2006	143	12	26	38	92	42
2007	127	11	38	93	148	233
2008	275	19	66	100	195	137

Figure A4a: Index of Trade Costs, Sea, ASEAN5 (Chilean imports; Singapore 2008=100)

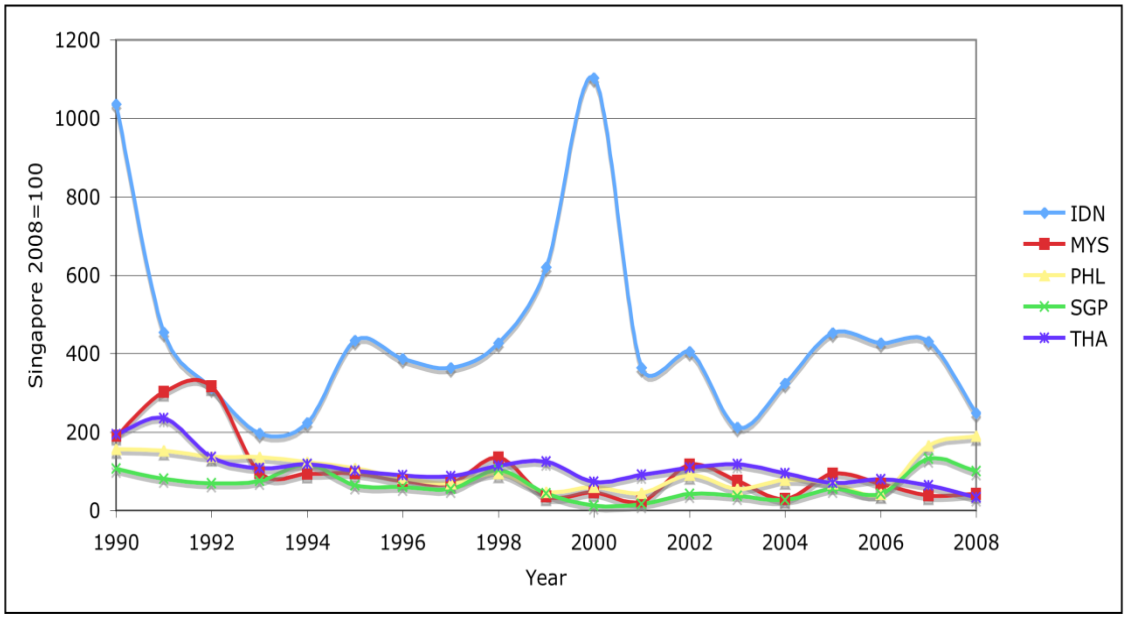

Figure A4b: Index of Trade Costs, Air, ASEAN5 (Chilean imports; Singapore 2008=100)

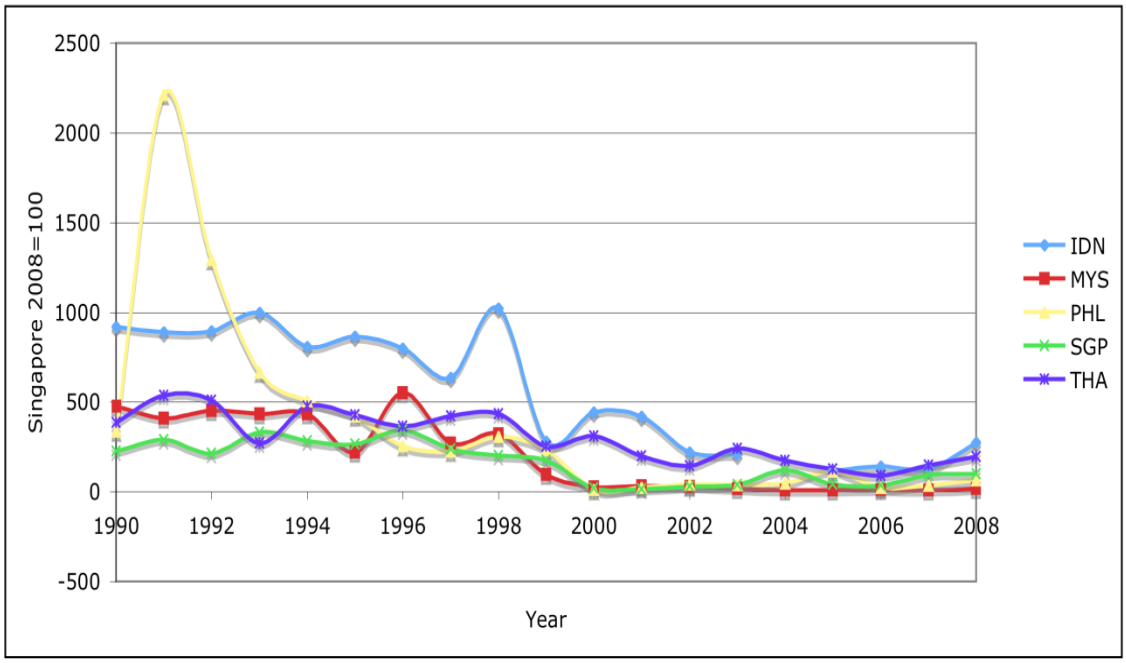

Table A6: Index of Trade Costs. Brazilian imports (Singapore 2008=100).

Table A6a: Sea freight

YEAR	IDN	KHM	LAO	MMR	MYS	PHL	SGP	THA	VNM
1990	267	n/a	n/a	n/a	215	548	72	983	0
1991	301	n/a	n/a	518	278	519	309	450	375
1992	304	n/a	n/a	n/a	172	474	221	191	529
1993	418	n/a	n/a	n/a	114	539	86	107	406
1994	330	121	n/a	n/a	108	424	83	115	376
1995	142	166	n/a	249	118	238	48	82	295
1996	179	112	n/a	331	48	111	22	55	329
1997	172	78	n/a	257	40	144	29	47	261
1998	148	14	n/a	232	49	101	116	114	111
1999	267	118	n/a	21	48	53	48	99	98
2000	231	130	76	20	46	57	51	69	57
2001	192	96	63	89	55	84	54	78	60
2002	136	124	22	15	127	344	106	107	54
2003	102	11	5	57	55	237	112	91	106
2004	175	128	12	116	52	193	44	99	266
2005	136	24	11	104	55	45	100	61	230
2006	100	13	9	80	47	155	79	50	135
2007	99	13	208	136	48	137	68	57	237
2008	88	15	6	97	48	128	100	44	108

Table A6b: Air freight

YEAR	IDN	KHM	LAO	MMR	MYS	PHL	SGP	THA	VNM
1990	507	n/a	n/a	n/a	514	153	438	628	n/a
1991	2288	n/a	n/a	n/a	594	1397	355	710	n/a
1992	2041	n/a	n/a	n/a	423	474	371	271	n/a
1993	2459	n/a	n/a	n/a	636	307	570	435	n/a
1994	2653	n/a	n/a	n/a	513	236	343	487	149
1995	1486	n/a	n/a	n/a	892	264	429	455	1231
1996	543	401	n/a	n/a	433	659	464	1863	714
1997	434	454	n/a	971	117	104	211	248	108
1998	508	205	n/a	238	96	75	171	197	617
1999	612	200	n/a	n/a	108	63	119	217	121
2000	376	198	n/a	79	109	74	150	191	214
2001	396	25	n/a	196	84	72	123	223	268
2002	461	136	132	122	81	35	130	165	165
2003	329	572	202	68	72	30	112	197	218
2004	429	434	310	313	96	43	107	192	269
2005	397	358	730	239	97	62	89	229	233
2006	468	444	157	162	119	73	88	191	296
2007	491	531	161	86	119	68	72	275	495
2008	461	604	166	441	120	65	100	231	469

Figure A5a: Index of Trade Costs, Sea, ASEAN5 (Brazilian imports; Singapore 2008=100).

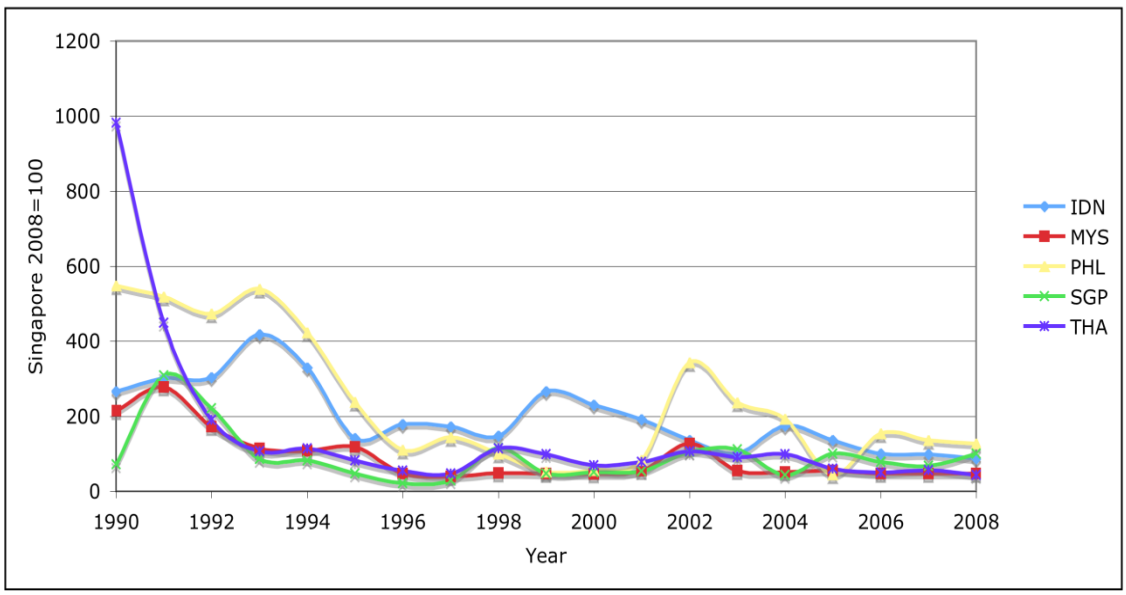

Figure A5b: Index of Trade Costs, Air, ASEAN5 (Brazilian imports; Singapore 2008=100).