

## CHAPTER 3

# Trade Facilitation<sup>1</sup>

CHRISTOPHER FINDLAY

School of Economics, University of Adelaide

*Business surveys show the significance of customs rules and their implementation as a key impediment in regional supply chains. Other policies such as licensing and rules on operations, and lack of transparency generally, also constrain the establishment of new businesses and their operations. These policies and processes add to costs in the supply chain which impedes trade growth, wastes resources, impedes the development of new supply chains and new forms of economic integration and limits participation in regional production networks.*

*The burden of the measures is inequitable: they are often borne by the shippers themselves, limiting their access to the benefits of globalization. Not only the shippers but also the operators can gain from the removal of these impediments.*

*There is a value therefore in reinvigorating the reform program in trade facilitation and logistics in the Asia Pacific. Relevant steps are to reinforce, monitor, benchmark and report on commitments to (a) new customs processes, especially the National Single Windows as a prerequisite to the ASEAN Single Window, (b) a web-based databank of trade regulations that is regularly updated, and (c) streamlined and harmonized procedures, starting with the Customs declaration (or 'SAD') form.*

*It is also recommended to maintain and report a new summary measure of the logistics policy regime in the regime: the 'logistics restrictiveness index' should be calculated for all countries every year. Policy and performance are connected and therefore it is also important to demonstrate this and to illustrate the contribution of reform to the national goals of growth and equity.*

---

<sup>1</sup> This paper was compiled by Christopher Findlay with contributions from Richard Pomfret, Loreli de Dios, Marn Heong Wong, Claire Hollweg and Patricia Sourdin. Responsibility for errors in this paper rests with Findlay.

## **1. Introduction**

A series of recommendations of items to include in the ASEAN Scorecard towards an ASEAN Community are made in this paper. The focus in that work is on trade facilitation.

The next section of the paper discusses the scope of trade facilitation and its treatment in various research methodologies. These studies use empirical methods to infer directly or indirectly the extent of and impact of improvements in trade facilitation. Also important are views of the users of the trading system, and the following section presents data on business assessments of priorities in trade facilitation, drawing on the results of recent surveys in ASEAN. A key element of and contributor to trade facilitation, it is argued in the second section, is the provision of logistics services. Policy applying to logistics in the ASEAN+6 economies is reviewed in section 4 of the paper. Finally, also presented is a new index of trade costs, based on the ratio of cif to fob values of traded goods. The scope to use this ratio as an indicator of performance in trade facilitation is then discussed.

This work provides the basis of series of recommendations for elements of a scorecard on trade facilitation, which covers customs processes and logistics services as well as a number of performance measures.

## **2. Trade Facilitation**

Trade facilitation (TF) has long been the subject of government policy and trade agreements. Several GATT Articles deal with TF issues. TF has also featured in regional trade agreements, most notably in the EU's single market program and establishment of Schengenland. The characteristic of these approaches is to set rules, proscribe certain procedures, advocate best practices and so forth. There was little attempt to quantify progress in TF, and this lacuna has begun to be viewed as an obstacle to future agreements on TF. In 2001, for example, APEC members agreed to

reduce trade costs by five percent over five years, but such TF commitments have little meaning without consensus on how trade costs are measured.

In the economics literature, the 2004 article “Trade Costs” by Anderson and van Wincoop highlighted the magnitude of trade costs. They estimated that in the high-income countries trade costs amount on average to a 170% ad valorem barrier to trade, and that tariffs and non-tariff barriers account for less than a fifth of the at-the-border trade costs. This dramatic figure is, however, based on a broad definition of trade costs: all costs of getting a good to the final user apart from the marginal cost of producing the good itself. Moreover, the empirical base for their results relied on indicative case studies or indirect evidence from gravity models.

An alternative approach, reported in a number of World Bank studies, breaks down trade costs into various components and estimates their impact on trade with a gravity model. Wilson, Mann and Otsuki (2003) use four broad TF indicators, and find that port efficiency has the largest positive effect on trade flows, regulatory barriers deter trade, and customs environment and e-business usage are statistically significant but less important. Simulating a scenario in which Asia-Pacific countries with below average port efficiency improve to half the APEC average, they estimate that intra-APEC trade would increase by \$254 billion a year.

Other studies have identified the direct impact of similar variables on trade costs. Limao and Venables (2001) found a large variation in the cost of shipping a container from Baltimore to different countries, some of which is physically determined (landlocked countries have higher transport costs) but much of it is due to differences in infrastructure, measured by an index based on kilometers of road, paved road and railway per square kilometer and telephone main lines per capita. Clark, Dollar and Micco (2004) came up with similar results for the costs of shipping a container from Latin American countries to the USA, and emphasized the importance of port efficiency. Their principal measure of port efficiency is survey data drawn from the Global Competitiveness Report published by the World Economic Forum. Wilson, Mann and Otsuki (2003) and Wilmsmeier, Hoffmann and Sanchez (2006) use the same source, and Sanchez et al. (2003) use Latin American survey data. Bloningen and Wilson (2008) show that survey data overstate the importance of port efficiency because respondents include other country fixed effects.

Trade costs may be reduced by better logistics or internet connectivity. Devlin and Yee (2005) document the wide variation in logistics costs among the Middle Eastern and North African countries and how they can influence shipping costs, e.g. inefficient trucking services lead to longer stand time on the dockside and costly inventory accumulation as well as reducing export volumes so that there are infrequent shipping services. The World Bank logistics perceptions index provides proxy measures for cross-country variations in logistic quality. There is a literature on the Digital Divide between developed and developing countries and on the positive effect of Internet adoption on economic growth, e.g. Freund and Weinhold (2004) found that internet use had no impact on world trade in 1995 but after 1997 it had an increasing impact.

This literature has enhanced our understanding of variations in trade costs, which clearly depend upon more than distance and the commodity composition of bilateral trade. However, isolating port efficiency, logistics and so forth only provides a partial explanation, and, because the importance of each measure may vary from country to country, any one of these indicators is a poor guide to overall TF across countries. Many studies suggest that a deep determinant of trade costs is institutional quality, which may be proxied by indicators such as the World Bank's *Cost of Doing Business* surveys, Transparency International's *Corruption Perception Index*, the Heritage Foundations *Economic Freedom Index*, and so forth. These tend to be correlated and give similar results, but they are at best indicators rather than measures of trade costs and can provide no more than an ordinal ranking across countries.

Direct measurement of trade costs requires detailed microeconomic evidence. A number of attempts have been made to standardize the results of such studies. Border crossing surveys can be framed by the WCO's time-release methodology, but they cannot capture behind-the-border trade costs. The ESCAP Time/Cost-Distance Methodology has been applied to several transport corridors in Asia, and ESCAP have improved the software which is now available on a disk. JETRO has prepared an 'ASEAN Logistics Map' including surveys of various transport routes, and suggestions for resolving bottlenecks. These detailed studies are useful because, if done properly, they provide firmly based evidence of the time and financial costs of trade. They cannot, however, provide across-the-board information on the level of and changes in trade costs.

At the aggregate level an operational and economically meaningful approach to studying variations in trade costs is to examine the gap between free-on-board (fob) values when a good reaches the port of exit in the exporting country and import values which include cost, insurance and freight (cif). The cif/fob price gap is operationally useful because many national statistical offices have data on fob and cif values at disaggregated levels (Korinek and Sourdin, 2008). It is an economically meaningful measure of the wedge between the cost of producing and moving a good to the exporter's port and the price paid by the importer upon the good's arrival in the destination country. Some of the cif/fob price gap is exogenously determined by geography and the commodity composition of trade (e.g. low value/ weight commodities will have higher transport costs); Pomfret and Sourdin (2008), utilizing cif/fob data for Australian imports at the six-digit HS level, control for commodity fixed effects and geographical determinants of the gap to show that Asian countries' trade costs fell faster than the world average from the mid 1990s until early 2000s. Discussed below is a new and more specific application of this methodology to ASEAN.

The economics literature indicates the importance of trade costs beyond traditionally viewed transport costs and provides insights into why they vary across countries. The potential for TF is large but because TF is multifaceted and the empirical literature recent, it is still difficult to quantify the impact of TF measures. There are trade-offs between focusing on at-the-border and total trade costs and between partial and general measures, with narrower coverage more operational but conceptually incomplete. Table 1 provides a summary of the various approaches.

**Table 1. Taxonomy of Methodologies for Measuring Trade Costs**

	<b>Partial</b>	<b>General</b>
At-the-border	<i>WCO Time Release</i>	<i>cif/fob gap</i>
Total (at and behind the border)	<ul style="list-style-type: none"> <li>• ESCAP/JETRO Time/Cost-Distance</li> <li>• Wilson et al (World Bank)</li> </ul>	<ul style="list-style-type: none"> <li>• Anderson – van Wincoop</li> <li>• Institutions (CDB, TI, HF)</li> </ul>

*Notes:*

- 1) The top row is partial because the measures are based on a narrow definition of trade costs.
- 2) The bottom left cell is partial because the ESCAP method covers specific routes and the Wilson method covers only certain aspects of TF.
- 3) The bottom right cell is the hardest to define and quantify.

### 3. Business Views on Trade Facilitation<sup>2</sup>

Business views on trade facilitation in ASEAN are available from the results of two recent surveys.<sup>3</sup> Respondents for the Business survey consisted of companies from nine priority goods and five priority services sectors that engage in import transactions within ASEAN.<sup>4</sup> Respondents for the Logistics survey were logistics services providers (shippers and freight forwarders), regulatory bodies, and logistics trade associations across ASEAN countries.<sup>5</sup>

Data from the surveys is revisited to ascertain the most important barriers from the viewpoint of survey respondents. The term “barrier” is used here rather than the more neutral “non-tariff measure”, in accordance with the terminology employed by the surveys. Using the WTO definition of trade facilitation (“the simplification and harmonisation of international trade procedures” where trade procedures are the “activities, practices and formalities involved in collecting, presenting, communicating and processing data required for the movement of goods in international trade”), the focus here is on Customs or border regulations and practices.

The aim is to identify priority trade facilitation measures, which will consist of improvements in rules, controls, or arrangements (both formal and informal) governing the movement of goods across borders/Customs. The ultimate goal is to reduce transactions costs and increase efficiency while securing legitimate regulatory objectives.

---

<sup>2</sup> This section is based on an extract from the background paper by de Dios.

<sup>3</sup> These surveys were completed as part of the AADCP-REPSF Project No. 06/001: An Investigation into the Measures affecting the Integration of ASEAN’s Priority Sectors (Phase 2), namely, (1) the Region-wide Business Survey (06/0013e) by Rowena Owen, PT ACNielsen Indonesia, and (2) the Case of Logistics (06/001d) by Robert de Souza, Mark Goh, Sumeet Gupta, and Luo Lei.

<sup>4</sup> In the Business Survey, 757 companies in the goods sector were distributed as follows: agro-based (72), fisheries (47), automotive (102), electronics (134), e-ASEAN (91), healthcare (47), rubber (61), textile and apparel (123), wood-based (79); while the 174 services companies came from e-ASEAN (32), healthcare (19), air travel (37), tourism (41), and logistics (45). In the Logistics Survey, there were 189 respondents.

<sup>5</sup> In the Business Survey, two sets of questionnaires were administered separately but all were asked to rate the seriousness of each barrier that affected them according to a 1-5 scale with 1 for least and 5 for most serious. Weighted average means were used to rank these barriers. In the Logistics Survey, each respondent was asked if a particular barrier exists or not, and to rate the significance of the barrier to free trade using a 6-point scale with 1 for insignificant and 6 for critically significant. Modal rather than mean scores were used as the basis for ranking these barriers.

Customs regulations and procedures are not a type of non-tariff measure under the ASEAN or UNCTAD classification schemes. Only special Customs formalities are a non-tariff measure in the UNCTAD inventory, where they are defined as “formalities which are not clearly related to the administration of any measure applied by the given importing country such as the obligation to submit more detailed product information than normally required on the basis of a customs declaration, the requirement to use specific ports of entry, etc.” ASEAN considers these as technical measures and classifies certain Customs-specific measures under para-tariff measures, e.g. surcharges and decreed Customs valuations.

### **3.1. Key Results**

Summary results of the analysis of the two surveys are presented in the next section. The main conclusion from the analysis of these survey responses is that border procedures continue to be pervasive and critically affect both goods and services businesses across ASEAN.

The procedures themselves are numerous and must be reduced or rationalized or streamlined, a need that has been enunciated for years now, and acted upon only slowly. The ASEAN Single Window program illustrates this difficulty, since national Single Windows still need to be realized in all member countries.<sup>6</sup> The completion of the national Single Window program is a priority.

Aside from the procedures per se, the manner of implementation has transformed certain procedures into formidable barriers, in particular those that allow wide discretion in application. Traders who have more to gain from unofficial payments favor this environment, and Customs personnel benefit privately from the arrangement. The total welfare loss of the community is expected to far exceed these private gains.

This can be addressed through an efficient information system that enables counterchecking of documents and a credible audit system to enforce accountability.

---

<sup>6</sup> Singapore has completed the implementation of its National Single Window (NSW). Malaysia, Philippines, Indonesia, Thailand and Brunei are expected to complete the NSW in 2009. Other ASEAN members are expected to complete by 2012. Pilot projects are underway to test the connections between National Single Windows. [http://www.miti.gov.my/storage/documents/bb6/com.tms.cms.document.Document\\_49a3fec9-c0a81573-84808480-1cdc005c/1/MITI%20WEKLY%20BULLETIN%20\(Vol.%2030\)%2004%20Februari%202009.pdf](http://www.miti.gov.my/storage/documents/bb6/com.tms.cms.document.Document_49a3fec9-c0a81573-84808480-1cdc005c/1/MITI%20WEKLY%20BULLETIN%20(Vol.%2030)%2004%20Februari%202009.pdf).

Content and time can be monitored through such a system, so that valuation and classification errors can be traced, while lengthy procedures examined to establish source of delays. Risks can also be managed and selectivity carried out by machine instead of manual alerts, and goods released automatically after payment, all through a good database and information system.

Transactions times require further study to pinpoint the exact causes and suggest remedies. Since time stamps are usually recorded for each procedure at Customs, this can be monitored regularly and used as target indicators for procedural improvement.

Poor information on border procedures was also cited as a major constraint. Thus another avenue that yields significant benefits is to make information available through the internet, update these as required, and obtain feedback from users. The lack of transparency and absence of accountability reinforce each other. Carrying out all these somewhat obvious solutions nevertheless requires a strong political will of government.

Recommended for the scorecard are a focus on customs services as a contribution to trade facilitation, and in particular, the following 4 points related to Customs procedures:

- a. complete the implementation of the National Single Windows as a prerequisite to the ASEAN Single Window
- b. set up a web-based databank of trade regulations that is regularly updated
- c. streamline and harmonize procedures starting with the Customs declaration (or 'SAD') form (see below for details)
- d. mutually recognize technical standards (see below for details)

A simple numerical measure but summary indicator of performance that should also continue to be monitored is the clearance time through customs (the ASEAN target time is 30 minutes). Generally these data are only available through special surveys but it is recommended here that ASEAN customs authorities collect and report these data themselves (most automated systems already include time stamps for each step that only need to be processed).

### 3.2. Priority Measures

More detailed results of the surveys are presented in this section. Barriers covered by the two surveys include regulations or procedures themselves, too much or a lack of procedure, dissimilarities of rules between countries, and more importantly, their manner of implementation such as imperfect or uneven or non-application of rules, arbitrariness, and malpractice.

Both surveys classified their respective barriers into several categories. For the Business survey, Customs procedures were further classified under sub-categories. That is, the category “Customs procedures” had ten sub-categories roughly corresponding to the steps in the import clearance process, under which individual barriers were classified.

Aggregate results are reported here and sectoral detail is available from de Dios (2009). The barriers were ranked on the basis of incidence (or frequency of occurrence, score out of 100) as well as significance (or impact, score on the scale of 1-5 for the Business Survey and 1-6 for the Logistics Survey). The top-ranked measures will be taken to indicate priorities for trade facilitation.

#### 3.1.1. Goods

Questions about border procedures were asked in both surveys: the Business survey addressed them only to goods sectors respondents while the Logistics survey addressed them to its services respondents.

The ten sub-categories under the Business survey are ranked for each sector in terms of incidence and then significance. The results are shown in Table 2 for all sectors as a whole. The relatively widespread and serious barriers are shown in boldface, using as thresholds the average scores that are given under the column headings.

The Logistics survey results in Table 3 support the findings from the Business survey. Logistics service providers rated as critically significant documentation, inspection, classification, and clearance processes, and facilitation fees as moderately significant. In addition, the lack of border crossing coordination with neighboring Customs offices points to the urgent need for formal arrangements to eliminate this barrier.

**Table 2. Ranking of Border Barriers in the Priority Goods Sectors from the Business Survey**

<b>RANKING BASED ON INCIDENCE</b>	<b>Incidence (45)</b>
<b>Unofficial facilitation fees for clearance or issuance of forms etc</b>	61
<b>Declaration of goods procedures - difficult to understand, numerous documents, long approval time</b>	53
<b>Information on regulations and procedures - not accessible, accurate, up-to-date, clear, or followed</b>	52
<b>Release of goods - difficult, time consuming</b>	51
<b>Selectivity &amp; examination of goods - no risk management system, long examination</b>	50
<b>Refund of duty &amp; access to appeal - complex and difficult processes</b>	45
Valuation of goods - WTO Transaction Value not used, procedure not transparent, declared values not accepted or replaced by reference prices	39
Payment of duties and taxes - Customs assesses differently, payment problems	35
Duty exemption schemes - procedures not transparent, resulting delays	32
Classification of goods - AHTN not used, inconsistent	30
<b>RANKING BASED ON SERIOUSNESS</b>	<b>Seriousness (2.79)</b>
<b>Refund of duty &amp; access to appeal - complex and difficult processes</b>	3.21
<b>Release of goods - difficult, time consuming</b>	3.03
<b>Unofficial facilitation fees for clearance or issuance of forms etc</b>	2.92
<b>Declaration of goods procedures - difficult to understand, numerous documents, long approval time</b>	2.80
<b>Information on regulations and procedures - not accessible, accurate, uptodate, clear, or followed</b>	2.76
<b>Valuation of goods - WTO Transaction Value not used, procedure not transparent, declared values not accepted or replaced by reference prices</b>	2.76
Duty exemption schemes - procedures not transparent, resulting delays	2.74
Payment of duties and taxes - Customs assesses differently, payment problems	2.64
Selectivity & examination of goods - no risk management system, long examination	2.55
Classification of goods - AHTN not used, inconsistent	2.49

**Table 3. Ranking of Border Barriers from the Logistics Survey**

	Incidence (18%)	Significance (3.83)
<b>Time consuming documentation requirements</b>	46	6
<b>Burdensome inspection requirements</b>	23	6
<b>Different classification of goods in different countries</b>	32	6
<b>Lack of border crossing coordination with regional neighbors</b>	19	5
<b>Inefficiency of inbound clearance process</b>	15	5
Arbitrary independent rulings	14	4
Volatility in border traffic	10	4
Multiple uncoordinated offices	12	4
Improper penalties	11	4
Other customs-related barriers	5	4
<b>Malpractices (facilitation fees)</b>	33	4
Limited hours of operations at Customs facilities	25	3
Discriminatory inspection practices, such as preferred treatment for domestic carriers	12	3
Customs department raises fees unilaterally	9	3
Criminal practices	9	3
Regulations that limit foreign firms' ability to provide brokerage services	12	2
Security related delays	20	2
Restriction on weight and value of shipment	20	1

The main observation about the top ranked barriers is that they are implementation practices that can be remedied through administrative decisions within the Customs agency.

- Unofficial facilitation fees affect the majority of respondents and are considered moderately serious in impact. The transaction involves two parties as the fees are both requested and paid for, implying mutual private benefits from the

arrangement to the detriment of the public treasury, a typical principal-agent problem. This practice may be reduced by a streamlining of procedures and an information or data management system that allows the counter-checking of actions of both parties.

- Barriers during goods declaration can be eliminated through a simplification of documentary requirements both in number and content, an information hotline for queries about procedures, or a time limit for the approval of declarations. Regular importers with good track records can be accorded Fast Lane privileges. This also requires an efficient database system.
- Barriers with respect to information on regulations and procedures can be easily removed with the help of the internet, a most effective way of publicizing regulations and procedures, updating them regularly, issuing explanatory notes, correcting inaccuracies, or responding to queries from clients. This is an area that does not require huge expenditures yet yields numerous benefits to users. A properly administered interactive website also allows Customs to receive feedback on its actions that aid its accountability efforts or clarify decisions immediately.
- Barriers during the release of goods such as procedural or signature requirements can be reduced through simplification and an information system that allows automatic release once payment has been received.
- The duty/tax refund process and appeals process are areas that can also be streamlined.
- Selectivity requires a good risk management system with regularly updated risk criteria and machine-implemented selection based on these risk criteria. X-ray equipment can reduce the time spent in examining goods. Manual inspection must be subject to time limits.

With respect to other measures

- The Customs marking requirement is a technical standard that defines the information to be printed on the package such as country of origin, weight, special symbols for dangerous substances, and the like. The objectives are not unreasonable, and can be less of a problem if a simple standard form is made

available to traders that they can attach to their packages. Perhaps a standard ASEAN package label can be agreed upon (recommendation c. above)

- Product characteristic requirements are technical specifications that the product must fulfil, usually for reasons of public health and safety, environmental and wildlife protection, national security, or prevention of deceptive practices. The objectives are again legitimate, and compliance is usually done through certification by an authorized body. The process will be enhanced if certifying bodies across ASEAN are recognized by all members for certificates to be immediately accepted at the border (recommendation d. above).
- The fixed time period for the settlement of import payments is a finance measure that is also within reason, depending on how long or short it actually is in each country. For unrealistically short periods, businesses could meet with finance officials to bargain for flexibility.

### *3.1.2. Services*

The ranking of barriers in the services sector from the Business survey are classified under the pertinent GATS mode of supply to better appreciate their impact. These are mode 1 or cross-border supply (CBS), mode 2 or consumption abroad (CA), mode 3 or commercial presence (CP), and mode 4 or movement of natural persons (MNP). Cross-border supply barriers would be equivalent to border procedures in the goods sector. Consumption abroad does not apply to any of the barriers under consideration. Barriers that were not specific to a single mode were labeled “all”.

The type of services trade barrier from Hoekman and Braga (1997) was also indicated separately, consisting of quantitative restrictions (Q), price-based instruments (P), standards, licensing, and procurement (S), and discriminatory access to distribution networks (D). This typology roughly corresponds to the one for goods.

Table 4 is the summary list of barriers affecting all priority services sectors together, using results from the Business Survey.

**Table 4. Ranking of Border Barriers in the Priority Services Sectors from the Business Survey**

RANKING OF BARRIERS BASED ON INCIDENCE	Mode of supply	Type	Incidence (52%+)	Seriousness
License is required to operate in the market	CP	S	78	3.51
Period of license validity is restricted	CP	S	70	3.31
Quality standards are imposed	all	S	59	3.02
Unofficial facilitation fees are requested for issuance of forms, licenses, etc.	CP	S	57	3.30
Unofficial facilitation fees are paid for issuance of forms, licenses, etc.	CP	S	55	2.95
Laws and regulations are not up to date	All	All	56	3.00
Enforcement of rules and regulations is unpredictable	All	All,	53	3.20
RANKING OF BARRIERS BASED ON SERIOUSNESS	Mode of supply	Type	Incidence	Seriousness (3.37+)
Additional or higher excise tax imposed on products of non-national/non-resident companies	CBS	P	31	3.61
License is required to operate in the market	CP	S	78	3.51
Other financial measures: higher license or user fees for non-resident or foreign companies	CBS	P	34	3.50
Restrictions on temporary intra-firm transfer of tools of the trade	CP	D	29	3.50
Limits on the geographic market or market segments for locally established foreign suppliers	CP	Q	29	3.40
Lengthy visa/work permit procedures	MNP	S	36	3.38
Regulatory decisions are not participatory	all	All	47	3.37

The most common as well as most serious barrier is the operator's licensing requirement. Unofficial fees for the issuance of forms and licenses also affect the majority of respondents together with general barriers such as quality standards, outdated laws and regulations, and unpredictable enforcement. These mainly affect commercial presence, i.e. where the service is supplied through the movement of a commercial organization to the consumer's country of residence.

On the basis of seriousness, the top barriers relate to all modes of supply and are of varied types, led by high excise taxes on products of non-residents and user fees charged to non-residents which affect cross-border supply. These are price based policies.

Restrictions on the intra-firm transfer of tools of trade and limits to the geographic market for locally established foreign suppliers both relate to commercial presence. Lengthy visa/work permit procedures restrain the movement of natural persons. Non-participatory decision-making on regulations affects all modes of supply.

The Logistics survey covered a wider range of questions relative to the Business survey, to include Customs procedures, which affect the capacity of logistics providers to supply their services. The results presented in Table 5 underscore the importance of such border procedures, as they outweighed the other types of barriers in terms of incidence and significance.

In summary, Customs procedures turned out to be the most pervasive as well as critically significant, in particular, time consuming document requirements. Most of the significant barriers restrict cross-border supply and take place at Customs, notably burdensome inspection, varying classification systems, lack of border crossing coordination with regional neighbours, inefficiency of inbound clearance processes, aside from the absence of adequate warehouse and specialized storage facilities. Barriers to commercial presence follow as the next most significant, such as limits on equipment usage by road transport operators or discriminatory licensing requirements.

**Table 5. Ranking of Barriers to Logistics Services from the Logistics Survey**

RANKING OF BARRIERS BASED ON INCIDENCE	Mode of supply	Type	Incidence (26%+)	Significance (Mode)
Time consuming documentation requirements	CBS	Customs	46	6
Foreign ownership regulations: limit foreign investment such as on the basis of economic needs or capacity tests, form of establishment	CP	S	41	4
Road transport-specific barriers: limits on fleet size and hours of operation	CP	Q	34	5
Malpractices e.g. facilitation fees	All	P	33	4
Different classification of goods in different countries	CBS	Customs	32	6
Maritime-specific barriers: inefficient ports i.e. inability to handle large cargo volume	CBS	D	29	4
RANKING OF BARRIERS BASED ON SIGNIFICANCE	Mode of supply	Type	Incidence	Significance (Mode) 4.6
Time consuming documentation requirements	CBS	Customs	46	6
Burdensome inspection requirements	CBS	Customs	23	6
Different classification of goods in different countries	CBS	Customs	32	6
Lack of border crossing coordination with regional neighbours	CBS	Customs	19	5
Inefficiency of inbound clearance process	CBS	Customs	15	5
Maritime-specific barriers: directional imbalance	CBS		13	5
Maritime-specific barriers: absence of adequate warehouse and specialized storage facilities	CBS	D	13	5
Road transport-specific barriers: limits on equipment usage	CP	Q	23	5
Road transport-specific barriers: limits on fleet size and hours of operation	CP	Q	34	5
Arbitrary independent rulings	CBS	Customs	14	4
Volatility in border traffic	CBS		10	4
Multiple uncoordinated offices	CBS	Customs	12	4
Improper penalties	CBS	Customs	11	4
Other Customs-related barriers	CBS	Customs	5	4
Foreign ownership regulations: limit foreign investment such as on the basis of economic needs or capacity tests, form of establishment	CP	S	41	4
Discriminatory licensing requirements; variation across locations	CP	S	18	4
Maritime-specific barriers: inefficient ports i.e. inability to handle large cargo volume	CBS	D	29	4
Aviation-specific barriers: access to cargo handling and storage and warehousing facilities	CBS	D	22	4
Aviation-specific barriers: cabotage regulations that restrict the supply of internal point-to-point transport services to domestic carriers	CBS	D	13	4
Aviation-specific barriers: limited lift capacity and directional imbalance	CBS		11	4
Malpractices e.g. facilitation fees	All	P	33	4

## 4. Logistics Sector Policy<sup>7</sup>

Logistics performance is a critical component of the quality of trade facilitation. It is defined (Hollweg and Wong, 2009) as

“the part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet consumers’ requirements” (de Souza et al 2007).

Hollweg and Wong argue that efficient delivery of logistics services is the ability to move goods expeditiously, reliably and at low cost. A competitive and efficient logistics sector is vital for all economies and is an imperative component of trade. In the logistics industry, time is money. The costs of delays are high and ultimately passed on to the consumers. Government restrictions imposed on logistics services providers (LSPs) can adversely affect the price, reliability and quality of these services, and are considered restrictions to trade. It is the time as much as the cost of complying with all the rules and regulations that matters.

Logistics also features in various ASEAN scorecards for integration, for example, but not with sufficient detail to help develop an operational implementation method. Past studies have explored the regulatory performance within specific logistics sub-sectors such as maritime and aviation but for the first time in this project, a measure of the regulatory index of the entire logistics sector has been developed. The logistics sector restrictiveness index groups the types of restrictions under six primary headings: customs, investment, movement of people, and sector-specific restrictions for maritime, aviation, and road transport. The full list of restriction categories used in the construction of the restrictiveness index is presented in Table 6.

---

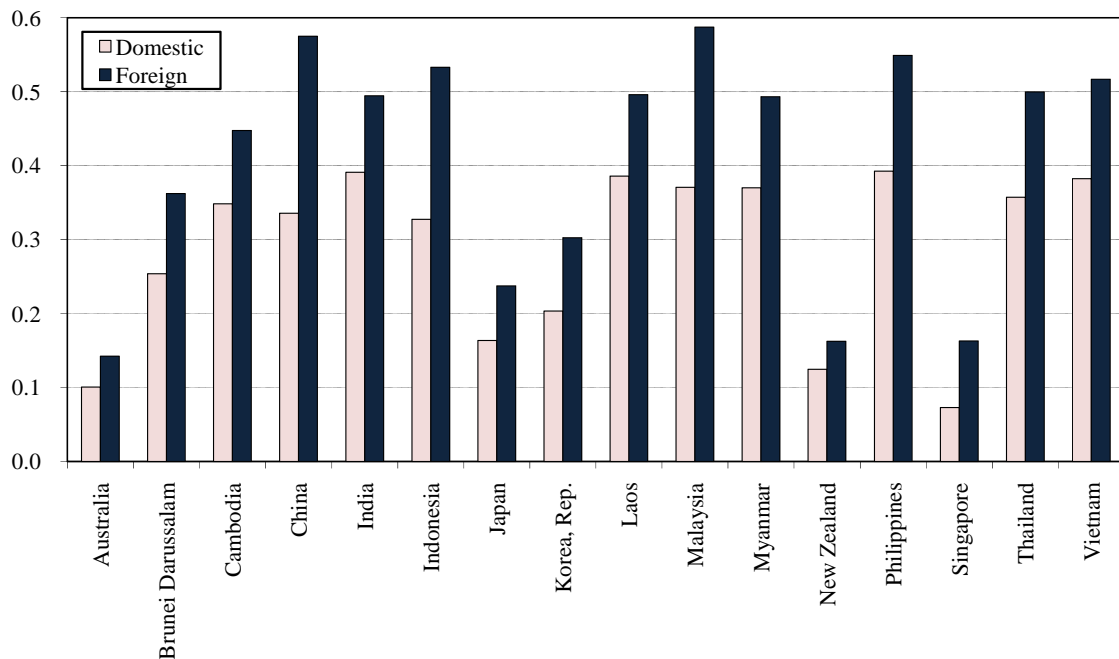
<sup>7</sup> The following is an extract from the summary section of the background paper by Hollweg and Wong.

**Table 6. Components of the Logistics Restrictiveness Index**

Logistics sector restrictiveness index					
<p><b>Customs</b></p> <ul style="list-style-type: none"> <li>•Customs documents</li> <li>•Customs signatures</li> <li>•Import licensing</li> <li>•Local language</li> <li>•Customs inspections</li> <li>•Import restrictions</li> <li>•Customs Electronic Data Interchange</li> <li>•Harmonized Commodity Description and Coding System</li> <li>•Possibility of a review</li> <li>•Customs operating hours</li> <li>•Customs brokerage services</li> <li>•Customs clearance</li> <li>•Customs procedures time</li> <li>•Customs charges or fees</li> <li>•Improper penalties or fees</li> <li>•Discriminatory fees or inspection practices</li> <li>•DeMinimis level</li> </ul>	<p><b>Investment</b></p> <ul style="list-style-type: none"> <li>•Commercial presence</li> <li>•Foreign equity participation</li> <li>•Licensing</li> <li>•Discriminatory licensing</li> <li>•Factors affecting investment</li> </ul>	<p><b>Movement of People</b></p> <ul style="list-style-type: none"> <li>•Licensing requirements on management</li> <li>•Movement of people – Permanent</li> <li>•Movement of people – Temporary</li> <li>•Local employment requirements</li> <li>•Difficulty in firing</li> </ul>	<p><b>Maritime Transport</b></p> <ul style="list-style-type: none"> <li>•Cabotage restrictions</li> <li>•Cargo reservation</li> <li>•Cargo handling</li> <li>•Storage and warehousing</li> <li>•Container station and depot services</li> <li>•General competition legislation</li> <li>•Monopolized handling of port-related services</li> </ul>	<p><b>Aviation Transport</b></p> <ul style="list-style-type: none"> <li>•Take-off and landing slots</li> <li>•Ground-handling</li> <li>•Cargo-handling and warehousing</li> <li>•Foreign investment in domestic airlines</li> <li>•Open skies agreement</li> <li>•Seventh freedom rights</li> <li>•Cabotage restrictions</li> <li>•Multiple designation on international routes</li> </ul>	<p><b>Road Transport</b></p> <ul style="list-style-type: none"> <li>•Equipment usage</li> <li>•Hours of operation</li> </ul>

Results are shown in Figure 1 from Hollweg and Wong (2009). Higher scores show higher levels of restriction and ‘domestic’ measures apply to all entrants while ‘foreign’ only to foreign providers (and is the sum of measures applying to all entrants plus additional conditions applying to foreign suppliers).

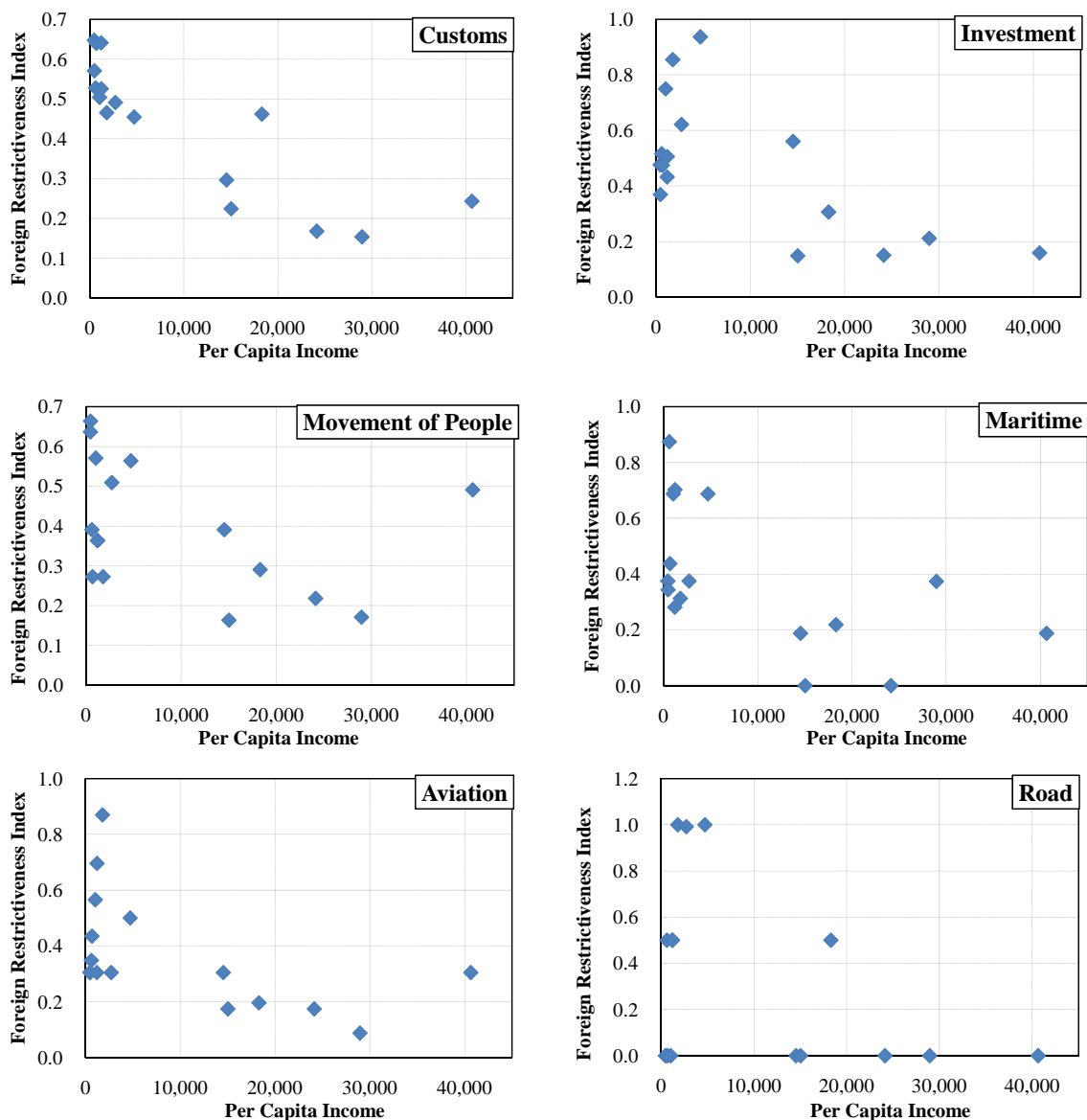
**Figure 1. Logistics Restrictiveness Index Score (0-1)**



Large differences exist in the regulatory environment for logistics of the ASEAN+6 economies. Many of these economies are open to trade in logistics services, while others are relatively restrictive. The average score for the domestic index is 0.29 and for the foreign index it is 0.41. Vietnam, Laos, India and the Philippines have relatively high scores on the domestic index (over 30% above the mean) and as do Indonesia, Philippines, China, and Malaysia on the foreign index.

Figure 2 provides additional detail in terms of the 6 components of the overall index (these are the foreign restrictiveness scores).

**Figure 2. Logistics Index Component Scores**



Generally the degree of restrictiveness falls as per capita income rises, but even at lower levels of income there is a range of values of the scores. In some sectors there are clear ideas, including among ASEAN members

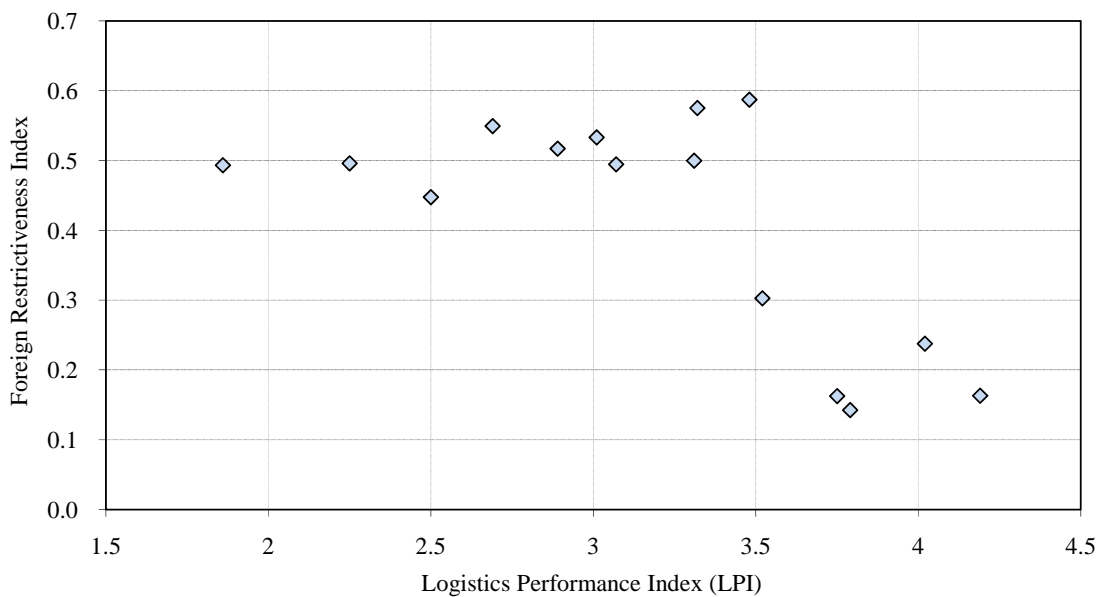
- Malaysia on investment
- Indonesia, Vietnam, Philippines and Malaysia on maritime services
- Indonesia, Philippines and Malaysia on aviation
- Thailand and Malaysia on road transport.

There is less variation on matters related to the movement of people, and customs we discuss in more detail below.

This study extended this analysis by using the restrictiveness index to see what relationships may exist between other indicators of logistics performance. This section assesses whether relationships exist between the performance of the logistics sector, as captured by the World Bank's LPI (Arvis and others, 2007), and the regulatory environment, as captured by the logistics sector restrictiveness index constructed in this study. Since the primary focus of this paper is on the regulatory barriers to international trade in logistics services, the foreign restrictiveness index is used in the analysis.

Data in Figure 3 support a general relationship exists between the two indices. Relatively high levels of the index values are associated with varying levels of performance in the low range of LPI values (which may reflect the presence of other constraints, such as features of the local infrastructure), but once the LPI scores reaches a value of 3, then a negative relationship with the index is observed. Less restrictive regimes are associated with better assessments of performance. The interaction of policy with other characteristics of the economy is a topic for further work.

**Figure 3. Logistics Performance Index vs. Foreign Restrictiveness Index**



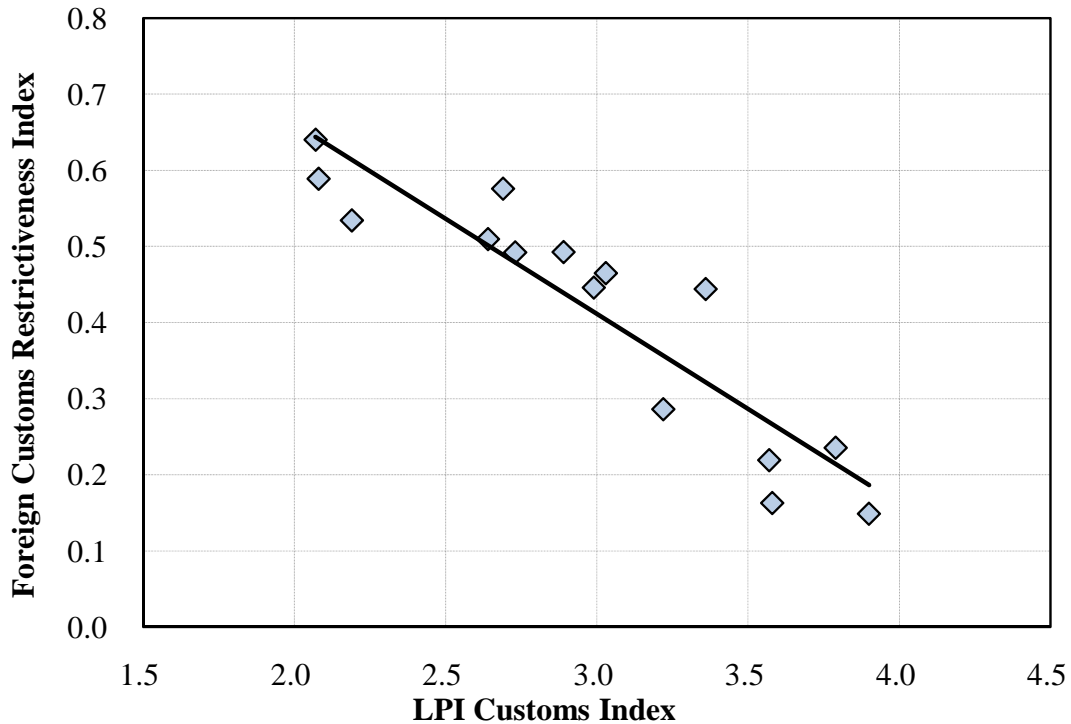
Customs regulations are considered to pose the greatest barrier to trade in logistics services (see 3.2.2). Furthermore, the customs component of this study has the greatest number of identified trade restrictions. A separate customs restrictiveness index was constructed. The customs restriction categories and their appropriate weights for the foreign and domestic indices are presented in Table 6. Figure 4 plots the customs component of the LPI against the foreign customs restrictiveness index.

**Table 6. Customs Restrictiveness Index Weights**

Restriction category	Foreign index weightings <sup>a</sup>	Domestic index weightings <sup>a</sup>
<b>Restrictions on customs</b>		
Customs documents	0.0889	0.0889
Customs signatures	0.0889	0.0889
Import licensing	0.0889	0.0889
Local language	0.0148	0.0148
Customs inspections	0.0889	0.0889
Import restrictions	0.0148	0.0148
Customs Electronic Data Interchange (EDI)	0.0889	0.0889
Harmonized Commodity Description and Coding System (HS)	0.0815	0.0815
Possibility of a review for imports	0.0741	0.0741
Customs operating hours	0.0444	0.0444
Customs brokerage services	0.0296	0.0296
Customs clearance	0.0741	0.0741
Customs procedures time	0.0741	0.0741
Customs charges or fees	0.0444	0.0444
Improper penalties or fees	0.0593	0.0593
Discriminatory fees or inspection practices	0.0444	n.a.
<b>Total weighting or highest possible score</b>	<b>1.00</b>	<b>0.9556</b>

Again, a strong correlation exists between the customs components of the LPI and the newly constructed foreign customs restrictiveness index of this study. The less customs restrictions faced by LSPs, then the better the perceived customs performance within that economy. The more recent members of ASEAN as well as Indonesia show relatively high scores on customs matters.

**Figure 4. LPI Customs Index vs. Foreign Customs Restrictiveness Index**



Indicators of logistics performance are available and are also worth monitoring (such as the World Bank’s LPI). However, the underlying determinant of that performance according to this study is the policy environment. The ASEAN scorecard refers to ‘a conducive policy environment’ and for this reason it is recommended to use the index developed in this project as a template for monitoring the change in, as well as benchmarking, logistics sector policy in ASEAN.

## 5. CIF/FOB Ratios<sup>8</sup>

The project developed two measures of ‘trade costs’. The first version, the **Unadjusted Index**, is based on the raw Australian cif/fob import data. Using Singapore in 2007 as the benchmark (i.e. the Index equals 100), the values from 1990-2007

<sup>8</sup> The following is an extract from the summary section of the background paper by Sourdin and Pomfret.

indicate the falling trend of trade costs in ASEAN countries, which can broadly be seen as convergence to regional best practice. The pattern is clearest for the five original ASEAN members and for Vietnam. For the four smaller trading nations, the index is more volatile and less valuable.

The Index provides a useful objective guide to trade costs, which can be used to monitor whether a country's trade costs are falling over time and whether they are falling relative to other countries' trade costs. However, if it is to be used as a policy guide, it is desirable to filter out changes in the Index which are not directly policy-related.

Some determinants of trade costs, such as distance, are constant for each country over time, but the research shows that commodity effects are also significant, so we should control for the extent to which the Index may be reflecting changes in a country's trade costs to due to commodity composition rather than trade facilitation measures.

The second version, the **Adjusted Index**, controls for commodity composition by running a regression with exporter-commodity fixed effects. The estimated trade costs capture ad valorem trade costs for a given commodity composition. The background paper explains the methodology used to create this index.

Compared to the Unadjusted Index, which is a simple trade-weighted index of trade costs, the estimates controlling for compositional change reveal a more rapid decline in transport costs over time from the ASEAN member countries relative to all countries in the world. Figure 5 shows results for a sample of ASEAN countries in which trade costs have fallen significantly since 1990.

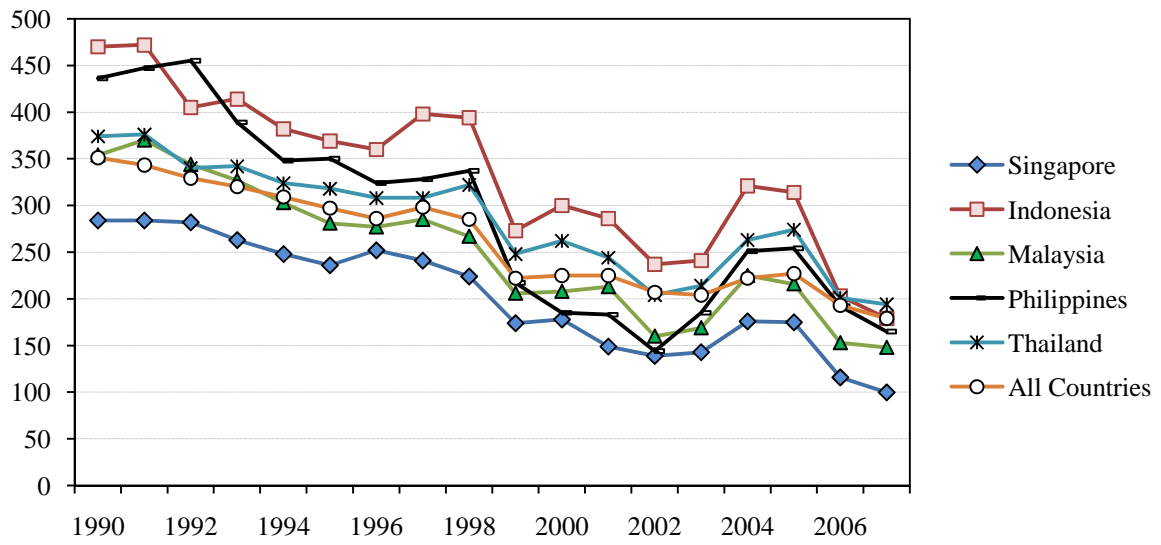
The Australian cif/fob measures are an impartial guide to the trade costs of each bilateral trading partner, and they provide a good benchmark for ASEAN because it is a large trading partner whose cities are roughly equidistant from most ASEAN ports of export.

As a robustness test of the characteristics of the Australian data relative to ASEAN trade costs, a similar exercise could be conducted using other countries' import data, although the currently available options are limited.

At present comparable cif-fob data only exist for New Zealand, the USA, Argentina, Brazil and some other Latin American countries. Each of these, with the

possible exception of the USA, has potential problems with the small volumes of bilateral trade which may make bilateral trade costs volatile. If similar data were to become available for Japan, that would be an excellent source.

**Figure 5. Adjusted Cif/Fob Ratio (Singapore 2007 = 100)**



The index has limitations. It cannot match all definitions of trade facilitation, and it cannot provide evidence on specific elements of trade facilitation. The cif-fob measure does not include some behind-the-border reductions in trade costs and it includes elements of reduced transport costs that may not be included in some definitions of trade facilitation. The greatest shortcoming of the Index is that, by focussing only on dollar values of trade costs, it does not capture trade costs in the form of time.

An advantage of this Index is that it provides a useful single-number measure of ASEAN countries' trade costs. There is no obvious bias from using trade with Australia as the basis for the Index. Once set up the Index has the advantage of being easy to update from year to year given the timeliness with which the Australian Bureau of Statistics releases its trade data, and to extend the country coverage, e.g. if new members accede to ASEAN or if it is desirable to cover ASEAN+3 or all East Asia Summit countries.

In summary, the Index provides a single soundly based indicator of each country's trade costs in each year that can be easily updated. It is recommended here that a process be established for doing so.

## 6. Summary

Suggestions for the scorecard are therefore to reinforce commitments to, or add commitments to, and then monitor the implementation of,

- a. National Single Windows as a prerequisite to the ASEAN Single Window
- b. a web-based databank of trade regulations that is regularly updated
- c. streamlined and harmonized procedures
  - starting with the Customs declaration (or 'SAD') form
- d. mutually recognized technical standards

In terms of performance measures it is recommended to

- have ASEAN Customs authorities report regularly and in a comparable manner on clearance time through customs, noting the target of 30 minutes
- maintain and report the Hollweg-Wong logistics restrictiveness index for all countries in each year
- recalculate the adjusted Sourdin-Pomfret cif/fob ratio for all countries each year using Australian import data while at the same time examining
  - o the opportunities to use import data of other ASEAN trading partners for this purpose eg Japan
  - o the scope to use ASEAN export data for this purpose, and if not develop the capacity to collect cif/fob data for intra-ASEAN trade.

## References

- Anderson, James, and Eric van Wincoop (2004): Trade Costs, *Journal of Economic Literature* **42**(3), 691-751.
- Arvis, J.F., M.A. Mustra, J. Panzer, L. Ojala, and T. Naula (2007), *Connecting to Compete: Trade Logistics in the Global Economy*, The World Bank, Washington, D.C.
- Bloningen, Bruce, and Wesley Wilson (2008): Port Efficiency and Trade Flows, *Review of International Economics* **16**(1), 21-36.
- Clark, Ximena, David Dollar and Alejandro Micco (2004): Port Efficiency, Maritime Transport Costs, and Bilateral Trade, *Journal of Development Economics* **75**, 417-50.
- Devlin, Julia, and Peter Yee (2005): Trade Logistics in Developing Countries: The Case of the Middle East and North Africa, *The World Economy* **28**(3), 435-56.
- De Dios, Loreli, (2009), Business Views on Trade Facilitation, Paper prepared for ERIA.
- De Souza, R., M. Goh, S. Gupta and L. Lei (2007), *An investigation into the measures affecting the integration of ASEAN's priority sectors: Phase 2: the case of logistics*, REPSF Project no. 06/001d.
- Freund, Caroline, and Diana Weinhold (2004): On the Effect of the Internet on International Trade, *Journal of International Economics*, **62**(1), 171-89.
- Hoekman, Bernard and Carlos Braga, 1997. "Protection and Trade in Services: A Survey," *Open Economies Review*, **8**(3), 285-308.
- Hollweg, Claire and Marn-Heong Wong, 2009, Measuring Regulatory Restrictions in Logistics Services, Paper prepared for ERIA.
- Korinek, Jane, and Patricia Sourdin (2008): Maritime Transport Costs and Trade: New Data and New Evidence, paper to be presented at the International Economic Association Congress in Istanbul, 25-29 June.
- Limao, Nuno, and Anthony Venables (2001): Infrastructure, Geographical Disadvantage and Transport Costs, *World Bank Economic Review* **15**(3), 451-79.
- Pomfret, Richard, and Patricia Sourdin (2008): Have Recent Asian Trade Agreements reduced Trade Costs? paper presented at the American Committee for Asian Economic Studies (ACAES) Conference *Asian Economic Integration in a Global Context* at the Rimini Campus of the University of Bologna, 29-31 August.
- Sanchez, Ricardo, Jan Hoffmann, Alejandro Micco, Georgina Pizzolitto, Martin Sgut and Gordon Wilmsmeier (2003): Port Efficiency and International Trade: Port Efficiency as a Determinant of Maritime Transport Costs, *Maritime Economics and Logistics* **5**, 199-218.

- Sourdin, Patricia and Richard Pomfret, 2009, Monitoring Trade Costs in Southeast Asia, Paper prepared for ERIA.
- Wilmsmeier, Gordon, Jan Hoffmann and Ricardo Sanchez (2006): The Impact of Port Characteristics on International Maritime Transport Costs, in Kevin Cullinane and Wayne Talley (eds.) *Port Economics: Research in Transportation Economics vol.16* (JAI Press/Elsevier: Oxford UK), 117-40.
- Wilson, John, Catherine Mann and Tsunehiro Otsuki (2003): Trade Facilitation and Economic Development: A New Approach to Quantifying the Impact, *World Bank Economic Review* **17**, 367-89.