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ASEAN+1 FTAS *AND* GLOBAL VALUE CHAINS IN EAST ASIA

EDITED BY
CHRISTOPHER FINDLAY

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FOREWORD

The Economic Research Institute for ASEAN and East Asia (ERIA) is an International Organisation which pursues economic research and makes policy recommendations relevant to the East Asia Summit member countries.

The Australian Government was one of the earliest donors among the member countries which pledged financial contribution to ERIA to conduct its research in such manner that the findings are of value to the member countries.

ERIA would like to take this opportunity to thank the Australian Government and AusAID, without whose generous contribution this research would not have been possible. ERIA also looks forward to continued association with AusAID in the future and hopes that the member countries find this research useful.

Hidetoshi Nishimura
Executive Director, ERIA

LIST OF PROJECT MEMBERS

PROFESSOR CHRISTOPHER FINDLAY: (PROJECT SUPERVISOR) School of Economics, University of Adelaide, Australia.

MR MICHAEL CORNISH: School of Economics, University of Adelaide, Australia.

DR ANANDA JAYAWICKRAMA: Department of Economics, University of Peradeniya, Sri Lanka.

ARCHANUN KOHPAIBOON: Associate Professor Faculty of Economics, Thammasat University, Bangkok, Thailand.

DR ERLINDA MEDALLA: Senior Research Fellow, Philippine Institute for Development Studies (PIDS), Philippines.

PROFESSOR RASYAD PARINDURI: Nottingham University Business School, University of Nottingham, Malaysia Campus, Malaysia.

MARIE ISABELLE PELLAN: Institute for International Trade, University of Adelaide, Australia.

MS MAUREEN ROSELLON: Philippine Institute for Development Studies (PIDS), Philippines.

SHANDRE M. THANGAVELU: Associate Professor Department of Economics, National University of Singapore, Singapore.

DR MARN HEONG WONG: Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore.

DR NOBUAKI YAMASHITA: School of Economics and Finance, La Trobe University, Melbourne, Australia.

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§ The views expressed in the publication are those of the author(s) and not necessarily those of the Commonwealth of Australia.

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EXECUTIVE SUMMARY

ASEAN economies as a group have signed free trade agreements with China, Japan, Korea, India and Australia/New Zealand. There is now an interest in forming a larger regional agreement, for a couple of reasons. The first is that the gains from integration are greater across wider areas with deeper coverage – there is also an interest in deepening the commitments to integration. The second reason is that there is a concern that the proliferation of trade agreements adds to the costs of decision-making in international business. The goal is therefore to achieve wider and deeper integration with lower costs to business. The ultimate goal is to operate economies more efficiently and achieve higher growth but the immediate task is to attain a higher level of integration.

A new wider economic agreement could be constructed in a new set of negotiations, but the track that is preferred by ASEAN is to build up from the '+1' agreements into a new 'ASEAN++' structure. There are advantages in this approach given the degree of common membership of the agreements under consideration. There is also a significant risk that any attempt to adopt a top-down approach based on a new region-wide agreement could add yet another agreement to the existing 'noodle bowl' and possibly one which is less liberal, given the difficulty of reaching agreement across the larger number of participants. This outcome will not contribute to the goals of wider and deeper integration with lower costs to business. However, the bottom-up process is not without these risks either, and a set of principles is important to manage those risks. These risks might not be avoided completely but at least they can be given attention and efforts made to reduce them.

The focus in this project is on the principles that might be applied in this circumstance and for these purposes. The decision was made to concentrate on trade facilitation, rules of origin, services and investment.

The approach adopted in this work was to pay great attention to the design and operation of production supply chains in the East Asian region. When deriving relevant principles for the consolidation of agreements, these features of the way that business actually works could then be taken into account, with the expectation of producing richer insights for the goals of designing a low risk path to wider and deeper integration and to lower costs of doing business.

The work began with a review of the treatment of the various dimensions of the existing agreements. It was generally found that:

- considerable impediments to trade and investment remain at economy level;
- there is not a high degree of consistency within agreements, since commitments by economy vary considerably;
- commitments can vary across agreements for the same economy; and
- commitments made in these agreements appear to be less liberal than actual policy.

This situation suggests that, despite its advantages, there are challenges in the application of the bottom-up approach. It also means that progress on the different components of a consolidated ASEAN++ approach referring to goods, services, investment and trade facilitation may have different requirements. In meeting those requirements the elements could move at different rates so the whole project might proceed with a series of building blocks. With this perspective, the suggestions from this project are the following five steps:

1. put immediate priority on areas such as trade facilitation where there are 'gains all round' from reform;
2. send a strong signal about the commitment to integration by removing rules of origin in goods at the lower tariff rates – otherwise simplify them and then adopt a liberal benchmark or reference rule (for goods, services and investment) before moving to consolidate existing agreements;
3. work to remove gaps between actual policies and those committed in goods, services and investment in the agreements and continue to work to reduce most favored nation (MFN) tariffs on goods;
4. start work on services and investment by designing and applying commitments in services and investment in areas which are of great value to supply chain operations; and
5. support the work on services by a capacity-building program on domestic regulation.

According to the supply chain perspective, there is a clear priority for work on trade facilitation. An agreement involving ASEAN and the '+1 partners' which incorporates a set of key principles of trade facilitation would be valuable. So far lacking in work on trade facilitation is a commitment to timelines and monitoring implementation. It would also be desirable for a system of monitoring progress to implementation to be designed. Complementary actions are work on capacity building to support implementation, and continuing reference to linkages to other regional (APEC – Asia-Pacific Economic Cooperation) and global (WTO – World Trade Organization) processes. There are two important features in this arrangement – it would be:

- applied to all trading partners, not just the ASEAN+6 members; and
- the foundation of an ASEAN++ arrangement but its implementation is not tied to progress on other areas.

With respect to goods, the first step is to establish the context in which agreements operate. The best approach to the operation of free trade agreements and to the efforts to reduce their costs, is to continue to work to reduce MFN tariffs and therefore to remove the incentive to operate under the more complex conditions of the agreements. ASEAN++ participants would be expected to demonstrate their commitment to MFN reform. One demonstration of that commitment would be to at least make binding commitments in the WTO on tariffs at the current rates of their application.

The next priority is to come to an understanding on an approach to rules of origin in the ASEAN++ framework. Not all sectors nor all firms face major issues with the application of rules of origin, but in some areas, particularly for small firms, they remain a constraint. Greater participation in trade by small firms can yield significant benefits in terms of productivity growth. Work to simplify rules of origin would assist their participation and could proceed in a series of steps.

A first step is to drop all rules of origin for low tariff items, which has the effect of multilateralism the tariff cuts in that range. These changes are expected to be concentrated in trade in intermediate products which is critical for supply chain operations. Remaining tariffs where the rules of origin continue to be relevant are more likely to be finished goods.

Another suggestion with respect to rules of origin is that ASEAN and all +1 partners adopt a benchmark to be applied in any new ASEAN++ framework. The argument for a benchmark is based on the observation that there is a risk that more

restrictive rules will be adopted in agreements with wider membership. The benchmark is used to provide a cap on the degree of restrictiveness of the rules in any new agreement in order to manage this risk.

The choice of the benchmark is a matter for negotiation: it could be a change of tariff classification or a content rule, or a choice of both (but it should not involve any combination of individual rules). A rule on the regional value of content is common in the set of agreements examined in this project but the rule on a change in tariff classification is sometimes easier to meet, although that depends on the production process involved.

The negotiated benchmark should be ambitious and also be made more liberal over time: a schedule for this relaxation should be agreed at the foundation of the new structure. Rules are then selected and transferred from existing agreements at the tariff line level but with a view to moving closer to the lower level of restrictiveness set by the benchmark. This approach does not involve harmonization, for the reason that such an approach risks movement to less liberal rules of origin.

This benchmark would be negotiated by ASEAN and all the +1 partners. It is an important principle that all the +1 partners are involved in this constitutional stage, even if their particular +1 agreement is not included in the foundation stage of work on an ASEAN++ agreement. All +1 partners could also be invited to continue to monitor implementation, and the private sector would also be involved.

The bottom-up approach could precede when parties to an existing pair (or more) of +1 agreements decide to consolidate them. A decision would also have to be made of whether to leave the existing +1 agreement(s) in place. The new agreement would have a wider area of coverage but could have different rules of origin. As an additional

contribution to helping to manage the risk of more restrictive rules in the wider agreement, the original +1 agreements could be left in place as a choice for traders for a fixed period of time. However, doing so would add to the costs of doing business and would imply that the benchmark rule of origin was not sufficiently ambitious. The existing agreements should therefore be removed once the consolidated agreement is in place. Failure to do so would diminish the value of the ASEAN++ process.

It is not only the rules that matter but the manner of their implementation. This is also a focus in the work on trade facilitation. More specifically, in terms of processing time and for the purpose of meeting a common rule of origin, it is useful to establish a system of mutual recognition of the certificates of origin and mechanisms for reaching common understanding of the correct tariff classification codes for particular products.

Investment must be included in the coverage of a new agreement, given its role in the construction of the supply chains. With respect to investment, recommendations are to document actual policy in any new consolidated agreement, which avoids back-sliding on that policy at least with these trading partners. To be added then would be a commitment to further liberalization, with schedules for reform in key sectors (similar to those used in the GATS – General Agreement on Trade in Services).

The question remains as to whether investment policy is easily applied in a discriminatory manner. It may not be easy to do so and the benefits of commitments may be available to all investors. But in any case ASEAN can show leadership by offering to take in new members to a regional investment agreement if those who are new abide by the same principle of removing gaps or 'water' between actual investment policy and committed policy.

There is a high degree of complementarily between services and investment commitments. Investment is important directly as a mode of delivery of many services. Furthermore, international investment is more likely to be attracted by the efficient provision of services, such as logistics, which is particularly important in relation to supply chains.

With respect to services, the recommendations for the long term are similar to those for investment, that is, removing any 'water' in commitments and continuing to liberalize. It will be important to commit to and continue to refer to the goals of integration. However experience in the WTO, and work here on the extent of commitments in the +1 agreements, suggests rapid progress on services commitments will be difficult.

A first step for progress on services is therefore not to move immediately to a new consolidated agreement but to work on the environment in which that agreement might be built. This means a focus on capacity building in services that deals with the key issues in the design of domestic regulatory systems. Considerable work of this type is already in progress in APEC – an important principle for ASEAN and its +1 partners as they seek to consolidate their agreements would be to confirm their commitments to APEC work programmers with specific time lines.

Meanwhile, commitments could be made on a group of sectors which are especially important to the operation of regional supply chains. These commitments would be informed by and complement the Master Plan on ASEAN Connectivity.[1]

[1] Master Plan on ASEAN Connectivity, Jakarta: ASEAN Secretariat, January 2011[1]

Both services and investment arrangements would also have to confront the question of rules of origin, but generally these are less of an issue compared to the commitments themselves and can be made relatively liberal (e.g. based on commercial presence).

CHAPTER 1

ASEAN+1 FTAs and Global Value Chains in East Asia: Overview

CHRISTOPHER FINDLAY[1]

Background

The goal of economic integration is to capture the immediate and also the dynamic gains that it offers. The former follows from the greater degrees of specialization and levels of trade, which lead to a more efficient allocation of resources and the scope for higher real incomes on average in participating economies. Other benefits include greater access to a variety of goods and services, higher degrees of competition and access to inputs in the production of other goods and services at world prices and world-class levels of performance.

The dynamic benefits of integration follow from its association with higher rates of economic growth but one of the puzzles of research on economic integration is the origin of this effect. A variety of channels and processes have been suggested, including those focused on the effects of integration on competition. More recent work suggests that a key contributor is the extent to which firms in a particular industry participate in trade. Generally, the share of firms in an industry actually involved in trade is surprisingly low in developed and developing economies, even in industries which are internationally competitive. There is, however, an association between participation in trade and productivity. Furthermore, more productive firms crowd out those which are less productive and overall sector productivity improves as a result of this effect. Identifying and reducing the barriers to participation in trade, including the

[1] The report draws on the research reported in other chapters in this report. Authors of those chapters have commented on this summary but the author is responsible for its structure and the interpretation of the research

costs of entering export markets and then managing the transactions, can according to this analysis add to productivity and growth.

The global multilateral trading system has provided a regime in which to manage the transition in policy to higher levels of integration. More recently there has been a surge of interest in smaller group arrangements in Asia, either bilateral or multilateral, as Kawai and Wignaraja state in their online article of January 2011:

> Asian economies began emphasizing FTAs as a trade policy instrument in the late 1990s and the region is today at the forefront of world FTA activity… In 2000, only three FTAs were in effect in East Asia, including the Association of Southeast Asian Nations (ASEAN) Free Trade Area (AFTA), while another 10 were in various stages of preparation. However, in just a decade, the number of FTAs in the region increased more than ten-fold. By May 2010, East Asia had emerged at the forefront of global FTA activity, with 45 FTAs in effect and another 84 in various stages of preparation[2]

While preferential arrangements reduce the extent of restrictions on access to markets, at least for the favored partner economies, that preferential access comes with a cost. Firms based in favored trading partner economies have to establish their rights of access (these are determined by the rule of origin used in the agreement). The benefit is sometimes less than the cost of establishing the right of access and that situation helps explain the observation that rates of utilization of free trade agreements (FTAs) are relatively low, or less than expected. A number of studies have examined the contributors to this result, including the case studies prepared as part of this project.

With the proliferation of agreements, any particular transaction could be organized under different sets of rules associated with the various preferential agreements or MFN conditions. Making that choice, as well as establishing the right of access to the chosen agreement, becomes another dimension of doing international business that firms have to consider.

ASEAN has already established five free trade areas with each dialogue partner in East Asia, as shown in Table 1.

[2] http://www.pecc.org/blog/2011/01/21/free-trade-agreements-in-east-asia-a-way-toward-trade-liberalization/

Table 1. ASEAN Free Trade Areas and Dates of Entry into Force

	Date of entry into force
ASEAN--Australia--New Zealand	January 2010
ASEAN--China	July 2005(G), July 2007 (S), August 2009 (I)
ASEAN--Japan	December 2008
ASEAN--Korea	June 2007 (G), May 2009(S), September 2009 (I)
India--ASEAN	January 2010 (G)

Data Source: Various Ministry websites
Note: G=goods, S=services, I=investment

A standard result in the research on regional arrangements is that wider membership is better, i.e. the more economies that are involved, the lower is the risk of incurring some of the costs of a regional and discriminatory approach to integration. For a variety of political economy reasons, economies tend to negotiate in smaller groups in the first instance, either bilaterally or in the case of the agreements of interest here by building on the links between ASEAN and its dialogue partners.

The question arises then of whether there is scope to bring these agreements together to form a larger and more comprehensive economic arrangement, possibly for the whole region. There are subsequent questions about the manner in which the consolidation might occur and the incentives for the economies involved to participate.

The consolidation process could be done in a variety of ways. One is by a top-down approach of constructing a new region-wide agreement, for example, based on the ASEAN+3 or ASEAN+6 groupings. However the brief in this project is to look at issues associated with constructing a region-wide agreement through a bottom-up approach, that is, by combining existing agreements, specifically the ASEAN+1 agreements. The recent ministerial discussion around the ASEAN Economic Ministers meetings in August 2011 (http://www.asean.org/26596.htm) referred to this option as ASEAN++. The media release noted the following, which stresses the commitment to ASEAN centrality in the development of these arrangements.

The material also notes a proposal from Japan and China for work on a top-down approach.

Comprehensive Economic Partnership in East Asia (CEPEA)

8. The Ministers welcomed and exchanged views on the joint proposal by China and Japan, 'Initiative on Speeding up the Establishment of an East Asia Free Trade Area (EAFTA) and Comprehensive Economic Partnership in East Asia (CEPEA)'.

9. To ensure the economic integration within ASEAN as well as with Dialogue Partners, the Ministers noted that ASEAN is still working on the structure and template for the ASEAN ++ FTA, which would include an appropriate institutional mechanism, and is taking into account the joint proposal by China and Japan in developing recommendations by November 2011.

10. The Ministers look forward to considering the ASEAN proposed structure and template for the ASEAN ++ FTA and would also give further consideration to the joint proposal by China and Japan at that time. The Ministers instructed Senior Officials to meet in November 2011 to initially consider these proposals and advise Ministers. The Ministers reiterated the importance of ASEAN Centrality in the expanded regional economic integration process.

Ministers also stressed that there were four working groups in progress:

> Ministers were pleased to note the progress of the four ASEAN Plus Working Groups (APWGs) that were tasked to look into the recommendations of the EAFTA and CEPEA studies relevant to rules of origin, tariff nomenclature, customs procedures and economic cooperation.

The preferred plan therefore is to build up from the +1 agreements (rather than a top-down approach, based either on an ASEAN+3 or ASEAN+6 grouping) by establishing a template and principles based on the results of these APWGs that allow a dialogue partner to propose to connect existing +1 agreements. Following the working group structure, the new constructs could involve a series of steps, perhaps starting with an arrangement for goods, followed by investment and services. Further comment on these steps is offered below.

There are some advantages in this bottom-up approach given the degree of common membership of the agreements under consideration. There is also a significant risk that any attempt to adopt a top-down approach based on a new region-wide agreement could

add yet another agreement to the existing 'noodle bowl' and possibly one which is less liberal, given the difficulty of reaching agreement over the larger number of participants. This outcome will not contribute to the goals of wider and deeper integration with lower costs to business. The bottom-up process is not without these risks either, and a set of principles is important to manage them.

Managing those risks adds to the incentives to participate. ASEAN, as noted, prefers this bottom-up pathway for its own interests. As explained below, the current structure of agreements appears to be like a hub and spoke structure but with the +1 partner as the hub. Starting a process of consolidation could help ameliorate some problems in this situation for the smaller economies.

Conversely for large economies, such as India and China, the interest in participating will depend in part on how such arrangements contribute to their further integration with the rest of the world. While the pathway beyond this level of regional integration and its connection with processes in the WTO is a topic for further work, establishing some expectations of that development will help build the interest in participating in this stage. Further comments are offered below on the links to multilateral commitments.

The progress of the consolidation will also depend on the reaction of various interests within each participating economy. For instance, the consolidation of agreements could assist the business sector by lowering the costs of organizing international transactions, as long as the process at least maintained, and preferably deepened and widened, market access. There is also the possibility of real resource savings as a result of the work on trade facilitation. The measurement of the welfare gains in this path to integration and the implications for particular economies along that path are also topics for further work.

The focus in this project is on the principles that might be applied in this circumstance and for these purposes of managing the risks associated with consolidation. A decision was made to focus on trade facilitation, rules of origin, services and investment. The research reported here is based on a particular framework of supply chains, as outlined in the next section. The project also draws on the results of a series of case study papers which examined the operation of supply chains (included as Chapters 7-10 in the final report):

- Electronics in Malaysia (by Rasyad Parinduri and Shandre Thangavelu)
- The Textile and Garment Industry in Sri Lanka (by Ananda Jayawickrama and Shandre Thangavelu)
- The Automotive and Electronic Sectors in the Philippines (by Maureen Rosellon and Erlinda Medalla)
- The Automotive Industry in Thailand (by Archanun Kohpaiboon and Nobuaki Yamashita)

Supply Chain Perspective

A key feature of the region is the presence of supply chains. East Asia has achieved economic growth through the formation of global value chains by multinational firms, and the desirable region-wide economic integration should be a system which provides opportunities and captures benefits from the regional global production and sales networks.

The supply chain perspective adds value to existing research by raising new questions. It is supported by research on component trade and final goods trade and research on business strategy. It applies to goods and services: goods activities include assembly and processing activities, and services have their own supply chains, while they also facilitate other chains. The services sector questions are explored in more detail below.

The case studies in this project illustrate the different architectures of these chains. The development of these chains depends on: the degree to which a production process can be divided; the scope to complete different stages with different factor intensities; the transport costs involved (also affected by the value of an item relative to its weight); and the ability to communicate and coordinate between the stages. The participation of any particular economy depends on its stage of development, its ability to meet the delivery expectations of the next stage of production and the features of the production process of the product involved. Examples for the manufacturing sector are as follows:

- The automobile sector in ASEAN involves trade in components and finished vehicles. However, different economies take on different roles. The Philippines, for example, is linked to the regional chain through

exports of standard and widely-used components, rather than finished vehicles. Thailand, on the other hand, exports finished vehicles not only to the Asian region but also to the rest of the world and is less reliant on imports of components, because of the nature of its domestic production system and the proximity of assemblers and component suppliers in the final stages of vehicle production.

- The Philippines takes a similar position in the electronics supply chain, both importing and exporting components. Malaysia, on the other hand, is more likely to import components and export final products. Most of its trading partners are within East Asia but the US is also a major destination for Malaysian exports.
- An orientation of exports towards final products is more evident in textiles and clothing in Sri Lanka. The case study finds that imports of fibre and yarn are mainly from China and ASEAN, and exports of finished products are mainly to the US and the EU.

An indicator of the significance of supply chains is the importance of components in total trade. A particular point of interest in this project was the overall trading relationship between China and ASEAN in components and final products. According to work by Yamashita and Kohpaiboon (Chapter 2), in 2005/06 the average share of components in total world trade was 24 per cent while the total for ASEAN was around 40 per cent in exports and 44 per cent in imports. Components accounted for about 44 per cent of China's imports but only 20 per cent of China's exports. The data therefore confirm China as a major assembly centre, compared to ASEAN. Its component imports are sourced from East Asia, including Japan, while exports go to the US and the EU and in some cases other high income countries in East Asia. Component shares in regional East Asian trade slumped as a result of the global financial crisis which had led to a decrease in trade in consumer durables in particular.

The strong connections between China and ASEAN reflect forces that can work in both directions. For example, China's competitiveness could drive component exports from within East Asia including ASEAN but also the competitiveness of regional components adds to that of China's finished products. The statistical work of

Yamashita and Kohpaiboon confirms the significance of the relationships between these economies but the separate contribution of these factors is difficult to identify.

Yamashita and Kohpaiboon are particularly interested in testing the impact of the FTA between China and ASEAN on trade. They observe that the impact of an FTA would depend on several factors including the degree of complexity of the rules of origin and the ease of meeting their conditions, subject to the margin of preference provided by the agreement. Yamashita and Kohpaiboon note that many components enter their destination economies duty free (or with a rebate when products are re-exported) and so the FTA has less value to business in that context. This point is reiterated in the case study papers which refer to zero tariffs on components going into Malaysia and the Philippines, and fibre and yarn imported into Sri Lanka. Tariff rates are higher on some finished products, although they are less likely to be so in the case of electronics because of commitments in the Information Technology Agreement (ITA), where tariff rates have been successfully lowered and brought under control, so much so that the focus on the further implementation of that agreement has shifted to non-tariff barriers. In those areas of high MFN tariffs, utilization rates of FTAs tend to be higher, as illustrated in the case study paper on the Thai automobile sector. In those sectors the signing of an FTA would be expected to have a larger effect.

Yamashita and Kohpaiboon do find that the ASEAN--China FTA has had a statistically significant effect on sourcing from ASEAN although the effect is very small. Again, the direction of causality is difficult to confirm, since the growth in trade may also have prompted the signing of the FTA.

The aggregate trade data do not reveal the sequence of steps involved in production. The data can be used to identify whether a component or a final product is being traded but a component may have already been traded in an earlier form. Many studies have identified the networks and the sequences of steps in production. The case studies in this project identify the different architectures involved.

The Sri Lankan case study highlights the links of that economy to the ASEAN+1 economies in terms of purchases of inputs but also its orientation outside the region in terms in exports. The global competitiveness of Sri Lanka in this sector demonstrates the value of establishing a trading regime which is open to new participants. A recommendation is that any new ASEAN++ structure adopts principles for taking in

new members, and doing so on the same terms as those available to the founding members.

Trade Facilitation in ASEAN+1 FTAs

The supply chain framework draws attention to the significance of the costs of trade in this system. Items change locations a number of times so the costs of managing trade become important determinants of supply chain design. These points are stressed in key trade facilitation messages from the case studies in this project.

There are substantial gains from reform which focus on trade facilitation, which results in real resource savings, and the impact on incomes and resource allocation are significant. Further, these reform measures affect the costs of entering international markets, and as noted earlier, participation in international markets is important for productivity growth. This argument has been stressed by Hoekman[3] who has argued, in commentary on the WTO rather than FTAs in particular, that what matters is reducing trade costs since doing so helps firms enter new markets and create new products. Hoekman states: 'expansion along the so-called extensive margin is an important mechanism through which trade supports higher economic growth'. He then argues that rules and trade policy bindings that reduce uncertainty and thus expected costs may be 'more important to the investment decisions of firms and the welfare effects of trade agreements than a marginal reduction in the applied tariff affecting an existing trade flow'.

Pellan and Wong (Chapter 3) note evidence that the ASEAN region remains fragmented, partly due to difficulties of moving goods across borders. Inefficient border administration affects the competitiveness of ASEAN exports by raising costs and shipping times. While the overall performance of ASEAN may have improved in recent years, there is considerable room for improvement of trade processes and procedures in individual countries. The ASEAN Economic Community Blueprint and ASEAN+1 FTAs offer a useful framework for channelling efforts to further reduce trade transaction costs between ASEAN and its dialogue partners. This would unlock

[3] See Hoekman's statement in cuts-tradeforum@googlegroups.com on 5 April 2011.

ASEAN's trading potential, promote the growth of regional value chains and trade in East Asia and help to rebalance global growth.

At the time of writing, negotiations are ongoing in the WTO on trade facilitation and ASEAN in 2010 made a major commitment to enhance institutional connectivity through trade facilitation. Pellan and Wong argue that the implementation of trade facilitation measures through regional agreements can complement efforts at the multilateral level. Their review of ASEAN+1 agreements finds that:

1. The agreements contain several provisions relevant to trade facilitation. However, there is no consistent approach: provisions in the different ASEAN+1 agreements vary in terms of their scope, specificity and depth of commitments.
2. The ASEAN FTA contains several provisions relevant to trade facilitation, including a framework for implementing trade facilitation initiatives, such as mutual recognition agreements (MRAs), the Single Window and the ASEAN Trade Repository, but the coverage of trade facilitation in other agreements, such as the ASEAN--China and ASEAN--India FTAs, is fairly general.
3. With the exception of the ASEAN, Australia New Zealand agreement, other ASEAN+1 FTA provisions on trade facilitation lack specificity: they are broad and aspiration and do not commit parties to undertake concrete action or to achieve specific targets or goals.
4. All of the ASEAN+1 FTAs call for economic cooperation in the area of customs with the objective of simplifying customs procedures and, to the extent possible, harmonizing such procedures to international standards. Pellan and Wong stress this connection to international developments. They say that the fact that RTAs explicitly affirm the application of international agreements, standards and instruments related to trade facilitation can contribute to further regional integration.
5. The inclusion of provisions on non-tariff barriers, including sanitary and phytosanitary measures (SPS) and measures such as standards, technical regulations and conformity assessment procedures, shows the growing

importance of these measures in global trade. Most of the provisions on these measures reaffirm WTO rights and obligations.

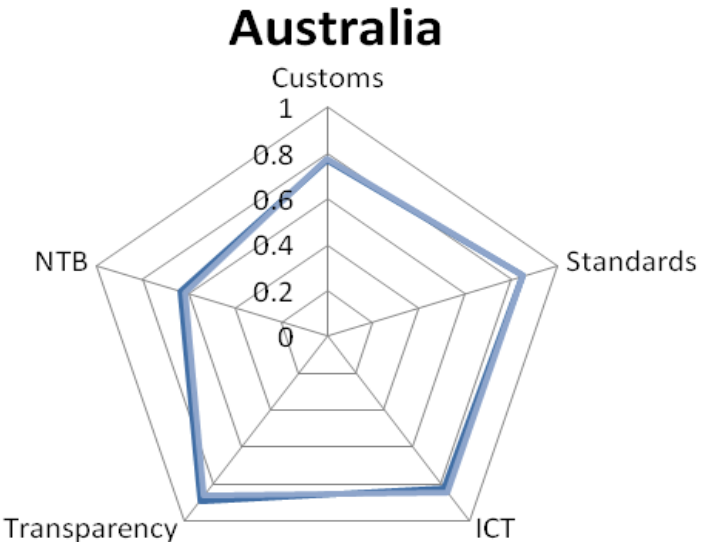
Pellan and Wong stress the value of identification of best practices or models of trade facilitation principles. They suggest that individual countries should strive to identify priority areas for action. Their more specific recommendations are summarized in Box 1. These include attention to monitoring implementation and in a further important contribution they identify a relatively low-cost method of doing so based on indicators like those illustrated in Figure 1 in which measures of performance on various indicators are presented on a scale from zero to one.

In the context of the discussion of integration of ASEAN+1 agreements and the development of an ASEAN++ framework, the recommendation here is to construct a cross-cutting agreement involving ASEAN and the +1 partners which:

i. defines a consistent set of underlying trade facilitation principles;
ii. adopts a set of specific trade facilitation measures;
iii. monitors performance in core trade facilitation areas and sets targets;
iv. shares best practices and implements capacity-building measures in priority areas; and
v. keeps abreast of developments in the multilateral process.

This trade facilitation programme would be applied to all trading partners not just the ASEAN+6 members. The programme would be the foundation of an ASEAN++ arrangement but its implementation would not be tied to progress in other areas.

Figure 1. Trade Facilitation Indicators



Box 1. Trade Facilitation Recommendations

1. Define a consistent set of trade facilitation principles

The ASEAN Trade in Goods Agreement (ATIGA), which entered into force on 17 May 2010, incorporates a set of model principles to guide member states in their undertaking of trade facilitation measures and initiatives at both ASEAN and national levels (and these are similar to APEC's principles of trade facilitation). These principles can also serve to guide ASEAN's trade facilitation cooperation with its dialogue partners. These principles are:

(1) transparency
(2) communication and consultation
(3) simplification, practicability and efficiency
(4) non-discrimination
(5) consistency and predictability
(6) harmonization, standardization and recognition
(7) modernization and use of new technology
(8) due process
(9) cooperation

2. Adopt a set of specific trade facilitation measures

Current ASEAN+1 FTAs, with the exception of the AANZFTA, often lack specificity. A consistent approach to trade facilitation in the context of greater economic cooperation in East Asia should define a specific set of measures that build on existing ASEAN initiatives and could reference as its starting point the measures as incorporated in AANZFTA. Such measures could include the establishment of a Single Window and product standards and conformity assessment procedures on a region-wide basis. As with the case of ASEAN, clear timelines could be set for implementing the various measures.

3. Monitor performance in core trade facilitation areas and set targets

ASEAN and its dialogue partners could agree to adopt a set of performance indicators to monitor progress in the implementation of trade facilitation measures. These could be in the core areas of customs procedures and cooperation; technical regulations, standards and SPS measures; NTBs, including administrative fees and charges; transparency of laws, regulations and administrative rulings; and use of ICT and E-commerce. The indicators would be compiled from data sources that are regularly updated, readily accessible and have wide country coverage for ease of tracking. They could form the basis for countries to set specific targets for improvement.

4. Share best practices and implement capacity building measures in priority areas

A review of trade performance indicators has shown that there is great disparity in trade facilitation performance across ASEAN+6 countries, which is conducive to the sharing of best practices among ASEAN countries and its dialogue partners. The performance indicators could also assist each country to identify areas of relative weakness for priority action. There are cost implications associated with implementing trade facilitation reforms. Some measures are considered elementary and relatively easy for countries to implement. Other measures are farther reaching

and more costly, and therefore need to be addressed through appropriate technical assistance and capacity-building support measures in order to be carried out satisfactorily. There is scope to provide this assistance within both the regional and multilateral structures.

5. Keep abreast of development in multilateral negotiations

Multilateral negotiations may result in the creation of binding commitments on the part of WTO member countries to implement measures aimed at facilitating trade. Such commitments are likely to be accompanied by provisions on technical assistance and capacity building, as well as special and differential treatment for developing countries. The Draft Consolidated Negotiating Text could serve as a point of reference in the negotiation of future trade facilitation measures in RTAs. If a multilateral agreement is concluded in WTO, RTA provisions will have to be in line with multilateral obligations.

The Impact of Free Trade Agreements on Foreign Direct Investment

The rapid growth of trade and foreign direct investment (FDI) flows in recent decades has been one of the commonly highlighted characteristics of globalization. FDI is also one of key drivers in the development of regional supply chains.

Given the context of proliferating trading arrangements and burgeoning FDI flows, it is useful to examine the role of RTAs in the determination of FDI location. As Thangavelu and Findlay (Chapter 4) explain, investment creation and diversion effects of RTAs have been estimated in various empirical analyses. However, these studies typically focus on case studies of the European Union (EU), Mercosur (Southern Common Market) and Latin American countries and with mixed results. Attention to Asia--Pacific economies is therefore valuable.

FTAs may drive FDI flows through a variety of channels. FTAs remove export regulations by lowering of trade barriers to facilitate the movement of intermediate or final products between parent firms in source countries, and foreign affiliates in host countries. Other positive effects of FTAs on FDI could arise from other conditions

negotiated in the FTA, such as investment regulations that increase the mobility of fund and capital flows. These regulations make it easier for multinational corporations to divert financial resources to their foreign affiliates. Lower exporting costs also reduce the cost of servicing markets from a home base rather than establishing a foreign operation in a host country. FTAs could also provide other less tangible benefits since their signing not only signifies economic cooperation between nations but also cooperation on the political and institutional fronts.

Thangavelu and Findlay examine the coverage of investment in selected ASEAN+1 agreements and the impact of (a wider body of) agreements on FDI flows.

They find firstly that significant sectoral barriers to investment in manufacturing and services still exist, and this forms major impediments to FDI in ASEAN and with the +1 partners.

Second, they find a high degree of variation among economies in the treatment of investment even within one agreement. This variation is much greater in the two agreements with a non-member which they study (China and Korea) than within AFTA. Even though the group negotiates as a whole, the extent of commitments that individual members are required to make varies considerably. This gives a large economy with a relatively open regime a characteristic similar to that of the hub country within a hub and spoke structure. Hub economies generally gain more from agreements than the spokes. For example, in the context of FDI flows seeking competitive cost structures compared to those in the home economy, the larger relatively open economy remains a preferred location for investment compared to others with similar cost structures. This situation puts the notion of ASEAN centrality at risk.

Third, there is further variation across agreements, with that involving China being less liberal than others. They suggest that this is because of the greater complementarily of other members with Korea and the more significant concern in those economies about competition from Chinese firms who invest in the ASEAN region.

Fourth, econometric results indicate that for a sample of economies (dominated by the OECD) multilateral agreements (such as ASEAN+1 agreements) are more likely to be FDI-flow promoting than a bilateral agreement in isolation.

Recommendations from these results in the context of consideration of consolidating ASEAN+1 agreements include firstly action to reduce the risk that

ASEAN becomes a series of spokes to partner countries' hub positions. One contribution would be to document actual policy in these agreements, rather than making commitments in which there is a gap to actual policy. This guarantees no back-sliding on actual policy at least to these trading partners. To be added then would be a commitment to further liberalization, with schedules for reform in key sectors (similar to those used in the GATS).

The question also remains of whether investment policy is easily applied in a discriminatory manner. A further suggestion is that ASEAN shows leadership by offering to take in new members to a regional investment agreement if those new members abide by the same principle of having 'no water' in investment commitments.

One question in relation to investment in an ASEAN++ building block is whether to include services commitments which are specific to that mode of delivery or whether to contain all services commitments within a services component. There is some advantage in the latter.

This assessment is based on recent work which indicates that services producers just like manufacturers take a supply chain approach to the international delivery of their outputs. To serve international markets they procure inputs from competitive origins, which might be their own offices in other (third) economies or could be other businesses. They also prefer to have access to all of the modes of supply which they use simultaneously in order to deliver their final output. To avoid biasing their choices in modes of delivery and to avoid the otherwise lost opportunities in supply chain design, there is value in making services commitments across all modes for one sector. Issues in integration in services markets are discussed in the next section.

Services in ASEAN+1 FTAs

Integration of services markets is important in its own terms, providing the same sorts of advantages as the integration of goods markets. Services also make a critical contribution to trade facilitation and the operation of production networks, through transport, logistics, information and communication services and finance.

Findings from the work here on services (Cornish and Findlay, Chapter 5) are similar to those for investment. They include:

- significant barriers to trade and investment in services remain in member economies;
- commitments to reform vary across economies within an agreement;
- an economy's commitments on services vary across agreements in a systematic manner depending on concerns about competition from the partner economy; and
- those commitments (and this conclusion also draws on other work) appear to be less liberal than actual policy, and they contain considerable 'water'.

These results suggest recommendations that are therefore similar to those made in relation to investment, which are as follows:

- to commit to actual policy in these agreements;
- to provide a commitment to further liberalization,
- to look to apply those provisions without discrimination (and since in many aspects of policy on services the operation of discrimination is not feasible); and
- to provide access to the provisions to other partner economies who are willing to join on these same principles.

Further to the earlier comments on the value of participation of more firms in trade, Hoekman has argued for action that squeezes out 'water', or the gap to actual policy, from existing commitments, including in services, and therefore lowers trade costs by reducing uncertainty. A set of commitments that achieves this result in the process of consolidating +1 agreements could be complemented by others to reduce 'water' in the services commitments in the GATS.

While these are important long-term goals, and objectives to be retained and to which regular reference should be made, progress in the short run may be difficult. There are important lessons from services negotiations in the WTO where there remain large gaps between commitments and actual policy in services. The assessment of Borchert, Gootiiz and Mattoo[4] is that:

[4] www.wto.org/english/tratop_e/dda_e/wkshop.../aaditya_**mattoo**_e.ppt

- The best offers submitted so far as part of the Doha negotiations improve on Uruguay Round commitments by about 13 per cent but are still on average 1.9 times more restrictive than actual policies.
- At present, Doha offers not greater access to markets but a weak assurance that access will not get worse.

Hoekman and Mattoo[5] identify a number of factors contributing to this result. First, governments are concerned that multilateral commitments 'will deprive them of the freedom to regulate' e.g. cross-border flows of financial and data services and activities such as cross-border gambling services; second 'regulators are unprepared for unrestricted entry and competition, especially in the smaller developing countries and especially in financial services'; and third there are 'inadequate mechanisms for the international regulatory cooperation, such as between financial regulators, competition authorities, and immigration authorities that would be needed to reap the full benefits of liberalization'.

Second, business interest has been limited. Services markets in industrialized countries, services markets are mostly open. Developing countries are unilaterally liberalizing their markets. Developing countries are increasingly the suppliers of outsourced services to OECD nations that are in turn the source of investment and know-how in sectors such as transport, telecommunications and finance. This investment flow and the interdependence it creates reduces the likelihood of a reversal of policy. Also the business community remains pessimistic because regulatory policies are not the focus of attention in the negotiations and those policies matter to them.

Hoekman and Mattoo suggest that therefore the priority is to deal with domestic regulation by working to 'strengthen regulatory institutions and identify, design and implement policies that address market failures and ensure wider access to services'. This might be based on 'services knowledge platforms' where sectoral regulators, trade officials and stakeholders come together to assess current policies and identify beneficial reforms. This could help establish the preconditions for future liberalization commitments. They also propose 'international cooperation to address regulatory externalities' e.g. prudential regulation problems arising from differences in regulatory

[5] http://www.voxeu.org/index.php?q=node/5969

standards, dangers that liberalization gain will be appropriated by international oligopolies (e.g. transport and information services), and cooperation between host and source countries as concerns temporary labour mobility.

This review of experience in the negotiation at the WTO level and the results here of the assessment of the ASEAN+1 agreements suggests that a first step for progress on services is not to move immediately to a new comprehensive and consolidated agreement but to work on the environment in which that agreement might be built. This means a focus on capacity building in services that deals with the key issues identified above. Considerable work of this type is already in progress in APEC, and an important principle for ASEAN and its +1 partners as they seek to consolidate their agreements would be to confirm their commitments to APEC work programs with specific time lines.

This recommendation does not imply that sectoral commitments in services should be avoided. The supply chain framework and the lessons from the case studies highlight the value of a well functioning transport and logistics system. The relevant bundle of activities is not readily defined in existing service industry classifications and a recommendation here is that (building on work in the WTO) a model set of commitments on that package of services be defined and implemented, and those commitments cover all the modes of supply including investment. There is further guidance on the relevant scope of this package in the strategies defined in the Master Plan on ASEAN Connectivity. This package could be adopted in advance of wider services and investment commitments. Other sectors might be examined in a similar fashion but the research here indicates that transport and logistics is the priority.

Both services and investment arrangements would also have to confront the question of rules of origin, but generally these are less of an issue compared to the commitments themselves and can be made relatively liberal (e.g. based on commercial presence).

Rules of Origin in ASEAN+1 FTAs

Medalla and Rosellon (Chapter 6) discuss the system of rules of origin used in the various ASEAN+1 FTAs in the East Asian region and how the rules of origin regimes affect the value chain.

To this end, the first task is to examine the nature of the rules of origin in these FTAs and how they are implemented. They find firstly that many different rules are used and sometimes combinations of rules are used. The rule most commonly used, however, is a regional value content of 40 per cent. Only about 30 per cent of tariff lines have basically the same rule of origin (although about 60 per cent have some rule in common). Generally the China--ASEAN FTA is the 'odd one out'.

Medalla and Rosellon, secondly, review the process for demonstrating that the conditions of the rules have been met. They find that processing times vary widely from one day in Australia to more than 30 days in other economies. The normal range is 5-10 days.

The case studies find mixed results with respect to rules of origin. In some sectors, the commonly used rules are relatively easy to meet. Larger firms report no difficulty in establishing the system to demonstrate compliance. However, there are some production processes in which the rules will be an issue, especially where combinations of rules increase the degree of restrictiveness. Small firms have more difficulty in complying, which is a problem given the goal of encouraging participation in trade. The case studies also stress the importance of the margin of preference in providing an incentive to use the conditions of an agreement. As noted earlier, these margins are more likely to be significant for final products since components imports are generally tariff free.

Any move to consolidate agreements will depend critically on the treatment of rules of origin. The great benefit of working from the base of ASEAN+1 agreements, rather than narrower, bilateral agreements, is that the area of cumulation of content is already relatively large. The consolidation process means adding another partner to an existing and relatively large group. This may be easier than combining two large agreements with a lower level of common membership. However, as work by Estevadeordal and others has shown, there is a tendency for rules of origin to become more restrictive in

groups with larger membership.[6] The goal of consolidation is not to make it more difficult for economies outside the bloc to enter the market: consolidation is supposed to make those within the group more competitive and more able to respond to competition from other economies.

To illustrate, suppose ASEAN and two of its +1 partners decided to consolidate their existing agreements. The first step suggested here is to remove the nuisance tariffs, by abandoning the application of any rule of origin for relatively low tariffs, for example, those at 5 per cent or less. This step involves, in effect, the ASEAN+1 partners agreeing to multilateralism their tariff cuts at this level.

The second step is to adopt a benchmark on the rules of origin to be applied in the new agreement. This does not mean that the rules should be harmonized, since harmonization is more likely to take place around a more restrictive rule. The idea of the benchmark is to offset the tendency for higher restrictiveness with a wider area of cumulation. Rules are selected and transferred from existing agreements but with a view to moving closer to the benchmark in the combined agreement. Additional +1 partners are then welcome to join but they must accept the benchmark set.

The choice of the benchmark is clearly a talking point. It could be a change of tariff classification or a content rule, although the latter is more common in the set of agreements examined here. This benchmark would be negotiated by ASEAN and all of the +1 partners. It is an important principle that all of the +1 partners are involved in this constitutional stage. This benchmark may be a choice of rules and it could also be made more liberal over time. For example, the regional value content component, now commonly set at 40 per cent, could be reduced by 2 percentage points per year. All +1 partners could also be invited to continue to monitor the implementation of the consolidated agreements and their choice of rules. The private sector would also be involved in this monitoring process.

A decision would have to be made about whether to leave the existing +1 agreement in place. The new agreement would have a wider area of cumulation but different rules

[6] The following discussion also draws on suggestions in 'Multilateralising preferential rules of origin around the world' by Kati Suominen, Antoni Estevadeordal and Jeremy Harris, available at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1803029

of origin. As a way of managing the risk of more restrictive rules in the wider agreement, the original +1 agreements could be left in place as a choice for traders.

An even more important discipline of course is to reduce the MFN tariffs so that the margins of preference become less significant. As noted earlier, Hoekman has made the case for reducing uncertainty in the trading system by taking the 'water' from current commitments. ASEAN and its +1 partners could adopt this principle in the current round of WTO negotiations alongside the consolidation of the +1 agreements.

In other suggestions, Medalla and Rosellon propose, in terms of processing time, for the purpose of meeting a common rule of origin, establishing a system of mutual recognition of the certificates of origin and mechanisms for reaching common understanding of the correct tariff classification codes for particular products.

Last words

There are challenges in the bottom-up approach and progress on the different components of a consolidated ASEAN++ approach referring to goods, services, investment and trade facilitation may have different requirements. In meeting those requirements the elements could move at different rates and the progress on the whole project might proceed with a series of building blocks. Generally, therefore the suggestions are to:

1. put immediate priority on areas such as trade facilitation where there are 'gains all round' from reform;
2. send a strong signal about the commitment to integration by removing rules of origin in goods at the lower tariff rates, and otherwise simplify them and then adopt a liberal benchmark or reference rule (for goods, services and investment) before moving to consolidate existing agreements;
3. work to remove gaps between actual policies and those committed in goods, services and investment in the agreements and continue to work to reduce MFN tariffs on goods;

4. start work on services and investment by designing and applying commitments in services and investment in areas which are of great value to supply chain operations; and
5. back up the work on services through a capacity-building programs on domestic regulation.

Appendix - Contents

CHAPTER 2

Trade in Supply Chains between ASEAN and China: Development and Implications[§]

NOBUAKI YAMASHITA

School of Economics and Finance, La Trobe University, Melbourne

ARCHANUN KOHPAIBOON

Faculty of Economics, Thammasat University, Bangkok

This paper examines the development of trade patterns of ASEAN economies in the context of global supply chains, in particular the emerging trade links with China. A modified gravity model has been developed to link China's export growth with the growing export opportunities for ASEAN in China. This paper finds that the import of components from ASEAN to China has had a positive impact on China's exports of final products, although other East Asian countries (South Korea and Taiwan) also continue to be important sources of components. It is also found that FTA formation between ASEAN and China had a positive effect on China's component imports over and above component imports from East Asian suppliers.

[§] We would like to thank Christopher Findlay, Shujiro Urata, Michael Cornish and other participants for useful comments and assistance at the Economics Research Institute of ASEAN and East Asia (ERIA) workshops in Jakarta and Singapore. We would also like to thank Nicola Chandler for her splendid editing job on the draft version of this chapter.

1. Introduction

One of the most important trade developments in East Asia is the rapid growth of product supply chains mainly driven by the widespread operations of multinational corporations. Production processes are vertically separated into two or more stages and across two or more countries through the extensive use of outsourcing and intra-firm trade (Jones and Kierkowski, 2001; Athukorala and Yamashita, 2006).[1] In this process a country no longer needs to specialize in the entire production of a product, and may choose to focus instead on some specific segments of products. Some segments of the lower end of the supply chain have been moved to several developing countries where production costs are relatively cheaper. As a consequence, there has been a rapid increase of trade in parts and components linking countries with different stages of production (Yeats, 2001; Yamashita, 2010).

This paper examines the development of trade in supply chains for ASEAN countries and especially their linkages with China. China is becoming an increasingly important trading nation for ASEAN economies. China overtook Germany in 2010 to become the world's largest exporter. China's growing importance has created concerns among other Asian exporting countries who fear that competition with China is crowding out their own export opportunities (the 'China fear'). However, it is now clear that for many Asian countries China's formidable growth has also created opportunities for exports to China (Eichengreen et al., 2007; Greenaway et al., 2008; Athukorala, 2009; Coxhead and Jayasuriya, 2010). China is becoming a major importer of manufactured components for final assembly in Chinese factories.

[1] For example, *Quanta Computer*, the largest original design manufacturer (ODM) of laptops originating in Taiwan, collects parts and components from around the globe – such as Intel microprocessors and Microsoft operating systems from the US; graphic tips designed by ATI technologies from Ontario in Canada; hard disc drives from Japan; and liquid crystal display (LCD) screens and memory chips produced from companies in Taiwan and South Korea – and then assembles them at Quanta Shanghai Manufacturing City in China. Quanta Computer was listed as one of the Global Fortune 500 Enterprises in Fortune Magazine in 2006. See http://www.quantatw.com/Quanta/english/Default.aspx

This paper examines the trade link between China and ASEAN economies in global supply chains. We are particularly interested in how China's integration into the global value chain has been complementary to ASEAN exports to China. A modified gravity model developed in this paper links China's export success with the created export opportunities in the Chinese market for ASEAN countries. We also investigate whether the FTA has had any positive impact on such trade linkage between China and ASEAN.

The rest of the paper is organized as follows. The next section reviews existing approaches to measure trade in value chains and explain the approach taken in this paper. Section 3 discusses ASEAN's trade patterns and in particular its trade linkages with China. Section 4 specifies a modified gravity equation and variables used for regressions, followed by interpretation of the results. Section 5 concludes the paper. In this paper among the 10 member countries of ASEAN we only focus on the so-called ASEAN-6 (Singapore, Indonesia, Malaysia, Philippines, Thailand and Vietnam) due to data availability.

2. Trade Data Approach

There is no unique way of quantifying the magnitude and pattern of vertical specialization of trade.[2] The approach taken in this paper relies on published international trade statistics on parts and components identified at the most highly disaggregated five-digit level. This method was pioneered by Yeats (2001) who used a list of commodity classifications based on Standard International Trade Classification (SITC) Revision 2 and extended by Athukorala (2005) using SITC Revision 3. We build on the approach by Yeats (2001) and Athukorala (2005). Identification of trade in parts and components in this paper takes a more systematic approach following the commodity classification system provided by the United Nation's Broad Economic Category (BEC), whereas Yeats (2001) and Athukorala (2005) simply identify a list of

[2] Feenstra and Hanson (1996, 1999) develop a measure of international outsourcing in their widely cited papers. However, their measure only captures the *intensity* of foreign outsourcing for given industries, not to the extent of the associated trade flows. Hence, we do not discuss the Feenstra--Hanson approach here. See Yamashita (2008) for more detailed discussion on this measurement issue.

components by focusing on the product description at the five-digit level. The BEC classification system is intended to categorize SITC-based trade statistics into a large economic class of items according to economic activity.[3]

Among seven major commodity categories under BEC, industrial supplies (BEC 2), capital goods (BEC 4), and transport equipment (BEC 5) include a sub-category for 'parts and accessories'. The corresponding sub-categories are BEC 22, BEC 42 and BEC 53. However, not all of the items classified under BEC 22, 42 and 53 correspond to parts and components. Only the items under these three sub-categories which at the same time correspond to SITC 7 (machinery and transport equipment) are identified as parts and components in this study. Limiting items to SITC 7 prevents the inclusion of some components traded as 'products in their own right' under specific trade names (e.g. automobile tyres which belong to SITC 6). The final list prepared though this procedure contains a total of 264 items[4] (see Yamashita, 2008, for a list of parts and components). We also define the final assembled goods which are not specified as components within the machinery sector.

A primary focus on the machinery product category is justified for the following reasons. First, the current available commodity trade classification permits the systematic separation of trade in parts and components in the machinery and transport equipment industry. Vertical specialization of trade in other sectors such as clothing, chemicals and toys has been increasingly important but the current data reporting system does not permit a meaningful separation of commodities. Second, many writers have argued that vertical specialization in trade in the high-tech machinery industry has been the driving force of the recent international fragmentation of production (Athukorala, 2005; Krugman, 2008).

By contrast, the existing studies use the data collected on the special operations of foreign processing and assembly, such as the US Offshore Assembly Programme (OAP) or the Inward/Outward Processing Trade (IPT/OPT) scheme of the European Union

[3] The original BEC was published in 1971, Revision 1 was issued in 1976 and Revision 2 in 1986. The BEC was developed in such a way that it would provide the elements which enable the construction of aggregates of trade goods approximately comparable to those for the three basic classes of goods in the 1968 Social National Account (SNA). For a more detailed description on the BEC, see: http://unstats.un.org/unsd/cr/family2.asp?Cl=10.

[4] A complete list of parts and components identified by BEC will be available by request.

(EU) (Helleiner, 1973; Sharpton, 1975; Egger and Egger, 2005; Swenson, 2005 and 2007). Using the processing trade data it is possible to distinguish between re-entry of dutiable imports, representing the dutiable value added associated with foreign assembly production and non-dutiable parts of value added. In this sense, the data contain the accurate information on the operation of overseas assembly (Grunwald and Flamm, 1985; Feenstra et al., 2000). However, these processing trade data suffer from two major limitations. First, the coverage of these schemes has a somewhat limited focus, since only the items under those special schemes are recorded. In order to qualify for OAP imports the goods finally assembled abroad need to be returned to the US. However, production fragmentation is not only confined to goods that have been processed abroad returning home. It might be the case that foreign assembled goods containing US produced components and parts are shipped to other third countries from the assembly locations, instead of coming back to the US for sale. The OAP statistics do not trace such trade flows (Grunwald and Flamm, 1985). Second, the benefit of tax exemption under IPT/OPT is disappearing due to the ongoing process of multilateral tariff reductions (Hijzen et al., 2005). The importance of OAP imports in total US imports has in fact been declining over the years, dropping to 8 per cent in 2000 from 12 per cent in 1990 (Swenson, 2005).

Finally, some studies have developed the input-output table approach to measure intensity of vertical specialization of trade (Ishii et al., 2001; Dean et al., 2007). While this method can make more precise separation of imported inputs used for production of export goods from domestically-sourced intermediate inputs, it has limited use in a multi-countries context (Yamashita, 2008). Since our focus is ASEAN member countries, the trade flows approach is more appropriate because the data provide more compatible series across countries.

3. Trade in Supply Chains for ASEAN

Table 1 shows the product composition of trade at the one and two-digit level of SITC product categories for ASEAN countries for the period 1992 to 2005. Overall, the

product composition of ASEAN's manufacturing trade is highly concentrated in the information communication technology (ICT) product categories under SITC 75, 76 and 77. In particular, Singapore, Malaysia and Thailand have a high concentration of ICT products in their trade structures. Those ICT products together account for around half of manufactured trade from these three countries. Their specializations in ICT products are closely related to the location strategies in the early 1960s of major multinational enterprises (MNEs) such as National Semiconductor and Texas Instruments (Athukorala, 2008).

Table 1. Product Composition of Trade Structure for ASEAN Countries, 1992-2005

	Singapore	Export composition (%) in total manufacturing			Import composition (%) in total manufacturing		
SITC code	Product description	1992/93	2000/01	2004/05	1992/93	2000/01	2004/05
5	CHEMICALS, RELATED NES	7.3	11.0	19.3	9.3	7.2	8.2
6	MANUFACTURED GOODS	6.0	4.2	3.9	15.6	8.8	9.2
68	NON-FERROUS METALS	0.6	0.6	0.5	2.4	1.6	1.6
7	MACHINES, TRANSPORT EQUIP.	76.7	77.3	69.8	64.7	74.4	73.6
71	POWER GENERATN.MACHINES	1.6	1.4	1.5	4.2	2.4	3.1
72	SPECIAL INDUST. MACHINERY	1.4	1.4	1.6	3.8	4.8	4.1
73	METALWORKING MACHINERY	0.3	0.5	0.7	0.8	0.8	0.8
74	GENERAL INDUSTL. MACHINES	3.5	2.6	2.7	5.9	4.0	3.9
75	OFFICE MACHINES, ADP. MACH.	32.2	34.1	25.1	10.7	15.4	12.5
76	TELECOMM. SOUND EQUIP. ETC.	13.4	6.5	6.3	10.7	6.6	8.5
77	ELEC. MACH. PARTS NES	21.5	29.2	30.0	20.7	35.1	35.0
78	ROAD VEHICLES	0.8	0.5	0.5	3.1	2.4	2.6
79	OTHER TRANSPORT EQUIPMENT	0.7	1.2	1.5	4.8	3.0	3.1
8	MISC. MANUFACTURED ARTCLS	10.6	8.1	7.6	12.7	11.3	10.6
84	CLOTHING AND ACCESSORIES	2.6	0.7	0.4	2.1	1.8	1.5
85	FOOTWEAR	0.1	0.1	0.0	0.4	0.2	0.2
894	BABY CARRIAGE, TOYS, GAMES	0.5	0.1	0.1	0.6	0.4	0.3
5 to 8	Manufactured goods	100.0	100.0	100.0	100.0	100.0	100.0

	Malaysia	Export composition (%) in total manufacturing			Import composition (%) in total manufacturing		
SITC code	Product description	1992/93	2000/01	2004/05	1992/93	2000/01	2004/05
5	CHEMICALS, RELATED NES	3.3	4.4	5.7	9.5	8.8	10.0
6	MANUFACTURED GOODS	11.7	7.4	7.1	18.9	12.8	13.9
68	NON-FERROUS METALS	1.2	0.8	0.9	2.6	2.6	3.2
7	MACHINES, TRANSPORT EQUIP.	69.2	78.8	78.9	67.3	74.2	72.3
71	POWER GENERATN.MACHINES	1.1	0.7	0.4	3.3	2.4	2.5
72	SPECIAL INDUST. MACHINERY	0.6	0.5	0.6	7.0	4.4	3.2
73	METALWORKING MACHINERY	0.1	0.1	0.1	2.1	1.2	1.0
74	GENERAL INDUSTL. MACHINES	2.7	1.6	1.7	7.3	4.2	3.7
75	OFFICE MACHINES, ADP. MACH.	10.4	26.4	24.2	3.7	7.1	10.4
76	TELECOMM. SOUND EQUIP. ETC.	26.2	16.7	16.6	6.3	5.2	4.9
77	ELEC. MACH. PARTS NES	26.6	32.2	34.5	27.9	45.8	41.1
78	ROAD VEHICLES	1.2	0.5	0.6	3.6	2.6	3.3
79	OTHER TRANSPORT EQUIPMENT	0.8	0.1	0.1	6.1	1.2	2.2
8	MISC. MANUFACTURED ARTCLS	17.0	10.1	9.2	6.9	6.9	7.0
84	CLOTHING AND ACCESSORIES	8.6	3.6	2.5	0.4	0.2	0.3
85	FOOTWEAR	0.5	0.1	0.2	0.1	0.1	0.2
894	BABY CARRIAGE, TOYS, GAMES	1.5	0.4	0.3	0.3	0.2	0.2
5 to 8	Manufactured goods	100.0	100.0	100.0	100.0	100.0	100.0

	Indonesia	Export composition (%) in total manufacturing			Import composition (%) in total manufacturing		
SITC code	Product description	1992/93	2000/01	2004/05	1992/93	2000/01	2004/05
5	CHEMICALS, RELATED NES	4.2	8.7	10.1	18.4	28.6	27.0
6	MANUFACTURED GOODS	47.8	33.1	29.6	22.4	23.6	24.2
68	NON-FERROUS METALS	1.9	2.2	4.7	2.3	3.0	2.8
7	MACHINES, TRANSPORT EQUIP.	9.1	27.8	36.3	56.2	46.3	47.3
71	POWER GENERATN.MACHINES	0.2	1.1	1.6	7.8	4.2	5.1
72	SPECIAL INDUST. MACHINERY	0.5	0.4	0.8	13.7	8.7	8.1
73	METALWORKING MACHINERY	0.0	0.0	0.0	2.1	1.5	1.6
74	GENERAL INDUSTL. MACHINES	0.4	1.1	1.6	10.6	9.2	9.4
75	OFFICE MACHINES, ADP. MACH.	0.7	6.8	9.1	0.9	1.2	1.6
76	TELECOMM. SOUND EQUIP. ETC.	4.5	9.2	9.9	4.4	2.1	4.5
77	ELEC. MACH. PARTS NES	1.9	8.0	10.9	7.7	4.6	5.2
78	ROAD VEHICLES	0.9	1.1	2.0	5.6	9.4	9.4
79	OTHER TRANSPORT EQUIPMENT	1.9	0.1	0.3	3.6	5.3	2.5
8	MISC. MANUFACTURED ARTCLS	40.7	32.5	28.6	5.3	4.5	4.3
84	CLOTHING AND ACCESSORIES	19.9	14.8	12.7	0.1	0.2	0.2
85	FOOTWEAR	11.2	5.9	4.1	0.5	0.4	0.2
894	BABY CARRIAGE, TOYS, GAMES	2.0	1.3	0.9	0.1	0.2	0.3
5 to 8	Manufactured goods	100.0	100.0	100.0	100.0	100.0	100.0

	The Philippines	Export composition (%) in total manufacturing			Import composition (%) in total manufacturing		
SITC code	Product description	1992/93	2000/01	2004/05	1992/93	2000/01	2004/05
5	CHEMICALS, RELATED NES	2.8	1.0	0.9	17.3	11.6	9.5
6	MANUFACTURED GOODS	9.1	3.9	4.0	26.0	15.6	12.3
68	NON-FERROUS METALS	2.4	0.9	1.1	2.2	1.6	1.3
7	MACHINES, TRANSPORT EQUIP.	47.0	81.8	85.1	53.4	69.1	75.4
71	POWER GENERATN.MACHINES	0.4	0.6	1.0	6.1	2.0	1.0
72	SPECIAL INDUST. MACHINERY	0.2	0.2	0.2	6.4	4.2	2.6
73	METALWORKING MACHINERY	0.1	0.1	0.1	0.9	0.7	0.5
74	GENERAL INDUSTL. MACHINES	0.4	0.6	0.9	5.3	3.0	1.7
75	OFFICE MACHINES, ADP. MACH.	7.8	26.1	18.9	3.3	11.2	10.1
76	TELECOMM. SOUND EQUIP. ETC.	7.7	4.8	5.6	5.4	7.8	3.5
77	ELEC. MACH. PARTS NES	29.4	48.4	56.6	12.8	35.3	51.9
78	ROAD VEHICLES	0.9	0.9	1.5	7.8	4.3	3.3
79	OTHER TRANSPORT EQUIPMENT	3.3	0.2	0.3	5.4	0.6	0.9
8	MISC. MANUFACTURED ARTCLS	43.4	14.3	11.1	5.4	5.3	4.1
84	CLOTHING AND ACCESSORIES	25.0	7.3	5.2	0.3	0.3	0.3
85	FOOTWEAR	2.2	0.3	0.1	0.3	0.2	0.1
894	BABY CARRIAGE, TOYS, GAMES	3.0	0.6	0.6	0.3	0.3	0.2
5 to 8	Manufactured goods	100.0	100.0	100.0	100.0	100.0	100.0

	Vietnam	Export composition (%) in total manufacturing			Import composition (%) in total manufacturing		
SITC code	Product description	1992/93	2000/01	2004/05	1992/93	2000/01	2004/05
5	CHEMICALS, RELATED NES	1.8	2.1	2.0	21.5	20.9	19.0
6	MANUFACTURED GOODS	18.3	11.0	10.2	25.3	28.8	35.8
68	NON-FERROUS METALS	5.1	0.4	0.2	2.8	2.4	3.1
7	MACHINES, TRANSPORT EQUIP.	5.5	14.8	16.7	49.8	44.9	40.8
71	POWER GENERATN.MACHINES	0.1	1.0	1.4	3.1	3.3	3.0
72	SPECIAL INDUST. MACHINERY	0.5	0.8	0.5	6.3	7.7	5.9
73	METALWORKING MACHINERY	0.1	0.0	0.1	0.3	0.9	1.1
74	GENERAL INDUSTL. MACHINES	0.4	1.3	1.4	7.8	5.2	5.1
75	OFFICE MACHINES, ADP. MACH.	0.0	0.5	2.3	1.5	2.5	4.6
76	TELECOMM. SOUND EQUIP. ETC.	0.2	1.5	1.5	8.2	3.6	3.8
77	ELEC. MACH. PARTS NES	0.7	8.7	7.4	5.7	8.7	7.5
78	ROAD VEHICLES	3.3	1.1	1.9	14.4	11.6	6.4
79	OTHER TRANSPORT EQUIPMENT	36.1	0.0	0.1	2.6	1.4	3.3
8	MISC. MANUFACTURED ARTCLS	79.6	72.4	71.3	6.2	7.8	7.4
84	CLOTHING AND ACCESSORIES	54.1	23.0	27.0	0.6	0.8	1.0
85	FOOTWEAR	13.9	33.8	26.4	0.1	1.4	1.0
894	BABY CARRIAGE, TOYS, GAMES	0.8	1.5	1.0	0.1	0.2	0.1
5 to 8	Manufactured goods	100.0	100.0	100.0	100.0	100.0	100.0

SITC code	Thailand Product description	Export composition (%) in total manufacturing 1992/93	 2000/01	 2004/05	Import composition (%) in total manufacturing 1992/93	 2000/01	 2004/05
5	CHEMICALS, RELATED NES	3.1	7.2	8.5	13.6	14.5	15.0
6	MANUFACTURED GOODS	17.7	14.8	13.6	25.7	21.9	26.2
68	NON-FERROUS METALS	0.3	0.6	0.6	2.6	3.1	4.3
7	MACHINES, TRANSPORT EQUIP.	44.2	56.6	61.4	56.9	59.6	55.2
71	POWER GENERATN.MACHINES	1.3	2.3	2.1	4.1	2.8	3.2
72	SPECIAL INDUST. MACHINERY	0.5	0.5	0.6	7.6	4.2	4.0
73	METALWORKING MACHINERY	0.2	0.3	0.3	2.2	1.5	1.9
74	GENERAL INDUSTL. MACHINES	3.5	4.6	5.2	7.9	5.7	6.4
75	OFFICE MACHINES, ADP. MACH.	15.5	19.1	17.5	5.1	8.3	7.0
76	TELECOMM. SOUND EQUIP. ETC.	9.4	8.5	11.3	4.2	4.9	4.7
77	ELEC. MACH. PARTS NES	12.7	16.7	16.8	13.5	25.9	21.2
78	ROAD VEHICLES	0.9	4.5	7.4	9.0	4.3	4.9
79	OTHER TRANSPORT EQUIPMENT	1.3	0.1	0.1	3.3	2.0	1.9
8	MISC. MANUFACTURED ARTCLS	35.3	22.0	17.1	6.4	7.1	7.9
84	CLOTHING AND ACCESSORIES	12.4	7.9	5.5	0.1	0.3	0.3
85	FOOTWEAR	4.7	1.9	1.1	0.1	0.1	0.1
894	BABY CARRIAGE, TOYS, GAMES	3.7	1.5	0.9	0.2	0.3	0.2
5 to 8	Manufactured goods	100.0	100.0	100.0	100.0	100.0	100.0

Source: UN Comtrade

More recently, the Philippines has developed some trade specialization in ICT products: in 1992/93 the share of electrical machinery, apparatus and appliances (SITC 77) products in exports substantially increased from less than 30 per cent in 1992/93 to over 50 per cent in 2004/05 and similarly from 13 per cent in 1992/93 to over 50 per cent in 2004/05 for imports. At first sight, it may seem strange to observe that a country in the lower cluster of the economic development stage within ASEAN has developed trade specialization in such high-tech and skilled industries. In 2008 GDP per capita in international dollars for the Philippines was $3,510, while that of Singapore was $49,284 and $14,215 for Malaysia. Surely, the Philippines' trade structure has been influenced by its integration with supply chains of ICT products.

While catching up with other ASEAN countries in terms of technological advancements in manufacturing, the export composition of Indonesia continues to be dominated by non-ICT products. This is closely related to the poor track record of major multinational investments (Athukorala, 2006). The export composition of Vietnam is still dominated by relatively labour-intensive products such as clothing (SITC 84) and footwear (SITC 85), accounting for over 70 per cent of manufacturing exports for the entire period of 1992 to 2005. However, machines and transport equipment products are Vietnam's largest import categories.

Table 2 summarizes the percentage share of parts and components in total manufacturing trade for ASEAN and other countries for 1992 to 2009. The percentage share of components in manufacturing trade for ASEAN is generally shown to be higher than for other countries. In 2005/06 the component shares both in manufacturing exports and imports amounted to around 40 per cent, whereas the world average share for same year was 24 per cent. Among ASEAN countries, the Philippines substantially increased the component share from around 34 per cent in 1992/93 to over 60 per cent in exports and 50 percent in imports in 2005/06. These figures are comparable to those for Malaysia and Singapore. China and Hong Kong (China) had a relatively lower share of components in exports, but the import share remained high. In 2005/06, components accounted for 44 percent of China's total manufacturing imports, compared to only 20 percent for exports in the same year. This suggests that China and Hong Kong specialize in importing parts and components for finally assembled export products.

Table 2. Percentage Share of Parts and Components in Total Manufacturing Trade, 1992-2009

	Export (%)				Import (%)			
	1992/93	2000/01	2005/06	2008/09	1992/93	2000/01	2005/06	2008/09
ASEAN6	27.4	38.6	40.2	18.1	34.6	48.8	43.4	24.9
Malaysia	33.4	46.1	48	20.5	42	57.4	53.1	25.4
Philippines	34.4	58.2	66.6	21.6	33.9	55.1	51.1	23.8
Singapore	33.8	43.2	43.5	18.2	38.6	50.4	46.5	25.7
Vietnam	1.4	9.9	10.2	9.2	8.9	18.5	17.2	15.7
Thailand	21.2	27.2	27.4	18	29.1	43.6	38.2	27.5
Indonesia	3.2	12.4	19.7	15.4	24.0	31.0	32.9	26.4
China	5.2	14.2	20.2	15.5	19.3	34.5	43.8	24.1
Hong Kong (China)	18.8	27.5	26.5	14.9	16.8	30.0	36.0	21.0
Japan	26.9	34.1	32.4	24.4	18.5	26.7	25.2	19.2
Rep. of Korea	19.1	27.4	33.1	18.5	29.2	36.7	31.9	19.4
Taiwan	21.1	36.9	45.9	19.2	30.5	39.1	37.7	17.6
US	30.3	35.6	31.2	23.8	24.5	24.1	21.5	17.7
NAFTA	29.6	32.2	29	22.8	27.4	27	23.7	19.4
EU-15	18.6	20.7	19.6	18	19.1	21.7	19.7	16.6
Low income	2.9	5.4	6.5	7.3	15.3	17.1	16.1	14.9
Low-middle income	8.1	17.5	21.7	15.3	21.6	31.3	34.3	22.1
High income	22.7	26	24	19.4	21.3	24.2	22.1	17.5
World	20.8	25.1	24.1	18.2	21.7	25.6	23.9	18.2

Source: UN Comtrade

The share of components in total manufacturing trade has dropped sharply during the global financial crisis (GFC) period in 2008 and 2009 (see Athukorala and Kohpaiboon, 2009; Athukorala, 2011). On a year-to-year basis, G-7 countries' exports dropped 7.9 per cent and imports fell 6.4 per cent in the fourth quarter of 2008 (OECD, 2009).[5] Among them, Japan was hit hardest: on a yearly basis, Japan's exports fell 20.1 percent and imports declined by 6.8 percent. The substantial drop in the volume of trade in 2008 and 2009 was caused largely by a sharp decline of demand for consumer durable goods (ICT products and motor vehicles) in industrial countries.

This falling demand in richer countries directly impacted on component trade in supply chains because of the linkage with demand for final products. For ASEAN countries on average, the share of components in manufacturing trade has dropped sharply, to 25 percent of imports and 18 percent of exports in 2008/09. Other East Asian countries, Taiwan and South Korea have undergone a similar magnitude of decline for their share of components in manufacturing trade in 2008/09.

Table 3 summarizes China's export destination and import sourcing and places ASEAN in a comparative perspective from 1992 to 2009. Trading countries are broken down into ASEAN countries, South Korea and Taiwan, Japan, the US and EU-15 countries. Table 3 also separates China's trade patterns into parts and components, and final goods.

[5] G-7 countries are Canada, France, Germany, Italy, Japan, United Kingdom and the United States.

Table 3. China's Import Sources and Export Destinations of Component and Final Products in Parts and Components and Final Goods in Machinery and Transport Equipment (SITC 7 and SITC 8)

	Imports: Part and components in SITC 7					Final goods in SITC 7				
Year	ASEAN 6	Korea+Taiwan	Japan	US	EU-15	ASEAN 6	Korea+Taiwan	Japan	US	EU-15
1992/93	2.2	15.0	33.4	10.7	19.1	1.1	15.5	28.5	14.1	25.6
2000/01	13.3	20.3	24.1	9.4	17.2	5.2	15.9	20.6	17.3	26.0
2005/06	17.2	30.1	18.2	5.7	9.4	12.1	14.1	21.5	10.2	24.3
2008/09	8.0	19.7	23.4	6.3	19.0	17.5	23.5	16.2	8.0	15.4
	Part and components in SITC 8					Final goods in SITC 8				
Year	ASEAN 6	Korea+Taiwan	Japan	US	EU-15	ASEAN 6	Korea+Taiwan	Japan	US	EU-15
1992/93	1.0	22.1	30.5	7.2	5.2	1.4	20.5	25.0	14.9	8.6
2000/01	5.5	16.6	36.1	9.0	13.6	3.1	16.4	20.8	19.4	18.0
2005/06	4.6	31.3	30.0	7.9	8.0	4.0	44.0	16.5	7.4	8.7
2008/09	5.6	25.1	28.0	7.4	13.6	4.2	41.8	15.4	8.0	11.2

Table 3. China's Import Sources and Export Destinations of Component and Final Products in Parts and Components and Final Goods in Machinery and Transport Equipment (SITC 7 and SITC 8)

	Exports: Part and components in SITC 7					Final goods in SITC 7				
Year	ASEAN 6	Korea+Taiwan	Japan	US	EU-15	ASEAN 6	Korea+Taiwan	Japan	US	EU-15
1992/93	7.8	6.2	15.8	17.5	13.0	6.2	3.0	8.6	22.3	15.2
2000/01	12.8	7.8	14.9	15.4	12.8	7.0	5.2	11.1	24.4	21.3
2005/06	11.6	9.5	10.1	15.6	13.4	5.2	4.0	8.2	26.4	23.2
2008/09	8.6	7.1	8.8	14.5	16.7	8.6	5.9	5.8	19.9	17.8
Exports: Part and components in SITC 8						Final goods in SITC 8				
Year	ASEAN 6	Korea+Taiwan	Japan	US	EU-15	ASEAN 6	Korea+Taiwan	Japan	US	EU-15
1992/93	3.9	5.5	13.0	16.8	9.6	1.5	2.3	16.0	27.1	14.5
2000/01	4.6	5.3	19.7	27.4	9.5	2.1	3.5	20.5	27.4	14.2
2005/06	5.9	7.7	25.3	19.4	9.1	2.9	3.5	12.9	26.6	18.2
2008/09	9.1	6.7	13.4	18.4	12.1	4.8	3.2	10.6	24.0	21.4

Source: UN Comtrade

In the SITC 7 category, China's component sourcing from ASEAN countries accounted for just 2.2 percent in 1992/93, but then ASEAN's share grew to around 13 percent in 2000/01 and 17 percent in 2005/06. The lion's share of China's component imports comes from other East Asian countries, namely South Korea, Taiwan and Japan (excluding Hong Kong). In 2005/06, South Korea and Taiwan accounted for 30 percent and Japan for 18 percent of China's component imports. On the other hand, the US share has declined from 11 percent in 1992/93 to less than 6 percent in 2005/06, and the EU-15 share dropped from 19 percent in 1992/93 to 9.4 percent in 2005/06. During the recent crisis period of 2008/09, the ASEAN share of China's component imports declined substantially to 8 percent in 2008/09. Similarly, the share of South Korea and Taiwan dropped.

In contrast to component imports, the recent crisis had little impact on China's final good imports from ASEAN countries. ASEAN's share actually went up from 12 percent in 2005/06 to 17.5 percent in 2008/09, while the shares of Japan, the US and EU-15 all went down in the same period. Japan's share of China's final product imports declined from 20 percent in 2000/01 to 16 percent in 2008/09. Similarly, the share of the US dropped from 17 percent in 2000/01 to 8 percent in 2008/09 and the share for EU-15 countries went down from 26 per cent to 15 per cent.

Table 3 also looks at the changes in China's exports of parts and components, and final products. Similar to the import pattern, the share of ASEAN countries has substantially increased since the early 1990s. ASEAN's share went up from 7.8 percent in 1992/93 to 12.8 percent in 2000/01 and 11.6 percent in 2005/06, while the shares of other country groups have not changed dramatically during the same period. The US and EU-15 countries together accounted for around 40 percent of China's final product exports, and their importance has not changed significantly for the last 20 years. In 1992/93, 22 percent of China's final good exports went to the US and 15 percent to the EU-15. In 2008/09 the US's share stood at 20 percent and 18 percent for EU-15 countries.

China's trade in miscellaneous manufactured articles (SITC 8) – mainly toys and clothing – shows a quite different pattern. ASEAN countries account for a small portion of China's imports and exports in this product category, while imports from South Korea and Taiwan dominate. Around 40 percent of China's final good imports in this

product category come from these two East Asian countries. On the export side the majority of Chinese products is directed towards Japan, the US and EU-15 countries. All in all, Table 3 clearly suggests the role of China as a major final assembly country. The majority of China's component imports are sourced from East Asian countries including Japan, while China's final product exports are directed towards the US and EU-15.

4. Supply Chain Linkage Between ASEAN and China

This section explores the trade linkage of supply chains between China and ASEAN countries using the gravity model approach, a standard empirical tool for analysing the bilateral trade flows for many years (see van Bergeijk and Brakman, 2010). Greenaway (2007), Eichengreen et al. (2008) and Athukorala (2009) have examined the 'China fear' hypothesis that China's export performance in the third market competes with East Asian exporter performance to the same third markets. While they focus on the third export market competition, we will extend their studies by looking at China's final good export success linked with ASEAN countries' exports of components to China in a unified gravity equation.

A simple hypothesis to be tested in this section is whether the rise of China as a final good exporter in the world market has indeed created export opportunities for ASEAN in China. As shown in the previous section, the China's component imports have been rising in tandem with China's export boom. However, we have also seen Taiwan, South Korea and Japan remain as important component sourcing countries for China. This might have created export competition between ASEAN and other East Asian exporters in China. The formation of the FTA between ASEAN and China in 2005 had some influence on changing China's sourcing patterns. At the same time, MNEs in China might find it beneficial to source components within China because of economies of scale. This has the effect of reducing the overall importing of parts and components from outside China.

We take a gravity equation approach but with an appropriate modification. As theoretically and empirically demonstrated in Baldwin and Taglioni (2011), a standard formation of the gravity equation may not be appropriate for explaining trade flows where trade in parts and components are important in supply chains. This is primarily because GDPs of importing countries do not strictly represent demand for imports with high presence of parts and components. In this case demand for final goods is more likely to come from other third market countries rather than importing countries. As seen in the previous section, China's trade patterns perfectly fit into this profile – increased imports of parts and components in value chains and exports of finally assembled goods to high income countries.

The estimation model includes ASEAN's FTA with China. However, the actual impacts of the FTA on trade in the supply chain are rather complex, depending on several factors. First, trade in final products consisting of a large number of imported parts and components may be countered by the presence of complex rules of origins (ROOs) in overlapping FTAs. This overlapping can create some concerns because in recent years both China and ASEAN economies have been quite active in FTAs: so far ASEAN countries have signed 91 FTAs (or are under implementation), 32 are under negotiation and 36 are proposed (Hall and Menon, 2010). Under an FTA, countries can maintain their own external tariffs while offering preferential (mostly zero) tariffs to the member countries.[6] In this setting, ROOs are put in place to prevent imports of any products into FTA countries through a country with the lowest tariff on the item in question and being re-exported to other countries (the final destinations). If ROOs imposed stringent criteria for identifying the 'true' origins of parts and components used in products and cumbersome administrative compliance procedures, FTAs would not be used at all (Krishna, 2006; Demidova and Krishna, 2008).[7] The utilization rates of FTAs can thus be influenced by the level of most-favoured-nation (MFN) tariff rates as well as the extent of imported parts and components contained in final goods (Menon,

[6] More precisely, this applies under FTAs except for the customs unions where member countries also offer uniform external tariff rates.

[7] There are four types of criteria to determine the origins of goods: (i) the value-added content criterion; (ii) change in tariff classification criterion; (iii) the optional criterion allowing a choice of either (i) or (ii); and (iv) the dual criterion requiring satisfaction of both (i) and (ii) (Cador et al., 2006).

2009).[8]

Secondly, the FTA may not have any actual impacts on trade in components since FTAs are usually duty free owing to the 'tariff escalation', which makes MFN tariff rates almost negligible or significantly lower for parts and components than for final goods in most countries.[9] In other words, margins of preference are practically worthless for this product category. After all, the creation of an FTA may not result in any significant trade creation despite significant resources invested in preparation, negotiation and maintenance.

Taking into account the above considerations we estimate the gravity equation only for China's final good exports excluding parts and components, and link it to China's component imports from ASEAN countries and from other East Asian countries. By doing this we can estimate China's component imports from ASEAN on final good export performance for China, holding other export determinants constant.

The modified gravity equation is written as follows:

$$\ln CHN_{it} = X'_{it}\beta + MP'_{jt}\alpha + t + u_{it} \qquad (1)$$

where CHE_{it} represents China's final goods exports to importing countries i (excluding ASEAN countries). Subscript t denotes years. The symbol *ln* before a variable denotes the natural logarithm. The actual trade flow data refer to import records of i from China (i.e. China's exports) because it is generally believed that import data are better recorded for tax collection purposes. MP represents a vector of China's component imports from ASEAN countries and the other East Asian countries of South Korea, Taiwan and Japan.

X is a vector of usual gravity equation variables that determines China's export performance to country i such as GDP; GDP per capita; the geographical distance between China and i; a dummy variable for countries that share a common land border; and a dummy variable for country pairs that share a common language.[10] All variables

[8] In fact, evidence suggests lower utilization of the FTA scheme for market access (Hayakawa et al., 2009; Takahashi and Urata, 2010,). For example, only 3.6 per cent of exporting firms are reported to use the Japan--Singapore agreement and 5.5 per cent for the Japan--Malaysia agreement.

[9] Except developing countries like Thailand and China where a policy is in place to protect the domestic upstream industries.

[10] Common language is a dummy variable taking unity if a language is spoken by at least 9 per cent of the population in both countries and zero otherwise to capture some trade costs.

except the dummies and the constant are in logarithmic form. *u* is a random variable that is *i.i.d.* normal with mean zero and variance σ_u. We also add a variable of the log of Chinese GDP per capita and the linear time trend (note that because of this set-up, the time-fixed effects cannot be included since it will absorb all variables which do not change across countries such as the ASEAN variable and China's GDP per capita). The specification also adds the interaction term of the ASEAN variable with the FTA dummy. This indicates whether the FTA formation with ASEAN has changed China's sourcing pattern of components.

The trade flow data are drawn from the online UN Comtrade database. The initial data point is set at 1991, because prior to this year, the country coverage of China's exports is not extensive (notably, no trade data were recorded for Taiwan). This time span also covers the period during which China's exports have grown so strongly that China has become the world's largest manufacturing exporter. GDP and GDP per capita are drawn from the online World Development Indicators and distance, border and language data are from the CEPII database.[11]

In all regressions in Table 4, we include China's component imports from ASEAN. Columns (1) to (5) include time dummies and from column (6) onward the regressions exclude the time dummy. The FTA dummy variable for ASEAN--China is included in columns (4), (5), (9) and (10).

[11] http://www.cepii.fr/anglaisgraph/bdd/bdd.htm

Table 4. Regression Results for China's Final Product Exports, 1992-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Importer GDP	0.43**	0.43**	0.43**	0.43**	0.43**	0.50***	0.50***	0.52***	0.45***	0.44***
	[0.174]	[0.174]	[0.174]	[0.174]	[0.174]	[0.158]	[0.157]	[0.154]	[0.168]	[0.168]
Importer GDPP	-0.38**	-0.38**	-0.38**	-0.38**	-0.38**	-0.41**	-0.40**	-0.42**	-0.40**	-0.39**
	[0.191]	[0.191]	[0.191]	[0.191]	[0.191]	[0.184]	[0.184]	[0.179]	[0.186]	[0.187]
Distance	-0.50	-0.50	-0.50	-0.50	-0.50	-0.45	-0.45	-0.44	-0.49	-0.49
	[0.306]	[0.306]	[0.306]	[0.306]	[0.306]	[0.286]	[0.286]	[0.289]	[0.300]	[0.300]
Common language	1.57***	1.57***	1.57***	1.57***	1.57***	1.67***	1.66***	1.69***	1.59***	1.58***
	[0.588]	[0.588]	[0.588]	[0.588]	[0.588]	[0.589]	[0.587]	[0.596]	[0.585]	[0.583]
Imports from ASEAN	0.25***	0.03		0.09	-0.08	0.18**	0.08		0.09	0.00
	[0.085]	[0.119]		[0.075]	[0.099]	[0.071]	[0.086]		[0.065]	[0.078]
Imports from other East Asia		0.10	0.29***		0.24*		0.19*	0.30***		0.17
		[0.169]	[0.099]		[0.135]		[0.109]	[0.107]		[0.110]
FTA*imports from ASEAN				0.02***	0.01***				0.02***	0.02***
				[0.004]	[0.004]				[0.004]	[0.004]
Constant	9.85**	12.29***	8.94**	12.89***	11.35***	9.18**	7.26*	6.14	12.73***	10.97***
	[4.028]	[4.263]	[4.032]	[4.303]	[4.227]	[3.992]	[3.743]	[4.121]	[4.372]	[4.218]
Time dummy	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Observations	666	666	666	666	666	666	666	666	666	666
Number of importers	37	37	37	37	37	37	37	37	37	37
R^2 within	0.152	0.152	0.152	0.152	0.152	0.0843	0.0908	0.0876	0.132	0.137
R^2 between	0.360	0.360	0.360	0.360	0.360	0.388	0.394	0.391	0.358	0.364
R^2 overall	0.334	0.334	0.334	0.334	0.334	0.351	0.357	0.354	0.331	0.337

Source: Authors' calculation based on the data described in the main text.

Notes: Year dummies were included in the estimation in column (1) to (5), but their coefficients are not presented here for brevity. Standard errors based on White's heteroscedasticity correction cluster by country are given in brackets, with statistical significance (two-tailed test) denoted as: *** 1 percent, ** 5 percent, and * 10 percent.

In column (1) the estimated coefficient indicates that China's import from ASEAN on average has had a positive impact on China's final good exports: a 10 percent increase of component imports from ASEAN has the effect of increasing China's final product exports by 2.5 percent on average. However, this variable becomes statistically non-significant as soon as a variable for component imports from South Korea and Taiwan is introduced (column 2). Given other estimated coefficients remaining unchanged, multi co-linearity is driving the result. As shown in the previous section, China's component imports from ASEAN countries, and from South Korea and Taiwan, have been moving quite closely, generating a high correlation between two variables. In column (3), a variable for imports from South Korea and Taiwan is only retained and it becomes positive and statistically significant: a 10 percent increase in component imports increases China's final product exports by 3 percent on average.

Columns (4) and (5) show regression results adding component imports from ASEAN with the FTA dummy. In both regressions, the estimated coefficient suggests that FTA formation with ASEAN had a positive impact on trade links between China and ASEAN, although its magnitude is very small. The FTA dummy is also resilient to the inclusion of imports from South Korea and Taiwan (column 5). These results mean that FTA formation has had some positive impacts on China's final product exports over and above China's component imports from ASEAN and other East Asian countries.

Results for other explanatory variables can be summarized as follows. First, a common language dummy is positive and statistically significant at the 1 percent level in all regressions: other factors held constant, exports of China's final product would have the effect of more than doubling trade. As commonly found in the gravity equation studies, the distance variable has a negative sign. However, it does not show strong statistical significance. As shown in section 3 of this paper, the main markets of China's final good exports are located in North America and Europe. Hence, we do not see a strong result for a distance variable for China's final product exports. The size of markets is very important but the sign of *GDPP* turns out be negative with statistical significance.

5. Conclusion

This paper has examined the development of trade linkages between China and ASEAN in product value chains. The broad analysis confirms that ASEAN's trade structure has been transformed, putting more weight on ICT-related products. At the same time, a trade link has been developed between China and ASEAN countries by the latter exporting parts and components to be assembled in final product exports in China. We then formally tested this by estimating a modified gravity equation of China's final product exports and linked it with China's component imports from ASEAN and other East Asian countries. The regression results show that China's component imports from ASEAN countries on average had a positive impact on China's final product exports. While we could not precisely estimate whether imports from ASEAN had any independent impact on imports as distinct from other East Asian countries (because two were highly correlated), it was found that FTA formation between China and ASEAN has created more component imports over and above component imports from East Asian countries.

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CHAPTER 3

Trade Facilitation in ASEAN and ASEAN+1 FTAs: An Analysis of Provisions and Progress

MARIE ISABELLE PELLAN

Institute for International Trade, University of Adelaide

MARN-HEONG WONG

Lee Kuan Yew School of Public Policy, National University of Singapore

The treatment of trade facilitation in the ASEAN Free Trade Area (FTA) and in the five FTAs concluded by ASEAN is analysed. The performance of ASEAN and its dialogue partners ('ASEAN+6') in different dimensions of trade facilitation is assessed. The paper offers a definition of trade facilitation and reviews the potential benefits of trade facilitation as highlighted in other studies. It examines the trade facilitation provisions in the ASEAN+1 agreements and discusses the complementary roles of multilateral and regional efforts on trade facilitation. It identifies and develops indicators of trade facilitation in several core areas and analyses the performance of ASEAN+6 countries as measured by these indicators over the period 2007 to 2010. Recommendations that could inform the approach of ASEAN+6 countries to trade facilitation in the context of wider intra-regional integration are then presented.

1. Introduction

The emergence of regional value chains was one of the main driving forces behind the rise in intra-regional trade in East Asia during the 1990s, in particular, the increased movement of intermediate goods across country borders. Not unlike other types of trade flows, the extent of trade in intermediate goods depends on the magnitude of prevalent trade costs. However, trade in intermediate goods might be more sensitive to trade costs when compared with trade in final goods[1] One explanation is that companies participate in global sourcing or outsourcing to reduce costs. Hence, any increase in the costs of inputs can quickly incentivize companies to switch suppliers. This includes the option of switching back to domestic suppliers to avoid trade costs.

The growth of regional value chains has added pressure for countries to reduce trade costs in order to make regional value chains more profitable to encourage its further development. While trade costs arise from tariffs as well as non-tariff trade barriers, recent efforts in trimming trade costs have increasingly emphasized the latter, as tariffs have progressively fallen. Trade facilitation is considered an important complement to trade liberalization efforts aimed at fostering economic integration.

There is evidence of the significant impact of trade transaction costs and the benefits that can be reaped from trade facilitation measures, especially for developing countries. Trade facilitation can result in 'win-win' opportunities both for developed and developing countries, as well as for governments, businesses and consumers. As such, trade facilitation is one of the 'WTO (World Trade Organization) plus' issues increasingly covered in Regional Trade Agreements (RTAs), including in East Asia. It is also a key component of the Doha Development Agenda in WTO, where negotiations for a multilateral agreement on trade facilitation are underway at the time of writing. In the current context of uncertainty over the successful conclusion of the Doha Round, RTAs can be an important vehicle for implementing trade facilitation measures.

This paper analyses the treatment of trade facilitation in the ASEAN (Association of Southeast Asian Nations) Free Trade Area and in the five Free Trade Area (FTA)[2]

[1] Miroudot et. al. (2009), p.5.
[2] Note that FTA in this paper is used both as an acronym for Free Trade Area as well as Free Trade Agreement.

agreements concluded by ASEAN and its dialogue partners, and assesses the performance of ASEAN and its dialogue partners ('ASEAN+6') in different dimensions of trade facilitation. The analysis is undertaken with a view to providing suggestions of ways to enhance cooperation in trade facilitation among ASEAN+6 countries as a means to fostering economic integration and the development of value chains in the region.

The paper is structured as follows: section 2 addresses definitional issues in relation to trade facilitation and reviews the potential benefits of trade facilitation as highlighted in other studies. Section 3 examines the trade facilitation provisions in the ASEAN Free Trade Area and ASEAN+1 FTAs, namely ASEAN--Australia--New Zealand Free Trade Area (AANZFTA); ASEAN--Japan Comprehensive Economic Partnership (AJCEP); ASEAN--India Free Trade Area (AIFTA); ASEAN--China Free Trade Area (ACFTA); and ASEAN--Korea Free Trade Area (AKFTA). This will be followed by a brief discussion of complementary roles of multilateral and regional efforts on trade facilitation. Section 4 identifies and develops indicators of trade facilitation in several core areas and analyses the performance of ASEAN+6 countries as measured by these indicators over the period 2007 to 2010. Section 5 attempts to draw policy recommendations that could inform the approach of ASEAN+6 countries to trade facilitation in the context of wider intra-regional integration and provides concluding remarks.

2. Trade Facilitation: Definition and Potential Benefits

2.1. Definition of Trade Facilitation

There is no standard definition of the term 'trade facilitation'. Various definitions have been used by international organizations and in trade agreements. In the context of the WTO and the Organisation for Economic Co-operation and Development (OECD), for instance, trade facilitation means: 'the simplification and harmonization of international trade procedures including the activities, practices and formalities involved in collecting, presenting, communicating and processing data and other information required for the movement of goods in international trade' (OECD, 2005).

In the context of the Doha Round of trade negotiations in WTO, the mandate of negotiations in the area of trade facilitation focuses in particular on the following three provisions of the GATT (General Agreement on Tariffs and Trade) 1994: Article V on Freedom of Transit; Article VIII on Fees and Formalities connected with Importation and Exportation; and Article X on the Publication and Administration of Trade Regulations.[3]

By comparison, many bilateral and regional trade agreements have a broader understanding of trade facilitation, extending more generally to 'any procedures, processes or policies capable of reducing transaction costs and facilitating the flow of goods in international trade'.[4]

This paper adopts a broader definition than the one used in the context of WTO negotiations. The review of trade facilitation provisions in section 3 covers a number of behind-the-border issues affecting the free flow of goods, including non-tariff measures such as sanitary and phytosanitary measures, standards, technical regulations and conformity assessment procedures.

Despite their significant impact on trade, rules of origin are not examined in this paper since the issue is addressed in depth in a separate chapter. Provisions in trade agreements for the development of physical infrastructure are also not examined as trade facilitation in FTA provisions, even when understood in a wider sense, is generally distinguished from infrastructure development, notwithstanding the latter's ability to also significantly influence the flow of traded goods.[5]

[3] It should be noted that other WTO rules are relevant to trade facilitation even though they are not covered by the negotiations. These include, for instance: Articles VII (Valuation for Customs Purposes) and Article IX (Marks of Origin) of GATT 1994; Agreement on the Implementation of Article VII of the GATT 1994 (Agreement on Customs Valuation); Agreement on Pre-Shipment Inspection; Agreement on Sanitary and Phytosanitary Measures (SPS Agreement); Agreement on Technical Barriers to Trade (TBT Agreement); and Agreement on Import Licensing Procedures.

[4] Impediments to international trade in particular complex and numerous formalities are also referred to as 'red tape'. Trade facilitation aims to cut such red tape; see for example, Woo and Wilson (2000).

[5] UNESCAP (2002), p.1.

2.2. Potential Benefits of Trade Facilitation

Inefficient trade procedures can produce harmful effects for a country's exports. Some experts have estimated that each additional day that a product is delayed prior to being shipped reduces trade volumes by at least 1 percent.[6]

The reduction in trade transaction costs through trade facilitation can bring significant welfare gains. According to a study by Wilson et al. (2005), improved trade facilitation in a sample of 75 countries could increase trade by 10 percent or US$377bn. For the Asia--Pacific region alone, improving trade facilitation along four dimensions, namely port efficiency, customs environment, regulatory environment and service sector infrastructure, could increase intra-APEC trade by around 10 percent, or US$280bn.[7]

Some studies have focused on the potential gains from trade facilitation reforms in the areas covered in the WTO negotiations on trade facilitation. It would appear from these studies that compliance with GATT Article V (Freedom of transit) and Article VII (Fees and formalities connected with importation and exportation) could yield a US$107 billion and $33 billion increase in manufacturing trade, respectively. Furthermore, compliance with GATT Article X (Publication and administration of trade regulations) could yield a US$154 billion increase in trade.[8]

Moreover, improving trade facilitation could produce greater benefits than tariff reductions. A study by Hertel and Keeney (2005) finds that the world-wide gains from improved trade facilitation (US$110bn) are of comparable magnitude to the results of full liberalization of goods and services trade (US$150bn).[9]

Duval and Utoktham (2009) suggest that tariff costs account for a small portion of the overall international trade costs of Asian sub-regions – typically 10 percent or less. This confirms in their view the need for trade policy-makers and negotiators to sharpen

[6] Peng (2008), p.5.
[7] Wilson et al. (2005).
[8] Wilson et al. (2005) 'Assessing the benefits of trade facilitation: A global perspective', The World Bank Institute, Washington D.C.
[9] Hertel and Keeney (2005), 'What's at Stake: The Relative Importance of Import Barriers, Export Subsidies, and Domestic Support' in Kym Anderson and Will Martin (eds) *Agricultural Trade Reform and the Doha Development Agenda*, Washington D.C.: The World Bank.

their focus on reducing non-tariff barriers, including trade facilitation and improvement of trade logistics services.[10]

The work of Pomfret and Sourdin (2009) suggests that efforts by ASEAN trade policy-makers to reduce non-tariff barriers have paid off. They analysed the changes in trade costs of around 200 countries between 1990 and 2007 as measured by the difference in 'free on board' (FOB) and 'cost insurance freight' (CIF) values of imports by Australia, a third country market. They observed that ASEAN countries had reduced trade costs by more than the global average from the mid-1900s until 2003, corresponding to the period during which AFTA was being established and suggested that this might support at least in part the effectiveness of trade facilitation provisions in trade agreements.

However, Shepherd (2010) found that while tariff reductions have played a significant role in reducing overall trade costs in APEC (Asia--Pacific Economic Cooperation) and ASEAN, progress on reducing non-tariff trade costs has been less impressive. He examined trade costs in APEC and ASEAN countries in the periods 1995-2008 and 2001-07 respectively. There has been encouraging progress towards the reduction of trade costs (although there were some data limitations that made it difficult to assess in the case of ASEAN) but that performance varied markedly across countries.[11]

For developing countries, implementing trade facilitation measures may be more challenging but they stand to gain the most from trade facilitation reforms. Unlike the elimination of tariff barriers which may affect a country's imports rather than its exports, the reduction of trade transaction costs can be beneficial to both importers and exporters, providing a win-win opportunity for developing countries.[12]

[10] Duval and Utoktham (2009), p.15.
[11] Shepherd, UNESCAP (2010), p.93.
[12] *Overcoming Border Bottlenecks*, OECD (2009) p.17.

3. The Treatment of Trade Facilitation in ASEAN and ASEAN+1 FTAs

3.1. Growing Trend to Include Trade Facilitation in RTAs

It is difficult to generalize about the content of the trade agreements that have spread across Asia in late 1990 to early 2000. However, it would seem that 'new generation' RTAs are not primarily about tariff barriers but more about reducing border and behind-the-border trade costs.[13]

With a few exceptions, Asian economies are increasingly favouring a WTO plus approach in the negotiation of their FTAs.[14] Besides liberalization of trade in goods, facilitating trade flows through closer customs cooperation and mutual recognition of standards and conformity assessment, for instance, has been a stated objective in most of the completed framework agreements of RTAs involving ASEAN, China and India.[15]

Peng (2008) reports that the number of agreements covering trade facilitation in Asia and the Pacific has significantly augmented in recent years. The WTO database on RTAs identifies 85 agreements out of the 298 in force (notified to WTO) as taking up the areas of trade facilitation covered by GATT/WTO agreements.[16] In the Asia-Pacific region alone, 34 out of 102 signed RTAs now include some trade facilitation provisions.

3.2. Trade Facilitation in ASEAN

ASEAN is one of the oldest regional trading arrangements in the Asia-Pacific region. It was formed in 1967 by Indonesia, Malaysia, the Philippines, Singapore and Thailand, and joined by Brunei Darussalam in 1985. During the 1990s ASEAN expanded its membership to 10 as Vietnam acceded in 1995, Laos and Myanmar in 1997, and Cambodia in 1998.[17]

[13] Pomfret and Sourdin (2009), p.257.
[14] Kawai and Wignaraja (2010b), ADB no 226, Oct, p.19.
[15] Sen (2006), p.572.
[16] Finger, Note for ADB FTA Forum.
[17] ASEAN member countries account for 592 million people. If ASEAN were a single economic entity, it would rank as the world's 10th largest economy, third biggest market in the world in terms of population, fifth largest trading bloc, and 10th in terms of foreign direct investment (FDI) inflows (ASEAN Annual Report 2009-2010, p.1).

The ASEAN framework, like a number of other RTAs in Asia, has developed over a prolonged period of time and consists of several layers of agreements and declarations, each building on and reinforcing the trust gained by the previous one.

Initially, the ASEAN Free Trade Agreement (AFTA) focused on a reduction of tariffs by implementing a Common Effective Preferential Tariff (CEPT) scheme. The agreement contains general provisions incorporating certain aspects that can be subsumed under a broad definition of trade facilitation.[18]

The Framework Agreement on Enhancing the ASEAN Economic Cooperation establishing AFTA urges members to 'reduce or eliminate non-tariff barriers between and among each other on the import and export of products'.[19] Moreover, the 1992 agreements include a Framework Agreement on the Facilitation of Goods in Transit which contains specific provisions on the mutual recognition of inspection certificates for road vehicles and driving licences, as well as provision on the harmonization and simplification of customs procedures as regards transit transport.[20]

The adoption of the Declaration of ASEAN Concord II (also called Bali Concord II)[21] at the Ninth ASEAN Summit in Bali on 7-8 October 2003 established the ASEAN Economic Community (AEC), which is foreseen by 2015. The ASEAN Economic Community Blueprint, a comprehensive action plan with clear timelines and targets for implementation from 2008, was further adopted in 2007.[22]

Taking one step further on the path of economic integration, in 2009, ASEAN countries adopted the ASEAN Trade in Goods Agreement (ATIGA). The agreement, which entered into force on 17 May 2010, consolidates and streamlines all the provisions of the CEPT--AFTA and economic cooperation agreements, as relevant. It

[18] For instance, the CEPT Agreement provides that members 'shall explore further measures on border and non-border areas of cooperation to supplement and complement the liberalization of trade. These may include, among others, the harmonization of standards, reciprocal recognition of tests and certification of products (…)' (See Article 5(C) of the Agreement on the Common Effective Preferential Tariff Scheme for the ASEAN Free Trade Area, signed in Singapore on 28 January 1992).

[19] See Article 2(A) Section 3 of the Framework Agreement on Enhancing ASEAN Economic Cooperation, signed in Singapore on 28 January 1992.

[20] See ASEAN Framework Agreement on the Facilitation of Goods in Transit, Parts III and IV.

[21] Full text can be found at: www.aseansec.org/15160.htm.

[22] The year 2010 has been a landmark year for ASEAN in terms of bringing the region ever closer to an ASEAN community with an integrated market. Countries forming part of ASEAN-6 can now import and export almost all goods across their borders at no tariff. For Cambodia, Laos, Myanmar and Vietnam, the tariff of some 99 percent of all tariff lines have been reduced to 0-5 percent.

also comprises elements such as the removal of non-tariff barriers, rules of origin, standards and conformance, sanitary and phytosanitary measures, customs and trade facilitation.

The ATIGA marks a significant milestone with regard to trade liberalization and trade facilitation to improve the free flow of goods within ASEAN. Notably the provisions on non-tariff barriers have been enhanced further as compared to the CEPT--AFTA provisions, through the codification of measures and the establishment of a mechanism to monitor the elimination of non-tariff barriers (NTBs).[23]

Apart from the provisions on the elimination of NTBs, the ATIGA contains a broad range of provisions relevant to trade facilitation. For instance, it includes provisions on fees and charges connected with importation and exportation;[24] publication and administration of trade regulations;[25] and the ASEAN Trade Repository.[26] It also contains specific chapters on trade facilitation[27] and customs.[28]

The chapter on trade facilitation calls upon members to develop and implement a comprehensive ASEAN Trade Facilitation Work Program setting out 'clear targets and timelines of implementation necessary for creating a consistent, transparent, and predictable environment for international trade transactions...'.[29] The Trade Facilitation Work Program sets out actions and measures to be implemented at both ASEAN and national levels, in areas such as customs procedures, trade regulations and procedures, standards and conformance, and sanitary and phytosanitary measures.[30]

Under an update on the ASEAN Trade Facilitation Work Program at the 42nd meeting of the ASEAN Economic Ministers, each ASEAN member state has been tasked to conduct a survey of the status of trade facilitation to take stock of the environment in ASEAN in 2010-11 through a common set of questionnaires for the private and public sector.[31]

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[23] See Chapter 4.
[24] Article 7.
[25] Article 12.
[26] Article 13.
[27] Chapter 5.
[28] Chapter 6.
[29] Article 45.
[30] See Art. 46 of the ATIGA. The work programme and any future revisions shall be administratively annexed to the ATIGA and form an integral part of the agreement (Art. 48.2).
[31] AEM meeting in August 2010. http://www.asean.org/25051.htm

The provisions dealing specifically with customs are aimed at ensuring predictability, consistency and transparency in the application of customs laws of member states; promoting the efficient and economical administration of customs procedures, as well as the expeditious clearance of goods; simplifying and harmonizing customs procedures and practices; and promoting cooperation among customs authorities.

More specific provisions focus on key issues such as conformance to international standards and practices on customs procedures and control; risk management; customs valuation; application of information technology; post-clearance audit; advance rulings; customs co-operation; transparency; designation of enquiry points; and review and appeal of decisions rendered by customs authorities.

In the context of the ASEAN Economic Community Blueprint, a scorecard was established to monitor and assess implementation of provisions in the blueprint, including trade facilitation measures. According to the first AEC Scorecard published in April 2010, 73.6 percent of measures scheduled for implementation between January 2008 and December 2009 were implemented by ASEAN member states. Measures that were not implemented mainly involved the ratification of important economic agreements by individual members.[32] The published version of the AEC Scorecard was a brief document and did not contain detailed information on the progress of trade facilitation measures.

In October 2010, ASEAN adopted the Master Plan on ASEAN Connectivity as a key step towards realizing the ASEAN Community[33]. The plan prioritized projects with regard to physical infrastructure development (physical connectivity); effective institutions, mechanisms and processes (institutional connectivity); and empowered people (people-to-people connectivity). Substantial improvement in trade facilitation was identified as one of the key strategies to enhance institutional connectivity, and prioritized projects in this area relating mainly to standards and conformance and customs facilitation. Specifically, these are projects to develop more Mutual Recognition Arrangements especially for the priority integration sectors, establish

[32] ASEAN Secretariat (2010) p.7.
[33] The ASEAN Community comprises the three pillars of a political-security community, an economic community and a socio-cultural community.

common rules for standards and conformity assessment procedures, and operational all National Single Windows (NSWs) by 2012.

Some of the key trade facilitation measures undertaken by ASEAN in moving towards an AEC are addressed in further detail below.

3.2.1. Customs Modernization and Integration

ASEAN member states have embarked on the acceleration of modernization of customs techniques and procedures with the objective of enhancing trade facilitation and expediting the clearance of goods at customs.[34]

Progress and achievements in this regard include: adoption of the 'ASEAN Customs Vision 2015' in June 2008; review of the ASEAN Customs Agreement to support realization of the ASEAN Economic Community; implementation of the ASEAN Harmonized Tariff Nomenclature 2007/1, which is fully aligned to the World Customs Organization (WCO) Harmonized Commodity Description and Coding System 2007; development of the ASEAN Customs Valuation Guide, ASEAN Customs Post Clearance Audit Manual and ASEAN Cargo Processing Model; and efforts to activate the ASEAN Customs Transit System under the ASEAN Framework Agreement on Facilitation of Goods in Transit.

Measures undertaken pursuant to the Strategic Program of Customs Development (SPCD) are likely to result in significant improvements as regards the free flow of goods within ASEAN, including the release of any containerized shipment within no more than 30 minutes. Information and communication technology (ICT) applications have also been introduced in the customs clearance of goods in all ASEAN member states, in accordance with international standards. Furthermore, with a view to supporting the establishment of the ASEAN Economic Community, ASEAN customs administrations are strengthening their cooperation in the area of customs enforcement.

3.2.2. Single Window

ASEAN members states adopted the Agreement to Establish and Implement the ASEAN Single Window in 2005. The ASEAN Single Window (ASW) is a facility that

[34] See Strategic Program of Customs Development (SPCD).

allows parties involved in trade and transport to lodge standardized documentation and/or data with a single entry point to fulfil all import, export and transit-related regulatory requirements.[35]

Although the ASEAN Economic Community Blueprint set 2008 as the latest year for the ASEAN-6 countries of Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand to operationalize their NSWs, it was only in August 2010 that ASEAN Economic Ministers noted at their meeting that these countries had activated their NSWs. The CLMV countries (Cambodia, Laos, Myanmar and Vietnam) have until 2012 to set up their respective NSWs and at the time of writing they are undertaking preparatory work to do so. The ASEAN countries have signed the Memorandum of Understanding on the Implementation of the ASEAN Single Window Pilot Project and the Protocol on Electronic Customs Facilitation (Single Window) to test the infrastructure and procedures.[36]

3.2.3. ASEAN Trade Repository

With a view to improving transparency, ASEAN member states are working towards the establishment of an ASEAN Trade Repository (ATR) by 2015. The ATR will serve as a gateway of regulatory information at regional and national levels. The objective is to make such information available on the internet to economic operators like exporters, importers, traders, government agencies and the interested public and researchers.

According to the terms of the ATIGA, the ATR will carry trade-related information on the following aspects: tariff nomenclature; preferential tariffs offered under the ATIGA; rules of origin; non-tariff measures; national trade and customs laws and rules; procedures and documentary requirements; administrative rulings; best practices in trade facilitation applied by each member state; and a list of authorized traders of member states.[37]

[35] See UN/CEFACT Recommendation No. 33.
[36] 'Thailand MOU On Implementation of ASEAN Single Window Pilot Project to be Signed,' Thai Press Reports, 5 October 2010.
[37] ATIGA (2007), Article 13.

The ASEAN secretariat has been entrusted to monitor and update information on the ATR based on notifications submitted by member states. At the time of writing, ASEAN is involved in the design phase of the establishment of the ATR.

3.2.4. Standards, Technical Regulations, Conformity Assessment and Mutual Recognition

ASEAN is undertaking a series of measures aimed at addressing non-tariff barriers to trade. Such measures include, *inter alia*, actions to: (1) harmonize standards, technical regulations and conformity assessment procedures through their alignment with international standards; (2) promote transparency in the development and application of standards, technical regulations and conformity assessment procedures; (3) develop and implement sectoral mutual recognition agreements (MRAs) on conformity assessment for specific sectors identified in the ASEAN Framework Agreement on MRAs. The main objective of these provisions is to avoid the creation of unnecessary obstacles to trade and reaffirm the rights and obligations of ASEAN member states under WTO agreements.

Work on harmonizing standards has been undertaken in ASEAN starting with products in the sectors earmarked as priority for economic integration. These include agro-based products; cosmetics; fisheries; pharmaceuticals; rubber-based products; wood-based products; automotive; construction; medical devices; traditional medicines; and health supplements. Moreover, ASEAN has harmonized technical regulations for the cosmetics and electrical and electronics sectors.

The ASEAN Framework Agreement on MRAs was signed in 1998. MRAs are agreements made between two or more parties to mutually recognize the results of conformity assessment conducted on goods. Having such arrangements between countries reduces the need for a product to undergo multiple tests in order to be sold or used within the same region. As such, MRAs can help reduce business costs on test reports and increase the certainty of market access for products.

A few years after the adoption of the Framework Agreement on MRAs, agreements were adopted in the following sectors: electrical and electronic equipment (2002), cosmetics (2003) and telecommunications (2000). These agreements require parties to accept the test reports and certification issued by the testing laboratories and

certification bodies of other parties. This reduces duplicate testing and certification requirements in all ASEAN countries.

3.3. Trade Facilitation Coverage in ASEAN+1 FTAs

3.3.1. ASEAN--Australia--New Zealand Free Trade Area

The Agreement Establishing the ASEAN--Australia--New Zealand Free Trade Area (AANZFTA) is the single most comprehensive economic agreement negotiated by ASEAN to date. It was signed in February 2009 and entered into force on 1 January 2010. The agreement aims to integrate 12 markets into a market of more than 600 million people with a combined gross domestic product (GDP) of US$2.65 trillion (based on 2008 figures).

The AANZFTA is a comprehensive FTA negotiated as part of a 'single undertaking', i.e. spanning goods, services, investment, as well as other subjects, such as competition policy, intellectual property and trade facilitation. As is the case for a number of modern FTAs, preferential tariff rates are not the centrepiece of AANZFTA and the terms of the agreement are more commonly aimed at addressing specific concerns about trade costs.[38]

Among the five ASEAN+1 FTAs, AANZFTA is the one that includes the most comprehensive and substantive set of provisions on trade facilitation. For instance, the chapter on trade in goods creates an obligation for parties to apply fees and charges connected with importation and exportation in a manner that is consistent with their rights and obligations under GATT 1994.[39] It further incorporates as part of the agreement, Article X of GATT 1994, calling on parties to the extent possible to make available on the internet their domestic laws and regulations.[40]

The chapter entitled Customs Procedures includes provisions aimed at improving predictability, consistency and transparency in the application of customs laws and administrative procedures to ensure the more efficient and effective administration at the border and faster clearance of goods. It includes detailed provisions on customs cooperation, including in relation to technical assistance programmes to be developed,

[38] Pomfret, p. 12.
[39] Chapter 2, Article 5.
[40] Chapter 2, Article 6.

subject to resources availability, to facilitate the parties' implementation of Single Windows.[41]

Other measures included in the agreement relate to advance rulings on issues regarding tariff classification, customs valuation or origin of goods[42] and risk management[43] (i.e. facilitating the clearance of low-risk goods and focusing on high-risk goods). Other provisions of the agreement focus on the use of automated systems[44] as well as new technology to promote greater certainty and predictability in relation to e-commerce in the relevant markets, such as paperless trading and e-certification.[45]

In addition to general provisions on non-tariff measures in the chapter on trade in goods, the AANZFTA includes separate chapters with detailed provisions on sanitary and phytosanitary measures,[46] as well as standards, technical regulations and conformity assessment procedures.[47] For example, the agreement aims at facilitating trade in goods by providing means to improve transparency, communication and consultation on SPS issues and to enhance the practical implementation of the principles and disciplines under the SPS agreement.[48] In this particular area, parties are to explore how to further strengthen cooperation on the provision of technical assistance, especially in relation to trade facilitation.[49]

With regard to standards, technical regulations and conformity assessment procedures, trade in goods is to be facilitated by ensuring that such measures do not create unnecessary obstacles to trade.[50] The agreement further reaffirms the rights and obligations of parties under the TBT agreement, including on issues such as transparency and the mutual recognition of the results of conformity assessments

[41] Chapter 4, Article 5(2)(b).
[42] Chapter 4, Article 8.
[43] Chapter 4, Article 9.
[44] Chapter 4, Article 6.
[45] Chapter 10 (Electronic Commerce).
[46] Chapter 5.
[47] Chapter 6.
[48] See for instance Chapter 5, Articles 1-7.
[49] Chapter 5, Article 8(3).
[50] Chapter 6, Article 1.

performed in the territory of another party.[51] Provisions also extend to the consideration of proposals to supplement existing cooperation in this area.[52]

In order to promote and monitor the implementation of trade facilitation measures in relation to SPS measures and standards, technical regulations and conformity assessment procedures, AANZFTA establishes two sub-committees, namely the Sub-Committee on SPS Measures and the Sub-Committee on Standards, Technical Regulations and Conformity Assessment Procedures (STRACAP) mandated to review progress towards achievement of the various commitments.[53]

3.3.2. ASEAN--Japan Comprehensive Economic Partnership (AJCEP)

The ASEAN--Japan Comprehensive Economic Partnership (AJCEP) Agreement was signed in April 2008 and entered into force in December 2008. It is an umbrella agreement for the individual FTAs or comprehensive economic partnership agreements concluded with ASEAN-6 countries over the period 2000-07. The agreement is comprehensive in scope, covering such fields as trade in goods, trade in services, investment and economic cooperation.

As part of the built-in agenda of the AJCEP, ASEAN and Japan launched negotiations on services and investment in 2009. ASEAN and Japan had a combined GDP of US$6.4 trillion in 2008. The total bilateral trade between ASEAN and Japan reached US$211.7 billion, making Japan ASEAN's top trading partner in 2008.

According to the terms of the 2006 Framework for Comprehensive Economic Partnership between ASEAN and Japan, parties are to engage in consultations with a view to developing a work programme for the expeditious implementation of measures or activities related to the facilitation of trade procedures. This work programme is to cover areas such as: customs procedures by computerization, simplification and harmonization to international standards, as well as exchange of information concerning

[51] See Chapter 6, Articles 4-7.
[52] See Chapter 6, Article 8. See also Components 2 and 3 of the Agreement Establishing the ASEAN--Australia--New Zealand Free Trade Area (AANZFTA) Economic Co-operation Work Programme developed pursuant to Chapter 12 of AANZFTA (Implementing Arrangement signed on 27 February 2009).
[53] See Chapter 5, Article 10 and Chapter 6, Article 13.

standards and conformance policies and capacity building of standardization organizations.

The AJCEP was negotiated in 2008 pursuant to the Framework Agreement. The AJCEP emphasizes the importance of simplification, transparency and harmonization with regard to the application of customs procedures for the prompt customs clearance of goods.[54] It stipulates that each party shall endeavour to apply its customs procedures in a predictable, consistent and transparent manner. In addition, the agreement contains provisions on transparency of laws, regulations, and administrative procedures and rulings.[55]

The agreement also covers SPS and TBT measures. In particular, it includes provisions that reaffirm the rights and obligations under WTO agreements,[56] strengthen cooperation and information exchange;[57] and commit parties to developing joint work programmes for building capacity, especially with regard to standards, technical regulations and conformity assessment procedures.[58] To facilitate cooperation in the area of SPS and TBT measures and to review implementation of these provisions, a Sub-Committee on Sanitary and Phytosanitary Measures and a Sub-Committee on Standards, Technical Regulations and Conformity Assessment Procedures were established.[59]

Further provisions deal with economic cooperation in areas such as trade-related procedures; business environment; ICT; and transportation and logistics.[60]

3.3.3. ASEAN--China Free Trade Area (ACFTA)

Under the Framework Agreement on Comprehensive Economic Cooperation signed in November 2002, ASEAN and China committed themselves to phased reduction of tariffs on goods traded among China and ASEAN's six older members so as to create a free trade area among them by 2012. The ASEAN--China FTA (ACFTA) was realized in 2010.

[54] Article 22.
[55] Article 4.
[56] See for instance Articles 39 and 45.
[57] See Articles 40 and 43.
[58] Article 46(2)(c).
[59] Articles 40 and 48 of the ASEAN-Japan Agreement on Comprehensive Economic Partnership.
[60] Article 52.

In November 2004, China's Commerce Minister and the Economic Ministers of the 10 ASEAN countries signed the Agreement on Trade in Goods, which set 1 January 2010 as the date for the elimination of all tariffs on trade between China and ASEAN-6.[61] This agreement entered into force on 1 January 2005. Two additional enabling agreements were negotiated under the 2002 Framework Agreement, namely the Agreement on Trade in Services, signed in 2007 and the ASEAN--China Investment Agreement signed in 2009.

In 2008, China was the third largest trading partner of ASEAN after Japan and the EU, with a trade value of US$192 billion. This accounted for 11 percent of ASEAN's total trade with external parties. The ACFTA in 2008 was a market of 1.91 billion consumers with a combined GDP of about US$5.83 trillion. It is reported that in terms of consumer market size, the ACFTA is the biggest FTA in the world.[62]

With regard to trade facilitation, the Framework Agreement includes provisions aimed at strengthening economic cooperation between the parties, including through the establishment of effective trade and investment facilitation measures, such as the simplification of customs procedures and the development of MRAs.[63]

The ASEAN--China Agreement on Trade in Goods contains provisions on Transparency[64] and some general language on the elimination of non-tariff barriers.[65] The Agreement on Trade in Goods does not include any specific provisions on trade facilitation or on customs procedures.

It is worth noting that in 2009 ASEAN and China adopted a Memorandum of Understanding (MOU) on Standards, Technical Regulations and Conformity Assessment within the framework of their initial cooperation agreement. This MOU aims, *inter alia*, at further promoting cooperation in the implementation of the TBT Agreement and ensuring that imported and exported products between ASEAN and

[61] However, up to 150 tariff lines can still be protected by tariffs up to 2012.
[62] ASEAN, 'Free Trade Agreements', available at www.aseansecretariat.org.
[63] See Articles 2 and 7 of the Framework Agreement on Comprehensive Economic Co-operation between ASEAN and the People's Republic of China.
[64] Article 4 essentially incorporates Article X of the GATT 1994 as an integral part of the ASEAN-China Agreement on Trade in Goods.
[65] Article 8.

China conform to requirements of safety, health, environment, the protection of consumers' interests and the promotion of regional trade in line with TBT principles.[66]

Also relevant to trade facilitation is the Beijing Declaration on ASEAN--China ICT Cooperative Partnership for Common Development and Plan of Action, which is aimed at deepening collaboration in the area of ICT.[67] A detailed Plan of Action to implement the Beijing Declaration was developed for 2007-12. This Plan of Action calls on parties, *inter alia*, to identify measures to facilitate mutual recognition arrangements for ICT telecommunications equipment and to exchange information and cooperate in the field of online applications and services.

3.3.4. ASEAN--Korea Free Trade Area (AKFTA)

ASEAN and the Republic of Korea signed a Framework Agreement on Comprehensive Economic Cooperation in 2005. Subsequently, four more agreements were negotiated between the parties, forming the legal basis of the ASEAN--Korea FTA (AKFTA): the Agreement on Dispute Settlement Mechanism (2005); the Agreement on Trade in Goods (2006); the Agreement on Trade in Services (2007); and the Agreement on Investment (2009). The ASEAN--Korea FTA took effect on 1 January 2010 for ASEAN-6. According to the ASEAN Annual Report for 2009-2010, bilateral trade between ASEAN and South Korea grew from US$38.7 billion in 2003 to US$750.3 billion in 2009.

The Framework Agreement on Comprehensive Economic Cooperation calls for economic cooperation in the area of customs procedures. More specifically, parties are encouraged to share expertise on ways to streamline and simplify customs procedures; exchange information on best practices relating to customs procedures, enforcement and risk management techniques; facilitate cooperation and exchange of experiences in the application of information technology; and publish their customs laws and regulations.[68]

AKFTA calls for economic cooperation in the areas of customs procedures; transparency of customs laws and regulations; application of information technology

[66] See Preamble and Article 1 of the Memorandum of Understanding between the Governments of Member States of ASEAN and the Government of the People's Republic of China on Strengthening Cooperation in the Field of Standards, Technical Regulations and Conformity Assessment.
[67] Beijing Declaration, adopted in May 2005.
[68] Annex, Article 1.

and improvement of monitoring and inspection systems in customs procedures. Other provisions contained in the Annex to the agreement deal with ICT, SPS measures and standards and conformity assessment procedures. The Framework Agreement calls for the establishment of effective trade and investment facilitation measures. On economic cooperation, it commits parties to explore and undertake cooperation projects in areas such as customs procedures; ICT; standards and conformity assessment; and SPS measures.

The Agreement on Trade in Goods under the Framework Agreement on Comprehensive Economic Cooperation signed in 2006 includes provisions on Transparency[69] and on WTO disciplines, reaffirming parties' commitments under WTO, including those relating to non-tariff, TBT and SPS measures.[70] Article 8 of the agreement deals specifically with non-tariff barriers and SPS measures. More specifically, it calls for the identification of non-tariff barriers with a view to their elimination. It also emphasizes the importance of transparency of TBT and SPS measures and establishes a working group on TBT and SPS to deal with issues relating to the implementation of this provision, and the protection of human, animal or plant life or health through mutual cooperation and bilateral consultations.

3.3.5. ASEAN--India Free Trade Area (AIFTA)

ASEAN and India negotiated a Framework Agreement on Comprehensive Economic Cooperation in 2003. The ASEAN-India Trade in Goods Agreement (AI-TIGA) under the Framework Agreement was signed on 13 August 2009 and entered into force on 1 January 2010 for four ASEAN member states and India. It calls for the reduction of tariffs with a view to their eventual elimination starting 1 January 2010. The AI-TIGA creates one of the largest free trade areas with a market of almost 1.8 billion people, and a combined GDP of US$2.8 trillion. At the time of writing, ASEAN and India are negotiating Agreements on Trade in Services and Investment under the Framework Agreement.[71]

[69] Article 4 incorporates as an integral part of the Agreement Article X of the GATT 1994.
[70] Article 7.
[71] ASEAN Annual Report 2009-2010, p.7.

The Framework Agreement sets out general terms of cooperation on a comprehensive set of trade facilitation issues. These include: MRAs, conformity assessment, accreditation procedures and standards and technical regulations; non-tariff measures; customs cooperation; trade financing; and business visa and travel facilitation.

The AI-TIGA also includes a number of provisions relevant to trade facilitation. For instance, the agreement calls for the simplification of customs procedures and their harmonization with relevant international standards and recommended practices, where possible.[72] The AI-TIGA also contains a provision on non-tariff measures reaffirming parties' commitments under WTO rules including transparency and notification of SPS/TBT measures.

3.4. Comparative Analysis of Trade Facilitation Provisions in ASEAN+1 FTAs

3.4.1. Main Areas Covered in Trade Facilitation Provisions

The empirical literature on trade facilitation provisions in regional trade agreements highlights the broadening scope of RTAs' trade facilitation coverage.[73]

For instance, Moise (2002) classifies RTA trade facilitation provisions in four main categories: rules on transparency and due process; harmonization of procedures and formalities; simplification and avoidance of unnecessary restrictiveness; and modernization and the use of new technology.

In his examination of trade facilitation provisions in RTAs in Asia and the Pacific, Peng (2008) focuses on nine areas, which in his view reflect the increasing use of a broader definition of the term trade facilitation. These areas are: customs procedures and cooperation; technical regulations, standards and SPS measures; NTBs, including administrative fees and charges; transparency of laws, regulations and administrative rulings; use of ICT and e-commerce; mobility of business persons; freedom of transit; facilitation in transport and trade logistics; facilitation in payment and trade finance.[74] In particular, Peng has identified the first five areas as 'core' areas in trade facilitation cooperation that are covered in the majority of RTAs.

[72] Article 14.
[73] Moise (2002); Wille and Redden (2006); Peng (2008).
[74] Peng (2008).

A review of trade facilitation provisions in the ASEAN and ASEAN+1 FTAs has shown that they tend to cover the five core categories as identified by Peng (Table 1).

Table 1. Summary Table of Trade Facilitation Provisions in ASEAN+1 FTAs

Trade Facilitation coverage/RTA	ASEAN	ASEAN--Australia--NZ	ASEAN--Japan	ASEAN--Korea	ASEAN--China	India--ASEAN
Customs procedures and cooperation	√	√	√	√	√	√
Technical regulations, standards and SPS measures	√	√	√	√		√
NTBs, especially administrative fees and charges	√	√	√	√	√	√
Transparency of laws, regulations and administrative rulings	√	√		√	√	
Use of ICT and E-commerce	√	√	√	√	√	

This section compares the trade facilitation provisions in ASEAN+1 FTAs in the five core areas of trade facilitation identified above , namely: (1) customs procedures and cooperation; (2) TBT and SPS measures; (3) NTBs, especially administrative fees and charges; (4) transparency of laws, regulations and administrative rulings; and (5) use of ICT and e-commerce.

Customs Procedures and Cooperation

Customs procedures are identified as an area for future cooperation in all of ASEAN's FTAs. However, not all ASEAN+1 FTAs include detailed and concrete provisions on customs procedures. ASEAN--China[75] and ASEAN--Korea FTAs,[76] for instance, identify customs procedures as an area of future collaboration in their respective Framework Agreement, but their respective Agreement on Trade in Goods do not include any specific provisions on the matter.

In contrast, the AJCEP, AIFTA and AANZFTA contain provisions that call on their parties to endeavour to apply customs procedures in a predictable, consistent and

[75] See Article 2 of the ASEAN--China Framework Agreement.
[76] See Article 3.1(a) of the ASEAN--Korea Framework Agreement on Comprehensive Economic Cooperation.

transparent manner. Furthermore, with a view to ensure prompt customs clearance, parties must endeavour to: (1) simplify their customs procedures; and (2) harmonize their customs procedures, to the extent possible, with relevant international standards and recommended practices, e.g. from the WCO. The issue of transparency is also emphasized, as parties are encouraged to share information amongst themselves in the area of customs procedures.

AANZFTA is the agreement that includes the most detailed and specific set of provisions on customs procedures. As such, AANZFTA is the agreement that most mirrors the ASEAN FTA in terms of the measures and initiatives identified to facilitate the free flow of goods across borders. Among the concrete measures relevant to customs cooperation are provisions on advance rulings[77] and risk management.[78]

TBT and SPS Measures

Like the provisions on customs procedures and cooperation, provisions on TBT and SPS measures are incorporated in most of the RTAs in East Asia.[79] Such provisions are also found in ASEAN+1 FTAs but once again, the provisions found in the different agreements tend to vary in terms of their scope.

The AANZFTA, AJCEP, AIFTA and AKFTA all reaffirm the rights and obligations of parties under the WTO TBT and SPS Agreements. Some of the agreements, such as AKFTA contain provisions reiterating the importance of transparency of TBT and SPS regulations, including notification procedures on the preparation of technical regulations or standards, and occurrences of SPS incidents.

Both AJCEP and AANZFTA address the issue of TBT and SPS measures in separate chapters through a detailed set of provisions focusing on specific aspects of the implementation of TBT and SPS measures, such as the issue of equivalence in respect of international standards, guidelines and recommendations. These ASEAN+1 FTAs

[77] Article 8.
[78] Article 9.
[79] The WTO Agreement on Technical Barriers to Trade (TBT) and the Agreement on Sanitary and Phytosanitary Measures (SPS) set out principles and rules in the areas of standards and conformance. The TBT Agreement covers technical regulations, voluntary standards and conformity assessment procedures applying to both industrial and agricultural products. The SPS Agreement regulates measures imposed on certain agricultural products to ensure food safety for human and animals, protect humans from animal or plant-carried diseases, and protect animals and plants from pests and diseases. The TBT and SPS Agreements are mutually exclusive in their application.

also establish working groups or sub-committees to follow up on the implementation of the relevant provisions by the parties to the agreement.

Whilst the ACFTA agreements do not substantively address the issue of TBT and SPS measures, China and ASEAN nevertheless adopted in 2009 a Memorandum of Understanding on Strengthening Cooperation in the field of standards, technical regulations and conformity assessment procedures.

Non-Tariff Barriers (NTBs)

NTBs are generally defined as measures other than tariffs which effectively prohibit or restrict imports or exports of goods between countries. With this broad definition, the term NTBs may encompass a wide variety of measures that have an impact on trade. These may include, for instance, quantitative restrictions; fees and charges in connection with importation and exportation; import licensing procedures; technical regulations, standards or conformity assessment procedures; and SPS measures.

This section deals particularly with measures such as quantitative restrictions; fees and charges in connection with importation and exportation; and import licensing procedures, as TBT and SPS measures were covered in a category of their own.

Based on the review of the five ASEAN+1 FTAs it appears that all of them contain provisions on 'non-tariff barriers' or 'non-tariff measures'. The provisions essentially call upon member states to abstain from adopting or maintaining any non-tariff measure on the importation of any good of any other member state or on the exportation of any good destined for the territory of any other member state, except in accordance with their WTO rights and obligations or in accordance with the ASEAN+1 agreement.

The AANZFTA specifically refers to quantitative restrictions and incorporates into the agreement the requirements of Article XI of the GATT 1994.[80] The ASEAN-India Agreement on Trade in Goods focuses on administrative fees and formalities, reaffirming the commitment of parties under Article VIII of the GATT 1994.

Furthermore, several ASEAN+1 FTAs contain provisions relating to transparency with regard to non-tariff measures. For instance, some of the ASEAN+1 agreements

[80] Chapter 2 Article 7.

invite parties to identify NTBs as soon as possible after the entry into force of the agreement and in some cases, to agree on a timeframe for their elimination.[81]

Transparency of Laws, Regulations and Administrative Rulings

Transparency constitutes one of the substantial issues addressed in the multilateral negotiations on trade facilitation at WTO. In particular, negotiations are aimed at the clarification and improvement of Article X of GATT 1994 (Publication and administration of trade regulations).

The ACFTA, AI-TIGA, AKFTA and AANZFTA explicitly incorporate into the agreement Article X of the GATT 1994, making the GATT provision an integral part of the FTA. In the case of AANZFTA the requirement extends, as far as possible, to making laws, regulations, decisions and rulings available on the internet. AJCEP also contains a general provision on transparency, inviting parties to make publicly available their laws, regulations, administrative procedures, administrative rulings and judicial decisions.

Use of ICT and E-Commerce

ICT and e-commerce provide useful tools to improve trade efficiency and create a more transparent and predictable trading environment. AJCEP, AIFTA, ACFTA and AKFTA only identify ICT and e-commerce as sectors in which cooperation between parties could be strengthened, or in which economic cooperation activities could be undertaken.

AANZFTA includes more detailed provisions on ICT and e-commerce, similar to the ASEAN FTA. E-commerce is covered in a separate chapter of the agreement. Provisions are aimed to promote its wider use globally and to enhance cooperation between the parties in order to foster its development. Under the terms of the agreement, domestic laws and regulations should be adopted by the parties to govern electronic transactions taking into account the UNCITRAL (United Nations Commission on International Trade Law) Model Law on Electronic Commerce 1996.

[81] See for instance ASEAN--China Agreement on Trade in Goods, Article 8 and ASEAN--Korea Agreement on Trade in Goods, Article 8.

Moreover, the AANZFTA includes provisions on paperless trading, whereby parties commit to making trade administration documents available to the public in electronic form and to accepting documents submitted electronically as the legal equivalent of the paper version of these documents, taking into account methods agreed by international organizations such as WCO.

3.4.2. Key Findings from the Comparative Analysis

ASEAN+1 FTAs contain several provisions relevant to trade facilitation. However there does not appear to be a consistent approach to trade facilitation across the five ASEAN+1 FTAs. The provisions in the different ASEAN+1 agreements vary in terms of their scope, specificity and depth of commitments.[82]

There is an important contrast in terms of the coverage of trade facilitation between ASEAN FTA and some of the ASEAN+1 FTAs. While the ASEAN FTA contains several provisions relevant to trade facilitation, including a framework for implementing trade facilitation initiatives such as MRAs, the Single Window and the ASEAN Trade Repository, the coverage of trade facilitation in other agreements, such as the ASEAN--China and ASEAN--India FTAs, is fairly general.

AANZFTA is the agreement with the most comprehensive trade facilitation content. It includes a number of specific trade facilitation measures already promoted in the context of ASEAN FTA, such as paperless trading, risk assessment, advance rulings and Single Windows.

With the exception of AANZFTA, ASEAN+1 FTA provisions on trade facilitation often lack specificity. The provisions are broad and aspiration and do not commit parties to undertake concrete action or to achieve specific targets or goals. [83]

All of the ASEAN+1 FTAs call for economic cooperation in the area of customs with the objective of simplifying customs procedures and, to the extent possible, harmonizing such procedures to international standards. As noted by Peng (2008), the

[82] A number of factors are relevant to assessing the overall efficiency of trade facilitation provisions in RTAs. Moise (2002) suggests factors such as: whether the provisions are part of an FTA or a Framework/Cooperation Agreement; are limited to establishing a work programme or plan of action; are complementary to tariff reduction or elimination (considered critical to effective implementation of tariff reduction/elimination in RTAs); binding or non-binding.

[83] For example, APEC has set a goal to lower trade transaction costs by 5 per cent between 2001 and 2006 and by a further 5 per cent between 2006 and 2010.

fact that RTAs explicitly affirm the application of international agreements, standards and instruments related to trade facilitation can contribute not only to further regional integration, but also to advance the harmonization of procedures and formalities world-wide.[84]

Another important area of trade facilitation covered in a number of ASEAN+1 FTAs is non-tariff barriers, including SPS and TBT measures such as standards, technical regulations and conformity assessment procedures. The inclusion of such provisions in FTAs shows the growing importance of these measures in global trade. Most of the provisions on SPS and TBT reaffirm WTO rights and obligations. This is the case for AANZFTA and AJCEP, which call upon parties to abide by their WTO obligations in this area. The establishment of sub-committees to oversee implementation of the FTA provisions on SPS and on standards, technical regulations and conformity assessment procedures is likely to ensure a continuing monitoring of progress in the implementation of these provisions.

3.5. Complementary Roles of Multilateral and Regional Efforts on Trade Facilitation

Trade facilitation was introduced in the WTO context during the 1996 Ministerial Conference in Singapore[85] and was explicitly included in the Doha Development Agenda of negotiations (DDA) in 2001.[86] WTO members agreed to start formal negotiations on trade facilitation in 2004, with the mandate of the negotiations limited to the following aspects: clarifying and improving GATT rules on the movement, release and clearance of goods, including goods in transit, with the aim of reducing the transaction costs of trade; developing special provisions for developing and least-developed country members and providing them with technical assistance and capacity-building support to implement better trade facilitation policies and practices; and

[84] Peng (2008), p.16.
[85] There are four so-called 'Singapore Issues' introduced in 1996 and mentioned in the 2001 Doha Declaration: trade facilitation, relationship between trade and investment, interaction between trade and competition policy, and transparency in government procurement.
[86] Paragraph 27 of the 2001 Doha Ministerial Declaration recognized 'the case for further expediting the movement, release and clearance of goods, including goods in transit, and the need for enhanced technical assistance and capacity-building in this area'.

improving communication and cooperation between the customs authorities of WTO members.[87]

A significant number of proposals have been tabled and discussed by members since the launch of the negotiations. Based on these proposals, a 'Draft Consolidated Negotiating Text' was developed in December 2009. While the draft text remains under negotiation at the time of writing, the document gives an overview of the possible content of a future multilateral agreement on trade facilitation.[88]

One key aspect of the negotiation of disciplines on trade facilitation relates to the concern of developing countries regarding the costs linked to trade facilitation reform and the capacity constraints to implement and comply with new commitments in this area.

Customs modernization programmes may require in certain instances commitments to large initial investments and long-term operating and maintenance costs. Yet, these costs can be quickly recouped by the gains from facilitated trade and increased productivity in customs administrations. Paperless trading, or the use of Single Window systems, for instance, can have significant impacts on reducing trade transaction costs if accompanied by effective measures to streamline and simplify border procedures.

The final agreement on trade facilitation is likely to incorporate provisions on technical assistance and capacity building to support developing countries in undertaking trade facilitation reforms. The negotiations to date have created some expectations that the final outcome would provide bound obligations in exchange for bound commitments of assistance to developing countries. In order to achieve consensus on a trade facilitation agreement WTO members will therefore have to strike a balance between new commitments, and the promise of technical assistance and other measures to support their implementation.

Most WTO members agree on the usefulness of undertaking trade facilitation reforms and on the benefits of such reforms for both importers and exporters. They all share an interest in seeing trade transaction costs reduced, in their own country as well as in their trading partners. For this reason, trade facilitation may appear less

[87] The modalities for the negotiations are set out in Annex D of the decision (WTO document WT/L/579, available at http://docsonline.wto.org/gen_home.asp).

[88] For the latest revision of the Draft Consolidated Negotiating Text, see document TN/TF/W/165/Rev. 10, 25 July 2011.

controversial than other issues under the DDA. Nevertheless these negotiations are part of a 'Single Undertaking' which means that their successful completion is tied to progress in other areas of the Doha Round, such as agriculture and services.

The conclusion of a multilateral agreement on trade facilitation would contribute greatly to the reduction of trade transaction costs by committing all WTO members to undertake reforms. As mentioned above, the development dimension is at the core of the mandate and will no doubt be a key to achieving an outcome in this area. However, the DDA negotiations have been at a stalemate and the timeframe for concluding the round is unclear at this stage. In the current state of WTO negotiations, FTAs can be an effective vehicle to take forward trade facilitation goals and support the deepening of production networks through trade and investment liberalization.[89] Maur (2008) has investigated how regional initiatives can contribute to trade facilitation reform. In his opinion RTAs offer good prospects of comprehensive and effective reforms and can effectively complement multilateral and national initiatives.

Since many RTAs are between developed and developing countries, the experience of negotiating RTAs with trade facilitation provisions could be useful to the multilateral process, in particular in terms of striking a balance between trade facilitation requirements and developing countries' capacity needs.[90]

Finger (2008) argues that the obligation to provide assistance to developing countries is more easily managed on a country-to-country basis than on a multilateral basis and that FTAs are a better vehicle to provide trade facilitation-related assistance to developing countries than multilateral negotiations. In his view, more progress on trade facilitation can be achieved through the smaller scale of FTAs than the larger scale of a multilateral agreement.[91]

[89] Kawai and Wignaraja (2010a) argue that even if the round were to be concluded in 2011, FTA activity would continue as many of the 'new age' agreements go beyond what is on the negotiating table and deal with issues such as investment, competition, intellectual property and public procurement. ADB brief p.7.

[90] Peng (2008) p.15.

[91] He argues that the specifics of building institutions from different starting points can be more effectively addressed on the smaller scale of free trade agreements that the larger scale of a multilateral agreement (likely to be common denominator).

It should be noted that in the review of ASEAN+1 FTAs, examples of provisions related to technical assistance in the area of trade facilitation were found only in one agreement, namely AANZFTA.[92]

4. Measuring Progress in Trade Facilitation by ASEAN+6 Economies

4.1. Constructing Trade Facilitation Indicators

The aim of this section is to identify and develop measures of trade facilitation to proxy for specific policy areas, which will enable a review of the trade facilitation performance of ASEAN+6 economies in recent years and allow their performance to be tracked on a regular basis in the coming years. To the extent that countries successfully implement the trade facilitation provisions in the various FTAs, it is reasonable to expect that their trade facilitation performance will improve, although the magnitude of the impact and their importance relative to other factors will have to be empirically verified.

In considering the indicators that could form the set of trade facilitation indicators for regular tracking, a review was undertaken to identify indicators that had been used in previous studies and the different ways in which they had been categorized and constructed, such as in Wilson, Mann and Otsuki (2003, 2005); Abe and Wilson (2008); Fosso (2008); Hoekman and Nicita (2008); Iwanow and Kirkpatrick (2008); and Portugal-Perez and Wilson (2010). It was found that most of the primary variables were drawn from the World Economic Forum's Global Competitiveness Reports (WEF's GCRs), the World Bank's Doing Business (DB) database and the World Bank's Logistics Performance Index (LPI) and sub-indicators. These data sources have the advantage of being able to provide a range of relevant basic indicators that measure different aspects of trade facilitation for a large number of countries on a readily-accessible annual or biannual basis. This facilitates cross-country comparisons over time.

[92] See for instance Chapter 4 Article 5 of AANZFTA where technical assistance is mentioned in regard to the implementation of Single Windows. Reference is also made to technical assistance related to trade facilitation in Chapter 5 (SPS Measures) and Chapter 6 (Standards, Technical Regulations and Conformity Assessment Procedures), Article 8.

In addition to the criteria of multiple country coverage and availability on a regular basis, this paper applies two other criteria in its selection of a list of primary variables. The first is that the variables would proxy for one of the five 'core' areas in trade facilitation cooperation that are covered in the majority of RTAs that contain trade facilitation provisions, as identified by Peng (2008) in his review of 34 RTAs in the Asia--Pacific region. The second criterion is to ensure that as far as possible, the variables specifically correspond to the provisions in the RTAs and/or point more specifically to areas where governments can undertake reforms. For example, while the extent of business internet use could reflect the outcome of the use of ICT in trade administration and provisions to promote electronic commerce, a more direct measure would be whether laws relating to ICT (e.g. electronic commerce, digital signatures and consumer protection) are well developed. However, given that there are relatively few suitable specific indicators, a number of broader indicators have also been selected, such as the national-level corruption perceptions index from Transparency International as one of the indicators to proxy for transparency in the publication and administration of trade regulations. The list of primary variables compiled is in Appendix 1.

The primary trade facilitation variables used in this paper are drawn from multiple sources: DB, GCR, the WEF's Global Trade Enabling Report (GETR), the WEF's Global Information Technology Reports (GITR),[93] LPI and Transparency International. These variables are a mix of quantitative data and survey scores. It is acknowledged that survey responses have an element of subjectivity; on the other hand, these data are from well-established sources (see footnote 4 of Wilson, Mann and Otsuki, 2005, p.845) and the information required would otherwise not be available. As there is a lack of ready data to proxy for the administrative fees and import licensing aspects of NTBs and technical regulations and standards, this paper has also constructed several indicators. These are: an index on import licensing and two indicators to proxy for standards, namely, the extent of a country's participation in the Technical Committees of the ISO (International Organization for Standardization) per million of the economically active population and the cumulative total number of MRAs signed by a

[93] The bulk of indicators in the WEF reports are drawn from the WEF's Executive Opinion Survey, but the GETR and GITR contain indicators that are specific to trade facilitation and ICT use that are not available in the GCRs.

country on standards related to trade in goods with ASEAN+6 and non-ASEAN+6 countries. Details of their construction are given in Appendix 2.

Data are from 2007 to 2010. As data on LPI indicators are available only for 2007 and 2010, they are interpolated for 2008 and 2009. Data from GETR are available from 2007 to 2009 and are extrapolated for 2010. Where data are not available for Brunei, Laos and Myanmar, imputed ASEAN averages are used for these countries, as in Layton (2007).

As the primary variables have different units and scales, each observation of a raw indicator series is indexed to the maximum value among the ASEAN+6 countries for that series during the whole period between 2007 and 2010 and rescaled on a zero to one continuous scale, following Portugal-Perez and Wilson (2010) and Wilson, Mann and Otsuki (2005). This puts the raw data on a comparable basis and also indicates the gap in a country's performance from that of the best-practice country among ASEAN+6 whose indexed value is 1.0. The year variability is also preserved.

The use of multiple sources of data to proxy for each core trade facilitation area is intended to avoid over reliance on any one survey question or source (as in Wilson, Mann and Otsuki, 2005, p.846). On the other hand, the variables selected to proxy for any area must be sufficiently correlated that they measure the same underlying trade facilitation dimension. To ensure that this is the case, the correlation among indexed variables representing each area is first tested with Bartlett's test of sphericity (as in Nicoletti, Scarpetta and Boylaud, 2000, p.19), which rejects the hypothesis that the items are not inter-correlated at the 1 per cent significance level in all five areas. The factor analysis procedure is then run on each group of indicators by area, where the extraction of factors is based on the principle components factor method. The single retained factor in each area accounts for between 89 percent and 66 percent of total variance of the data across the five areas. This shows that there is a valid statistical basis to support the list of primary variables as selected in this paper.

While the indexed variables in each area can be aggregated to yield a weighted trade facilitation sub-index using the squared factor loadings, this paper has chosen to aggregate the variables by taking a simple average as the resulting aggregated index will be easier to interpret. There is also no theoretical argument for using weights from

factor analysis.[94] The five trade facilitation sub-indices, which can each range from zero to one, are summed up to give what this paper will term a 'Core Trade Facilitation Index' for each country.

4.2. Trade Facilitation Performance of ASEAN+6 Countries

As measured by the Core Trade Facilitation Index over the period 2007 to 2010, Singapore has performed best in trade facilitation overall while Laos has been the worst performer among the ASEAN+6 countries. This is given in Table 2, which reports summary statistics on the primary variables, the five trade-facilitation sub-indices and the overall Core Trade Facilitation Index, all of which have been rescaled on a zero to one continuous scale. The table also indicates the country with the highest and lowest indexed values on each item over the four-year period.

By individual core area of trade facilitation, Singapore has been the best performer in all areas except for technical regulations, standards and SPS measures, where New Zealand has come out on top. Within each core area, however, there are other countries that have shown strengths in selected primary variables. For example, Korea has recorded the best practice in several customs and ICT variables: number of documents required to export and import; percentage of imported shipments subject to physical inspection; and laws relating to ICT. Australia has registered the shortest clearance time without physical inspection for shipments in the customs area; the highest number of MRAs signed; and has the least restrictive import licensing requirements in the area of NTBs, the latter together with New Zealand. New Zealand has obtained the highest scores on a couple of indicators under transparency, namely, the frequency with which firms make undocumented extra payments or bribes connected with import and export permits, and the perceived levels of public sector corruptions as measured by the corruption perceptions index.

[94] Portugal-Perez and Wilson (2010) aggregated trade facilitation indicators using weights from factor analysis, but earlier studies such as Wilson, Mann and Otsuki (2005) and Fosso (2008) used a simple average of primary variables. This paper also constructed weighted aggregate indices across the five core trade facilitation areas using squared factor loadings, but finds that the results are similar to those obtained from taking simple averages, except in the area of NTBs (administrative fees and import licensing), where the factor loading of the import licensing variable is much smaller.

There is no one country that has been a consistent worst performer by core area of trade facilitation over the period 2007 to 2010. Rather, a different country has obtained the lowest rating in each area. They are: Cambodia in customs procedures and cooperation; Laos in NTBs (especially administrative fees and charges and import licensing); India in technical regulations, standards and SPS measures; the Philippines in transparency of laws, regulations and administrative rulings; and Indonesia in the use of ICT and e-commerce. These countries, together with Myanmar and Vietnam, have been the weakest in a range of primary variables across the core areas.

Table 2. Summary Statistics for Values of Trade Facilitation Core Areas and Primary Variables

Indices/Variables	Mean	SD	Lowest performance		Highest performance		Source
Customs Procedures and Cooperation	**0.58**	**0.17**	**Cambodia**	**0.36**	**Singapore**	**1**	
Documents to export (number)	0.51	0.17	Cambodia	0.27	Korea	1	DB
Documents to import (number)	0.51	0.19	Cambodia	0.27	Korea and Thailand	1	DB
Time to export (days)	0.36	0.22	Laos	0.10	Singapore	1	DB
Time to import (days)	0.31	0.22	Laos	0.08	Singapore	1	DB
Burden of customs procedures (score; 1-7 (best))	0.67	0.14	Cambodia	0.38	Singapore	1	GCR
Customs service index (score; 0-12 (best))	0.61	0.18	Vietnam	0.15	Singapore	1	GETR
Efficiency of clearance process (score; 1-5 (best))	0.75	0.12	Indonesia	0.51	Singapore	1	GETR/LPI
Clearance time	0.42	0.22	Myanmar	0.10	Australia		LPI
Physical inspection (%)	0.17	0.18	Myanmar	0.02	Korea	1	LPI
Number of agencies - exports	0.52	0.16	Cambodia	0.25	Singapore and Australia	1	LPI
Number of agencies – imports	0.52	0.16	Cambodia	0.25	Singapore and Australia	1	LPI
NTBs, especially fees and charges	**0.61**	**0.16**	**Laos**	**0.22**	**Singapore**	**1**	
Cost to export (US$ per container)	0.57	0.19	Laos	0.21	China	1	DB
Cost to import (US % per container)	0.51	0.18	Laos	0.18	Singapore	1	DB
Import licensing requirements (score)	0.61	0.22	Laos and Myanmar	0.20	Australia and New Zealand	1	Authors' calculations

Indices/Variables	Mean	SD	Lowest performance		Highest performance		Source
Technical Regulations, Standards and SPS	**0.34**	**0.28**	**India**	**0.01**	**New Zealand**	**1**	
Country's participation in ISO Technical Committees (score per million capita)	0.23	0.29	Cambodia, Myanmar and Laos	0.00	New Zealand	1	Authors' calculations
Cumulative number of MRAs signed by country	0.42	0.28	India	0.00	Australia	1	Authors' calculations
Transparency of laws, regulations and administrative rulings	**0.64**	**0.19**	**Philippines**	**0.39**	**Singapore**	**1**	
Transparency of government policy making (score; 1-7 (best))	0.73	0.12	Indonesia	0.40	Singapore	1	GCR
Favouritism in decisions of government officials (score; 1-7 (best))	0.66	0.16	Philippines	0.36	Singapore	1	GCR
Irregular payments in exports and imports (score; 1-7 (best))	0.63	0.20	Philippines	0.32	New Zealand	1	GETR
Corruption Perceptions Index (score; 0-10 (best))	0.49	0.28	Myanmar	0.12	New Zealand	1	Transparency International
Use of ICT and E-Commerce	**0.77**	**0.11**	**Indonesia**	**0.48**	**Singapore**	**1**	
Laws relating to ICT (score; 1-7 (best))	0.74	0.15	Cambodia	0.40	Korea	1	GITR
ICT use and government efficiency (score; 1-7 (best))	0.75	0.11	Indonesia	0.47	Singapore	1	GITR
Government prioritization of ICT (score; 1-7 (best))	0.80	0.10	Indonesia	0.47	Singapore	1	GITR
Core Trade Facilitation Index	**0.62**	**0.17**	**Laos**	**0.42**	**Singapore**	**1**	**Authors' calculations**

Source: Author's calculation

Note: Each variable and factor was standardized to values that range from 0 to 1 to facilitate comparison

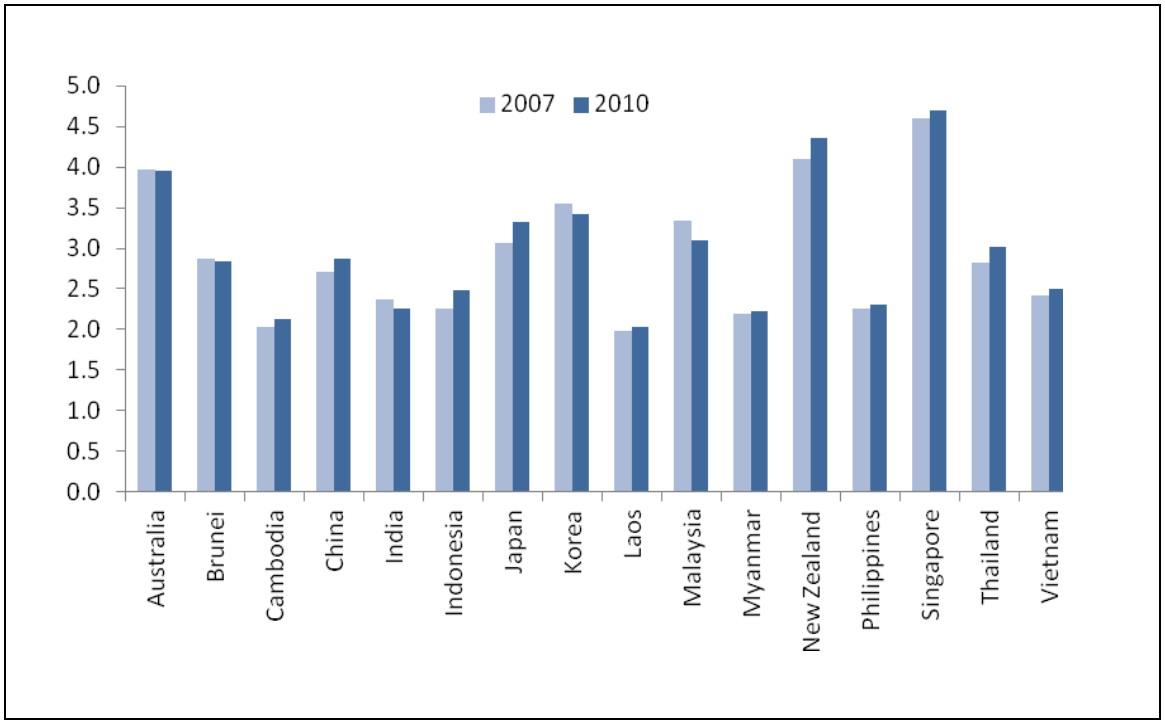
A comparison of trade facilitation performance across countries highlights the great disparities among ASEAN+6 countries (Figure 1). The top three countries are Singapore, New Zealand and Australia and the bottom three countries are Laos,

Cambodia and Myanmar, and their positions have not changed between 2007 and 2010. However, a positive development over the last four years has been the improvement in trade facilitation performance by the majority (70 percent) of countries. The countries that have made the greatest headway have been Japan from improvements in standards (number of MRAs signed) and customs (survey scores on customs burden and customs services and number of agencies traders have to deal with); New Zealand in standards (number of MRAs signed); Indonesia in ICT (survey scores on ICT use and government efficiency and government prioritization of ICT) and to a lesser extent transparency (survey scores on transparency in government policy making and corruption); and Thailand in customs (number of documents to export and import).

Countries that have registered poorer performance in trade facilitation between 2007 and 2010 have been Malaysia from deteriorations in transparency (survey scores on favouritism in official decisions and corruption) and ICT (survey scores on ICT laws and government prioritization of ICT); Korea in transparency (survey scores on favouritism in official decisions and transparency of government policy-making) and India from NTBs (cost to import and export) and transparency (survey scores on favouritism in official decisions and corruption).

Details of changes in index scores by core areas of trade facilitation between 2007 and 2010 are provided in radar diagrams for each country in Appendix 3. It is noted that most of the countries have scored relatively low in standards, which means that they are quite far from the country with the best practice relative to their performance in other core areas. However, the low scores may have arisen from the choice of primary variables used to proxy for this area and thus may have to be interpreted with caution. The raw data of primary variables used in the construction of the Core Trade Facilitation Index and sub-indices are given in Appendix 4.

Figure 1. Core Trade Facilitation Index for ASEAN+6 Countries, 2007 and 2010



Source: Author's calculations

5. Policy Recommendations to Enhance Trade Facilitation in the Context of Greater Economic Integration in East Asia

ASEAN is emerging as an integration hub for FTAs in the East Asian region. With the recent realization of FTAs with key dialogue partners the focus is turning to policy discussions of an extended ASEAN+3 or ASEAN+6 framework to further consolidate economic integration in the region.[95] Differences among FTAs can be cumbersome to business and add to the cost of compliance for exporters. With the proliferation of bilateral and regional FTAs, ASEAN countries are starting to consider how to integrate individual agreements into a coherent and seamless free trade regime.

The key to regional economic integration in East Asia will be to tackle behind-the-border regulatory barriers. This will be crucial to extending multinationals' supply chains and opening up regional markets for domestic producers and consumers.[96] The

[95] Kawai and Wignaraja (2010b).
[96] Sally (2010), p.6.

reduction of trade transaction costs and the improvement of customs procedures efficiency will play a significant role in fostering economic integration in the region.

5.1. Policy Recommendations

The comparative analysis of ASEAN and ASEAN+1 FTA provisions and the review of ASEAN+6 countries' performance on trade facilitation suggest five main recommendations that could guide ASEAN and its dialogue partners in their aim to strengthen trade facilitation cooperation. These are:

(1) Defining a consistent set of underlying trade facilitation principles;
(2) Adopting a set of specific trade facilitation measures;
(3) Monitoring performance in core trade facilitation areas and setting targets;
(4) Sharing best practices and implementing capacity-building measures in priority areas; and
(5) Keeping abreast of developments in the multilateral process.

5.1.1. Define a Consistent Set of Trade Facilitation Principles

Provisions in the current five ASEAN+1 FTAs vary in terms of their scope, specificity and depth of commitments. ASEAN and its dialogue partners, in their consideration of improvements to current agreements and the design of future agreements to deepen integration in East Asia, could undertake to adopt a consistent approach to trade facilitation. Such a consistent approach could rest in the first instance on a common set of principles as set out in the ATIGA.

The ATIGA, which entered into force on 17 May 2010, incorporates a set of model principles to guide member states in their undertaking of trade facilitation measures and initiatives at both ASEAN and national levels. [97] These principles are:

1. **Transparency**: Information on policies, laws, regulations, administrative rulings, licensing, certification, qualification and registration requirements, technical regulations, standards, guidelines, procedures and practices relating to trade in goods (hereinafter referred to as 'rules and procedures relating to

[97] Article 47 of the ATIGA.

trade') to be made available to all interested parties, consistently and in a timely manner at no cost or a reasonable cost;

2. **Communication and consultation**: The authorities shall endeavour to facilitate and promote effective mechanisms for exchanges with the business and trading community, including opportunities for consultation when formulating, implementing and reviewing rules and procedures relating to trade;
3. **Simplification, practicability and efficiency**: Rules and procedures relating to trade to be simplified to ensure that they are no more burdensome or restrictive than necessary to achieve their legitimate objectives;
4. **Non-discrimination**: Rules and procedures relating to trade to be applied in a non-discriminatory manner and be based on market principles;
5. **Consistency and predictability**: Rules and procedures relating to trade to be applied in a consistent, predictable and uniform manner so as to minimize uncertainty to the trade and trade-related parties. Rules and procedures relating to trade to provide clear and precise procedural guidance to the appropriate authorities with standard policies and operating procedures and be applied in a non-discretionary manner;
6. **Harmonization, standardization and recognition**: While accepting the need of each member state to regulate or set rules for legitimate objectives such as protection of health, safety or public morals and conservation of exhaustible natural resources, regulations, rules and procedures affecting the acceptance of goods between member states to be harmonized as far as possible on the basis of international standards where appropriate. The development of mutual recognition arrangements for standards and conformity assessment results, and continuing co-operation on technical infrastructure development, are encouraged;
7. **Modernization and use of new technology**: Rules and procedures relating to trade to be reviewed and updated if necessary, taking into account changed circumstances, including new information and new business practices, and based on the adoption, where appropriate, of modern techniques and new technology. Where new technology is used, relevant

authorities shall make best efforts to spread the accompanying benefits to all parties through ensuring the openness of the information on the adopted technologies and extending cooperation to authorities of other economies and the private sector in establishing inter-operability and/or inter-connectivity of the technologies;

8. **Due process**: Access to adequate legal appeal procedures, adding greater certainty to trade transactions, in accordance with the applicable laws of member states; and
9. **Cooperation**: Member states shall strive to work closely with the private sector in the introduction of measures conducive to trade facilitation, including by open channels of communication and cooperation between both governments and business. Member states shall continue to work in partnership to focus on opportunities for increased cooperation including integrated technical assistance and capacity building; exchanges of best practices critical to implementing trade facilitation initiatives and the coordination of positions concerning topics of common interest discussed in the framework of regional and international organizations.

The trade facilitation principles incorporated in the ATIGA are similar to the APEC principles on trade facilitation.[98] This can be explained by the considerable overlap of membership between APEC and ASEAN. In the context of APEC, the development and implementation of trade facilitation measures compliant with the Principles on Trade Facilitation is left to the member economies. The inclusion of the model principles in the ATIGA gives greater emphasis to the issue of trade facilitation in the context of ASEAN. It can also serve to guide ASEAN's trade facilitation cooperation with its dialogue partners. However, in order to be effective, such principles need to translate into concrete measures.

[98] The APEC principles were endorsed as part of the Shanghai Accord adopted at the 13th APEC Ministerial Meeting in 2001.

5.1.2. Adopt a Set of Specific Trade Facilitation Measures

The review of trade facilitation provisions in ASEAN+1 FTAs shows an emphasis on cooperation in areas relating to trade facilitation. However, with the exception of AANZFTA, which includes a number of specific trade facilitation measures already promoted in the context of ASEAN FTA, ASEAN+1 FTA provisions on trade facilitation often lack specificity.

A consistent approach to trade facilitation in the context of greater economic cooperation in East Asia would define a specific set of measures that build on existing ASEAN initiatives and could reference as its starting point the measures as incorporated in the AANZFTA. Electronic customs clearance procedures, for instance, is an area of great potential that could result over time in significant reductions of transaction costs. The establishment of a Single Window across the region could also contribute to an unimpeded trade environment. Product standards and conformity assessment procedures on a region-wide basis should also be considered. As with the case of ASEAN, clear timelines could be set for implementing the various measures.

5.1.3. Monitor Performance in Core Trade Facilitation Areas and Set Targets for Improvement

This paper has highlighted five core areas in trade facilitation cooperation that are covered in ASEAN and ASEAN+1 FTAs as well as a majority of RTAs in Asia and the Pacific. These are customs procedures and cooperation; technical regulations, standards and SPS measures; NTBs, including administrative fees and charges; transparency of laws, regulations and administrative rulings; and use of ICT and e-commerce. A set of primary variables has been collated or constructed from multiple data sources for the ASEAN+6 countries to proxy for their performance in the five core trade facilitation areas. A composite Core Trade Facilitation Index has also been constructed based on data in the five core areas to measure each country's overall performance in trade facilitation. Although much of the trade facilitation performance of ASEAN+6 countries over the past few years may not reflect the outcomes of trade facilitation provisions in the various FTAs given that most of them have only recently entered into force, it can be expected that the performance indicators would be useful in monitoring the effective implementation of trade facilitation measures in the coming years.

It is recommended that the trade facilitation performance indicators presented in this paper be tracked on an annual basis for the ASEAN+6 countries. Care has been taken to ensure that the trade facilitation indices and primary variables are compiled from data sources that are regularly updated and readily accessible and have a wide country coverage.[99] These measures form the basis for countries to set specific quantitative targets for improvement. The experience of APEC, which has set specific targets for the reduction of trade transaction costs across the region, could be useful in this regard.[100]

5.1.4. Share Best Practices and Implement Capacity-Building Measures in Priority Areas

The review of trade facilitation performance has shown that there are great disparities across ASEAN+6 countries. A number of countries are strong in different core trade facilitation areas and on specific primary variables, while others are weak overall or in particular core areas and primary variables. This diversity in performance is conducive to the sharing of best practices among ASEAN countries and its dialogue partners. For example, a number of ASEAN countries could benefit from the experience of dialogue partners in the areas of product standards and conformity assessment procedures.

The performance indicators could also assist each country to identify areas of relative weakness for priority action. These measures could complement the national self-assessment exercises that have been undertaken by developing countries that are WTO members in the context of WTO negotiations, which sought to identify their needs and reflect on priorities with respect to trade facilitation reforms.

There are cost implications to implementing trade facilitation reforms that are particularly pertinent for developing countries. Some measures are considered elementary and relatively easy for countries to implement. These include, for instance:

[99] Although some indicators could be more specifically measured with customized surveys of businesses, these indicators may be costly to update regularly.

[100] APEC economies committed to a 5 percent reduction of trade transaction costs between 2002-06 as part of the 2002 Trade Facilitation Action Plan and later agreed on a further 5 percent reduction between 2006-10. For progress on trade facilitation work in APEC, see 2010 CTI Annual Report to Ministers, available at: http://publications.apec.org/publication-detail.php?pub_id=1081.

the establishment of enquiry points and the adoption of simplified documents. Other measures are farther reaching and more costly, and therefore need to be addressed through appropriate technical assistance and capacity-building support measures in order to be carried out satisfactorily. In the context of ASEAN+1 FTAs, only the AANZFTA contains provisions related to technical assistance in the area of trade facilitation, one of which calls on customs authorities to develop technical assistance programmes to facilitate implementation of Single Windows.

As discussed above, measures to support developing countries' efforts to engage in trade facilitation reforms are likely to form an integral part of any multilateral agreement on trade facilitation. Technical assistance and capacity-building measures should likewise be a feature of trade facilitation cooperation between ASEAN and all its dialogue partners.

5.1.5. Keep Abreast of Developments in Multilateral Negotiations

Multilateral negotiations may result in the creation of binding commitments on the part of WTO member countries to implement measures aimed at facilitating trade. Such commitments are likely to be accompanied by provisions on technical assistance and capacity building, as well as special and differential treatment for developing countries.

The Draft Consolidated Negotiating Text gives an overview of the proposals currently on the table. This document could serve as a point of reference in the negotiation of future trade facilitation measures in RTAs. If a multilateral agreement is concluded in WTO, RTA provisions will have to be in line with multilateral obligations.

6. Conclusion

Trade facilitation is considered to be an important enabler in the growth of regional value chains and an important driver of economic integration. With the gradual elimination of tariffs, a number of new barriers to trade have been erected. These barriers are increasingly targeted in negotiations at the bilateral, regional and multilateral levels. Despite many ongoing initiatives in trade facilitation, there is

evidence that the ASEAN region remains fragmented, partly due to difficulties of moving goods across borders. Inefficient border administration affects the competitiveness of ASEAN exports by raising costs and shipping times. While the overall performance of ASEAN may have improved in recent years, there is considerable room for improvement of trade processes and procedures in individual countries. The ASEAN Economic Community Blueprint and ASEAN+1 FTAs offer a useful framework for channelling efforts to further reduce trade transaction costs between ASEAN and its dialogue partners. This would unlock ASEAN's promise, promote the growth of regional value chains and trade in East Asia and help to rebalance global growth.

Ongoing negotiations in WTO could contribute to advancing trade facilitation goals by creating binding commitments for WTO members to improve trade procedures and formalities. Such an agreement, if adopted, would most likely incorporate provisions on technical assistance and capacity building to assist developing country members in their implementation of any new commitments.

The implementation of trade facilitation measures through RTAs can effectively complement efforts at the multilateral level. The identification of best practices or model trade facilitation principles could assist in this regard. In addition, individual countries should strive to identify priority areas for action.

In the context of the reflection on further deepening economic integration in the East Asia region and the possible harmonization of existing provisions on trade facilitation, a sensible approach would be to align as much as possible RTA provisions to existing WTO obligations, bearing in mind the content of the draft negotiating text currently on the table.

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Appendix

Appendix 1. List of Primary Variables to Measure Trade Facilitation Performance

Table A1. List of Primary Variables to Measure Trade Facilitation Performance

Trade Facilitation Area	Indicator	Source
Customs Procedures and Cooperation • Classification of goods (WCO HS) • Customs valuation (WTO CVA and Article VII of GATT 1994) • Certificate of origin • Temporary admission • Advance rulings • Pre-shipment inspection • Express shipment • Risk Management • Mutual Assistance • Customs automation system • Information exchange • WCO Customs Data Model	Documents to export (number)	DB
	Documents to import (number)	DB
	Time to export (days)	DB
	Time to import (days)	DB
	Burden of customs procedures (score; 1-7 (best))	GCR
	Customs service index (score; 0-12 (best))	GETR
	Efficiency of clearance process (score; 1-5 (best))	GETR/LPI
	Clearance time without physical inspection (days)	LPI
	Physical inspection (%)	LPI
	Number of agencies - exports	LPI
	Number of agencies - imports	LPI
NTB, especially fees and charges • Administrative fees and formalities such as taxes and internal charges, customs user fees (Article VIII of GATT 1994) Import licensing	Cost to export (US$ per container)	DB
	Cost to import (US$ per container)	DB
	Import licensing requirements (score)	Authors' calculation
Technical Regulations, Standards and SPS • Use of international standards • Mutual recognition of conformity assessment • Accreditation • Laboratory and testing • WTO TBT Agreement • WTP SPS Agreement	Country's participation in ISO Technical Committees (score per million capita)	Authors' calculation
	Cumulative number of MRAs signed by country	Authors' calculation
Transparency of laws, regulations and administrative rulings • Publication • Notification and provision of information • Administrative processes • Contact Point • Article X of GATT 1994	Transparency of government policy making (score; 1-7 (best))	GCR
	Favouritism in decisions of government officials (score; 1-7 (best))	GCR
	Irregular payments in exports and imports (score; 1-7 (best))	GETR
	Corruption Perceptions Index (score; 0-10 (best))	Transparency International

Trade Facilitation Area	Indicator	Source
Use of ICT and E-Commerce • Paperless trading • Electronic authentication and signature • Regulatory framework • Online consumer protection Online personal data protection	Laws relating to ICT (score; 1 - 7 (best))	GITR
	ICT use and government efficiency (score; 1 - 7 (best))	GITR
	Government prioritization of ICT (score; 1 - 7 (best))	GITR

Sources: DB: Doing Business; GCR: Global Competitiveness Report, GETR: Global Enabling Trade Report; LPI: Logistics Performance Index; GITR: Global Information Technology Report.

Note: The Catagories and summary points in the first column under 'Trade Facilitation Area' are from Peng (2008).

Appendix 2. Note on Construction of Indicators on Import Licensing and Standards

A2.1. Import licensing

The extent of a country's import licensing requirements is scored on a scale of 0 to 1 with scores assigned as follows:

0	no licence required
0.2	licences mainly on grounds of public health, morality, national security etc. with no discrimination
0.4	licences mainly for public health etc. with some discrimination
0.6	licences not based solely on grounds of public health etc. and non-transparent
0.8	substantial number of goods require import licences
1	all goods require import licences

Information is sourced mainly from various years of the National Trade Estimates Reports, as well as country sources.

A2.2. Participation in ISO Technical Committees (TCs)

All ASEAN+6 countries are members of the International Organization for Standardization, but they participate in different numbers of Technical Committees and with different status: Secretariat, Participating Member or Observer Member. Scores are assigned as follows for a country's participation in each TC:

Secretariat: 1.5

Participating Member: 1

Observer Member: 0.5

The total score of a country is obtained by summing up the score it obtains across all the TCs in which it is a member.

To control for the likelihood that a bigger economy will have the resources to participate in a greater number of committees, the total score is then divided by the country's economically active population (aged 15 – 64) to obtain ISO score per million capita, which is one of the primary variables used to proxy for the country's trade facilitation efforts in standards.

It is found that a variable of total ISO score does not correlate well with other trade facilitation variables, in particular, the MRA variable that is the other variable that proxies for standards, while ISO score per million capita is correlated with the MRA variable as well as a few other customs-related variables.

The limitation of the current ISO score per million capita variable is that it captures only current year information. In this paper, the ISO score per million capita variable is assumed to have remained unchanged between 2007 and 2010 for each country. Thus, year variations in countries' scores on standards a rise solely changes in the MRA variable.

Information is sourced from the ISO website: http://www.iso.org/iso/about/iso_members.htm

A2.3. Cumulative Number of MRAs Signed

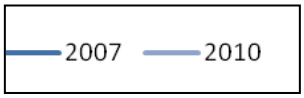
Information on the MRAs that each country has concluded with other countries or regional entities – ASEAN, EU, etc. – is obtained from the websites of national standards agencies and trade agencies.

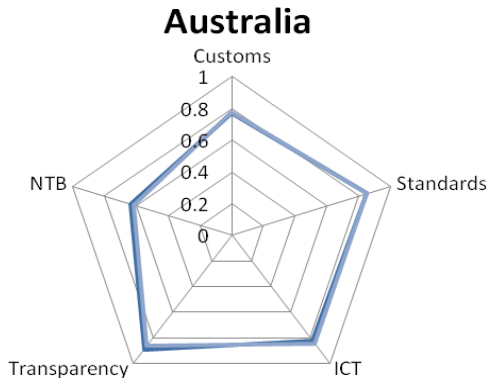
Only MRAs related to trade in goods e.g. electronic products, customs procedures are counted. This variable does not count the number of MRAs concluded in professional services.

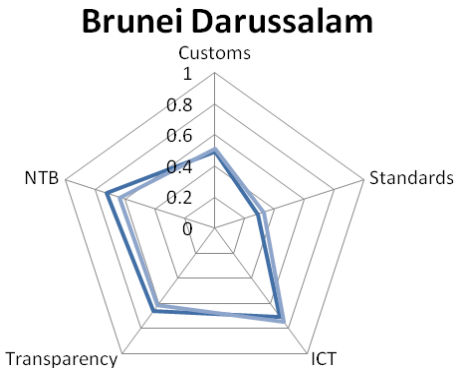
Appendix 3. 2007 and 2010 Country Specific Scores on the Five Core Areas of Trade Facilitation

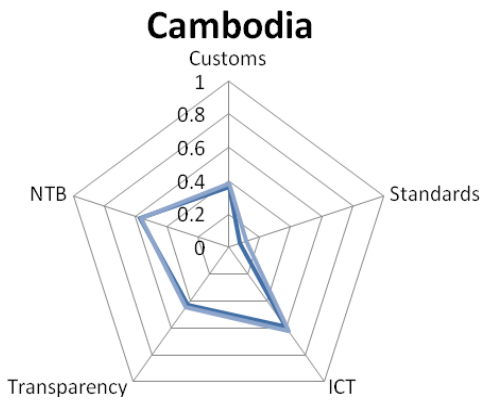
Figure A1. 2007 and 2010 Country Specific Scores on the Five Core Areas of Trade Facilitation

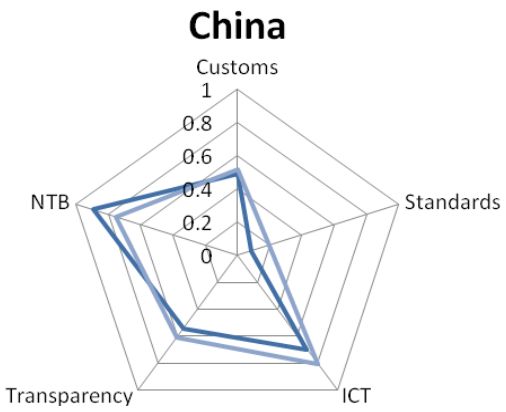
Legend:

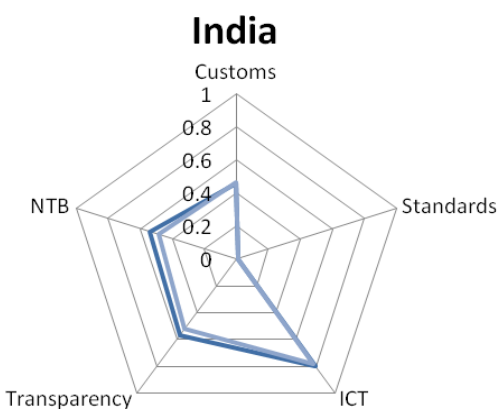


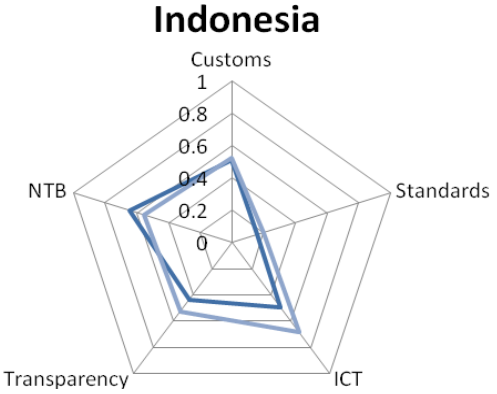


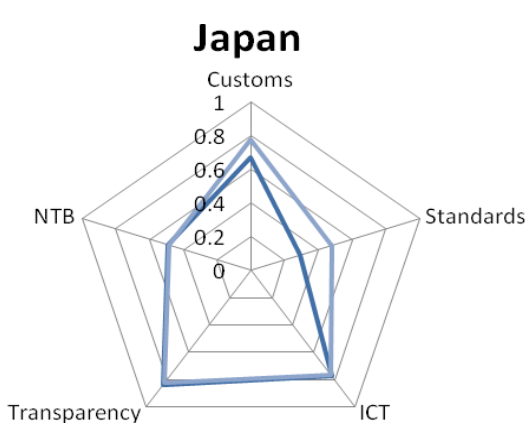


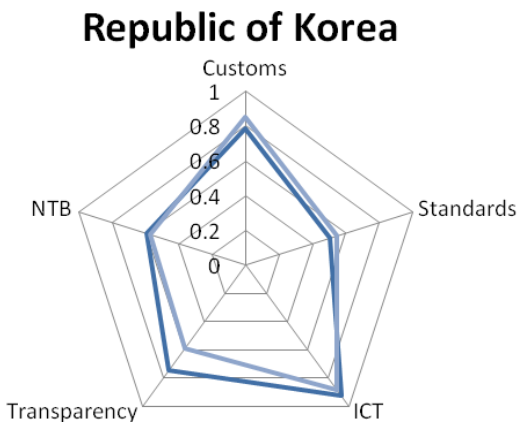


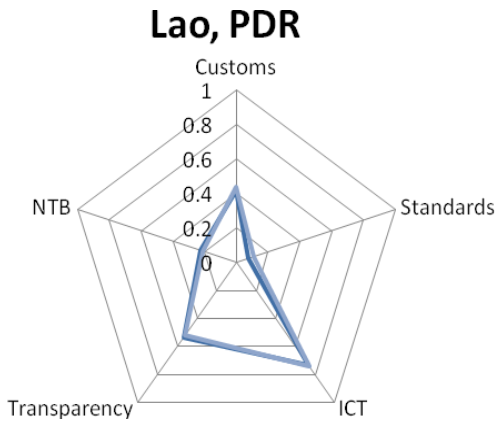


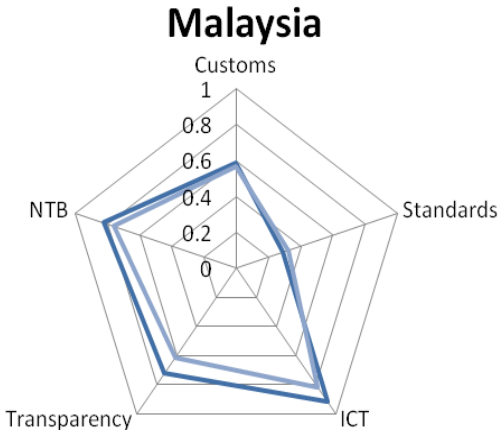


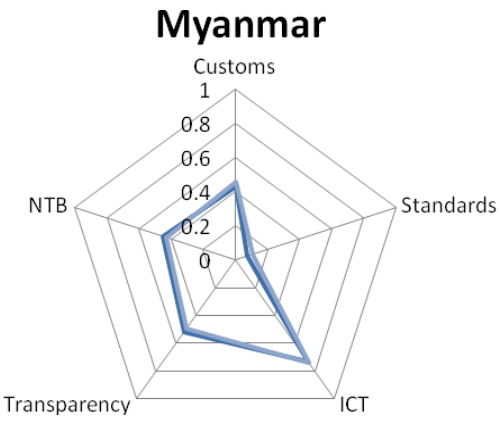


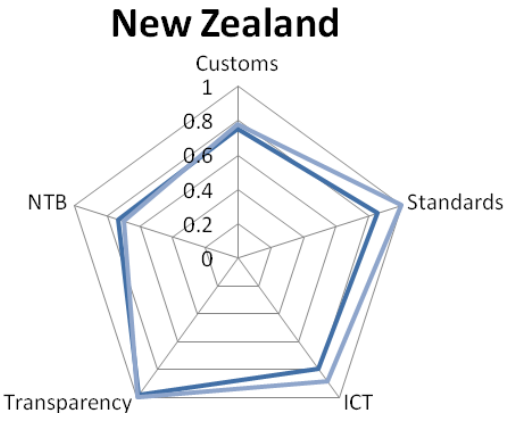












Source: Authors' calculations

Appendix 4. Trade Facilitation Primary Indicators by Country Customs Procedures and Cooperation

Tables A2. Trade Facilitation Primary Indicators by Country Customs Procedures and Cooperation

	Year	Documents to export (no.)	Documents to import (no.)	Time to export (days)	Time to import (days)	Burden of customs procedures (score: 1-7, where 7 best)	Customs service index (score: 0 - 12(best))	Efficiency of clearance process (score: 1 - 5(best))	Clearance time without physical inspection (days)	Physical inspection (%)	No. of agencies - exports	No. of agencies - imports
Australia	2007	6	5	9	8	4.9	8.8	3.6	1.7	3.0	2	2
	2008	6	5	9	8	4.9	9.3	3.6	1.3	3.6	2	2
	2009	6	5	9	8	4.9	10.3	3.7	0.9	4.2	2	2
	2010	6	5	9	8	5.0	11.3	3.8	0.5	4.9	3	3
Brunei Darussalam	2007	6	6	27	19	4.5	6.4	3.0	1.9	18.0	3	3
	2008	6	6	27	19	4.5	6.4	3.0	1.7	19.3	4	4
	2009	6	6	27	19	4.6	7.6	2.9	1.5	20.5	4	4
	2010	6	6	25	20	4.5	8.8	2.8	1.3	21.8	4	4
Cambodia	2007	11	11	37	45	2.5	3.2	2.2	1.0	12.0	4	4
	2008	11	11	22	29	2.8	4.5	2.2	1.1	17.7	4	5
	2009	11	11	22	29	3.3	5.8	2.3	1.3	23.3	5	6
	2010	10	10	22	26	3.5	7.1	2.4	1.4	29.0	6	7
China	2007	7	6	21	24	4.2	7.0	3.0	1.4	7.0	4	4
	2008	7	6	21	24	4.5	6.8	3.0	1.5	7.5	4	4
	2009	7	5	21	24	4.6	7.8	3.2	1.6	8.1	4	4
	2010	7	5	21	24	4.5	8.8	3.4	1.7	8.6	4	4
India	2007	8	9	18	21	3.6	6.7	2.7	2.4	25.0	3	2
	2008	8	9	17	20	3.7	7.0	2.7	2.2	21.2	3	3
	2009	8	9	17	20	3.9	7.3	2.7	2.1	17.4	3	3
	2010	8	9	17	20	4.0	7.6	2.7	1.9	13.6	3	4
Indonesia	2007	5	6	21	27	3.0	7.7	2.7	1.6	12.0	3	3
	2008	5	6	21	27	3.3	5.5	2.7	1.8	11.7	3	3
	2009	5	6	21	27	3.7	7.2	2.4	2.0	11.4	3	3
	2010	5	6	20	27	3.9	8.9	2.1	2.1	11.1	3	4
Japan	2007	4	5	10	11	4.4	8.7	3.8	1.4	3.0	3	3
	2008	4	5	10	11	4.3	11.5	3.8	1.2	3.1	3	3
	2009	4	5	10	11	4.4	11.3	3.8	1.0	3.3	2	2
	2010	4	5	10	11	4.6	11.1	3.8	0.8	3.4	2	2

	Year	Documents to export (no.)	Documents to import (no.)	Time to export (days)	Time to import (days)	Burden of customs procedures (score: 1-7, where 7 best)	Customs service index (score: 0 - 12(best))	Efficiency of clearance process (score: 1 - 5(best))	Clearance time without physical inspection (days)	Physical inspection (%)	No. of agencies - exports	No. of agencies - imports
Korea, Rep.	2007	4	6	11	10	5.4	9.0	3.2	1.0	1.0	2	3
	2008	4	6	8	8	5.0	9.5	3.2	0.9	1.5	2	2
	2009	3	3	8	8	4.6	9.5	3.3	0.8	2.1	2	2
	2010	3	3	8	7	4.5	9.5	3.4	0.6	2.6	3	2
Lao PDR	2007	9	10	50	50	3.9	6.4	3.0	1.9	18.0	3	3
	2008	9	10	50	50	4.0	6.4	3.0	1.7	19.3	4	4
	2009	9	10	50	50	4.2	7.6	2.9	1.5	20.5	4	4
	2010	9	10	48	50	4.2	8.8	2.8	1.3	21.8	4	4
Malaysia	2007	7	7	18	14	5.0	9.0	3.4	1.7	6.0	3	3
	2008	7	7	18	14	4.8	6.3	3.4	1.4	6.2	3	3
	2009	7	7	18	14	4.8	6.6	3.1	1.1	6.3	3	3
	2010	7	7	18	14	4.8	6.9	2.8	0.7	6.5	3	3
Myanmar	2007	7	8	24	24	3.9	6.4	3.0	4.5	56.0	4	4
	2008	7	7	22	22	4.0	6.4	3.0	3.7	54.0	4	4
	2009	7	7	22	21	4.2	7.6	2.9	2.8	52.0	5	4
	2010	7	7	21	21	4.2	8.8	2.8	2.0	50.0	5	4
New Zealand	2007	7	5	10	9	5.5	9.5	3.6	0.5	5.0	2	3
	2008	7	5	10	9	5.6	10.0	3.6	0.5	3.9	2	3
	2009	7	5	10	9	5.9	10.0	3.6	0.5	2.9	3	3
	2010	7	5	10	9	5.8	10.0	3.6	0.5	1.8	3	3
Philippines	2007	8	8	17	18	3.1	4.3	2.6	1.8	32.0	4	4
	2008	8	8	16	16	2.9	8.0	2.6	1.8	27.6	4	4
	2009	8	8	16	16	3.0	9.3	2.7	1.8	23.1	4	3
	2010	8	8	15	14	3.0	10.6	2.8	1.8	18.7	3	3
Singapore	2007	4	4	5	4	6.4	9.5	3.9	1.1	3.0	2	2
	2008	4	4	5	4	6.5	11.0	3.9	0.9	2.7	2	2
	2009	4	4	5	4	6.4	12.0	4.0	0.7	2.3	2	2
	2010	4	4	5	4	6.3	13.0	4.1	0.5	2.0	2	3

	Year	Documents to export (no.)	Documents to import (no.)	Time to export (days)	Time to import (days)	Burden of customs procedures (score: 1-7, where 7 best)	Customs service index (score: 0 - 12(best))	Efficiency of clearance process (score: 1 - 5(best))	Clearance time without physical inspection (days)	Physical inspection (%)	No. of agencies - exports	No. of agencies - imports
Thailand	2007	7	9	17	14	4.3	4.7	3.0	1.9	9.0	4	4
	2008	4	3	14	13	4.1	7.5	3.0	1.5	8.9	3	4
	2009	4	3	14	13	4.1	9.2	3.0	1.1	8.8	3	3
	2010	4	3	14	13	4.1	10.9	3.0	0.7	8.7	2	2
Vietnam	2007	6	8	24	23	3.2	2.0	2.9	1.4	14.0	5	4
	2008	6	8	24	23	3.3	2.0	2.9	1.4	23.3	4	5
	2009	6	8	22	21	3.6	3.3	2.7	1.4	32.6	4	5
	2010	6	8	22	21	3.6	4.6	2.5	1.4	41.8	3	6

Sources: Doing Business, Global Competitiveness Report, Global Enabling Trade Report, Logistics Performance Index, various years

Table A3. Trade Facilitation Primary Indicators by Country: NTB, Especially Fees and Charges; Technical Regulations, Standards and SPS

	Year	Cost to export (US$ per container)	Cost to import (US$ per container)	Import licensing requirements (score)	Country's participation in ISO Technical Committees (score per million capita)	Cumulative no. of MRAs signed by country
Australia	2007	930	1120	0.2	25.4	14
	2008	1200	1239	0.2	25.4	14
	2009	1060	1119	0.2	25.4	14
	2010	1060	1119	0.2	25.4	14
Brunei Darussalam	2007	515	590	0.6	10.8	4
	2008	630	708	0.6	10.8	4
	2009	630	708	0.6	10.8	5
	2010	630	708	0.6	10.8	5
Cambodia	2007	722	852	0.6	0	2
	2008	732	872	0.6	0	2
	2009	732	872	0.6	0	3
	2010	732	872	0.6	0	3

	Year	Cost to export (US$ per container)	Cost to import (US$ per container)	Import licensing requirements (score)	Country's participation in ISO Technical Committees (score per million capita)	Cumulative no. of MRAs signed by country
China	2007	390	430	0.6	0.7	2
	2008	460	545	0.6	0.7	3
	2009	500	545	0.6	0.7	4
	2010	500	545	0.6	0.7	5
India	2007	820	910	0.6	0.6	0
	2008	945	960	0.6	0.6	0
	2009	945	960	0.6	0.6	0
	2010	1055	1025	0.6	0.6	0
Indonesia	2007	667	623	0.6	1	4
	2008	704	660	0.6	1	4
	2009	704	660	0.8	1	5
	2010	704	660	0.8	1	5
Japan	2007	989	1047	0.6	8.2	5
	2008	989	1047	0.6	8.2	7
	2009	989	1047	0.6	8.2	8
	2010	1010	1060	0.6	8.2	10
Korea, Rep.	2007	745	745	0.6	18.8	7
	2008	767	747	0.6	18.8	7
	2009	742	742	0.6	18.8	7
	2010	790	790	0.6	18.8	8
Lao PDR	2007	1750	1930	1	0	2
	2008	1860	2040	1	0	2
	2009	1860	2040	1	0	3
	2010	1860	2040	1	0	3
Malaysia	2007	432	385	0.8	10.7	4
	2008	450	450	0.8	10.7	4
	2009	450	450	0.8	10.7	5
	2010	450	450	0.8	10.7	5
Myanmar	2007	709	769	1	0	2
	2008	756	821	1	0	2
	2009	759	825	1	0	3
	2010	743	815	1	0	3

	Year	Cost to export (US$ per container)	Cost to import (US$ per container)	Import licensing requirements (score)	Country's participation in ISO Technical Committees (score per million capita)	Cumulative no. of MRAs signed by country
New Zealand	2007	725	800	0.2	39.5	9
	2008	868	850	0.2	39.5	12
	2009	868	850	0.2	39.5	13
	2010	855	825	0.2	39.5	13
Philippines	2007	800	800	0.6	1.6	4
	2008	816	819	0.6	1.6	4
	2009	816	819	0.6	1.6	5
	2010	675	730	0.6	1.6	5
Singapore	2007	416	367	0.4	24.3	9
	2008	456	439	0.4	24.3	10
	2009	456	439	0.4	24.3	11
	2010	456	439	0.4	24.3	13
Thailand	2007	615	786	0.6	3.7	9
	2008	625	795	0.6	3.7	9
	2009	625	795	0.6	3.7	10
	2010	625	795	0.6	3.7	10
Vietnam	2007	468	586	0.6	1.1	3
	2008	533	606	0.6	1.1	3
	2009	555	645	0.6	1.1	4
	2010	555	645	0.8	1.1	5

Sources: Logistics Performance Index; various years; author's calculations

Tables A4. Trade Facilitation Primary Indicators by Country: Transparency of Laws, Regulations and Administrative Rulings; Use of ICT and E-Commerce

	Year	Transparency of government policy making (score: 1-7, where 7 best))	Favouritism in decisions of government officials (score: 1 - 7(best))	Irregular payments in exports and imports (score: 1 - 7(best))	Corruption Perceptions Index (score: 0 - 10(best))	Laws relating to ICT (score: 1 - 7(best))	ICT use and government efficiency (score: 1 – 7(best))	Government prioritization of ICT (score: 1 - 7(best))
Australia	2007	5.3	4.8	6.3	8.6	5.3	5.0	4.9
	2008	5.4	5.2	6.2	8.7	5.5	5.2	5.4
	2009	5.3	5	6	8.7	5.6	5.1	5.4
	2010	5.2	4.6	5.8	8.7	5.5	5.0	5.3
Brunei Darussalam	2007	4.7	4	4	5.5	3.4	4.6	5.2
	2008	4.7	4	3.7	5.5	3.4	4.6	5.2
	2009	4.5	3.9	3.6	5.5	3.8	4.7	5.3
	2010	4.1	3.9	3.5	5.5	4.0	4.6	5.3
Cambodia	2007	4.1	2.7	2.4	2	2.4	4.3	4.4
	2008	4	2.8	2.4	1.8	2.5	4.2	4.3
	2009	3.7	3	2.6	2	2.8	4.1	4.3
	2010	3.6	3.2	2.8	2.1	3.2	3.9	4.6
China	2007	3.8	3	4.4	3.5	3.9	4.6	4.5
	2008	4.5	3.4	4.5	3.6	4.2	4.9	5.1
	2009	4.8	3.8	4.3	3.6	4.2	5.1	5.6
	2010	4.8	3.8	4.1	3.5	4.4	5.0	5.6
India	2007	4.4	3.3	4	3.5	4.6	4.9	5.5
	2008	4.2	3.2	3.6	3.4	4.6	4.9	5.4
	2009	4.6	3.2	3.4	3.4	4.5	4.9	5.5
	2010	4.7	2.9	3.2	3.1	4.6	4.7	5.3
Indonesia	2007	2.5	3.6	3	2.3	3.3	3.0	3.0
	2008	3.2	3.5	3.2	2.6	3.8	3.5	3.6
	2009	3.9	3.7	3.1	2.8	4.0	4.0	4.5
	2010	4.1	3.9	3	2.8	3.9	4.2	4.7
Japan	2007	5.2	4.6	6.1	7.5	4.8	4.1	5.5
	2008	5.1	4.6	5.9	7.3	4.8	4.1	5.0
	2009	4.8	4.5	6	7.7	4.8	4.2	5.1
	2010	4.6	4.6	6.1	7.8	4.8	4.3	5.2
Korea, Rep.	2007	4.7	4.7	5.7	5.1	5.7	5.6	5.9
	2008	4.5	4.4	5.2	5.6	6.0	5.8	5.6
	2009	3.7	3.1	4.8	5.5	5.6	5.8	5.4
	2010	3.8	2.8	4.4	5.4	5.1	5.7	5.6

	Year	Transparency of government policy making (score: 1-7, where 7 best))	Favouritism in decisions of government officials (score: 1 - 7(best))	Irregular payments in exports and imports (score: 1 - 7(best))	Corruption Perceptions Index (score: 0 - 10(best))	Laws relating to ICT (score: 1 - 7(best))	ICT use and government efficiency (score: 1 – 7(best))	Government prioritization of ICT (score: 1 - 7(best))
Lao PDR	2007	4.3	3.6	4	1.9	4.1	4.6	4.9
	2008	4.4	3.6	3.7	2	4.1	4.7	4.9
	2009	4.5	3.6	3.6	2	4.1	4.7	5.0
	2010	4.4	3.6	3.5	2.1	4.2	4.6	5.0
Malaysia	2007	5.2	4.3	5	5.1	5.4	5.6	6.0
	2008	5	4.1	4.6	5.1	5.3	5.6	5.8
	2009	4.9	3.7	4.2	4.5	5.1	5.5	5.7
	2010	4.8	3.7	3.8	4.4	5.1	5.4	4.8
Myanmar	2007	4.3	3.6	4	1.4	4.1	4.6	4.9
	2008	4.4	3.6	3.7	1.3	4.1	4.7	4.9
	2009	4.5	3.6	3.6	1.4	4.1	4.7	5.0
	2010	4.4	3.6	3.5	1.1	4.2	4.6	5.0
New Zealand	2007	5.6	5.7	6.7	9.4	5.4	4.7	4.7
	2008	5.3	5.4	6.6	9.3	5.3	4.7	4.8
	2009	5.8	5.7	6.7	9.4	5.5	4.9	5.4
	2010	6	5.7	6.8	9.3	5.5	5.2	5.7
Philippines	2007	4	2.6	3.1	2.5	3.9	4.1	4.1
	2008	3.8	2.2	2.6	2.3	3.9	4.0	4.3
	2009	3.7	2.1	2.4	2.4	3.8	3.9	4.2
	2010	3.6	2.2	2.2	2.4	3.6	3.6	4.1
Singapore	2007	6.1	5.4	6.6	9.3	5.9	6.1	6.3
	2008	6.3	5.7	6.6	9.2	6.0	6.3	6.3
	2009	6.3	5.8	6.5	9.2	6.0	6.3	6.4
	2010	6.3	5.6	6.4	9.3	5.9	6.2	6.4
Thailand	2007	4.6	3.6	4.1	3.3	4.1	5.2	5.2
	2008	4.2	3.4	3.7	3.5	3.9	4.8	4.6
	2009	4.2	3.1	3.5	3.4	3.9	4.7	4.4
	2010	4.3	2.9	3.3	3.5	3.9	4.5	4.5
Vietnam	2007	3.8	3	3.1	2.6	3.4	4.0	5.1
	2008	4.2	3.1	2.9	2.7	3.7	4.5	5.0
	2009	4.4	3.2	2.7	2.7	3.8	4.7	5.3
	2010	4.3	3.1	2.5	2.7	4.0	4.6	5.5

Sources: Global Competitiveness Report, Global Information Technology report, Transparency International; various years

CHAPTER 4

The Impact of Free Trade Agreements on Foreign Direct Investment in the Asia-Pacific Region

SHANDRE M. THANGAVELU[1]

Department of Economics, National University of Singapore

CHRISTOPHER FINDLAY

School of Economics, University of Adelaide

According to the World Investment Report, outward foreign direct investment (FDI) increased dramatically faster than exports over the past decade. Since the 1990s, this dramatic rise in FDI flows has also been accompanied by an increase in the number and intensity of regional trade agreements (RTAs), many of which include key provisions for FDI. Specifically, trade agreements may be seen as the formal means for integrating trade and investment flows.

Given the context of proliferating trading arrangements and burgeoning FDI flows, it is interesting to examine the impact of RTAs in the determination of FDI flows. This paper investigates whether membership of a bilateral or regional trade agreement has a differential impact on FDI flows in the Asia-Pacific region using an extended gravity model. The panel data comprise 30 Organisation of Economic Development (OECD) source countries and 43 host countries including the 30 OECD countries and 13 non-OECD partners in the Asia--Pacific region from 1986 to 2007. These countries are chosen given their attractiveness as inward FDI locations and are also part of various bilateral and regional trading agreements. The paper also accounts for the horizontal and vertrical integration of multinational activities as highligted by Baltagi et al. (2007).

[1] Corresponding author: Department of Economics, 1 Arts Link, AS2, 6th Floor, National University of Singapore, Singapore 119750. Email: ecssmt@nus.edu.sg

1. Introduction

The rapid growth of trade and foreign direct investment (FDI) flows in recent decades has been one of the commonly highlighted characteristics of globalization. According to the *World Investment Report* (2010) and the United Nations' World Trade Data Base, world-wide outward FDI stocks expanded almost five times faster than exports, exceeding even the growth of intermediate goods exports from 1990 to 2009.

This dramatic rise in FDI flows was accompanied by an increase in the number and intensity of regional trade agreements (RTAs)[2] since the 1990s, many of which include provisions for investments. The plethora of trade liberalization agreements overlapping at the unilateral, bilateral, regional and multilateral levels gave rise to what Bhagwati (1995) terms the 'spaghetti bowl' phenomenon. Baldwin (2006) proposes a process of multilateralizing regionalism in which preferential trading arrangements (PTAs) are extended to additional partners,[3] through juggernaut and domino effects. With the juggernaut effect, political economy considerations intensify trade opening. With the domino effect, countries participate in more open trading arrangements so as to avoid being left behind. Blomström and Kokko (1997) argue that by joining RTAs, trade and investment will be promoted in the short run while the extended market size, stronger competition, more efficient resource allocation and other positive externalities will enhance economic development of participating countries in the long run.

Given the context of proliferating trading arrangements and burgeoning FDI flows, it is useful to examining the role of RTAs in the determination of FDI location. Analogous to the Vinerian (1950) trade creation and trade diversion effects of a custom union (CU), the investment creation and diversion effects of RTAs have been estimated in various empirical analyses. These studies typically focus on case studies of the European Union (EU), Mercosur (Southern Common Market) and Latin American countries, and have produced mixed results. OECD (2003) found a that there would be a

[2] In this study, RTAs and regional integration agreements (RIAs) are used interchangeably as trade agreements often comprise commitments to domestic reformatory measures that promote trade and investment for the participating countries. Specifically, trade agreements may be seen as the formal means to the end of integrating trade and investment flows.

[3] The extension of PTAs to additional partners may occur via the inclusion of new members in existing agreements or the creation of new arrangements including new members.

positive investment creation effect of EU membership for those countries joining the EU in 2004. In contrast, Brenton et al. (1999) and Di Mauro (2001) found no evidence of the EU diverting investment from the Central and Eastern European countries. Özden and Parodi (2004) and Yeyati et al. (2004) found substantial investment creation and diversion effects for Mercosur and Latin American countries, respectively.

Countries in the Asia--Pacific region deserve special attention for two reasons. First, FDI has played an instrumental role in the economic growth of developing countries in the Asia--Pacific region over time – from the 'flying-geese model of dynamic comparative advantage' in Association of South-East Asian Nations (ASEAN) beginning in the 1960s to the rise of the economic powerhouses of China and India today. Second, the Asia--Pacific region has been the focus of bilateral trade negotiations, including with major economies like the United States, Japan and China.

There is a variety of channels by which free trade agreements (FTAs) may drive FDI flows. One is that FTAs remove export regulations by lowering trade barriers to facilitate the movement of intermediate or final products between parent firms in source countries, and foreign affiliates in host countries. Other positive effects of FTAs on FDI could arise from other conditions negotiated in the FTA, such as investment regulations that increase the mobility of fund and capital flows. These regulations make it easier for multinational corporations (MNCs) to divert financial resources to their foreign affiliates when the need arises, such as the building of a new plant in the host country. Hence, countries targeting an increase in FDI inflows from a particular source country or region could seek to implement FTAs with the other party, using such international agreements as viable tools to achieve their aim.

FTAs could also provide other less tangible benefits. The signing of FTAs not only signifies economic cooperation between nations, but also cooperation on the political and institutional fronts. Chia (2010) notes that FTAs are increasingly being used as instruments to promote political diplomacy, while Kawai and Wignaraja (2008) imply that FTAs can help signatory nations harmonize their regulatory and institutional frameworks. Therefore, the political legitimacy and binding nature of these FTAs (Coe et al., 2007) help to create a more secure political and institutional environment for MNCs to invest, thereby increasing FDI flows.

This paper examines whether bilateral or regional trade agreements have a differential impact on FDI flows in the Asia-Pacific region using an extended gravity model. The panel data comprise 30 OECD source countries and 43 host countries including the 30 OECD countries and 13 non-OECD partners in the Asia-Pacific from 1986 to 2007. These countries were chosen given their attractiveness as inward FDI locations[4] and also because they were part of various bilateral and regional trading agreements. Specifically, the non-OECD partners are the ASEAN countries, India, China and Hong Kong. The focus on OECD countries as sources of FDI reflects the characteristics of the data available.

This chapter is organized as follows. It is useful first to set the context concerning the extent of impediments to barriers to investment. Our main interest in this paper is the ASEAN economies and we first assess the treatment of investment in a number of trade agreements involving the ASEAN economies. The next section therefore provides a summary of FDI flows and an FDI restrictiveness index for ASEAN. Section 3 discussess the augmented gravity model to examine the key determinants of FDI and assesses whether bilateral and regional trade agreements have different impacts on the level of FDI flows. Section 4 provides the results of the model. The policy conclusions are given in section 5.

2. FDI Restrictiveness Index in ASEAN

Recent developments indicate that FTAs are used as a strategy to liberalize FDI activities with partner countries in order to increase access to multinational activities . In this section we derive an FDI Restrictiveness Index for ASEAN FTA (AFTA), China--ASEAN FTA (ACFTA) and Korean--ASEAN FTA (AKFTA). The FDI Restrictiveness Index follows closely the methodology proposed by Golub (2003), OECD (2003, 2010), Thangavelu and Lim (2011) and Urata and Sasuya (2007). The

[4] The ASEAN countries received the most FDI, with an average FDI stock of 44 per cent of GDP in 1999 and net FDI inflows averaging 4.5 per cent of GDP over the 1980s and 1990s. The second most attractive RTA countries were from the Western Hemisphere with an average FDI stock of 39 per cent of GDP in 1999, with net FDI inflows averaging 4.8 per cent of GDP over the period 1995–99 (OECD, 2003).

restrictiveness of policy affecting FDI flows was evaluated in six areas: foreign ownership or market access; national treatment; screening and approval procedure; board of directors and management composition; movement of investors; and performance requirements. The higher the scores, the more open the FDI rules.[5]

In 2010, the OECD updated its FDI Restrictiveness Index (created in 2003 and updated in 2006) by expanding the study to include more sectors and more updated information on the regulatory requirements for FDI activities in OECD countries[6] (OECD, 2010). The updated index highlights interesting results with respect to Asian countries: (1) China and Indonesia are listed with the top five countries having very restrictive FDI policies – Iceland, Russia and Saudi Arabia are the other three countries with very restrictive policies; (2) the Latin American countries of Brazil, Chile and Argentina have more liberal FDI policies compared to the Asian countries of China, India, Indonesia, Japan and Korea; and (3) the Eastern European countries of Estonia, Latvia, Slovenia, Lithuania, Slovak Republic and Czech Republic are more liberal with respect to FDI activities compared to the Asian countries.

Urata and Sasuya (2007) studied FDI rules in the FTA and created the FDI Restrictiveness Index for seven FTAs. The study covers 21 sectors and 158 ISIC (International Standard Industrial Classification) three-digit subsectors. The results show that US--Australia and US--Singapore FTAs have higher quality rules and more liberal FDI policies. Urata and Ando (2009) analysed the FDI environment of the ASEAN countries, looking not only at the FDI instruments but also the enforcement and implementation of the FDI policies. They found wide variations among the ASEAN countries and the most serious impediments for FDI are due to the lack of transparency and complicated/delayed processing in screening and appraisal procedures regarding FDI application.

[5] The OECD FDI Restrictiveness Index is given in descending order, where open economies are given lower scores.

[6] The updated OECD FDI restrictiveness Index is expanded to include all primary sectors (agriculture, forestry, fishing and mining), as well as investments in real estate, are now included. Subsectors have been added to cover services other than banking and insurance (under finance), as well as media services (TV and radio broadcasting, as well as printed and other media). There is greater detail in manufacturing (five subsectors), in electricity (generation and distribution), distribution (retail and wholesale) and transport (added international/domestic breakdown for air and road transport).

The index used here covers sectors based on the classification given in Urata and Sasuya (2007). We have aggregated the analysis into 10 sectors: manufacturing, services incidental to manufacturing, agriculture, services incidental to agriculture, fishery, services incidental to fishery, forestry, services incidental to forestry, mining and quarrying, and services incidental to mining and quarrying. As highlighted by Urata and Sasuya (2007), the above methodology has its limitations as it is subjective to random and arbitrary weights. However, by careful usage of weights across all the sectors and consistently applied across the countries, we hope to reduce the bias in the scores. In this study, we use only the information provided in the FTA agreements.

The various weights for the respective groups are given in Thangavelu and Lim (2011). The weights follow closely those of Urata and Sasuya (2007). The restriction on ownership and market access is given a greater weightage of 0.4 to reflect the importance of foreign ownership and market access as key drivers of multinational activities. To capture the activities of governments in protecting domestic industries, we give a weight of 0.2 to national treatment of foreign firms, where foreign firms are treated in equal terms to domestic firms.

The summary of the FDI Restrictiveness Index for the AFTA, ACFTA and AKFTA are given in Table 1. Higher scores reflect a more liberal regime. The first important result is that the scores vary between economies, that is, even though all these economies are members of the same agreement, their treatment of investment varies significantly. These agreements are more likely to be characterized as network agreements where the non-ASEAN member may not be the most liberal. However the variation among members is smaller for AFTA than it is for the other two agreements.

Second, the results show considerable variation between agreements. The results for AFTA seem to be in line with the expectations. Singapore, which is driven by export growth, tends to have more liberal FDI policies to attract multinational activities in the economy and the region. The AFTA scores for Thailand, Philippines and Vietnam indicate that they are also adopting liberal FDI policies to attract multinational activities. However, in the AFTA scores, it is quite surprising to see Malaysia ranked lower among the key ASEAN-5 countries, which clearly indicates that there is an urgent need to remove some of the restrictions to FDI flows in the economy. Although they are ranked lower among the ASEAN-5 countries in terms of economic development, it

is also quite interesting to observe that emerging countries such as Vietnam and Cambodia tend to have adopted key FDI policies to maintain their momentum of economic liberalization and integration in the region. In fact, Cambodia is ranked higher in terms of the index compared to Indonesia and Malaysia.

Table 1. FDI Restrictiveness Index for AFTA, ACFTA and AKFTA

	ACFTA	Rank	AKFTA	Rank	AFTA	Rank
Brunei	0.178	10	0.227	10	0.399	10
Cambodia	0.525	2	0.530	2	0.562	2
Indonesia	0.295	6	0.320	7	0.496	5
Laos	0.273	8	0.346	5	0.499	4
Malaysia	0.305	5	0.331	6	0.489	6
Myanmar	0.073	11	0.089	11	0.442	7
Philippines	0.209	9	0.214	9	0.433	8
Singapore	0.554	1	0.539	1	0.594	1
Thailand	0.291	7	0.292	8	0.400	9
Vietnam	0.482	3	0.482	3	0.529	3
China	0.458	4	-		-	
Korea	-		0.467	4	-	

There are interesting differences in the treatment of investment, depending on the partners involved. For example, compared to AFTA, the FDI restrictiveness under ACFTA and AKFTA is much lower indicating that AFTA tends to give fewer FDI restrictions across the three FTAs. In fact, ACFTA indicates the lowest index values across the three FTAs, indicating that it is the least open to foreign investment, and shows greater caution among the ASEAN countries to allow more FDI inflows from China as compared to Korea. Further, as with the Japanese, Korean MNCs have been investing in ASEAN for past two decades and thus Korea has become part of the production value chain in the region. Hence, we observe greater complementarily between Korean MNCs and ASEAN industrial activities in comparison to Chinese MNCs. In comparison, Chinese companies are only in the initial stages of developing their overseas activities.

Under ACFTA Singapore, Vietnam, Cambodia and Malaysia tend to provide greater access to FDI flows to China. In comparison, China tends to have less FDI restrictiveness as compared to the other ASEAN countries indicating the commitment for more regional FDI flows from China. Under AKFTA, the ASEAN countries of Singapore, Cambodia, Vietnam and Laos tend to have more access to Korean FDI flows.

3. Impact of FTAs on FDI Flows

In this section, we present and estimate a model of the ways in which FTAs might affect FDI flows. This study adopts a country-pair fixed effects model using panel data. The country-pair fixed effects model has been used by Carrère (2006) and Egger (2008) who examined the effects of RTAs and exchange rate agreements on bilateral trade flows respectively. Here our application is to FDI flows. This estimation method accounts for any bias due to omitted variables that might be related to the unobserved time-invariant pair-specific heterogeneity which is not captured by the bilateral distance, border, language and colony dummies. Corrections are also made for the cross-section endogeneity of the FTA dummy variables and the resultant selection bias.

In addition, time-fixed effects are added to capture common events such as oil price shocks and the intensification of FDI flows in the context of globalization that are specific to a particular point in time but common to all country pairs. The model is as follows:

$$\begin{aligned} ln\,(FDI_{ijt}+1) = {} & \alpha_0 + \beta_1 ln\,(GDP_{it} + GDP_{jt}) + \beta_2(GDPSim_{ijt}) + \beta_3 BI_{ijt} + \beta_4 MUL_{ijt} + \beta_5 \\ & (GDPPCR_{ijt}) + \beta_6 ln\,(FDI_{ijt-1}+1) + \beta_7 ln\,(Dist_{ij}) + \beta_7 Bor_{ij} + \beta_8 Lang_{ij} + \\ & \beta_9 Col_{ij} + \alpha_t + \upsilon_{ij} + \varepsilon_{ijt} \qquad (1) \end{aligned}$$

Note that $ln\,(FDIO_{ijt}+1)$ is the logarithm of FDI outflows from source (i) to host (j) country plus one and $ln\,(FDI_{ijt-1}+1)$ is its lagged term. $Ln\,(GDP_{it} + GDP_{jt})$ is the logarithm of i's and j's gross domestic products (GDP) at time t. $(GDPSim_{ijt})$ is the GDP

similarity of country pairs: for estimation, this variable is measured as $GDPSim_{ijt}BAL = 1\text{-}si^2\text{-}sj^2$ and $GDPSim_{ijt}BE = ln(s_i/s_j)$ where $s_i = GDP_i/(GDP_i+GDP_j)$ and $s_j = GDP_j/(GDP_i+GDP_j)$ following Baltagi et al. (2007) and Bergstrand and Egger (2007), respectively, are used for robustness. BI_{ijt} and MUL_{ijt} are dummy variables equal to unity if *i* and *j* have a bilateral and multilateral trade agreement respectively at time *t*. $Ln\ (Dist_{ij})$ is the bilateral distance between *i* and *j*. Bor_{ij}, Off_{ij} and Col_{ij} are dummy variables equal to unity if *i* and *j* share a common border, official language and a colonial link respectively. υ_{ij} is the country-pair specific effect where $\upsilon_{ij} \neq \upsilon_{ji}$ and ε_{ijt} is the error term assumed to be log-normally distributed.

Two points are to be noted about the trade agreement dummies used in this study. First, unlike most studies that use trade agreement dummies without variation across time, temporal variation is allowed for both the bilateral and multilateral trade agreements. New agreements and changes in membership for existing agreements were observed during the 1986-2007 estimation period. The inclusion of a temporal dimension in the trade agreement dummies allows us to better understand the differential dynamic impact of joining a trade agreement. In particular, variation of the trade agreement variables allows us to avoid collinearity issues associated with the estimations involving policy variables (Dee and Gali, 2005). Second, the multilateral trade agreement dummy is equal to unity when country pairs in the gravity model belong to an arrangement that includes three or more members such as ASEAN+1 FTAs.

3.1. Data

Nominal bilateral FDI flows are compiled from the OCED's *International Direct Investment Statistics* 2009 for the period 1986 to 2007 for 43 potential partners. These data are scaled by the United States (US) Consumer Price Index for all urban consumers from the Bureau of Labour Statistics to generate real trade flows for the panel analysis. Real gross domestic product (GDP) figures in constant US dollars at 2000 prices are from the World Bank's World Development Indicators (2010). The language, adjacency and colonial links dummy variables are obtained from the Centre d'Études Prospectives et d'Informations Internationales (CEPII) database. The trade agreement dummy variables include the FTAs notified to the GATT/WTO under GATT Articles XXIV or the Enabling Clause for developing economies. Appendix Table A1 lists the trade agreements used and Appendix Table A2 lists the countries in our sample.

4. Results and Analysis

Table 2 presents the results from the extended gravity models of outward FDI flows from OECD countries to other OECD countries and selected non-OECD countries in the Asia-Pacific region. As mentioned above, outward FDI flows from the OECD parent countries may be interpreted as inward FDI flows to their partnering host countries. Aligned with the empirical literature, the gravity model fits the data well, explaining a large part of the variations in bilateral FDI flows. Most of the estimated coefficients of the standard variables in a gravity model are statistically significant with the expected signs. However, a comparison of the results from regressions (1) to (3) that use time-fixed effects alone with regressions (4) to (6) that include both time-fixed and country-pair-fixed effects yields interesting findings. These findings are addressed below. We first analyse the behaviour of the commonly used gravity variables.

The estimated coefficients on the market size of country pairs are all positive and statistically significant across regressions (1) to (5) using different specifications. This implies that a larger combined market size of the country pairs is associated with an increase in the amount of FDI outflows from the source to the host economy. A larger

market justifies the incurrence of higher fixed costs of setting up a foreign affiliate compared to home production in the parent economy for exports.

Table 2. The Impact of Bilateral and Multilateral Trade Agreements on FDI Inflows

Dependent variable: $ln\ (FDI_{ijt}+1)$	Regressions					
	Time-fixed effects			Time-fixed and country-pair-fixed effects		
	(1)	(2)	(3)	(4)	(5)	(6)
$ln\ (GDP_i + GDP_j)$	0.335*** (0.019)	0.339*** (0.019)		1.135 *** (0.305)	1.156*** (0.311)	
$ln\ (GDP_i)$			0.172 *** (0.013)			0.835 (0.524)
$ln\ (GDP_j)$			0.165*** (0.011)			0.398 (0.474)
$GDPSim_{ijt}BAL$	0.891*** (0.098)			4.40*** (1.193)		
$GDPSim_{ijt}BE$		0.147*** (0.016)			0.805*** (0.262)	
BI_{ijt}	0.334* (0.183)	0.287 (0.186)	0.292 (0.186)	0.022 (0.202)	-0.065 (0.209)	-0.031 (0.208)
MUL_{ijt}	0.061* (0.033)	0.0577*** (0.033)	0.050 (0.033)	0.176*** (0.066)	0.187*** (0.065)	0.180*** (0.065)
$GDPPCR_{ijt}$	0.312*** (0.023)	-0.301*** (0.023)	-0.300*** (0.024)	-0.243 (0.380)	-0.112 (0.397)	-0.740 (1.156)
$ln\ (FDI_{ijt-1}+1)$	0.777*** (0.010)	0.775*** (0.010)	0.775*** (0.010)	0.323*** (0.020)	0.324*** (0.020)	0.324*** (0.020)
$BI_{ijt}*MUL_{ijt}$				0.291*** (0.094)	0.318*** (0.099)	0.303*** (0.098)
$BI_{ijt}*GDPPCR_{ijt}$				0.419 (0.700)	0.271 (0.653)	0.329 (0.666)
$MUL_{ijt}*GDPPCR_{ijt}$				0.048 (0.109)	0.0427 (0.108)	0.042 (0.108)
$ln\ (dist_{ij})$	-0.212*** (0.019)	-0.211*** (0.019)	-0.210*** (0.019)			
Bor_{ij}	-0.018 (0.057)	-0.024 (0.059)	-0.025 (0.059)			
$Lang_{ij}$	0.380*** (0.0585)	0.387*** (0.060)	0.390*** (0.060)			
Col_{ij}	0.227*** (0.067)	0.217*** (0.065)	0.218*** (0.066)			
No. of observations	9917	9917	9917	9917	9917	9917
Adjusted R^2	0.834	0.835	0.835	0.868	0.868	0.868
Durbin-Watson statistic	2.375	2.373	2.375	2.057	2.057	2.057

Note: 1) *, ** and *** indicate that the estimated coefficients are statistically significant at 10%, 5% and 1%, respectively.
2) White period standard errors are in parentheses.
3) Intercept and year dummy variables are included but not reported.
4) $s_i = GDP_i/(GDP_i+GDP_j)$ *and* $s_j = GDP_j/(GDP_i+GDP_j)$

One of our interests here is whether FDI flows are horizontal (the same activities in different countries) or vertical (different stages of production in different countries) and how the impact of FTAs might vary between these types of flows. An examination of the GDP similarity variables sheds some light. The coefficients of the GDP similarity

variables following either Baltagi et al.'s (2007) or Bergstrand and Egger's (2007) specifications are positive and statistically significant. Home countries are more likely therefore to invest in similar economies. This suggests that the dominance of horizontal export platform FDI is observed in this data set for FDI outflows from OECD to its fellow OECD and selected non-OECD partners.

This notable result, that implies the dominance of horizontal multinational enterprises (MNEs) in the data used here, is strengthened by other results showing the different and opposite impacts of GDP similarity and factor dissimilarity on FDI flows. The coefficients for the GDP per capita ratio are negative and statistically significant for regressions (1) to (3). Although they are insignificant in regressions (4) to (6), they remain with the expected sign. Unlike in the case of vertical FDI, where a positive sign is expected due to the exploitation of comparative advantage, the sign for factor dissimilarity is negative.

Aside from the GDPs of country pairs, the other variable forming the backbone of the gravity model is distance. Distance may refer to both actual physical distance reflecting trade costs and transactional distance involving informational costs, with the former often proxied by bilateral geographic distance or existence of a common border and the latter by the lack of a common language or a colonial link. We can only examine these variables in regressions (1) to (3) since as they must be dropped once they are subsumed within the country-pair fixed-effects model to avoid multicollinearity. In all regressions, bilateral distance, a common official language and a colonial link are statistically significant, while the border dummy is statistically insignificant. However the coefficient on physical distance contradicts earlier results which highlighted the importance of horizontal FDI flows. If the firm's motive is to serve the foreign market, a greater distance increases the trade costs of exporting and may hence encourage local production via horizontal FDI (Hattari et al., 2008). We find a negative sign on bilateral distance obtained in our regressions, which does not provide evidence of horizontal FDI.

The signs for the other two statistically significant variables – common language and colonial links – are positive as expected. As mentioned, a common language and a shared historical link as proxied by the colony dummy are likely to facilitate an

understanding of a foreign work culture and hence minimize associated disruptions. The common border variable is not significant.

With respect to trade agreements, Equations (1) to (3) include multilateral and bilateral agreements separately. In that case, mutual participation in a multilateral agreements provides the FDI flow but their joint membership of a bilateral agreement does not. However, in Equations (4) to (6), the coefficients on the interaction term of bilateral and multilateral trade agreements are positively and statistically significant. This implies that the addition of a bilateral agreement to mutual membership of a multilateral agreement raises FDI flows between two countries.

5. Policy Conclusion: Key Challenges to ASEAN Integration

Key results here include firstly the degree of variation among economies in the treatment of investment even within one agreement. This variation is much greater in the two agreements than within AFTA. Sectoral barriers to investment in manufacturing and services still exist and this forms major impediments to FDI in ASEAN. This is particularly important for key member countries such as Malaysia and Indonesia.

Secondly, the trade agreement with China is less liberal as compared to the Korean ASEAN FTA. Thirdly, econometric results indicate that for a sample of economies (dominated by OECD countries) multilateral agreements are more likely to promote FDI flows than a bilateral agreement in isolation, though the latter in conjunction with the former adds a positive effect.

The empirical results indicate that there is a positive relationship between participation in multilateral agreements and FDI inflows into the Asia--Pacific region. The recent conclusion of ASEAN+1 agreements are therefore expected to have a positive impact on the FDI inflows into the region. ASEAN could also work towards greater regional integration – 'multilateralizing regionalism' – through ASEAN+ agreements. While there is still greater scope for regional integration within ASEAN through intra-ASEAN FDI flows and intra-ASEAN trade, several key challenges lie

ahead that require economic and political considerations, as the results here indicate. These challenges are as follows.

ASEAN unlike other regions is very outward looking to other regions in terms of trade. This can be attributed to the fact that it has a small market size and constantly looks towards extra-ASEAN trade for economic growth. Thus, ASEAN should consider extending its ties with external relations as a whole rather than as individual member countries since individual FTAs according to these results are not significant contributors to greater FDI flows, and by implication deeper integration. However, organizing this group approach may also require a degree of leadership, based on a commitment to an open regime combined with significant size, which is not evident at present.

If there were such a leader in ASEAN in the same way as America is the leader in North America and France and Germany are leaders in the EU, ASEAN would be able to reduce the above-mentioned limitations to a large extent. ASEAN member countries, despite sharing common cultural and historical backgrounds, are essentially very different in terms of their levels of development. Countries like Singapore and Malaysia have been accepted as developed countries, while the CLMV (Cambodia, Laos, Myanmar and Vietnam) countries are ranked along with the third world countries. This disparity within ASEAN is quite large. Thus, with different levels of income and development, these countries will differ in their motivations and interests which might even diverge from each other, as clearly seen by the willingness of some members like Singapore and Malaysia to open up their markets to external relations and the reluctance of others like Laos. This divergence of interests can only be reconciled under strong leadership, which will in turn promote greater integration within the Asia--Pacific region.

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Appendix

Table A1. Free Trade Agreements

Association of Southeast Asian Nations, or ASEAN: Indonesia, Malaysia, Philippines, Singapore, Thailand (1967); Brunei (1984); Vietnam (1995); Laos, Myanmar (1997); Cambodia (1999)
Asia Pacific Trade Agreement (APTA): India; Korea; Laos (1976), China (2002)
Australia - New Zealand (ANZCERTA) (1983)
Central European Free Trade Agreement (CEFTA): Czech Republic; Hungary; Poland; Slovak Republic (1992-2004) Croatia (2003)
European Commission (EC)–Mexico (2000): EU Membership and Mexico
EC–Norway (1973): EU Membership and Norway
EC–Switzerland–Liechtenstein (1973): EU Membership and Switzerland, Liechtenstein
EC–Turkey (1996): EU Membership and Turkey
EC(9) Enlargement (1973): Belgium; Denmark; France; Germany; Ireland; Italy; Luxembourg; Netherlands; United Kingdom
EC(10) Enlargement (1981): Belgium; Denmark; France; Germany; Greece; Ireland; Italy; Luxembourg; Netherlands; United Kingdom
EC(12) Enlargement (1986): Belgium; Denmark; France; Germany; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain; United Kingdom
EC(15) Enlargement (1995): Austria; Belgium; Denmark; Finland; France; Germany; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain; Sweden; United Kingdom
EC(25) Enlargement (2004): Austria; Belgium; Czech Republic; Denmark; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Luxembourg; Netherlands; Poland; Portugal; Slovak Republic; Spain; Sweden; United Kingdom
EC (27) Enlargement (2007): Austria; Belgium; Czech Republic; Denmark; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Luxembourg; Netherlands; Poland; Portugal; Slovak Republic; Spain; Sweden; United Kingdom
EFTA - Korea, Republic of (2006): EFTA Membership and Korea, Republic of
EFTA – Mexico (2001): EFTA Membership and Mexico
EFTA – Singapore (2003): EFTA Membership and Singapore
EFTA – Turkey (1992): EFTA Membership and Turkey
EFTA (1960): Liechtenstein; Norway; Switzerland; Iceland (1970)
European Economic Area (EEA) (1994): Belgium; Denmark; France; Germany; Greece; Iceland;

Ireland; Italy; Luxembourg; Netherlands; Norway; Portugal; Spain; United Kingdom and EU Membership

Global System of Trade Preferences among Developing Countries (GSTP) (1989): India; Indonesia; Korea, Republic of; Malaysia; Mexico; Myanmar; Philippines; Singapore; Thailand; Vietnam

Japan–Mexico (2005)

Japan–Singapore (2002)

Japan–Thailand (2007)

Korea, Republic of – Singapore (2006)

New Zealand–Singapore (2001)

North American Free Trade Agreement (NAFTA): United States; Canada (1989); Mexico (1994)

Singapore–Australia (2003)

South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA) (1981): Australia; New Zealand

Thailand–Australia (2005)

Thailand–New Zealand (2005)

Trans-Pacific Strategic Economic Partnership (2006): Brunei Darussalam; New Zealand; Singapore

US – Australia (2005)

US – Singapore (2004)

Source: World Trade Organisation (2010) Regional Trade Agreements. Available at: http://www.wto.org/english/tratop_e/region_e/summary_e.xls.

Note: 1) Countries listed in agreements only include those in our sample of 43 countries listed in Appendix Table A2. Years in parentheses denote date of entry.

Table A2. Sample Countries Used in this Study

Source Countries		Host countries			
OECD		OECD		Non-OECD	
1	Australia	1	Australia	31	Brunei Darussalam
2	Austria	2	Austria	32	Cambodia
3	Belgium	3	Belgium	33	China
4	Canada	4	Canada	34	Hong Kong
5	Czech Republic	5	Czech Republic	35	India
6	Denmark	6	Denmark	36	Indonesia
7	Finland	7	Finland	37	Laos
8	France	8	France	38	Malaysia
9	Germany	9	Germany	39	Philippines
10	Greece	10	Greece	40	Singapore
11	Hungary	11	Hungary	41	Taiwan
12	Iceland	12	Iceland	42	Thailand
13	Ireland	13	Ireland	43	Vietnam
14	Italy	14	Italy		
15	Japan	15	Japan		
16	South Korea	16	South Korea		
17	Luxembourg	17	Luxembourg		
18	Mexico	18	Mexico		
19	Netherlands	19	Netherlands		
20	New Zealand	20	New Zealand		
21	Norway	21	Norway		
22	Poland	22	Poland		
23	Portugal	23	Portugal		
24	Slovakia	24	Slovakia		
25	Spain	25	Spain		
26	Sweden	26	Sweden		
27	Switzerland	27	Switzerland		
28	Turkey	28	Turkey		
29	United Kingdom	29	United Kingdom		
30	United States	30	United States		

CHAPTER 5

Services Liberalization in the 'ASEAN Plus' Free Trade Agreements

MICHAEL CORNISH

School of Economics, University of Adelaide

CHRISTOPHER FINDLAY

School of Economics, University of Adelaide

Reviews of the treatment of services in ASEAN+1 agreements, applying two different methodologies, find that commitments to services reform in these agreements are relatively low compared to what might be possible; whilst they provide some additional commitments to the General Agreement on Trade in Services (GATS), these commitments continue to be circumscribed and fail to deal with issues of domestic regulation. Commitments to reform also vary across economies within an agreement, with generally greater commitments to cross-border trade, mixed commitments to investment, and few commitments to the movement of people. An economy's commitments on services also vary across agreements in what may be a systematic manner, depending on concerns about competition from the partner economy. There are some similarities in agreements, though the correlations appear to be low and agreements involving India and Japan are at early stages of development. Further progress, it is argued, depends not so much on working with the existing agreements but in tackling the resistance of policy-makers to adopt reforms and to commit to them with trading partners. This requires further work on the design of regulatory reform and the institutions to implement regulation. This focus however does not preclude the development of commitments in sectors of particular interest to ASEAN, especially in logistics.

1. Introduction

The trade in services has not historically been granted the same attention as goods in WTO negotiation rounds nor in free trade agreements (FTAs); it took until the Uruguay Round in 1986 for the members of the General Agreement on Tariffs and Trade to even seriously consider services. It is perhaps in part due to this comparatively limited pedigree that services are often seen as less significant to international trade – this being substantiated by trade volumes in services relative to goods. Alternatively, services may also be viewed as being in the 'too-hard' policy basket due to the higher level of complexity in addressing the attendant issues. In East Asia and South-East Asia, where developing countries still predominate geographically, services have historically been of less importance than the commodity trade. International trade negotiations require an intense combination of technical expertise that is a scarce resource in many developing countries, keeping services policy 'on the backburner' when faced with competing demands upon capacity.

'Enabling services' – that is, transport, finance, telecommunication and legal services and logistics – play a crucial role in enabling the structural shift from commodity- or manufacturing-centric economies to information- and knowledge-based economies. They attract more attention in ASEAN as a result. Locking in a less restrictive services trade policy environment will thus be even more important to the transformative modernization of these economies than commodity trade policy was in the past.

Recent research (Nordas, Miroudot and Lanz, 2008) on the benefits of the extensive margin in trade in services (the creation of new trade flows) rather than the intensive margin (expansions of existing trade flows) further points to the potential of services to reduce the costs of international business. For example, the *Master Plan on ASEAN Connectivity* (ASEAN, 2011) recognizes the role of various and specific services in reaching its goal of facilitating the movement of goods, people and services themselves.

Despite their increasing potential and importance, global progress on services reform to date has been sporadic, mixed and slow. In East Asia, the use of bilateral and regional trade agreements has grown rapidly. In this region, the developing economies

stand to benefit greatly from services reform, but are there encouraging signs of higher levels of commitments within these bilateral and regional FTAs?

This paper investigates the level of liberalization in services in that core element of the East Asian trade system, ASEAN, specifically within its FTA partnerships. The focus is on the 'ASEAN Plus one' agreements.

The next section provides more background on the results of other research on the impact of various systems of reform and the contribution of preferential trade agreements in particular. The following sections apply two different methodologies to assess the agreements and the final section concludes with a focus on 'next steps'. Rather than focussing on using existing agreements and looking for ways to build up commitments for reform from within those agreements, the priority should be to build an improved environment – including, but not limited to, increased economic cooperation – that will better support reform. In particular, regional cooperation has a significant role to play in this work. However, this should not rule out or limit progress on particular sectors of key interest in the region.

2. Background

The key question has been the extent of commitments in services in these agreements. The general assessment has been that: '…most regional agreements have not been effective mechanisms for liberalizing access to services markets. Instead policy reforms have mostly been unilateral' (François and Hoekman, p.674).

In this chapter, we carefully review studies on this question. However, we also note that recent presentations from the World Bank have reported that the multilateral process is not contributing to progress on reform. Gootiiz and Mattoo (2009) (whose methodology is reviewed in more detail in section 4), compare commitments to actual policies. They find that Uruguay Round commitments are on average 2.3 times more restrictive than current policies. The best offers submitted so far as part of the Doha negotiations improve on Uruguay Round commitments by about 13 per cent but remain

on average 1.9 times more restrictive than actual policies.[1] Their assessment is that the Doha process does not offer greater access to markets, but a weak assurance that access will not get worse.

They also stress that significant restrictions remain in many services, with restrictions in East Asia being relatively high. The gains from reform are therefore expected to be significant. The extent of these gains is discussed in François and Hoekman (2010) and also evident in recent work for the Policy Support Unit in Asia--Pacific Economic Cooperation (APEC) (Findlay et al., 2010).

Our focus in this paper is the treatment of services in preferential agreements among ASEAN members and their dialogue partners (as listed in Table 1). Some of the agreements have been examined in other work, although at earlier stages of the development of those agreements. However, *timing matters*, as there appears to be significant evolution in agreements over time.

Trewin et al. (2008) asked the question of whether East Asian FTAs in services were facilitating the flow of services in ASEAN. They found among other things that:

- The agreements studied did increase the number of committed sectors beyond the GATS but not dramatically so;
- There was little evidence that these commitments had translated into actual liberalization;
- The largest gains come from non-discriminatory market access and negotiations are ineffective in achieving liberalization that requires unilateral action;
- Whilst most intra-Asia agreements adopt a positive list approach, the negative list approach appears to be more liberalizing; however, they recognize that the contribution of the architecture to this result is difficult to identify; and
- There are identifiable differences in commitments among ASEAN members under the various agreements.

[1] Other studies find instances of preferential commitments which are more restrictive than those in the GATS (see papers discussed by Dee and McNaughton, 2011)

Ochiai, Dee and Findlay (ODF) (2010) reviewed the treatment of services in a number of East Asian FTAs (their methodology is also discussed in more detail in section 3). They found that the extent of commitments does not appear to be related to the architecture of the agreements examined. Some adopt the positive list approach and others the negative list approach. In the sample of agreements studied here for example that between ASEAN and China is a positive list agreement, while the ASEAN--ANZ agreement and the ASEAN--S. Korea agreements are negative list agreements. While ODF note that in principle both approaches could be used to document the same level of commitment, the negative list agreements tend to have text that promotes future liberalization (and those agreements tend to limit protection against new services).

Relative to the GATS, ODF find that preferential agreements tend to have a wider coverage. At the same time, they stress the number of sectors which are excluded in the agreements they examine, although, as just noted, they report that the rate of exclusion is generally better than that in the GATS for the same economy.

ODF also highlight the use of horizontal commitments, but as sources of restriction. Limitations dismantling the effectiveness of liberalization are imposed in horizontal commitments; for instance, restrictions on the form of establishment and the dominance of domestic labour law are explicitly designated. The consequence is that the number of sectors committed to liberalization may not always be a proper indicator of the *degree* of liberalization. ODF report that this situation is more likely to be an issue for commitments related to the movement of people (mode 4)[2].

[2]The modes of supply in the GATS are the following (quoted from http://www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm)

1. **Cross-border supply** is defined to cover services flows from the territory of one Member into the territory of another Member (e.g. banking or architectural services transmitted via telecommunications or mail);
2. **Consumption abroad** refers to situations where a service consumer (e.g. tourist or patient) moves into another Member's territory to obtain a service;
3. **Commercial presence** implies that a service supplier of one Member establishes a territorial presence, including through ownership or lease of premises, in another Member's territory to provide a service (e.g. domestic subsidiaries of foreign insurance companies or hotel chains); and
4. **Presence of natural persons** consists of persons of one Member entering the territory of another Member to supply a service (e.g. accountants, doctors or teachers).

In other remarks related to modes of supply, they find that the elimination of barriers is more likely in cross border supply and consumption abroad (modes 1 and 2), while investment and commercial presence (mode 3) remains subject to limitations which are similar to those at the multilateral level and mode 4 obligations are small (see also the results of Ishido (2011) later in this section). Investment is sometimes treated in two parts of the same agreement (and in one agreement using a negative list approach in the investment chapter and a positive list in the services chapter).

With respect to domestic regulation (including matters such as mutual recognition, transfer payments, transparency, subsidies and business practices), ODF find that the agreements do not offer much beyond the commitments in the GATS. Fink and Molinuevo (2007) likewise report that East Asian FTAs have not made significant progress in areas of rule-making that remain unresolved in the WTO. Roy, Marchetti and Lim (2007) also find that preferential agreements offer little over the GATS disciplines with respect to these areas.

Dee (2009) and Dee and McNaughton (2011) report research on the commitments in services in the ASEAN Framework Agreement on Services (AFAS). To some extent countries have introduced genuine trade reforms in response to either that agreement or the GATS but the conclusion is that in general the more significant reforms have been made unilaterally. However, it was also found that reforms so far have made a only a slight difference to the overall prevalence of restrictions on foreign suppliers and no difference to the prevalence of restrictions on domestic suppliers.

A couple of other aspects of agreements deserve attention. These are the rules of origin and the inclusion of a most favoured nation (MFN) clause.

A rule of origin is required to identify eligibility to access the terms of the agreement. Generally in a services agreement, the rule is based on the identity of the supplier rather than being based on the process of production of the service. The rule can either be the more liberal version based on the location of the substantial business operations of the provider, or the less liberal rule of ownership. Fink and Jansen (2009) find that generally liberal rules are used, and by implication any commitments that are made in preferential agreements are likely to involve only weak degrees of discrimination. They suggest that contributors to this outcome are the political treatment of foreign investors and the networking characteristics of services production.

Fink and Jansen also study the use of MFN clauses within an agreement, so that when a new agreement is signed by a country it should extend to its existing partners any more liberal treatment offered to the most recent partner. This clause facilitates liberalization and reduces the extent of disparities among a set of interconnected countries. Of the agreements they examine, half have such a clause although such agreements are more likely to involve developed countries

Ishido (2011) examined the ASEAN+1 agreements, applying the earlier methodology of Hoekman (1995) which was developed to assess GATS commitments. A database is created for each sub-sector by mode and by aspect of liberalization (that is, market access or national treatment) and commitments are rated as N (no limitation and bound); L (limited or restricted but bound); and U (unbound). These results are scored as N=1, L=0.5 and U=0. Simple averages are then calculated. Ishido reviews and compares AFAS, the ASEAN--Australia--New Zealand FTA, the ASEAN--China FTA and the ASEAN--Korea FTA. A strength of his work is his treatment of the detail within each agreement by sub-sector and by country. Findings include:

- Low overall scores, which are all less than 0.33;
- Mode 1 and mode 3 have various 'country- and sector-specific commitment patterns' but (in all but one case) mode 4 shows the least commitments and mode 2 shows the most;
- There is not much difference in commitments with respect to market access and national treatment across these agreements;
- There is considerable variation in average scores: AFAS – 0.33, AANZFAT – 0. 23, AKFTA – 0.20 and ACFTA – 0. 12;
- There are some examples of high correlations in commitments among participating economies within agreements but overall they are low (interpreted as differences in sensitive sectors among economies, although with no negative correlations);
- In terms of correlations at the agreement level, AFAS is an outlier while the other three agreements have more similar patterns of commitment; and
- Looking at the commitments by the same country under different FTAs, Ishida finds that overall 'there is no 'convergence' of country level commitments under different FTAs as they currently stand, and the degree of similarity differs greatly

across different countries and also across different pairs of FTAs' (p.28), although the correlations are generally positive.

Stephenson and Robert (2011) ask a series of questions about the impact of the regional agreements on services trade. To the question of whether regional agreements promote reform in services policy they respond with 'yes and no'. For example, they refer to treatment of government procurement of services as a case where regional agreements have gone further than the WTO. Other areas where contributions might be found are in provisions for future liberalization, chapters on electronic commerce and treatment of movement of people. At the same time, they note the lack of more extensive treatment of subsidies or domestic regulation. Their conclusion is that regional agreements have not been able to push countries to liberalize services faster than might otherwise have been done on their own. Their observation is that countries have organized reform domestically first, and then committed to those changes in trade agreements 'where appropriate' (p.26).

We now return to our question of the coverage of services in the ASEAN+1 agreements. Our purpose is to determine an indicator of the overall level of liberalization in each of the +1 agreements and to note their similarities and differences. In this paper we do not compare the treatment of the agreements with actual policy, nor with commitments in the WTO. Rather our purpose is to comment on issues in extending and aligning commitments within these agreements.

Two distinct methodologies were chosen to measure the liberalization in the trade in services in FTAs: the ODF approach and the Gootiiz and Mattoo (2009) approach. These are reported in the following sections.

4. The Ochiai, Dee and Findlay Methodology

The Ochiai, Dee and Findlay (ODF) methodology assesses the level of liberalization in FTAs by rating the restrictiveness of the various modes of supply. The most important and indicative clauses in the actual text have been chosen and given their own rating scale (with some scales reused) between zero and one, with '0' being the most restrictive and '1' being the least restrictive. All of the significant metrics of liberalization are covered, including, but not limited to: sectoral coverage, most-favoured nation exemptions, national treatment, market access, transparency and safeguards.

A final score and simple average for each mode of supply – with modes 1 and 2 combined – is then calculated for each agreement and the numbers compared. We also comment on country exceptions and variations below.

The key strength of the ODF method is that it grants an immediate and simple snapshot of the level of restrictiveness, both overall and by mode of supply, but also against critical individual clauses. The method behoves itself as a quick reference tool, highlighting the critical areas of the agreement that can be targeted for future progress towards liberalization. The methodology is relatively straightforward to apply, although it is a time-consuming process that requires close scrutiny and deep understanding of the structure of FTAs.

A critical issue is the arbitrary – although consistent – manner in which the original rating scales have been assigned. The number created at the end of the process can only be used for like-for-like comparisons, as the rating of individual clauses is not weighted according to their relative importance to the liberalization in the trade of services, let alone the level of liberalization that the agreement actually manages to effect in the real-life policy environment.

The simple averages from the ODF method for the ASEAN+1 agreements hold some obvious and intuitive conclusions, but also a few surprises. Summary results are shown in Table 1 and an appendix contains the results by clause.

Table 1. Liberalization in 'ASEAN Plus' Free Trade Agreements: ODF Method

	ASEAN--China	ASEAN--ANZ	ASEAN--South Korea	ASEAN--Japan	ASEAN--India
Modes 1 and 2: Cross-border trade in services					
Simple average	0.457	0.420	0.531	0.081	0.109
Mode 3: Investment					
Simple average	0.354	0.538	0.502	0.120	0.120
Mode 4: Movement of people					
Simple average	0.046	0.277	0.123	0.046	0.046
Total averages	0.286	0.412	0.386	0.083	0.092

Source: Author calculations.
Note: 0 is restrictive, and 1 is unrestricted

It should be noted that the ASEAN--India and ASEAN--Japan agreements are highly limited in scope and application and both scored poorly in their agreed commitments to liberalization. However, at the time of writing, neither partnership has yet to conclude a services-specific trade agreement. Thus, hereafter, we concentrate primarily on the other agreements:

- Whilst the ASEAN--Japan 'Agreement on Comprehensive Economic Partnership' does include a specific chapter on investment, it nonetheless makes no significant steps towards liberalization in mode 3 supply;
- The most restricted mode of supply is mode 4 as it requires the presence of a natural person. Interestingly, some limited freedom of movement of professional labour is responsible for the noticeably higher mode 4 score in the ASEAN--Australia--New Zealand (ASEAN--ANZ) agreement, with a small spike also recorded in the ASEAN--South Korea agreement;
- The three agreements, ASEAN--China, ASEAN--ANZ and ASEAN--South Korea all record significant levels of liberalization in cross-border trade in services, with ASEAN--South Korea with a slight but noticeable lead;
- ASEAN--China lags somewhat behind the others in the liberalization of investment in mode 3, although the rating has risen significantly – by a factor of three – since it was reviewed at an earlier date by ODF; and

- The most comprehensive – and longest by far – of the agreements, ASEAN--ANZ, holds a slight lead over the ASEAN--South Korea agreement, but significantly ahead of the remaining three agreements.

There is significant variation between country commitments in these agreements. To illustrate, we examined more closely differences in commitments in ASEAN--China and ASEAN--ANZ (locating details of commitments by economy and by sector for the agreement with Korea has been more difficult). Results of our assessments of examples of sectors in which restrictions remain are summarized in Table 2. These two cases show:

Table 2. Sectors for which Restrictions are Retained, by Economy

Country schedules	ASEAN--China	ASEAN—ANZ
Indonesia	Construction and assembly work, tourism, energy	Professional services, telecommunications, construction, education, finance and banking, health, tourism, transport
Brunei	Tourism, transport	Professional services, telecommunications, construction, financial, tourism, transport
Vietnam	Professional services, R&D, courier, telecommunications, construction, distribution, environmental, educational, financial, health, transport (all)	Professional services, courier, telecommunications, construction, distribution, environmental, financial, tourism, transport (all)
Lao PDR	Banking, insurance	Professional services, telecommunications, education, tourism
Myanmar	Air transport, communication, finance, printing/publishing, maritime services	Professional, communication, construction, education, transport (all)
Cambodia	Construction, professional services, telecommunications, distribution, education, environment, finance, banking, health, tourism, transport (all)	Construction, banking, finance, tourism
Malaysia	Professional services, IT, education, banking, finance, health, tourism, transport (all)	Prof, telecomm, construction, education, finance, health, tourism, transport (all)
Thailand	Professional services, education, tourism, maritime transport	Financial, transport (all)
Singapore	Professional services, telecommunications distribution, education, environment, financial, health, tourism, cultural, transport (all)	*Limited* restrictiveness in courier, environment, financial
Philippines	Mining, construction environmental, tourism, [applies 'reciprocity test']	Professional services, mining, telecommunications, education, environmental, financial, tourism, transport (all)
China	Construction, environmental, transport	N/A
	Australia	*Some* limited restrictions on financial services, commercial presence required for real estate
	New Zealand	None of note

Source: Author calculations.
Note: simple list, does not account for *level* of restrictions.

- Nearly all participating economies (except New Zealand) retain restrictions on some sectors;
- The sectors included in the list of those in which restrictions remain vary across economies within an agreement;
- Only some countries have consistent sectoral restrictions across the ASEAN--China and ASEAN--ANZ agreements (the degrees of similarity are strongest for Vietnam, Malaysia, Philippines and Myanmar);

However, there is also significant asymmetry between the ASEAN--China and ASEAN--ANZ agreements; for example:

- Indonesia, Brunei, Vietnam, Lao, Myanmar, Malaysia and the Philippines all restrict professional services in the ASEAN--ANZ agreement;
- Vietnam, Malaysia, Thailand, Cambodia and Singapore restrict professional services in the ASEAN--China agreement; and
- There is particularly asymmetric treatment between the two agreements for Indonesia, Cambodia, Thailand, Singapore, Brunei and Lao PDR.

It is also found that Australia and New Zealand have little restrictions of note; Singapore has a more extensive list in the agreement with China; and China retains relatively few restrictions.

With respect to the rule of origin, the agreements with Australia and New Zealand, with China and with South Korea all say that 'the terms of the agreement may be denied to the supply of a service, if it establishes that the service is supplied from or in the territory of' an economy which is not a party to the agreement. This is a relatively liberal 'place of business rule'. However there are variations by mode of supply and by sector which are evident in the schedules and these variations are taken into account in the scoring system. For example, in the ASEAN--ANZ agreement, there is total denial of benefits for cross-border trade in services where there is ownership by a third party. Summary scores are provided in the appendix table.

With respect to the MFN clause, in the ASEAN--South Korea agreement on investment, each party accords to one another treatment no less favourable than it

affords to any party with whom it has a trade agreement. However, there is no automatic future application of this treatment, only retrospective application. The ASEAN--China agreement would appear to treat MFN status in an identical fashion. The ASEAN--ANZ agreement in regards to services says that any agreement that the parties enter into that provides more favourable treatment to a non-party merely granting the right to request consultative discussions. The parties have committed to future discussions on MFN treatment in investment. No current commitments are yet made in regards to MFN status for services under the ASEAN--India and ASEAN--Japan framework agreements. In summary, whilst the parties to the ASEAN--South Korea agreement are willing to mirror liberalization measures agreed with existing partners, the other agreements do not without the right of reservation. None of the agreements compel the parties to automatically extend any *future* liberalization measure resulting from another agreement – as yet, there is no 'ratchet' mechanism.

5. The Gootiiz and Mattoo Methodology

In measuring the level of commitment to liberalization in services in FTAs, the Gootiiz and Mattoo (G&M) method uses a sectoral weighting approach. Services are split into seven separate sectors – banking, insurance, retailing, telecommunications, maritime shipping and auxiliary services, and professional services – and then further split into subsectors and their possible modes of supply and assigned modal and sectoral weightings. Following Hoekman (1995), a standardized five-point rating from zero to one – where '1' is completely restrictive and '0' is without restrictions (the inverse of the ODF method as discussed later in this section) – is then applied to each subsector and weighted against first the mode and then against standardized sectoral weights for an average industrialized country. The aggregate scoring at the agreement level is then on a 0 to 100 scale, with the higher the number the more restrictive the agreement.

Because they reflect the relative importance of each sector to an average industrialized economy, the scale of the final scores is not as arbitrary as in the ODF method, and a real sense of proportion can be achieved when comparing the levels of

liberalization. However, it is less clear how the modal weights have been settled upon and, despite its consistency, arbitrariness remains in the setting of the five-point scale. The 'broad-brush' approach of the five-point scale makes its application to sectoral policy more imprecise and less than straightforward.

The application of the method here to only the main-text level (rather than the schedules) of an FTA is an oversimplification for multilateral agreements with many partners – as, for example, with all 'ASEAN Plus' agreements – because it does not begin to address the complexity contained within the multiple and distinct individual country schedules of commitments. Conversely, the level of detail required when attempting to capture the sectoral commitments of all countries is overly complex, and does not make for easy comparisons.

The agreements involving India and Japan are not sufficiently detailed yet to make this methodology relevant and hereafter we concentrate on the results of the other three agreements. Results are shown in Table 3.

Table 3. Liberalization in 'ASEAN Plus' Free Trade Agreements: G&M Method

Aggregate scores at FTA main-text level							
	Overall	Banking	Insurance	Retailing	Telecommunications	Maritime shipping and aux. services	Professional services
ASEAN--China	9.6	0	0	0	0	0	0.4
ASEAN--ANZ	26.6	0.2	0.2	0.3	0.3	0.1	0.4
ASEAN--S. Korea	14.7	0	0	0	0	0.9	0.4
Average	17.0	0.1	0.1	0.1	0.1	0.3	0.4

Source: Author calculations

The G&M method was only applied here to the main-text level of the 'ASEAN Plus' FTAs. The ASEAN--China and ASEAN--South Korea agreements made higher levels of commitment to liberalization in services at the main-text level of the agreement and therefore appear relatively liberal at the main-text level. However they also heavily restrict those aspirations within the individual country schedules. The ASEAN--ANZ agreement, on the other hand, is much more restrictive in the trade of services at the main-text level of the agreement but much more liberal at the country

schedule level, and therefore gives the impression that it is more restrictive than ASEAN--China and ASEAN--South Korea.

In professional services in particular there was no difference recorded between the troika of specifically services FTAs (ASEAN--China, ASEAN--South Korea and ASEAN--ANZ) at the macro-level of the main-text commitment. However there is considerable variation in the provisions for maritime services.

In keeping with the results of the ODF method, cross-border supply of services (modes 1 and 2) faces less restrictions than investment (mode 3) and much more liberal than services requiring the movement of natural persons (mode 4) – namely, professional services.

6. Conclusions

Results of the work undertaken here (and related earlier work) include:

- Significant barriers to trade and investment in services remain in member economies;
- Commitments to services reform in these agreements are relatively low compared to what might be possible, and while they provide some additional commitments to the GATS agreement, they are often circumscribed and continue to fail to deal with issues of domestic regulation;
- Commitments to reform vary across economies within an agreement with generally greater commitments to cross-border trade, mixed commitments to investment and fewer commitments to the movement of people;
- An economy's commitments on services also vary across agreements, in what may be a systematic manner depending on concerns about competition from the partner economy; and
- There are some similarities in agreements, though the correlations appear to be low and agreements involving India and Japan are at early stages of development.

These results, combined with those of the World Bank on the extent of 'water' in multilateral commitments as well as the results of other research reviewed above indicate that further progress on services reform in the short run via these routes of negotiated agreement will be difficult. A more fundamental understanding of the reasons for the slow progress is useful in order to suggest some appropriate initiatives. For that purpose, there are important lessons from services negotiations in the WTO where there remain large gaps, as noted above, between commitments and actual policy in services. Hoekman and Mattoo (2010) have identified a number of factors contributing to this result:

- First, governments are concerned that multilateral commitments will deprive them of the freedom to regulate, e.g. cross-border flows of financial and data services and activities such as cross-border gambling services;
- Second, regulators are unprepared for unrestricted entry and competition, especially in the smaller developing countries and especially in financial services; and
- Third, there are inadequate mechanisms for the international regulatory cooperation, such as between financial regulators, competition authorities, and immigration authorities that would be needed to reap the full benefits of liberalization.

Furthermore, business interest has been limited: in industrial countries, services markets are mostly open, except for transport and labour mobility, and developing countries are unilaterally liberalizing their markets. There is growing mutual interdependence in any case and developing countries are increasingly suppliers of outsourced services to OECD nations that are the source of investment and know-how in sectors such as transport, telecommunications, and finance. This is creating a self-enforcing equilibrium of openness with a reduced likelihood of policy reversal. Meanwhile there is pessimism in the business community because regulatory policies are not the focus of attention in the negotiations and it is those policies that matter to them.

Hoekman and Mattoo suggest that therefore the priority is to deal with domestic regulation by working to '...strengthen regulatory institutions and identify, design and implement policies that address market failures and ensure wider access to services.'

This might be based on: 'Services knowledge platforms' that bring together sectoral regulators, trade officials and stakeholders to assess current policies and identify beneficial reforms could help establish the preconditions for future liberalization commitments.'

They also propose international cooperation to address regulatory externalities. Examples they list are prudential regulation problems arising from differences in regulatory standards and from international oligopolies (e.g. transport and information services) capturing all the gains from liberalization. They suggest cooperation between host and source countries on temporary labour mobility (an area of low commitments in the ASEAN+1 agreements).

This review of experience in the negotiations at the WTO level and the results here and in other research of the assessment of the ASEAN+1 agreements therefore suggests that the next step for progress on services is not to move immediately to a new comprehensive and consolidated agreement but to work on the environment in which that agreement might be built. The focus, in other words, should be on the attitudes of policy-makers to reform and the levels of confidence in regulatory reform. This means a focus on capacity-building in services that deals with the key issues identified above. Considerable work of this type is already in progress in APEC and an important principle for ASEAN and its +1 partners as they seek to consolidate their agreements would be to confirm their commitments to APEC work programmes with specific time lines.

This recommendation does not imply that sectoral commitments in services should be avoided. The supply chain framework and the lessons from the case studies highlight the value of a well-functioning transport and logistics system. The relevant bundle of activities is not readily defined in existing services industry classifications and a recommendation here is that (building on work in the WTO) a model set of commitments on that package of services be defined and implemented, and those commitments cover all the modes of supply including investment. There is further guidance on the relevant scope of this package in the strategies defined in the *Master*

Plan on ASEAN Connectivity. This package could be adopted in advance of wider services and investment commitments. Other sectors might be examined in a similar fashion but the research here indicates that transport and logistics is the priority.

Both services and investment arrangements would also have to confront the question of rules of origin, but generally these are less of an issue compared to the commitments themselves and can be made relatively liberal (e.g. based on commercial presence).

In summary, progress on services reform and international commitments to reform involves not so much work with the existing set of agreements but work on the environment in which those agreements are being negotiated.

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Appendix

Table A1. Template for Cross-Border Trade in Services

	ASEAN--China	ASEAN--ANZ	ASEAN--S. Korea	ASEAN--Japan	ASEAN--India
(1) Form of Agreement					
Scope	0.8	0.75	0.75	0.2	0.2
MFN	0.75	0.25	0	0	0.75
MFN exemptions	1	0	0	0	0
National treatment	0.75	0.5	1	0	0
Market access (i.e. prohibition on quantitative restrictions as in GATS)	0.5	0.75	0.75	0	0
Local presence not required (right of non-establishment)	0	0	0	0	0
Domestic regulation	0.4	0.4	0.4	0	0
Transparency (scores additive)	0.7	0.7	0.7	0	0
Recognition	0.2	0.2	0.2	0	0
Monopolies and exclusive service providers	0.75	0.75	0.75	0	0
Business practices	0.75	0.75	0.75	0	0
Transfers and payments	1	1	1	0	0
Denial of benefits (i.e. rules of origin)	0.75	0	0.75	0	0
Safeguards	0	0.5	0.5	1	1
Subsidies	0.5	0.5	1	0	0
Government procurement in services	0	0	0	0	0
Ratchet mechanism	1	0	0	0	0
Telecommunications (scores additive)	0	1	0.6	0	0
Financial services (scores additive)	0	0.8	0.7	0	0

(2) Content of Agreement					
Excluded modes	0	0.5	0.5	0	0
Excluded measures	0.5	0	0	0	0
Sectoral exclusions: Total sectors: 138 (based on CPC)	0	0	0	0	0
Measures at regional level	1	1	1	0	0
Restrictions on land purchases	0	0	0	0	0
Reservations on minority	0	0	1	0	0
Requirements on the number of domestic employees	0	0	1	0	0
Provisions asymmetric?	1	1	1	1	1
Simple average	0.467	0.420	0.531	0.081	0.109
Total score	12.600	11.350	14.350	2.200	2.950

Table A2. Template for Investment

	ASEAN--China	ASEAN--ANZ	ASEAN--S. Korea	ASEAN--Japan	ASEAN--India
(1) Form of Agreement					
Sectoral coverage	1	1	1	1	1
Scope of MFN, NT etc. provisions (scores additive)	1	1	1	0	0
MFN	0.75	0	0.75	0	0
MFN exemptions	0	0	0.25	0	0
National treatment	0.5	0.5	0.5	0	0
Nationality (residency) of management and board of directors	0	0	0.5	0	0
Performance requirements	0	0.75	0.75	0	0
Transparency (scores additive)	1	0.7	1	0	0
Denial of benefits (i.e. rules of origin)	0.5	1	1	0	0
Expropriation etc. (scores additive)	0.6	1	0.6	0	0
Transfers and payments	0.5	0.5	0.5	0	0
Investor state dispute settlement	1	1	1	0	0
Safeguards	1	1	1	1	1
Subsidies	0	0	0	0	0
Government procurement	0	0	0	0	0
Ratchet mechanism	0	0	0	0	0

Table A2. *(Continued)*

(2) Content of Agreement					
Excluded measures	0	0	0	0	0
Sectoral exclusions: Total sectors: 138 (based on CPC)	0	0	0	0	0
Measures at regional level	0	1	0.7	0	0
Restrictions on land purchases	0	0	0	0	0
Reservations on minority	0	0	0	0	0
Requirement of prior residence for establishment	0	1	0	0	0
General restrictions on foreign capital participation	0	1	0	0	0
Review or approvals on large foreign investments (acquisition)	0	1	1	0	0
Provisions asymmetric	1	1	1	1	1
Simple average	0.354	0.538	0.502	0.120	0.120
Total score	8.850	13.450	12.550	3.000	3.000

Table A3. Template for Movement of People

	ASEAN--China	ASEAN--ANZ	ASEAN--S. Korea	ASEAN--Japan	ASEAN--India
(1) Form of Agreement					
Sectoral coverage	0	1	0.5	0	0
Scope	0	0.5	0.25	0	0
Immigration	0	0	0	0	0
MFN for mode 4 delivery	0	0	0	0	0
MFN exemptions	0	0	0	0	0
National treatment for mode 4 delivery	0	0	0	0	0
Market access (i.e. prohibition on quantitative restrictions as in GATS)	0	0	0.5	0	0
Domestic regulation	0	0	0	0	0
Transparency of regulations governing service delivery via mode 4 (scores additive)	0	0.4	0	0	0
Transparency of regulations governing temporary movement of persons (scores additive)	0	0.4	0	0	0
Recognition	0	0	0	0	0
Denial of benefits (i.e. rules of origin)	0	1	0.75	0	0
Ratchet mechanism	0	0	0	0	0

Table A3. ***(Continued)***

(2) Content of Agreement-Service Delivery					
General reservations/exceptions	0	0	0	0	0
Sectoral exclusions: Total sectors:138 (based on CPC)	0.2	0.2	0.2	0.2	0.2
Measures at regional level	0	1	0	0	0
(3) Content of Agreement-Facilitation of Mobility					
Skill coverage (least generous treatment among members of FTA)	0	0.25	0	0	0
Short term entry (least generous treatment among members of FTA	0	0.25	0	0	0
Long term entry (least generous treatment among members of FTA	0	0.2	0	0	0
Quotas on numbers of entrants	0	1	0	0	0
Needs test	0	0	0	0	0
Local labour market testing or other criteria	0	0	0	0	0
restrictions on land purchases	0	0	0	0	0
Considerations on minority	0	0	0	0	0
Requirements on the number of domestic employees	0	0	0	0	0
Provisions asymmetric?	1	1	1	1	1
Simple average	0.046	0.277	0.123	0.046	0.046
Total score	1.200	7.200	3.200	1.200	1.200

CHAPTER 6

ROOs in ASEAN+1 FTAs and the Value Chain in East Asia

ERLINDA M. MEDALLA

Philippine Institute for Development Studies

MAUREEN ANE D. ROSELLON[1]

Philippine Institute for Development Studies

This paper discusses the nature of the rules of origin (ROOs) in the ASEAN+1 FTAs, particularly with respect to features and characteristics that could either facilitate or hinder the development of value chains, and the participation of firms in the increased globalization of production. By examining both the types of ROOs used and the origin certification procedures employed in these FTAs, the paper arrives at recommendations for reforms that could facilitate trade and the linkages in the value chain system in the region. Case studies on automotive and electronic sectors provide further insights.

[1] Senior Research Fellow and Research Associate respectively, Philippine Institute for Development Studies.

1. Introduction

The role of the value chain systems in regional economic integration has become increasingly important, especially in East Asia with the growth of production networks led by Japan. Identifying and understanding the factors affecting them are necessary to provide corresponding policy handles for the development process, not only at the regional and global level, but at the national and local level as well. Numerous factors affect the linkages between firms in the value chain, from the local to the global level, and the shape of the development that takes place. Among the factors that need close attention would be free trade agreements (FTAs), as they directly affect the flow of goods and investments. This paper, as part of the ERIA project on FTAs and the global value chain in East Asia, focuses on the ROOs – in particular, the ROO regimes in the various ASEAN+1 FTAs.

There has been a lot of discussion about the 'noodle-bowl syndrome' created by the proliferation of FTAs during the past decade. Central to this issue is the set of ROOs that necessarily accompany any FTA. Thus, we have multiple FTAs with as many (non-uniform) ROO systems, compounding the set of rules that FTA (actual and potential) users would need to hurdle, and customs administration would have to implement. This has special implications when viewed within the context of the global value chain because of hurdles it could add to the flow of goods in the value chain. This paper aims to look more closely at these implications of the ROOs in the ASEAN+1 FTAs with the end in view of providing recommendations that could facilitate trade and linkages within the region's value chain system.

The paper starts with a brief discussion of the nature of the ROOs in the ASEAN+1 FTAs – the basic types of ROOs and their variation across products. Some comparison across FTAs will also be made. The paper then examines the implications of the ROO regimes – the ROO criteria *per se* and the accompanying procedures used – for the value chain. The particular ROO criterion used in itself (and how this varies across products and across FTAs) would have direct implications for the links in the value chain. In addition, the impact of the ROO regime would depend not only on the nature of the ROOs *per se*, but also on the origin certification procedures (OCP). The paper then looks at special sectors where global production networks (GPNs) play key roles –

the electronics and automotive sectors – to highlight key issues and concerns. The last section provides the conclusion and recommendations.

2. Features and Characteristics of the ROOs in ASEAN+1 FTAs[2]

In the various ASEAN+1 FTAs, there are four basic rules used to determine origin (see Table 1):

1. Wholly obtained (WO)
2. Regional value content (RVC)
3. Change in tariff classification (CTC), and
4. Specific process rule (SPR)

There is no question about conferring origin on products that are wholly obtained (WO) or produced. However, with technological change and increased globalization of production, the majority of products are no longer strictly wholly obtained. As such, for most FTAs, the WO criterion is usually used mainly for primary products. Prime examples are in the early chapters of the Harmonized System (HS) code, e.g. covering plants and animals.

With the blurring of geographical boundaries in production, there was general consensus that conferring origin should be on some basis of 'substantial transformation'. In this regard, the last three basic rules are considered as acceptable criteria. The second, regional value content (RVC), requires that a minimum share in value added should come from member parties. In the ASEAN Trade in Goods Agreement (ATIGA) and the various ASEAN+1 FTAs, the usual norm is a regional value content of not less than 40 per cent of value added, or RVC(40), for the good to be considered originating from that FTA area. Change in tariff classification (CTC) is another criterion used, that is, the inputs from non-member parties have been 'sufficiently transformed' in production thereby acquiring a change in classification in the output according to the HS code. The usual requirement is for a change in

[2] This draws from Medalla (2011).

classification at the four-digit level, but chapter and tariff sub-heading levels (six-digit) are also sometimes used. Finally, many FTAs, especially earlier agreements, confer origin on the basis of the specific process rule (SPR), that is, a certain process is required for the good to be considered originating from that FTA area.

Table 1. Basic Methods of Origin Determination

Agreements	Methods of determining origin	General rule
ASEAN Trade in Goods Agreement (ATIGA)	1. Wholly obtained (or produced) (WO)	RVC(40): RVC of at least 40% or
	2. Regional value content (RVC)	CTH: CTC at 4-digit
	3. Change in tariff classification (CTC)	
	4. Specific process rule (SPR)	
ASEAN--China Trade in Goods Agreement (ACFTA)	1. WO	RVC(40)
	2. RVC	
	3. SPR	
ASEAN--Korea Trade in Goods Agreement (AKFTA)	1. WO	RVC(40) or CTH
	2. RVC	
	3. CTC	
	4. SPR	
ASEAN--Japan Comprehensive Economic Partnership (AJCEP)	1. WO	RVC(40) or CTH
	2. RVC	
	3. CTC	
	4. SPR	
ASEAN--Australia/New Zealand FTA (AANZFTA)	1. WO	RVC(40) or CTH
	2. RVC	
	3. CTC)	
	4. SPR	
ASEAN--India Trade in Goods Agreement	1. WO	35% RVC+ CTSH
	2. 35% RVC+ CTSH	

The advantages, disadvantages and key issues using the different methods are highlighted in Table 2 below as summarized by Brenton (2003).

Table 2. Summary of the Different Approaches to Determining Origin

Rule	Advantages	Disadvantages	Key issues
Change in tariff classification (CTC)	● Consistency with non-preferential rules of origin.	● Harmonized system not designed for conferring origin, increased possibility to be influenced by domestic industries	● Level of classification at which change required – the higher the level the more restrictive
	● Once defined, the rule is clear, unambiguous and easy to learn	● Documentary requirements maybe difficult to comply with	● Can be positive (which imported inputs can be used) or negative (defining cases where change of classification will not confer origin) test[a] – negative test more restrictive
	● Relatively straightforward to implement	● Can be conflicts over the classification of goods which can introduce uncertainty over market access	
Value added	● Clear and simple to specify and unambiguous	● Complex to apply – requires firms to have sophisticated accounting systems	● The level of value added required to confer origin
	● Allows for general rather than product specific rules	● Uncertainty due to sensitivity to changes in exchange rates, wages, commodity prices, etc.	● The valuation method for imported materials – methods which assign a higher value (e.g. CIF) will be more restrictive on the use of imported inputs
Specific process requirement	● Once defined, clear and unambiguous	● Documentary requirements can be burdensome and difficult to comply with	● The formulation of the specific processes required – the more procedures required the more restrictive
	● Provides for certainty if rules can be complied with	● Domestic industries can influence the specification of the rules.	● Should test be negative (processes or inputs which cannot be used) or a positive test (what can be used) – negative test more restrictive

Source: Notes on Rules of Origin with Implications for Regional Integration in South East Asia, Paul Brenton (2003).

These basic rules could be used singly, or in combination whether as co-equal (alternative) or dual (plus) rules, and with some variation. The minimum cut-off could be raised or reduced, the disaggregation level required for change in classification could be amended, or the required process specifically defined. Agreements would provide a

general ROO, and some variations of the basic rules are usually adopted for specific products, according to negotiation outcomes.

At the start, AFTA--CEPT (ASEAN Free Trade Agreement – Common Effective Preferential Tariff, before ATIGA) almost uniformly adopted the RVC rule. This was intended to be liberal enough, as the rule is theoretically straightforward and ostensibly fair, compared for instance to the SPR, which could be very limiting. However, over time, it became more apparent that there are practical problems in applying RVC, contributing to the low AFTA utilization rate. The CTC has become a viable alternative. In more recent FTAs and in ROO reforms, co-equal rules are increasingly being used.

In general, reforms and improvements in ROOs towards simplification have been introduced in ATIGA, and more recent FTAs generally tend towards more liberal ROOs. The approach, however, has been to refine ROOs on a per product basis. While in general, this has led to easing ROO restrictiveness,[3] this product specific approach, without an overall framework, could lead to numerous variations in ROOs, not only across products within FTAs, but also variations across FTAs for the same product. Both could have adverse implications on linkages in the regional value chains, especially those dealing with multiple products and multiple countries. This could mean, for example, that there will be the need to have separate accounting, different expertise, etc. to deal with possible inconsistencies.

In Medalla (2011), the author compiles and presents a frequency table of various types of ROOs used by six-digit HS (2002) classification for the various ASEAN+1 FTAs in East Asia. The table is reproduced below as Table 3.

[3] There are, of course, likely to be instances where ROOs negotiated are designed for protection. However, the ROO reforms are generally aimed at encouraging FTA utilization.

Table 3. Frequency of ROO Used by FTA

ROO type	ATIGA	AKFTA	ACFTA	AJCEP	AANZFTA	Japan-India [a/]
WO	185	458	8	3	302	756
CC		61	1	735	288	
CTH		4		157	117	225
CTSH				8		638
RVC(<40)		36				
RVC(40)	147	22	4,659	219	286	
RVC(>40)		6				
CC with exception				258	3	
SPR (Textile Rule)						805
CC + RVC(40)		2				
CTH + RVC(<40)						12
CTH + RVC(40)						15
CTH + RVC(>40)		1				3
CTSH + RVC(<40)						2,693
CTSH + RVC(40)					3	52
CTSH + RVC(>40)						22
RVC(40) or CC	437	487	7	126	585	
RVC(40) or CC or SPR	33				33	
RVC(>40) or CTH		4				
RVC(40) or CTH	2,782	4,076	122	3,057	2,205	
RVC(40) or CTH or SPR	16				24	
RCV(40) or CTSH	706	61		33	1,072	
RVC(50) or CTSH						2
CC or Textile Rule				350	15	
CTH or Textile Rule				277	91	
RVC(40) or Textile Rule			427	1		
RVC(40) or CC or Textile Rule	453					
RVC(40) or CTH or Textile Rule	340					
RVC(40) or CTH or RVC(35) + CTSH	125				200	
WO or CTSH						1
WO or RVC(>40)		6				
Total tariff lines (HS 2002)	**5,224**	**5,224**	**5,224**	**5,224**	**5,224**	**5,224**

Source: Lifted from Medalla (2011)

Notes: WO - wholly obtained; CC - change in commodity classification; CTH - change in tariff heading; CTSH - change in tariff subheading; RVC - regional value content; GR - general ROO rule

* Tariff lines not included in PSR list but can be classified according to the general ROO rule

a/ in lieu of ASEAN--India FTA (PSR)

In summary, from the Medalla (2011) study, we note the following key observations about the features and characteristics of ROOs of the ASEAN+1 FTA:

- There are numerous types of ROOs used, even after the author tried to group together similar types under one category. A lot more variations exist within each grouping. The variations come from the following:
  - Some combination of rules – co-equal or 'plus' rules
  - For SPR, different specific processes required
  - For RVC, variation in cut-off level
  - For CTC, variation in the level of classification where change is required, e.g. change in chapter (CC), change in tariff heading (CTH), change in tariff sub-heading (CTSH)
  - Additional specific requirements, e.g. CTSH 'except change coming from some classification, or provided the materials are sourced' accordingly
- The co-equal rule, RVC(40) or CTH, is the general rule for ATIGA, ASEAN--Korea (AKFTA), ASEAN--Japan (AJCEP) and ASEAN--Australia--New Zealand (AANZFTA). For ASEAN--China (ACFTA), the general rule is RVC(40). For ASEAN--India FTA (AIFTA), the general rule is the dual rule, RVC(35) + CTSH, which is considered the most restrictive as both rules need to be complied with.
- ACFTA uses RVC most extensively, while AJCEP relies more on CTC. ATIGA has been undertaking ROO reforms, coming up with product specific rules (PSRs) that are generally intended to encourage better utilization of the FTA. As a result, it has more HS lines with the co-equal rule using 'RVC(40) or CTSH', more liberal than the general rule (RVC[40] or CTH). At the time of writing, PSRs for India were still under negotiation, such that only the general rule is currently applicable (refer again to Table 3).
- How much commonality or divergence exists in the ROOs of the different ASEAN+1 FTAs is also examined by the author. This is done by going over the ROOs of the five different FTAs by six-digit HS lines and counting how many HS lines there are where all five FTAs share at least one rule, where only four FTAs share at least one common ROO and so on down the line. When down to one, the frequency indicates how many HS lines have no common ROO used at all (see

Table 4). It appears that in 64 per cent of all tariff lines, all five FTAs have at least one ROO in common.[4] On the other hand, only 0.4 per cent of HS lines have ROOs that are all totally different. However, most of the commonality is in the use of the RVC(40). If we count only those with almost the same ROO,[5] the frequency of lines with a common ROO is more than halved, at around 30 per cent. In most cases, the ASEAN--China FTA would be the odd FTA out.[6]

Table 4. Commonality of ROOs Across FTAs

Degree of commonality	Frequency distribution of HS lines (6-digit HS2002)	
	No.	%
In all 5 FTAs	3,318	64.00%
In only 4 FTAs	766	14.80%
In only 3 FTAs	825	15.90%
In only 2 FTAs	255	4.90%
No common ROO	23	0.40%

Source: Table 5 in Medalla (2011)

Other Relevant ROO Provisions

There are other ROO provisions aside from the general rules (GR) and the product specific rules (PSR) that govern origin determination. Of significant importance with respect to trade facilitation are the *de minimis* rule when CTC is applicable, and the treatment of intermediary trade.

Certain products could be using a host of intermediate goods as inputs. Under a CTC rule, requiring a change in classification for each and every input could be daunting. To simplify administration and ease the ROO restrictiveness, a *de minimis* rule could be very useful. ATIGA and the ASEAN+1 FTAs all have *de minimis* provisions, with the exception of AIFTA.

[4] Where the ROO provision of the FTA uses a 'plus' rule, the dual/multiple rule is treated as one ROO. When co-equal rules are used, they are treated as separate rules.
[5] That is, treating the co-equal rule as one.
[6] This excludes the ASEAN--India Trade in Good Agreement, for which, at the time of writing, only a general rule of 'CTSH or RVC(35)' applies for all, while PSRs are still being negotiated.

Especially for GPNs and value chains, a smooth flow of intermediary goods could be crucial. These are cases, for example, when a batch of goods enters first one (member) country in the chain, and some portion is later re-exported to another (member) country. If the invoice comes from a member party, it will be useful if a back-to-back Certificate of Origin (CO) is allowed (a fresh CO is issued on the basis of the original CO from a member country). It could also be possible that the invoice is from a third country (e.g. Japan, but the FTA used is, say, AANZFTA) although the good qualifies as originating using the relevant FTA ROO criterion. In this case, the useful provision is one that allows for third-party invoicing.

Except for ACFTA, the ASEAN+1 FTAs allow back-to-back certificate and third party invoicing. However, for ACFTA, an agreement was reached in October 2010 to amend the OCP to accommodate intermediary trade using these instruments. By January 2011, except for Indonesia, Myanmar and Cambodia, member countries have signed the revised OCP. This is indicative of the importance of intermediary trade and the direction of reforms being made to improve the system.

3. The Origin Certification Procedure

Equally important to examine is how the ROO system is implemented. In this regard, we examine the OCPs of ATIGA and the ASEAN+1 FTAs.

There appear to be efforts to harmonize procedures and learn from each other's systems. This is manifested in the almost identical CO forms used. ATIGA uses form D; ACFTA – form E; AKFTA – form AK; AJCEP – form AJ; and AANZFTA – form AANZ. All require COs on a per shipment basis; all forms have the same cells for required information; and all require pre-export verification. Still, some implementing procedures and required documents could vary.

3.1. Issuing Body/Authority

For Japan, Korea, Australia and New Zealand, the issuing authority has been assigned to their designated private Chamber(s) of Commerce and Industry. In addition,

for Korea, its customs service also has CO issuing authority. For the rest (i.e. ASEAN and India), the issuing authority is a designated government agency. However, for ATIGA, self-certification will be allowed by 2012. The procedure is being piloted in Singapore, Malaysia and Brunei.

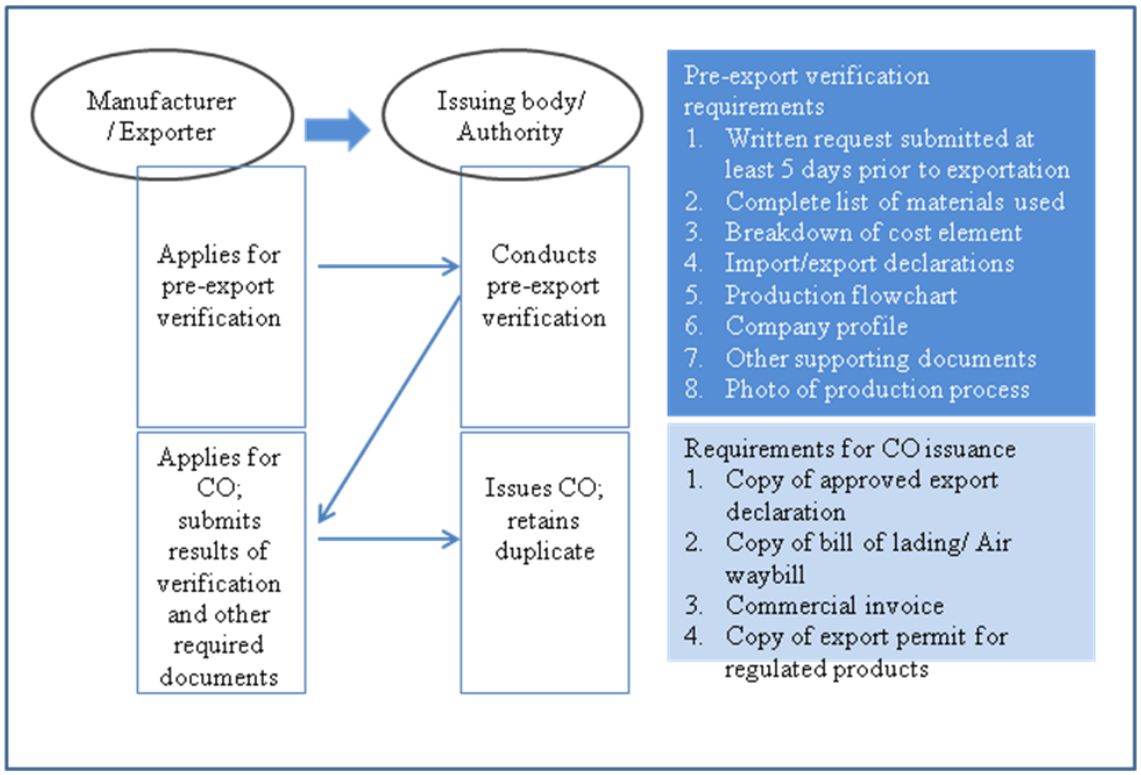
3.2. Typical OCP Process and Documentation Requirements

The typical process for acquiring a CO starts with a pre-export verification, where origin examination/assessment takes place. This presumes that the HS classification has been determined. For some exporters, determining the HS classification can be a problem, as this could be a source of differences in interpretation. This is critical since this forms the basis for what is the applicable ROO in the first place. This is also where provisions for advanced rulings would be very useful, cutting unnecessary delays in releasing the shipments.

Figure 1 below represents a typical OCP process (based on Philippine procedures). It shows two stages of application – first for pre-export verification, and second for CO issuance. Korea and Vietnam merge the two into one application but the processes themselves are basically the same. For most of the ASEAN+1 FTAs, the requirements for the CO application itself are almost the same. In the pre-export verification requirements, the documentation requirements may vary a little. For example, in some countries (China and Brunei), there is the initial requirement of company registration. This would require some additional documentation like business licence, organization code, etc. In the case of Australia, the pre-export verification requirement is simple, based only on exporter registration including an export declaration that the goods meet the ROO criterion and that it will provide any documentation the issuing body may request to confirm origin.[7] It is supported with a profuse education and information campaign about ROO procedures. Also, there are countries with electronic (online) CO application (Australia, New Zealand, Japan, Malaysia, Singapore and Thailand).

[7] Basically, it is a hybrid form of self-certification.

Figure 1. Typical OCP Process Flow and Requirements



Source: Bureau of Customs, Philippines

Processing time from pre-export verification to issuance of CO ranges widely, from one working day (as for Australia and New Zealand); three working days (the minimum in the case of Korea); to not more than 30 working days (for China and Brunei, including company registration). In the case of Australia, the entire processing time could be done within a day, given automatic registration of the exporter for CO issuance. In the case of New Zealand, as part of company registration, if procedures and information provided are in order, the pre-export verification is done within one working day and CO issuance likewise within one working day. For most countries, processing time could take five to 10 working days. See Table 5 for a comparison across countries.

Table 5. Processing Time for OCP

Country	Issuing body/ authority	Pre-export verification (examination of origin)	Issuance of CO
Australia	Australian Industry Group Australian Chamber (ACCI)	Automatic	Within 1 working day 2 hours for electronic application
Brunei	MOFAT, Department of Trade Development	30 days (includes company registration)	1-2 working days
Cambodia	Ministry of Commerce (Department of Multilateral Trade)	Within 7 working days	10 hours, 55 mins
China	Entry-Exit Inspection and Quarantine Bureau	20-30 working days	within 1 day
Indonesia	Ministry of Trade (Export and Import Facilitation)	15 working days for first time users; 1 working day for exporters in database	Within 1 day
Japan	Japan Chamber (JCCI)	Within 3 working days	Within 2 working days
Korea	Korean Customs Service; Korean Chamber (KCCI)	Regular cases: 3 working days; cases needing onsite examination: 10 working days	
Laos	Ministry of Commerce and Industry	3-7 days	3 days
Malaysia	Ministry of International Trade and Industry	5 working days for online, 7 working days for manual application	1 working day for online, 2 days for manual
Myanmar	Ministry of Commerce	7 working days	1 working day
New Zealand	New Zealand Chamber (NZCCI) Independent Verification Services	1 working day, if procedures and information provided are in order Within 1 hour	1 working day Within 4 hours
Philippines	Bureau of Customs	Within 5 working days	Within same day
Singapore	Singapore Customs	Step 1: Factory registration - 1 week Step 2: Manufacturing cost statement - at least 7 days before exportation	2-3 working hours
Thailand	Ministry of Commerce, Department of Foreign Trade	3 working days	Within 1 day; 4 hours for EDI systems
Vietnam	Government issuing authority	Within 5 working days	

Source: ERIA Project (2011): Towards Accessible FTA: The Role of ROO Documentation in FTA Utilization; Interviews

Note: EDI - Electronic Data Interchange

4. Implications for the Value Chain

Part of the rationale for regional FTAs is the increasing importance of global and regional production networks. FTAs are supposed to help countries engage more fully in these growing global/regional production systems, by easing access both to markets and technologies, and creating more opportunities for local producers. In particular, a key feature of the ASEAN+1 FTAs is cumulation, which should encourage the value

chain in East Asia. However, each FTA comes with ROOs intended to limit preference to member parties. Hence, while the FTA would remove trade barriers among member parties, the governing ROOs would present barriers of their own. The challenge is therefore how to strike a balance between trade facilitation and preventing trade preference circumvention.

One could argue, however, that trade facilitation should take priority over the concern about circumvention, as the latter actually brings the preferential arrangement closer to the Most Favoured Nation (MFN) principle, and trade facilitation would always provide benefits (if only to reduce transactions costs). Nonetheless, in keeping with the 'preferential' agreement, the possibility of circumvention would still need to be considered. The bottom line is that ROOs should be as simple and liberal as possible, and reforms should be sought to minimize the transaction costs of ROO compliance.

Hence, in analysing the implications of the system of ROOs on the value chain, one needs to understand the attendant cost of ROO compliance. In this regard, it will help to categorize costs into two basic groups, depending on where these costs are coming from.

The first is related to the degree of restrictiveness of the rule itself. As discussed above, there are three basic rules used to signify 'substantial transformation' and confer origin: RVC, CTC and SPR. Without specific information on the ROO and the production processes involved, one cannot state categorically that one rule is more restrictive than another. What is clearer is that for RVC, the lower the required minimum RVC, the less restrictive the ROO. In the case of CTC, in general, the higher the digit level of classification where change is required (or the lower level of classification), the less restrictive the ROO. The degree of restrictiveness of the SPR is entirely on a case-by-case basis, but in general, the more SPRs there are for the product, the more restrictive the ROO. In addition, if the exporter has a choice, that is, the co-equal rule, the ROO is more liberal. On the other hand, if the exporter is required to comply with two or more ROO criteria (dual or multiple rule), then the ROO is more restrictive.

The degree of restrictiveness of the ROO could affect compliance costs and the value chain in the most fundamental way. This is when the exporter would have to change the (presumably most efficient) manufacturing process in order to meet the ROO

criterion. Hence, care should be taken that the ROO is not made too restrictive as to induce exporters to resort to a change that will lead to inefficiency in production. Indeed, if there are known cases like these, then this would suggest candidates for appropriate reforms. The other impact of an overly restrictive ROO could, of course, be non-utilization of the FTA preference. In other words, the ROO becomes 'prohibitive'. In this case, the FTA does not contribute to the links in the value chain. This would again point to areas for possible ROO reforms.

What this implies is a need to take a closer look at the ROOs themselves. Is the cut-off rate of 40 per cent regional value content enough to encourage value-chain activities in the region? Could this cut-off rate be lowered? Similarly, could a finer classification be used in the level of change required to confer origin? Perhaps the most cumbersome are the additional requirements and restrictions accompanying many general rules, e.g. as to where certain inputs are sourced; limiting where change in classification comes from; etc. Aside from increasing the restrictiveness of the ROOs, these additional limiting requirements are usually very specific, increasing the variation in ROOs across products within and across FTAs.[8] This has a substantial and direct impact on the value chain. Which among these additional restrictions could be removed or relaxed?

The second group of costs would pertain to the costs of complying with the procedures of origin certification. This would include two main components: (1) the cost of the paperwork and administrative work needed to complete the required documents for certification, including in-house man hours and other fees related to securing these documents; and (2) cost of lead time. Big companies dealing with multiple inputs and outputs, and multiple FTAs, would incur extra costs to manage the different ROOs. This could be in terms of maintaining in-house information and accounting systems and corresponding staff. Delays in securing COs would mean additional costs, e.g. in terms of warehousing costs and production disruptions.

It appears that substantial efforts are being made to simplify and rationalize procedures to reduce ROO compliance costs and speed up the certification process. An example is the treatment of intermediary trade, which is of particular importance to the value chain. As indicated earlier, ACFTA has revised its OCP to include the relevant

[8] Indeed, this variation is pointed out earlier in the discussion about the system of ROOs in the ASEAN+1 FTAs.

provisions on intermediary trade following the other ASEAN+1 FTAs. More countries are adopting an electronic system, with online application. Self-certification, or its hybrid form, using some method of accreditation and endorsement by industry chambers, is increasingly being adopted. Hopefully, these reform efforts will continue.

5. Focus on the Automotive and the Electronics Sectors

To provide further insights, we take a closer look at the automotive and electronics sectors. These sectors are considered prime examples of industries with highly evolved global/regional production networks. Firm interviews were conducted covering one electronic firm and three automotive firms in the Philippines (see Appendix for more details).

First, it will be interesting to examine what types of ROOs have been negotiated in the FTAs for these sectors. These are presented in Tables 6 and 7.

Table 6. ROOs in Electronics

ROO type	ATIGA	AKFTA	ACFTA	AJCEP	AANZFTA
WO	1				1
RVC(40)	13		287	1	15
RVC(40) or CTH	151	265		286	122
RVC(40) or CTH or SPR					8
RCV(40) or CTSH	35	22			40
RVC(40) or CTH or RVC(<40)* + CTSH	87				101
Total with alternate rules	273	287	0	286	271
Total tariff lines (HS 2002)	**287**	**287**	**287**	**287**	**287**

Source: Data from Medalla (2011); authors' calculations.
Notes: This table covers tariff lines under Chapter 85 of HS Code 2002; WO - wholly obtained; CC - change in chapter (2 digit); CTH - change in tariff heading (4-digit); CTSH - change in tariff subheading (6 digit); RVC - regional value content; SPR - specific process requirement

* RVC cut-off level is usually 35%

Table 7. ROOs in Automotive Products

ROO type	ATIGA	AKFTA	ACFTA	AJCEP	AANZFTA
RVC(40)	66		76	47	50
RVC(>40)**		25			
CTSH + RVC(40)					3
RVC(40) or CC					1
RVC(40) or CTH	10	51		29	22
Total number of tariff lines (HS 2002)	76	76	76	76	76

Source: Data from Medalla (2011); authors' calculations.
Notes: This table covers tariff lines under Chapter 87 of HS Code 2002; WO - wholly obtained; CC - change in chapter (2 digit); CTH - change in tariff heading (4-digit); CTSH - change in tariff subheading (6 digit); RVC - regional value content; SPR - specific process requirement
* RVC is usually 35%
** RVC ranges from 45-70%

In the case of the electronics sector (HS Chapter 85),[9] for the majority of the products, the GR is used. In the case of ACFTA, there is no deviation from the GR, which is the single rule of RVC(40). For ATIGA, AKFTA, AJCEP and AANZFTA, the GR is the co-equal rule of RVC(40) or CTH, which is at the outset more liberal, with exporters being given a choice. In the case of AJCEP, there is also almost no deviation from the GR. However, where there are deviations from the GR, the PSRs are designed to be less restrictive, especially in the case of ATIGA and AANZFTA. In ATIGA, 35 out of 287 HS (2002) lines use a more liberal choice of CTC at the six-digit level (CTSH) compared to CTH in the GR, and an additional 87 lines use a third option of RVC(35) plus CTSH. In AANZFTA, even further easing of PSRs are used, 40 lines with CTSH as the second option, and 101 lines with the same third option.

The opposite is true in the case of the automotive sector (HS Chapter 87),[10] except for ACFTA, which, as in the case of electronics, does not deviate from the GR of RVC(40). This time, the PSRs for the other FTAs become more like that of ACFTA: a single RVC(40) for many of the products – 66 out of 76 HS lines in the automotive

[9] HS Chapter 85 description: Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.
[10] HS Chapter 87 description: Vehicles other than railway or tramway rolling stock, and parts and accessories thereof.

sectors for ATIGA, 47 for AJCEP, and 50 for AANZFTA. In the case of AKFTA, the PSRs are made even more restrictive with the cut-off rate for RVC ranging from 45 to 70 per cent for 25 of the 76 HS lines, although many more lines retain the GR.

This appears to be 'consistent' with the MFN tariff structure of these sectors. Tables 8 and 9 provide the figures only for the Philippines, but in relative terms, the structure will be the same for the rest of ASEAN. Tariffs are generally very low for the electronics sector, while tariff peaks could be found in the automotive sector (especially for the assembled products).

In the case of electronics (HS Chapter 85), the simple average tariff is around 3.9 per cent, with minimum at zero duty (78 out of a total 266 HS lines in the sector), and maximum at 30 per cent (one line). The average tariff is higher for assembled products at 6.2 per cent, compared to 1.2 per cent for parts and components.

In the case of the automotive sector (HS Chapter 87), the simple average tariff is around 12.8 per cent, with minimum at zero duty (four out of a total 75 HS lines in the sector), and maximum at 30 per cent (24 lines). As in the case of electronics, the average tariff is higher for assembled products at 23.6 per cent, compared to 6.2 per cent for parts and components.

Table 8. Philippines: MFN Applied Tariffs 2010 for Electronics

HS Code 2007	Description	MFN applied tariff			
		Number of TL	Average of AV duties	Minimum AV duty	Maximum AV duty
Chapter 85	Electrical machinery and equipment and parts thereof				
	MFN tariff (average, minimum, maximum)		**3.9**	**0**	**30**
	No. of TL at HS 6 digits (minimum/maximum AV duty)			78	1
	Total no. tariff lines at HS 6 digits	266			
8532-34; 8540-42	Electronics components				
	MFN tariff (average, minimum, maximum)		**1.2**	**0**	**15**
	No. of TL at HS 6 digits (minimum/maximum AV duty)			31	1
	Total no. tariff lines at HS 6 digits	44			
8509-10; 8516; 8518-24; 8527-28	Consumer electronics and related products				
	MFN tariff (average, minimum, maximum)		**6.2**	**0**	**15**
	No. of TL at HS 6 digits (minimum/maximum AV duty)			14	15
	Total no. tariff lines at HS 6 digits	62			

Source: WTO tariff download facility; authors' calculations.
Notes: AV: ad valorem; TL: tariff lines.

Table 9. Philippines: MFN Applied Tariffs 2010 for Automotive Imports

HS 2007	Description	MFN applied tariff			
		Number of TL	Average of AV duties	Minimum AV duty	Maximum AV duty
Chapter 87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof				
	MFN tariff (average, minimum, maximum)		**12.8**	**0**	**30**
	No. of TL at HS 6 digits (minimum/maximum AV duty)			4	24
	Total no. tariff lines at HS 6 digits	75			
Specific HS lines: e.g. 392630; 400921-401019; 700711-21; 700910; 732020; 732020 etc.	Autoparts (i.e. selected HS 6 digit lines)				
	MFN tariff (average, minimum, maximum)		**6.2**	**0**	**30**
	No. of TL at HS 6 digits (minimum/maximum AV duty)			3	6
	Total no. tariff lines at HS 6 digits	84			
8702-8704	Motor vehicles/motor cars and other motor vehicles designed for the transport of persons and goods				
	MFN tariff (average, minimum, maximum)		**23.6**	**0**	**30**
	No. of TL at HS 6 digits (minimum/maximum AV duty)			3	14
	Total no. tariff lines at HS 6 digits	18			

Source: WTO tariff download facility; authors' calculations.
Notes: AV: ad valorem; TL: tariff lines.

Findings from Firm Interviews

Four firms (in the Philippines) were interviewed, composed of one multinational company (MNC) engaged in assembly of motor vehicles; one foreign-owned firm manufacturing wheels; one MNC engaged in production of electronic and mechanic components for automotive applications; and one Filipino-owned electronics firm producing hard disk drive (HDD) components.[11] These firms import from and export to ASEAN and for some to the 'plus one' countries.

From the interviews, some important points can be gathered. One observation is that the two MNCs' utilization of FTAs, and specifically compliance with the ROOs, has been smooth. As expected and as has been found in previous studies, large firms that have been importing or exporting for a long time, frequently or in large volumes and eventually have organized a system and set up a group that takes care of documentations, have a high FTA usage rate. Moreover, they are well informed, by their own efforts, with regards to developments and updates on FTAs. Furthermore, especially because they are able to satisfy requirements in the ROOs, they generally face no difficulty as far as requirements are concerned. There may be different ROO forms but they ask for almost the same information. It was expressed, however, that a lower regional value content and a harmonized ROO are much preferred. A pressing concern for the large companies interviewed is with regards to the logistics side, which affects delivery of goods. There are ports that experience congestion, indicating that the velocity of improvement on process and system in the ports is not on a par with the requirement of the industry.

On the other hand, for the small automotive firm interviewed (Firm B in the Appendix), what is evident is the discouraging effect bureaucratic red tape has on their decision to use FTAs, e.g. troublesome regulatory procedures and the additional cost associated with it. Likewise, lack of information, as in the case of the electronics firm (Firm A), is one reason for non-utilization of FTAs. However, with knowledge about FTAs, both are going to use them and benefit from preferential tariffs. While Firm B will use it primarily as implemented or required by the mother company, Firm A will look into the FTAs for potential use for their upcoming product. Firm A, a 100 per cent

[11] The Appendix presents a summary of interview results.

Filipino electronics firm, is very enthusiastic about FTAs. The firm is keen on expanding opportunities and so would like to assess how FTAs could benefit them.

Previous studies, such as Wignaraja et al. (2010), found that FTA utilization is high in the automotive sector and relatively low in the electronics sector. Findings indicate reasons such as high margins of preference especially for the automotive sector, and already low tariffs and use of incentive schemes in economic zones and/or in the World Trade Organization's Information Technology Agreement (ITA) especially for electronics firms. Such is evident in the three automotive firms interviewed, which maximize benefits from the FTAs that the Philippines/ASEAN has with East Asia. As for the electronics firm, it has managed with the incentive they get as a 100 per cent exporter (this is without knowledge of FTAs and the ITA).

It appears that the privilege of fiscal incentives and/or the ITA are reasons for non-utilization of FTAs, but as one interviewee stated, FTAs and incentive schemes go hand in hand. For one, incentive schemes such as duty-free importation of raw materials only apply to products manufactured for exportation, so firms producing for the domestic market and importing inputs from ASEAN or another trading partner will benefit highly from preferential tariffs.

From the interviews, as far as the value chain is concerned and especially with FTAs that entered into force, it is apparent that clear and good understanding of ROOs and compliance thereof for both firms and customs personnel, together with better logistical systems are needed to ensure that the value chain is in order and benefits from free trade are gained. Furthermore, to complement this is an enabling domestic environment for investment such as improvement in infrastructure (especially road networks and ports) and facilitation of industry linkages.

As far as ROO reforms are concerned, there seems to be room for further liberalizing in the two sectors – electronics and automotive. Firstly, in the case of the electronics sector, tariffs are already low. Secondly, these are ASEAN priority sectors, whose production is highly characterized by GPNs. The interviews show that FTAs could matter. They could be supportive of the value chain and overall regional growth of the industry. Reforms in ROOs in simplifying procedures have been helpful. More effort could be made, including better education and information campaign.

6. Conclusion and Recommendations

The discussion above examines the features and characteristics of the ASEAN and ASEAN+1 FTAs, the OCPs and how they impact on ROO compliance costs, and as such, on the value chain.

To summarize, there is substantial commonality in ROOs across the FTAs covered (ATIGA, ACFTA, AKFTA and AANZFTA) although considerable variation still exists (especially with respect to specific restrictions). In addition, reforms being sought are generally aimed at relaxing restrictions and reducing compliance costs. The AIFTA is the newest agreement but appears to have a more restrictive basic ROO. The parties are still to come up with PSRs, which would hopefully benefit from experiences of the earlier agreements.

The type of applicable ROOs (especially in terms of restrictiveness), the number of FTAs the exporter deals with, and the OCP would have impacts on ROO compliance costs, and thus the global value chain. As long as these costs add up to less than the margin of preference provided by the FTA, exporters benefit and the FTA would have a positive impact on the value chain. However, the objective is not for the ROO costs to be lower than the margin of preference. Instead, costs of ROO compliance must be minimized and ROOs made liberal enough, so as to have a greater impact on regional growth and integration.

The ideal scenario that would provide an enabling environment for the value chain in East Asia is harmonization of the ROOs of the ASEAN+1 FTAs. Needless to say, the direction of harmonization should be towards the most liberal ROO and best practice in OCP. This could be the ultimate goal.

Short of this goal, general guidelines for reforms that could be taken have been suggested in the discussion.

1. On the ROOs themselves:
    a. Can the cut-off rate for RVC be lowered?
    b. Can a finer classification be used in the level of change required to confer origin?

c. Perhaps most cumbersome are the additional requirements and restrictions accompanying many PSRs, e.g. as to where the certain inputs are sourced, limiting where change in classification comes from, etc. Can some of these additional restrictions be removed or relaxed?

d. Is there a *de minimis* rule along with CTC?

2. On further measures to streamline the OCP:

a. What are the best practices in OCP?

i. Can an electronic system be put in place?

ii. Is self-certification a viable option? What form and safeguards?

b. Are there outstanding complaints from exporters/importers?

c. Are there sufficient education and information campaigns?

In terms of more specific recommendations, with regards to the first, there are some indicators that could help identify candidates for more liberal ROOs. Among others, these include:

1. the region's share in total world export for the product, and
2. the applied MFN tariff rate.

If the region's share in total world exports for the product is high (the region is the principal supplier), trade circumvention is not a big problem and there is a strong case for a more liberal ROO. Even more compelling, if the MFN tariff is low enough, then protection (and circumvention) is not an issue and the ROO should be made liberal. Indeed, where the MFN rate is lower than say 5 per cent, a waiver of ROO COs should be seriously considered.

With regard to OCP, further streamlining could focus on facilitating cumulation. One possibility is the use of mutual recognition of COs among these East Asian FTAs (the forms could be interchangeable). It is true that the ROOs are not completely harmonized, but, excluding AIFTA, substantial commonality exists. ndeed they have the same basic GR. In addition, if adopted, this would be a concrete step to ROO harmonization. The mutual recognition arrangement (MRA) could be done in stages, by product, and/or by FTA.

Finally, some outstanding issues from exporters/importers that need to be addressed include:

- The interview with customs officials (the case of the Philippines) indicated that the first problem (and the first hurdle) of the exporter is getting the right HS code for their product. Education and information campaign should address this problem. Support should be available at customs (or the authorised issuing body) to help in HS classification.
- If there were conflicts in interpretation between the exporter and the importing authority, it is important that it is possible to resort to advanced ruling.
- Generally, customs personnel have been observed to be lacking in capability and dependability, implying that they need attention and support. Besides the HS classification problem, other issues were the electronic filing system that would repeatedly fail and port systems that would fall short and cause congestion.
- In addition, not only customs personnel but some importers/exporters themselves lack information on ROOs, be it in terms of compliance or lack of knowledge on FTAs. The government, possibly in partnership with the private sector, e.g. industry associations, should exert more effort to disseminate relevant and updated information.

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Appendix

Appendix 1. Summary of Firm Interviews

Firm A is an electronics firm that assembles components for HDD and exports 100 per cent to Japan. The firm is 100 per cent Filipino-owned and has 850 regular employees (large enterprise). The company is registered with the Philippine Economic Zones Authority[12] (PEZA). PEZA offers incentives schemes[13] to companies that are registered with them, usually those that are located in special economic zones such as Firm A. As a 100 per cent exporting company, Firm A receives duty free importation of parts or raw materials used in their production. To this end, the firm is satisfied with the incentives they are getting from PEZA. Their assembly of HDD components has been going on for years, such that the chain has already been established and paperwork has become easier. However, with the introduction of a new product, they would like to learn about FTA provisions, and be able to use them as it might help them be competitive, and give options for low-cost components that they will need in the manufacturing of this new product. The firm is eager to get information about FTAs as well as the ITA. One particular problem they foresee concerns the HS classification of parts in their new product, as they have encountered this problem in the past.

Firm B is an Australian automotive firm that designs and manufactures wheels. The firm exports 60 per cent and the rest goes to the local market. Forty per cent of inputs are imports (mainly steel) and 60 per cent are local (mainly chemicals). Firm B is an example of a firm that has had a bad experience in the Customs procedure. The red tape in the process has made filing costly for them, even with an electronic filing system. The firm hires a broker that takes care of applying for their CO (a regular one since they use MFN rate). The CO can be obtained quickly but 'is not cheap'. The company imports indirectly via a local firm because of the troublesome paperwork, aside from the

[12] PEZA is the Philippine government agency tasked to promote investments, extend assistance, register, grant incentives to and facilitate the business operations of investors in export-oriented manufacturing and service facilities inside selected areas proclaimed as PEZA special economic zones.

[13] Incentives include income tax holiday or exemption from corporate income tax for four years (extendable) or 5 per cent tax on gross income; exemption from duties and taxes on imported capital equipment, spare parts, supplies and raw materials; exemption from wharfage dues and export taxes, imposts and fees; simplified import and export procedures; permanent resident status for foreign nationals and immediate family; and employment of foreign nationals, among others.

reason that this is their way of supporting the local company. The interviewee expressed lack of information dissemination as regards the FTAs. He found out only recently, through their mother company, that AANZFTA had entered into force in 2010 and therefore will be availing of the preferential tariff. Firm B however could not avail of fiscal incentive schemes related to exemption from duties or taxes on imports or exports because it does not meet the requirement of 70 per cent exports to sales ratio.

Firm C is an American MNC engaged in assembly of motor vehicles and engines and exportation of completely knocked down (CKD) kits. The firm exports completely built-up (CBU) units (70 per cent of production) to ASEAN, CKD kits to Vietnam, engines to South Africa, and cylinder heads to Taiwan. The firm uses ATIGA--AFTA and JPEPA. The firm participated in the ASEAN Industrial Cooperation (AICO) scheme before, but with the FTAs, it does not find any need for AICO extension. The firm is able to meet the 40 per cent RVC since on average their regional content is 40-45 per cent, with ASEAN origin at 2-5 per cent. Though the firm is able to meet this requirement, preference is for lower RVC, as well as a harmonized RVC for all FTAs. As far as local content is concerned, the idea is to increase local content as much as possible but some local parts are not available or quality is not assured.

Moreover, documentation is not found to be difficult. There may be different origin forms, but the same information is basically asked and so it is not much of a concern. There are costs related to complying with ROOs, but the benefits of preferential tariff rates offset the cost of compliance. In terms of submission and processing of documents, there is a chronic red tape problem. To address this, the Customs Department has introduced the electronic filing system, which the firm welcomed but then implementation is becoming a problem. The persons responsible for the system are not sufficiently capable and knowledgeable such that when the system fails, the problem cannot be addressed immediately. On another note, as a PEZA-registered firm, Firm C enjoys fiscal incentives. However, while the firm receives duty free importation for inputs to exported products or for importation of vehicles, FTAs still matter to them in terms of products that are intended for the domestic market.

Firm D is a German MNC that produces electronic and mechanic components for automotive applications. Its products include electronic braking systems and seat/door/roof/access control that are 100 per cent exported to Germany, Belgium,

Japan, China and Korea. The firm uses ACFTA, AKFTA and Philippines-Japan Economic Partnership Agreement (PJEPA). At present, the firm is looking at the ASEAN--India or AANZFTA and assessing potential benefits. They would like the Philippine plant to be more competitive in terms of cost, and the FTAs are deemed to be a good vehicle to promote competitiveness. Firm D finds no difficulty as regards the rules of origin. For instance, they are able to satisfy the 40 per cent RVC (ACFTA) as many materials come from ASEAN and the CTC (AKFTA). They submit a complete set of required documents, get a CO within a week, with no additional costs. The set of documents they submit consist about seven different documents which in volume could go up to two inches thick depending on the shipment. The firm has no complaints because these are requirements and part of the process. The different ROO forms ask for almost the same information and so it is not much of a problem. Moreover, there may be different ROOs in the FTAs, but the interviewee/manager leaves this matter to the leaders whom she feels are working toward optimizing the benefits from FTAs.

Firm D has staff that take care of document submissions to customs. It helped that they have been doing this for a long time and therefore have established this side of their operations. In addition, there is a conscious effort to be informed and updated on FTAs. The manager herself reads up on the FTA websites. Access to information is generally smooth, except that for ACFTA it is rather difficult and a viewing fee is asked (there are private websites). The firm is PEZA registered, and located in a special economic zone, and therefore enjoys fiscal incentives such as free duty on imported equipment and on materials for exported products. Even with these fiscal incentives, the firm highly utilizes the preferential tariffs in FTAs. The interviewee/manager infers that fiscal incentives and FTA provisions address separate concerns. The PEZA fiscal incentives attract investors to invest in the country, while the FTAs provide exporters with a push and a channel to the global market.

CHAPTER 7

ASEAN+1 FTAs and Global Value Chains in East Asia: The Case of the Electronics Industry in Malaysia

RASYAD A. PARINDURI

Nottingham University Business School, University of Nottingham, Malaysia Campus

SHANDRE M. THANGAVELU

Department of Economics, National University of Singapore

We examine the development of the electronics industry in Malaysia and the challenges and impediments that firms in the industry are facing along the supply chain. We approach these questions as an analysis of trade data and case studies. We find that the industry has grown fast in the past few decades, and driven by large intra-industry trade in electronic components. The trends of the Malaysian electronics industry production and trade are correlated with the trends of the world economy. However, the stagnant productivity of workers since the early 2000s, and the declining revealed comparative advantage in producing electronic products for Malaysia are key concerns for sustainable growth. Given the current drive towards regional free trade agreements and with the increase in the fragmentation of the electronics industry, we offer some policy recommendations that could help firms in the industry to keep their global competitiveness.

1. Introduction

How has the electronics industry in Malaysia developed since the Asian financial crisis? What are the effects of Malaysia's trade policies and free trade agreements (FTAs) on the map of the regional and global supply chain of the industry? What are the challenges and the constraints faced by firms in the industry along the supply chain?

The answers to these questions are important to understand the effects of FTAs, in particular those of the Association of Southeast Asian Nations (ASEAN) +1 FTAs on the supply chain map.[1] They are also important to inform policy-makers on how to help firms in the industry to overcome impediments to trade.

We approach these questions by undertaking an analysis of trade data and a case study. First, we look at the data from Malaysia's Department of Statistics for production, trade, value added, and employment of Malaysia's electronics industry. We also compile the industry's trade statistics from the Comtrade database. Then we interview several managers of firms in the industry to understand what they think about the FTAs and to make sense of the challenges that they are facing along the supply chain.

The electronics industry in Malaysia has developed rapidly because of the export-oriented trade policies adopted by the Government of Malaysia since its independence. Production of the electronics industry has grown fast, but it has followed closely the boom and bust of external demand, with similar consequences for the industry's value added, employment and productivity.

The key product categories of the electronics industry are electronic components and computers.[2] However, the industry does not seem to have revealed comparative advantage (RCA) in producing components. As a result, the electronics industry as a whole does not have large RCA. At the product level, Malaysia has high RCA in radio and communications as well as in computers and consumer electronics.

[1] The focus of the paper will be on the following ASEAN+1 FTAs: ASEAN--Australia--New Zealand, ASEAN--China, ASEAN--Japan, ASEAN--Korea, and ASEAN--India.

[2] See Appendix 1 for the definition of the electronics industry, and Appendix 2 for the definition of the electronic products.

The industry's production, exports and imports of electronic products follow closely the cycle of external demand. Most of the electronics industry's exports are components and computers, while most of the imports are components. In the 1990s, a large proportion of trade in components used to be inter-industry trade and horizontal intra-industry trade (HIIT). But, the proportion of vertical intra-industry trade (VIIT) has been increasing so that in 2009 about 80 per cent of trades in components were VIIT.

We also find that the heavy reliance of the electronics industry on imports of components makes exports and imports tend to move in tandem. Despite the co-movement, net exports of electronic products have been increasing since the 1990s.

On the subject of Malaysia's trades in electronic products, we find that Malaysia's major trading partners are China, the United States (US), Singapore, Hong Kong and Japan. The last four countries have been Malaysia's major trading partners since the 1990s. Not only are they major trading partners for the industry as a whole, but these five countries are also major trading partners for each of the six electronic products analysed in this paper. Besides Singapore, ASEAN member countries that are major trading partners of Malaysia are Thailand and the Philippines.

There are also some indications that Malaysia's FTAs and ASEAN+1 FTAs affect the production network of the electronics industry in the region, though the FTAs are not perhaps the most important factors. Given the low or zero import duties on electronic final goods and components, some firms may have relocated their factories to other ASEAN member countries or ASEAN's FTA partners to take advantage of cheaper labor costs or larger market demand.

Trade facilitation in Malaysia provided by Dagang Net, a government-linked trade facilitation and e-commerce service provider, seems to be quite good. We also find that many firms are likely to be aware of the FTAs and do actually use the FTA provisions, in particular for imports and exports of final goods. There are a few other regulatory issues and non-trade barriers that may also affect the firms' use of FTAs; these factors are, among others, the Strategic Trade Act (STA) 2010 and excise duties on automotive electronics. The Government of Malaysia and federations of manufacturers in Malaysia do promote FTAs, though perhaps small and medium enterprises (SMEs) are the firms

that gain the most from this promotion and training programmes, not large multinational corporations (MNCs) like the ones whose managers we interviewed.

We offer several policy recommendations. One, the government needs to continue promoting the FTAs to firms in the electronics industry, in particular to SMEs. Two, the government should disseminate more information on the ASEAN--Australia--New Zealand, ASEAN--Korea, and ASEAN--India FTAs, which seem to be used less frequently compared to other ASEAN+1 FTAs. Three, the government should streamline the procedures of applications for certificates of origin and the STA permits. Four, the government should remove some of the non-tariff barriers such as the excise taxes currently imposed on automotive electronics. Five, it may be difficult to increase linkages between large firms and SMEs, but the government could push some of the SMEs development programmes further to help the SMEs to grow so that they have the technological capabilities required by large firms in the industry. Six, to graduate into the designing and development stage of production in the electronics industry, Malaysia would need to make its economy more attractive to foreign investors and skilled labor.

The paper proceeds as follows: section 2 describes the electronics industry in Malaysia. Section 3 analyses the map of the supply chain. In section 4, we discuss the challenges and the impediments to trade faced by firms in the industry along the supply chain. Section 5 concludes with a discussion of policy implications.

2. The Electronics Industry in Malaysia

First, we briefly describe trade policies and the stages of industrialization in Malaysia. Then, we discuss the trends of production in the electronics industry, the composition of output, the productivity of workers, and the industry's trade competitiveness. We conclude this section with an examination of the value added and employment of the industry.

2.1. Trade Policies and Industrialization in Malaysia

Except for the two stints of industrialization in the 1960s and early 1980s when the government implemented import substitution policies, in general, Malaysia's trade policy since its independence in 1957 has been quite liberal.[3] Malaysia's ratio of trade to gross domestic product (GDP), for example, in terms of trade openness, has been always high. In the 1960s and 1970s, Malaysia's trade had been equivalent to about 70-90 per cent of its GDP (see Figure 1). In the 1980s, Malaysia's trade to GDP ratio was rising until it reached about 200 per cent in the early 2000s.

Figure 1. Trade as a Percentage of GDP

Source: World Development Indicators

Note: Trade is defined as the sum of exports and imports.

[3] See, for example, Tham (2010), Kinuthia (2009), Athukorala (2005), Jomo (1993), and Alavi (1996) for discussions of trade policies and industrialization in Malaysia. The stages of industrialization in Malaysia discussed in this section are adopted from Table 1 in Tham (2010).

Even during the first implementation of import substitution policies in 1957-1967, tariff rates were low compared to those in other developing countries, and non-tariff barriers were rarely used to protect domestic industries (Athukorala, 2005).[4]

In 1968, because the protected firms failed to export and create employment, in addition to limited domestic demand, Malaysia abandoned import substitution policy and started adopting a more export-oriented industrialization.[5] To attract foreign direct investment (FDI), free trade zones (FTZs) were established in 1972. However, the inter-ethnic riot in 1969 induced the government to introduce the New Economic Policy (NEP), which, among other things, promoted income redistribution and imposed restrictions on ownership of firms by the non-Malays and non-natives of the country. As a result, FDI in manufacturing, including in the electronics industry, fell. According to Tham (2010), because of these ownership restrictions, among other things, the contribution of MNCs to manufacturing exports fell from 70 per cent in 1970 to 42 per cent in 1985.

However, the ownership restrictions were later relaxed for firms that export more than 80 per cent of their products so that the contribution of MNCs in manufacturing exports increased to 70 per cent in 2000.[6] Some of these exporting firms were also awarded pioneer status, which provides income tax breaks for up to five years. The government also offered investment incentives for purchases of capital goods. As a result, a wave of relocation of US and Japanese factories to Malaysia followed, including firms in the electronics industry.

In 1980-85, Malaysia made an about-face by returning to import substitution policy, in particular in heavy industries such as automotive, steel, and cement industries, spearheaded by joint ventures between state-owned enterprises and MNCs. In accordance with the infant industry argument, and trying to imitate the success of industrialization in Korea, Malaysia protected these heavy industries with high tariff rates. By 1984, the average tariff rate had increased to 26 per cent (Athukorala, 2005).

[4] Athukorala (2005) estimates that in 1965 the average tariff rate was 13 per cent. Only a handful of industries were protected by tariff rates of more than 30 per cent.

[5] The key statutes in this stage of industrialization are the Investment Incentives Act 1968, Free Trade Zone Act 1971, Industrial Coordination Act 1975, and Foreign Investment Committee 1974.

[6] See Tham (2010).

Since 1986, because of the fiscal and trade deficits suffered by the Malaysian government, Malaysia abandoned the import substitution policy and has been adopting a more liberal trade policy. To attract more FDI, Malaysia relaxed equity restrictions for export-oriented firms further. The government also offered generous investment incentives through the Promotion of Investment Act 1986. A second wave of relocation of manufactures then followed, this time from Japan and other East Asian countries.

Malaysia has been reducing its tariff rates, partly through its participation in FTAs. With the ASEAN Free Trade Area (AFTA) put in place in 1992, through the implementation of the Common Effective Preferential Tariff scheme, tariff rates of most goods traded among ASEAN member countries have been gradually reduced to zero. Malaysia has also concluded FTAs with Japan, Pakistan, New Zealand, and Chile, and is currently negotiating FTAs with, among others, the US, EU and Australia. The recent establishment of ASEAN+1 FTAs will have opened the Malaysian economy further to some of the largest economies in the region, namely Japan, China, Korea, India, Australia and New Zealand.

Malaysia's trade openness has been inducing increasing trade between Malaysia and the other ASEAN member countries as well as with the FTA partners. Because of the eventual creation of one market for goods and services in the region through AFTA and ASEAN+1 FTAs, industries in the region may become more fragmented. The design of the supply chains of some of these industries may have changed, and may continue changing.

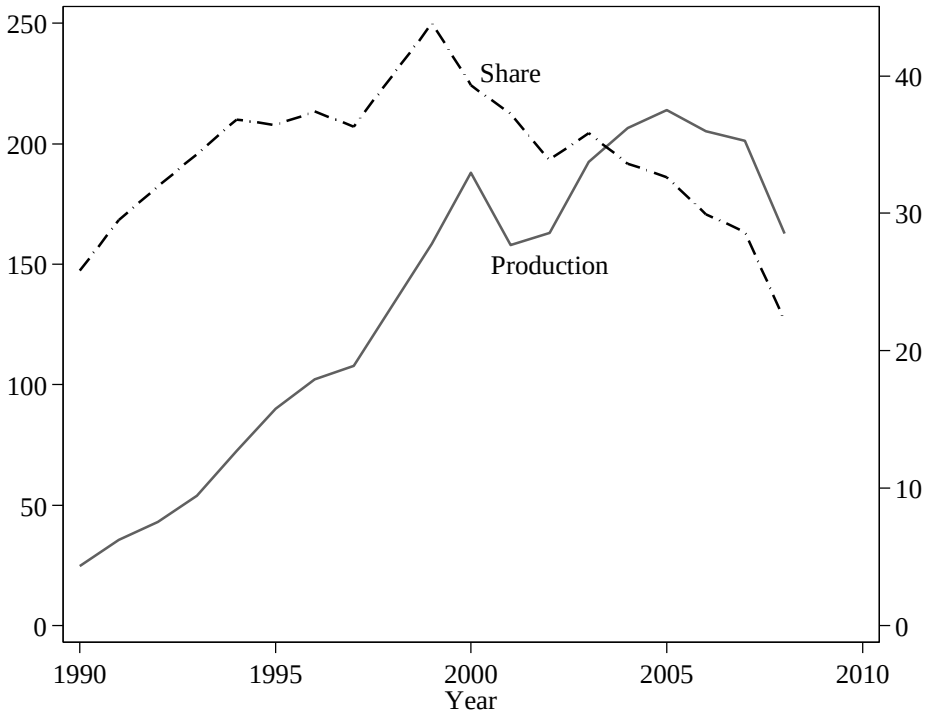
One such industry that is likely to go through this transformation is the electronics industry in Malaysia, which is the subject of the case study in this paper.

2.2. Production of Malaysia's Electronics Industry

The trend in production of Malaysia's electronics industry closely follows the cycle of external demand (see Figure 2). When the world economy expanded in the 1990s, production had been growing rapidly at about 22 per cent per year on average. When the external demand shrank in 2001 due to the dot-com bust, production contracted by 17 per cent.

The Malaysian production recovered quickly, however. As the world economy grew from the year 2002 to 2006, production had been growing by 23 per cent per year on average. When the global financial crisis hit major world economies in 2008, Malaysia's production declined again, contracting by 20 per cent. Preliminary data show that production has started increasing as the economic growth of the US and the developed countries picked up in 2009.

Figure 2. The Production of the Electronics Industry (2005 Constant RM billion) and its Share in the Manufacturing Sector



Source: Malaysia's Department of Statistics and the authors' own calculation.
Note: The data for the year 1998 are linearly extrapolated. See Appendix 1 for the definition of the electronics industry.

The production of the electronics industry tends to move in line with trends in the world economy because many firms in the industry are exporters. Most of the largest firms in the industry export more than 80 per cent of their products. Therefore, if the developed countries fall into recession, the demand for Malaysia's electronics industry will contract as well, and, as a result, production will fall. In fact, it is likely that

external demand for Malaysia's electronics industry is highly income elastic. Wong (2008), for example, finds that the long-run income elasticity of export demand for Malaysia's electronic products is larger than one. A fall of GDP in the export market by 1 per cent will, therefore, lead to a decline in Malaysia's exports by more than 1 per cent.[7]

The share of the production of the electronics industry in the manufacturing sector has a similar pattern. It had been increasing until 1999 when the production of the electronics industry was more than 40 per cent of the manufacturing sector. It has been declining since, however. By 2008, the share of the electronics industry had fallen to only about 22 per cent of the manufacturing sector.

2.3. The Composition of Output

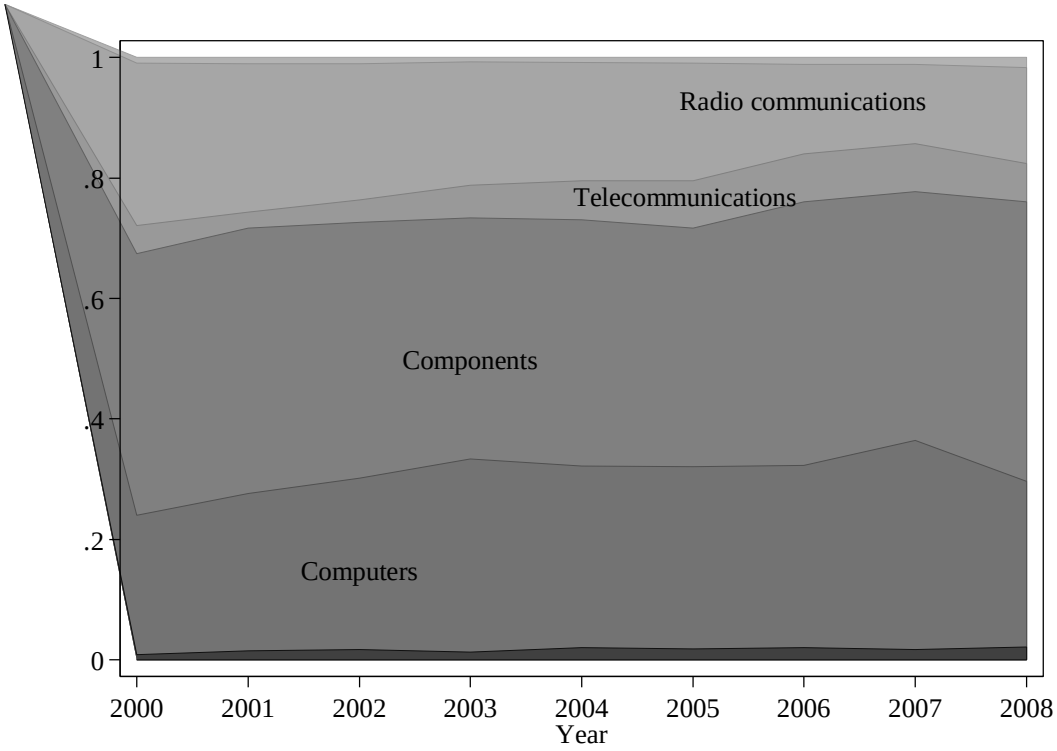
Electronic components has always been the largest part of the electronics industry's production in Malaysia (see Figure 3). In the year 2000, components accounted for about 43 per cent of production. Radio communications and computers came second and third, respectively. In the year 2000, components and computers accounted for more than 67 per cent of total production of the electronics industry.

Since then, these two products have been dominating the industry. Over the past decade since the late 1990s, their proportion has been increasing so that in 2008 components and computers accounted for more than 74 per cent of the production of the electronics industry.

The increase of the proportion of components and computers in total production, in addition to the increasing share of telecommunications, has been at the expense of radio communications. In the late 1990s, radio communications had 27 per cent of industry production. In 2008, its share fell to 16 per cent. Meanwhile, the share of consumer electronics has been quite stable, at about 2 per cent of the production of the electronics industry since the year 2000.

[7] Wong (2008) also finds the demand is price elastic.

Figure 3. The Composition of the Electronics Industry by Products



Source: Malaysia's Department of Statistics and the authors' own calculation.
Note: The areas at the bottom and at the top of the figure represent consumer and industrial electronics, respectively. See Appendix 2 for the definition of the electronic products.

2.4. The Productivity of Workers

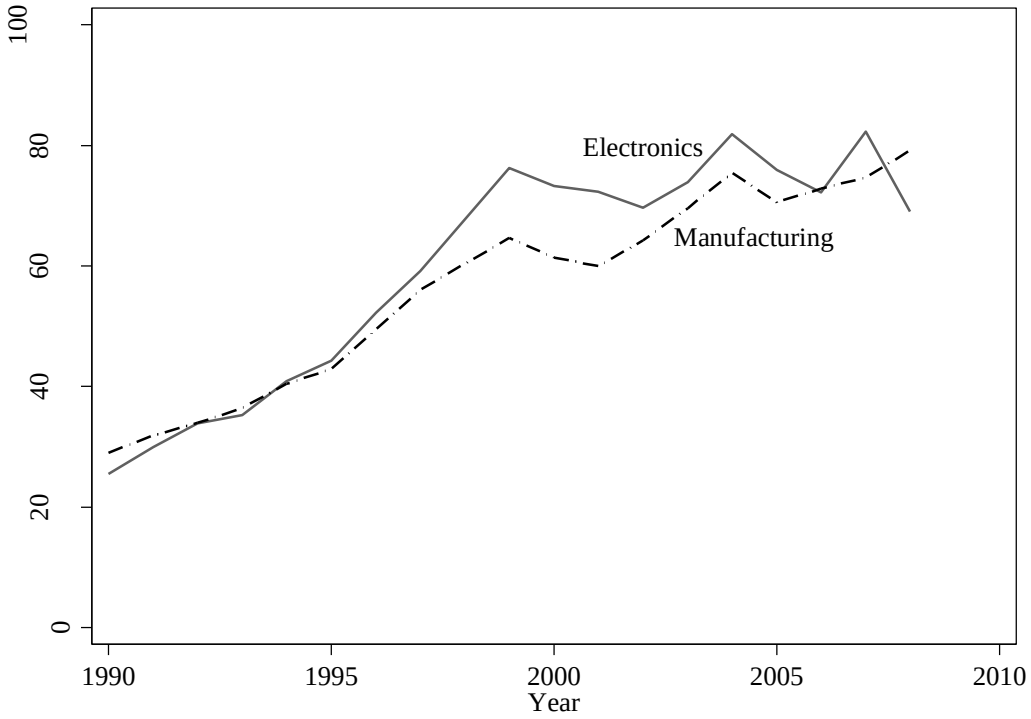
Productivity of workers in the electronics industry has been increasing since the early 1990s (see Figure 4). In 1990, the productivity, which we define as value added per worker, was about RM25,000 in 2005 constant ringgit. Almost two decades later in 2009, the productivity had more than doubled to about RM70,000 per worker.

Productivity in the electronics industry had been growing at 16 per cent per year on average in the 1990s. It has slowed down, and been fluctuating, since the 2001 dot-com bust. Overall, its time trend is similar to that of productivity of the manufacturing sector, which indicates that the change in capital intensity of the electronics industry does not differ much from that in other industries in the manufacturing sector.

This rather stagnant and fluctuating productivity might simply be due to the cycle of external demand for Malaysia's electronics industry. It is also possibly due to the industry not making significant investments to improve the industry's technological capabilities. Rasiah (2009), for example, examines the electronics industry in South-

East Asian economies. He finds that among the countries in the region, only Singapore has improved its electronics industry at the designing and development stage of production. Other countries, including Malaysia, have continued to focus on the assembly, packaging and testing of electronic products.

Figure 4. The Productivity of the Electronics Industry and the Manufacturing Sector



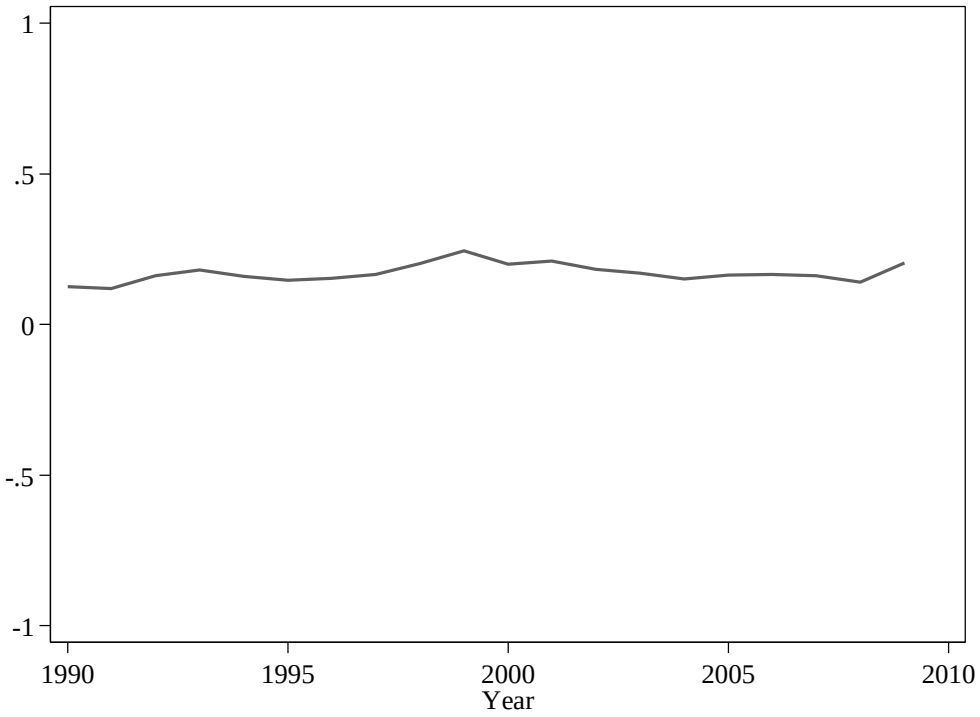
Source: Malaysia's Department of Statistics and the authors' own calculation.
Note: Productivity is defined as value added per worker in 2005 constant thousand ringgit per worker. The data for the year 1998 are linearly extrapolated. See Appendix 1 for the definition of the electronics industry.

2.5. The Industry's Revealed Comparative Advantage

Overall, Malaysia does not seem to have RCA in producing electronic products. Moreover, its RCA has not changed much since the 1990s (see Figure 5). Using the ratio of net exports to trade as a measure of RCA, we find that Malaysia's RCA in

producing electronic products was about 0.12 in 1990.[8] It increased to 0.25 in the late 1990s, though later declined back to 0.2 in 2009.

Figure 5. The Revealed Comparative Advantage (RCA) of the Electronics Industry



Source: Comtrade and the authors' own calculation.
Note: RCA is defined as the ratio of net-exports to trade. See Appendix 1 for the definition of the electronics industry.

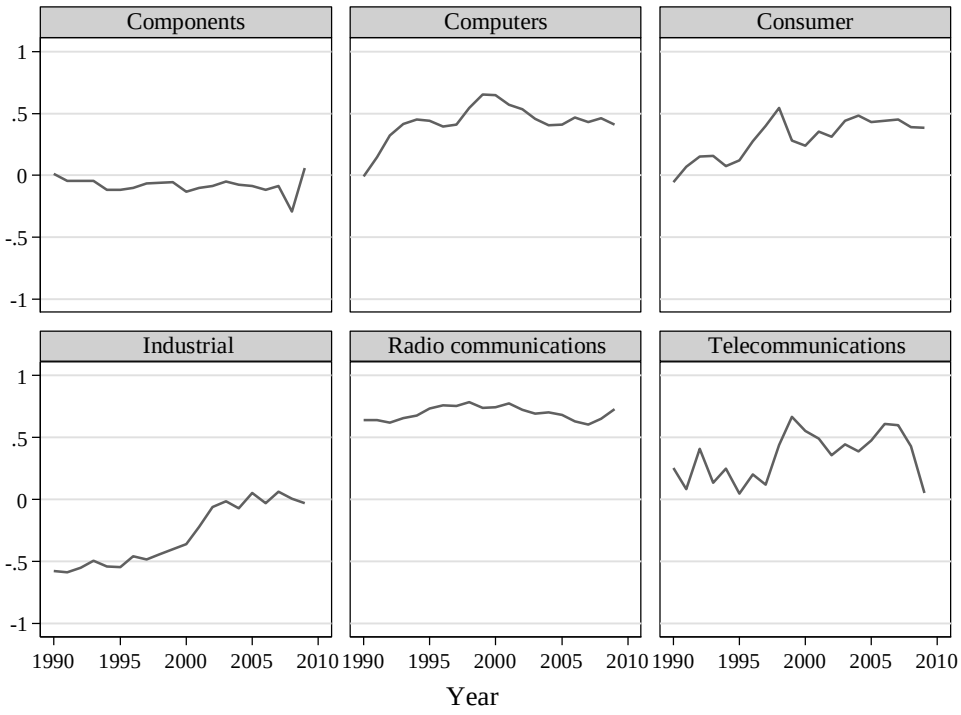
Conversely, Mahani and Loke (2008) find that Malaysia's RCA of the electrical and electronics industry increased from 2.82 in 2001 to 3.19 in 2005. However, they use Balassa's (1965) measure of the RCA, which is based on the values of exports only. Nevertheless, even using Balassa's measure, the industry's RCA did not improve much during the early 2000s.[9]

Looking closer at the RCA at the product level, we find that Malaysia has negative, though small in magnitude, RCA in electronic components (see Figure 6). This negative RCA and the large trades in components seem to be the reason why Malaysia's

[8] We calculate the RCA as follows: $RCA_{ij} = \frac{X_{ij}-M_{ij}}{X_{ij}+M_{ij}}$, where X and M are exports and imports, respectively, i indicates country, and j product. See, for example, Greenaway and Milner (1993).
[9] Mahani and Loke (2008) also find that Malaysia's RCA of electrical and electronics industry in 2005 was lower than that of wood products, but higher than those of metal, textiles, and transport equipment.

electronics industry does not have high RCA as shown in Figure 5. The RCAs in computers and consumer electronics are positive and have been increasing. The RCA in radio communications has always been high since the 1990s, which indicates that Malaysia has revealed comparative advantage in producing these final goods.

Figure 6. The RCA of the Electronics Industry by Products



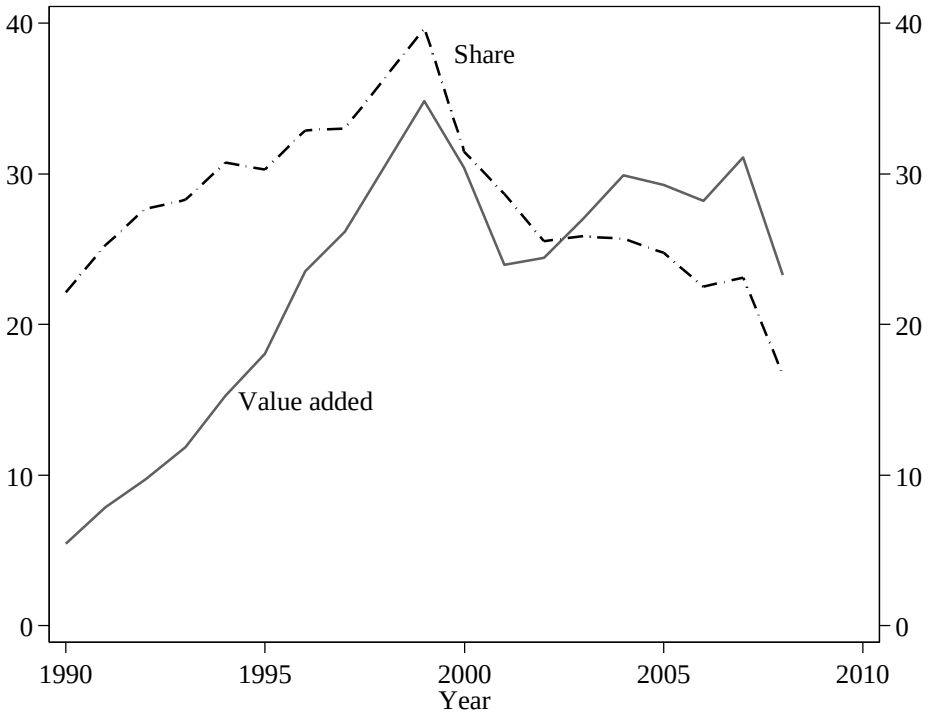
Source: Comtrade and the authors' own calculation.
Note: RCA is defined as the ratio of net-exports to trade. See Appendix 2 for the definition of the electronic products.

The RCA in telecommunications is positive, though fluctuating. The RCA in industrial electronics has been increasing: In the 1990s Malaysia had revealed comparative disadvantage in this product, and recently the RCA has been fluctuating near zero.

2.6. Value Added and Employment

The trend of the value added of the electronics industry mimics that of production (see Figure 7). As production expanded in the 1990s, the value added was also increasing rapidly. It took a dip when the industry contracted in 2001, though it increased quickly when the external demand for electronic products recovered. Value added declined again in the aftermath of the global financial crisis in 2008.

Figure 7. The Value Added of the Electronics Industry (2005 constant RM billion) and Its Share in the Manufacturing Sector



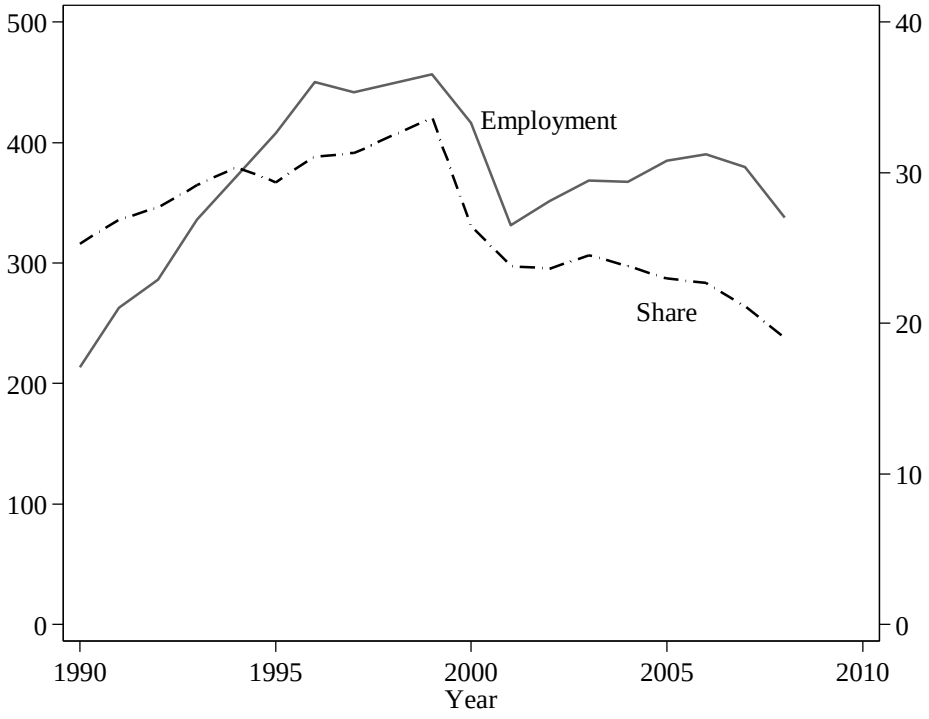
Source: Malaysia's Department of Statistics and the authors' own calculation.
Note: Productivity is defined as value added per worker in 2005 constant thousand ringgit per worker. The data for the year 1998 are linearly extrapolated. See Appendix 1 for the definition of the electronics industry.

The share of value added of the electronics industry has an inverted V-shape. It had been increasing from about 22 per cent of the value added in the manufacturing sector in 1990 to almost 40 per cent in 1999. It has declined ever since, however, so that in 2008 the value added of the electronics industry fell below its level two decades earlier.

The patterns of employment are also similar, increasing until 2000, and declining during the dot-com bust (see Figure 8). Employment levels recovered slightly as the world economy grew in the early 2000s, but declined again in 2008.

The share of employment of the electronics industry has exhibited the same patterns. n 1990, 25 per cent of employment in the manufacturing sector was in the electronics industry. It reached the highest proportion in 1999 at more than 30 per cent. Since then, the share of employment of the industry in the manufacturing sector has been declining. In 2008, the electronics industry employed less than 20 per cent of workers in the manufacturing sector.

Figure 8. Employment in the Electronics Industry and its Share in the Manufacturing Sector



Source: Malaysia's Department of Statistics and the authors' own calculation.
Note: The data for the year 1998 are linearly extrapolated. See Appendix 1 for the definition of the electronics industry.

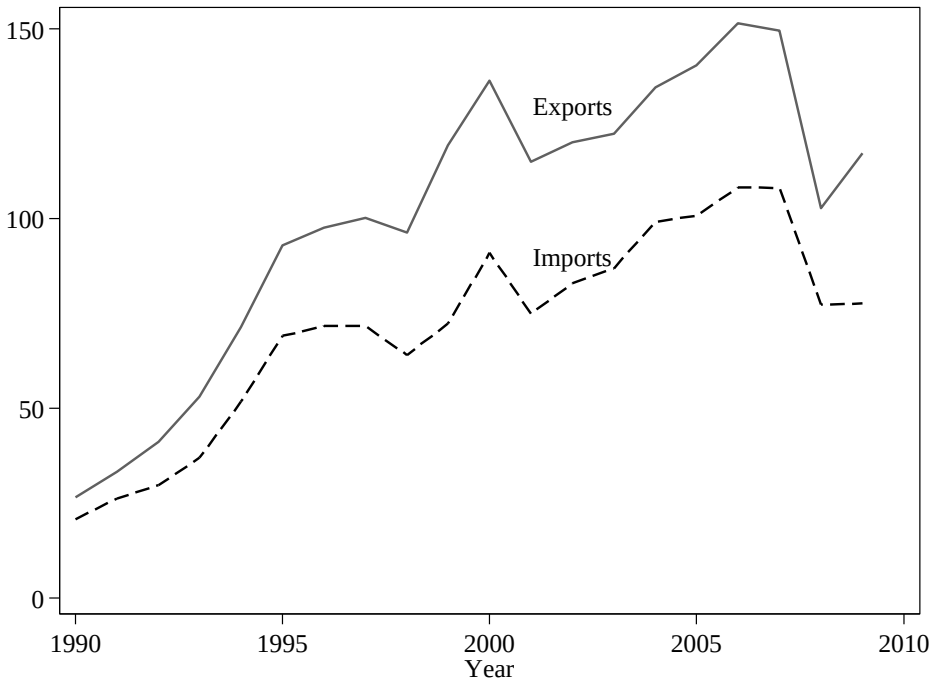
3. The Map of the Supply Chain

We now discuss the map of the supply chain. First, we describe the trends and the composition of trade in electronic products. Then, we examine the map of trade flows of the electronics industry. We conclude with an analysis of intra-industry trade, tariff rates, and trade facilitation.

3.1. The Trends of Trade Flows

Malaysia's exports and imports of electronic products, like the trends of production discussed in section 2, follow closely the boom and bust cycle of external demand (see Figure 9). Trade had grown rapidly during the 1990s until it reached its peak in 2000. Exports and imports declined in 2001 when external demand fell, though the flows recovered quickly up until the global financial crisis in 2008. Exports and imports fell sharply in 2008, but again recovered somewhat in the following year.

Figure 9. The Exports and Imports of the Electronics Industry, 2009 US$ billion

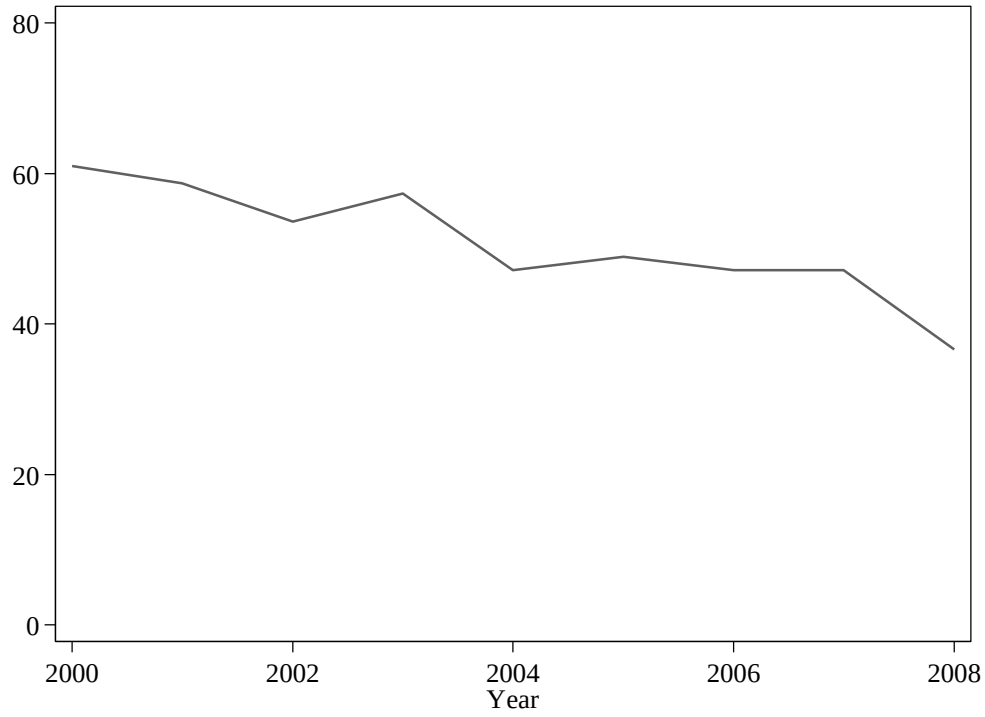


Source: Comtrade and the authors' own calculation.
Note: See Appendix 1 for the definition of the electronics industry.

Exports and imports of the electronics industry tend to move in tandem. When exports rise, imports do as well. When imports take a dip, so do exports. This co-movement of exports and imports indicates the heavy reliance of firms in the electronics industry in Malaysia on imports, in particular on imports of components. Over time, the gap between exports and imports, the net exports, tends to increase. In 1990, the net exports were about 22 per cent of exports. In 2007, the figure rose to 34 per cent.

Even though production and exports recovered quickly after the dot-com bust in 2001, the share of the electronics industry's exports in the manufacturing sector has been declining since 2000 (see Figure 10). It accounted for about 60 per cent of manufacturing exports in 2000. After the global financial crisis in 2008, the contribution of the electronics industry's exports fell to below 40 per cent.

Figure 10. The Share of the Electronics Industry's Exports in the Manufacturing Sector



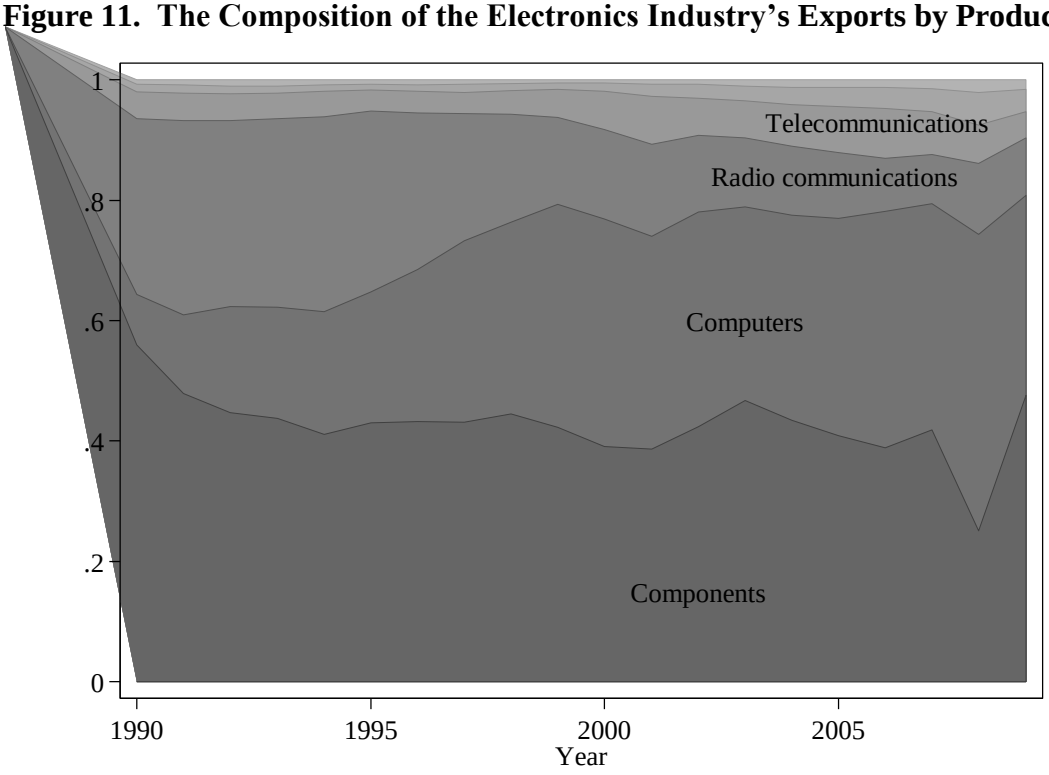
Source: Malaysia's Department of Statistics and the authors' own calculation.
Note: See Appendix 1 for the definition of the electronics industry.

3.2. The Composition of Trades

Consistent with the composition of production, most of exports from the electronics industry in Malaysia are components and computers (see Figure 11). Since the 1990s, components have accounted for more than 40 per cent of exports. Together with exports of computers, whose share has been increasing, they accounted for about 80 per cent of exports in 2009. Meanwhile, the share of radio communications has fallen from about 30 per cent in 1990 to about 10 per cent in 2009.

The increasing share of computers in the industry's exports is in line with the finding that the industry has RCA in producing computers, though this might be also because of the large increase in the external demand for computers in the past two decades. Radio communications products have lost a large part of their export share, however, despite the industry's high RCA in these products.

Figure 11. The Composition of the Electronics Industry's Exports by Products

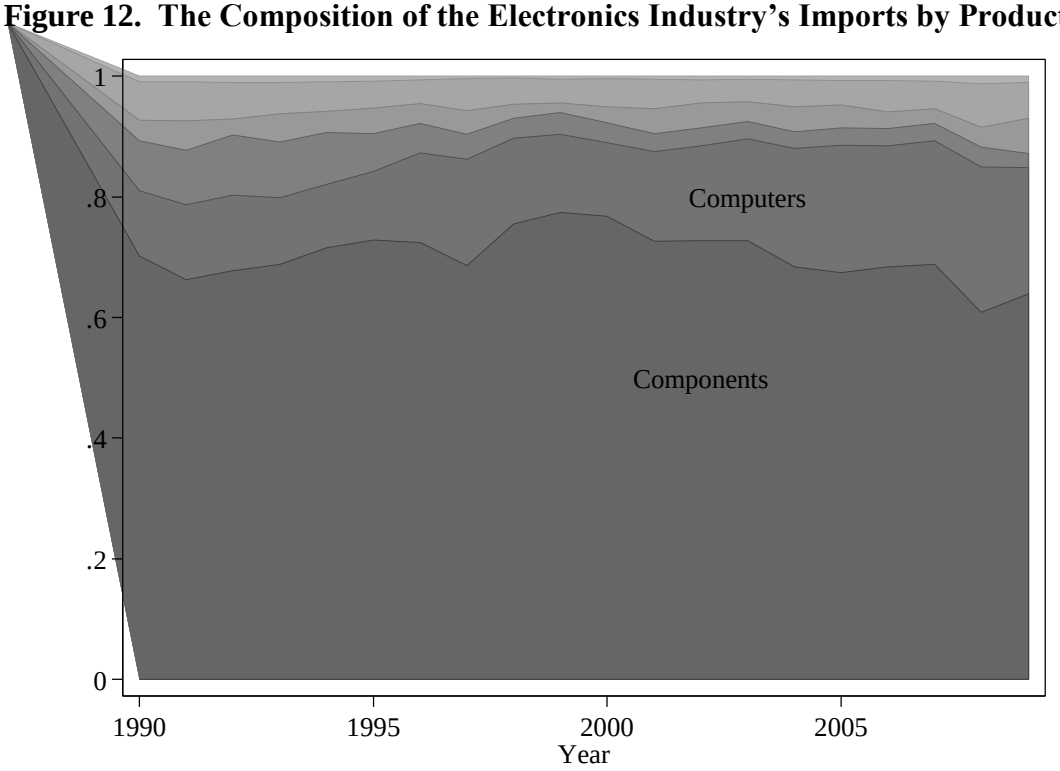


Source: Comtrade and the authors' own calculation.
Note: The areas at the top and bottom of the figure represent consumer and industrial electronics, respectively. See Appendix 2 for the definition of the electronic products

The composition of imports is even more concentrated towards components (see Figure 12). The proportion of components in imports has been about 70 per cent since the early 1990s. Together with imports of computers, which have been increasing slightly at the expense of radio communications, they accounted for 85 per cent of electronics industry imports.

The proportions of imports of telecommunications, consumer electronics, and industrial electronics, on the other hand, have been always very small.

Figure 12. The Composition of the Electronics Industry's Imports by Products



Source: Comtrade and the authors' own calculation.

Note: The four areas above 'computers' represent radio communications, telecommunications, industrial electronics, and consumer electronics, respectively, from the bottom to the top. See Appendix 2 for the definition of the electronic products.

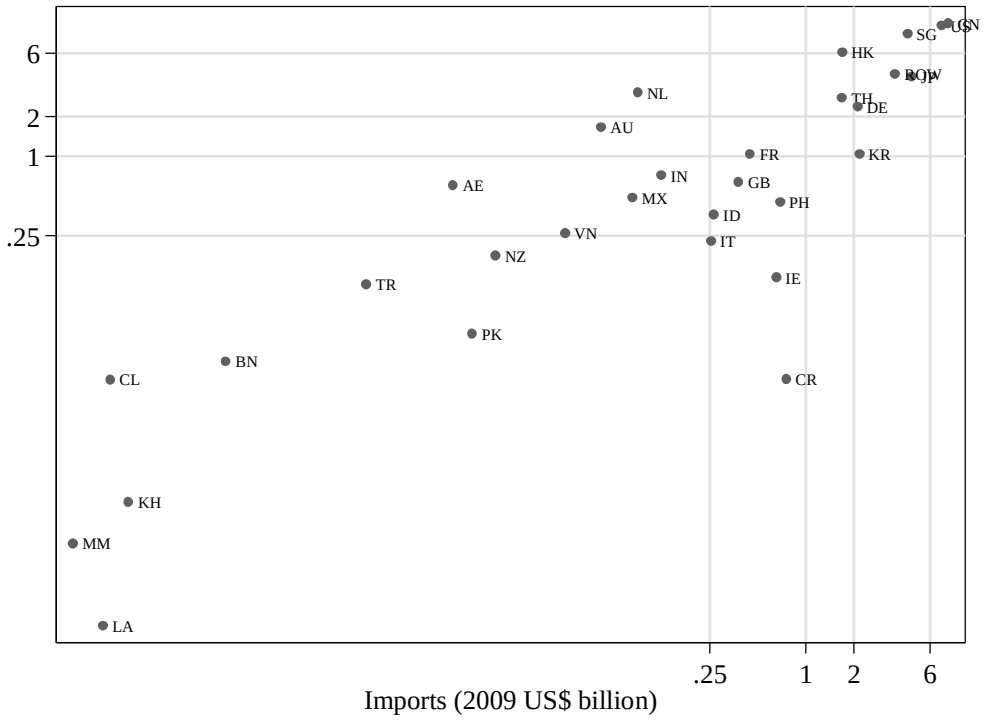
3.3. The Map of Trade Flows

China, the US, Singapore, Japan and Hong Kong were Malaysia's major trading partners in electronic products in 2009 (see Figure 13). Malaysia trades heavily with these five countries: They accounted for two-thirds of Malaysia's trades of electronic products in 2009. Malaysia had a trade surplus in electronic products with all of these countries except Japan. As shown in Figure 13, China, the US, Singapore and Hong

Kong are located above the 45-degree line, which indicates that Malaysia's exports to each of these countries were larger than the corresponding imports.

Among ASEAN member countries, besides Singapore, Malaysia's largest trading partners are Thailand, the Philippines and Indonesia. It has significant trade with Vietnam, though much smaller, while trades with the remaining ASEAN member countries such as Laos, Myanmar, Brunei and Cambodia are very small.

Figure 13. The Exports and Imports of Electronics Industry with Major Trading Partners and ASEAN Member Countries, 2009 US$ billion



Source: Comtrade and the authors' own calculation.

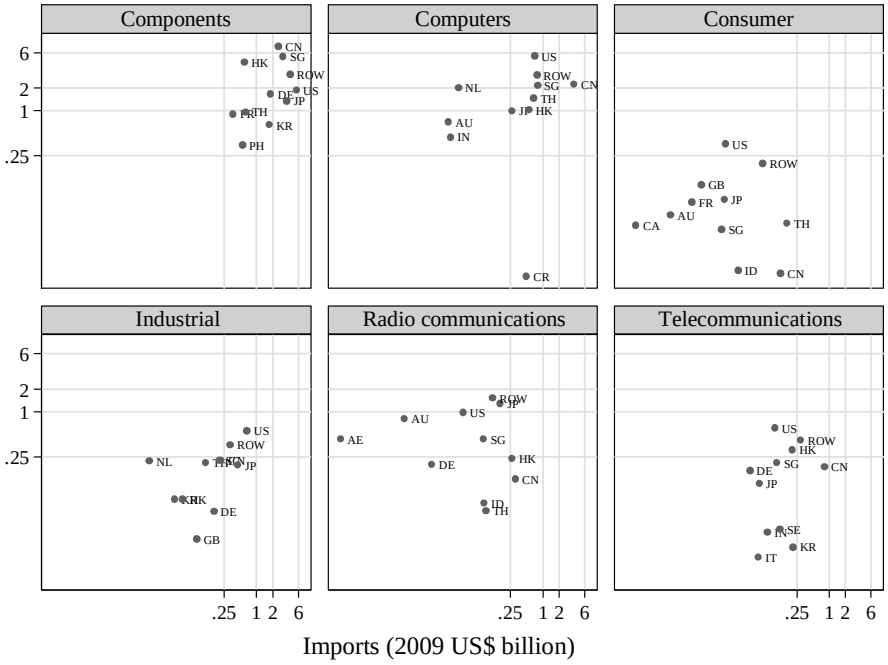
Note: Both axes are in logarithmic scale. See Appendix 1 for the definition of the electronics industry. See Appendix 3 for the description of the country codes.

Malaysia is also a large trader with some European countries such as Germany, United Kingdom (UK), France, the Netherlands, Ireland and Italy, as well as some of the FTA partner countries, in particular South Korea and Australia.

Malaysia has trade surpluses with most of these major trading partners: Most of the countries in Figure 13 are above the 45-degree line. Countries with whom Malaysia had the largest trading surplus in 2009 were Hong Kong, Singapore, Netherlands, US, China and Australia. Among these major trading partners, ASEAN member countries, and FTA partner countries, Malaysia has large trade deficits in electronic products with South Korea, Costa Rica, Japan and Ireland. Among the ASEAN member countries, Malaysia has a trade deficit with the Philippines only.

A closer look at the map of trade flows by products reveals a similar picture. The US, Singapore, Japan, Hong Kong and China are Malaysia's major trading partners in most products. (See Figure 14, which shows the 10 largest importers or exporters of electronic products from/to Malaysia.) Among these five countries, only Hong Kong is not among the 10 largest exporters or importers for all products: Hong Kong only appears in the list of major trading partners for one product, i.e. consumer electronics.

Figure 14. Exports and Imports of the Electronics Industry in 2009 by Products with Major Trading Partners and ASEAN Member Countries, 2009 US$ billion

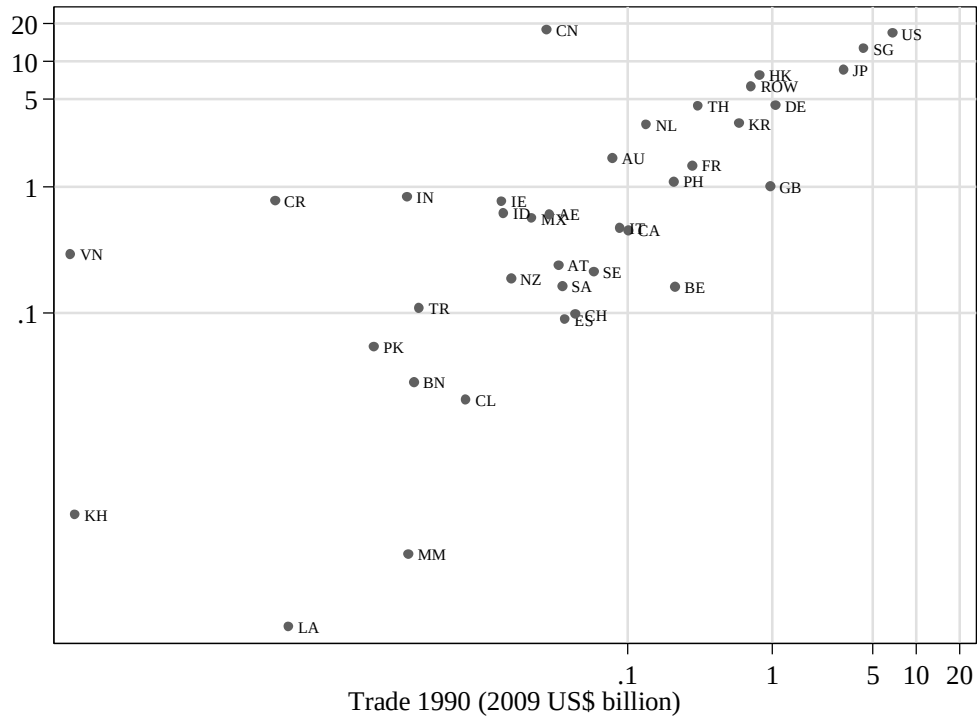


Source: Comtrade and the authors' own calculation.
Note: Both axes are in logarithmic scale. See Appendix 2 for the definition of the electronic products. See Appendix 3 for the description of the country codes.

Among ASEAN member countries, besides Singapore, Thailand was a major trading partner in all products, except telecommunications. The Philippines appears in the list of major trading partners in components, while Indonesia features in consumer electronics and radio communications. Other ASEAN member countries do not make the list. Other FTA partner countries that are in the list are South Korea and Australia.

These trade patterns have not changed much since the 1990s (see Figure 15, which shows Malaysia's major trading partners in 1990 and 2009). The US, Singapore, Japan and Hong Kong have been Malaysia's major trading partners since 1990. The same applies to Germany, UK and South Korea. Among Malaysia's largest trading partners in 2009, only China was not a major trading partner in 1990. Among ASEAN member countries, Thailand and the Philippines have been major trading partners since the 1990s.

Figure 15. Electronics Industry Trade with Major Trading Partners and ASEAN Member Countries, 1990 and 2009, 2009 US$ billion



Source: Comtrade and the authors' own calculation.

Note: Trade is defined as the sum of exports and imports. Both axes are in logarithmic scale. See Appendix 1 for the definition of the electronics industry. See Appendix 3 for the description of the country codes.

Trade in electronic products with these major trading partners and ASEAN member countries has been growing in the past two decades. Most of the countries in Figure 15 are plotted above the 45-degree line. Some of the largest growth in trade was between Malaysia and China, with trade value increasing by more than 650 times over the last two decades. Malaysia's trade with Indonesia, India and Vietnam has also been increasing, by 44, 283 and 21,500 times, respectively.

We expect that, given Malaysia's participation in AFTA and other FTAs, the shares of trade between Malaysia and its FTA partners would have increased. Baier and Bergstrand (2009), for example, find that FTAs increase members' trade. However, as we see in Figure 15, the patterns of trades between Malaysia and its trading partners have not changed significantly. Urata and Kiyota (2005) also find that, using a CGE model, FTAs do not significantly affect the trade patterns of East Asian economies: Even though intra-regional trade increases, extra-regional trade of East Asian economies also expands rapidly.

3.4. The Intra-Industry Trade

To examine the nature of trade in intermediate inputs, i.e. components, we calculate some measures of intra-industry trade of electronic components following Fontagne and Freudenberg (1997).

First, we identify whether the trade of a good is one-way trade or intra-industry trade using the ratio of the minimum to the maximum of exports and imports. If the minimum of exports and imports is less than 10 per cent of the maximum, we regard the trade of the good as one-way trade; otherwise, it is a two-way trade. Then, if the trade is intra-industry trade, we look at the ratio of export and import prices to determine whether the trade is HIIT or VIIT. If the price ratio is close to one, the trade is HIIT; otherwise, it is VIIT.[10]

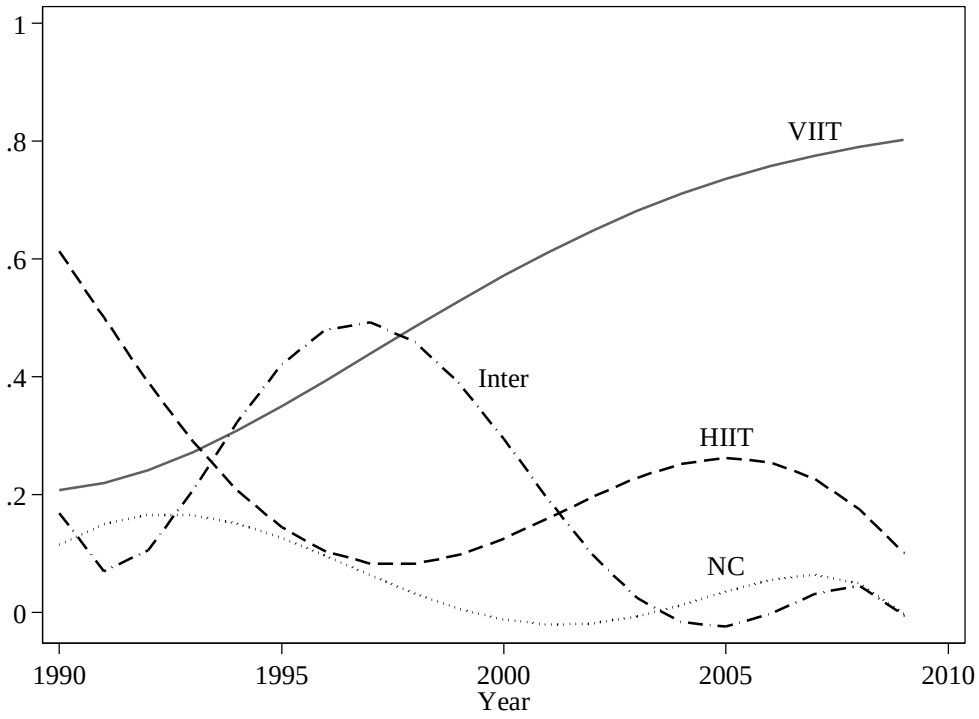
Figure 16 shows the proportions of trades that are inter- or intra-industry trade. Because the changes of the proportions are erratic from one year to another, we present

[10] A trade is one-way trade if $\frac{Min(X,M)}{Max(X,M)} \leq 0.1$ and intra-industry trade otherwise. If a trade is two-way trade, and $\frac{1}{1.25} \leq \frac{P^X}{P^M} \leq 1.25$, the trade is HIIT; otherwise, it is VIIT. X, M, P^X, and P^M are exports, imports, the price of exports and the price of imports, respectively.

the trend lines of these proportions approximated using polynomial functions of degree four or five.

One feature of the trends is that the proportion of VIIT has been increasing since the early 1990s. In 1990, VIIT was about 20 per cent of trade. Two decades later, it was about 80 per cent. The increase in the proportion of VIIT came at the expense of HIIT and inter-industry trade. The proportion of HIIT has fallen from more than 50 per cent in 1990 to less than 20 per cent in 2009. Inter-industry trade has also fallen to less than 10 per cent in 2009.

Figure 16. The Proportion of VIIT, HIIT and Inter-Industry Trade (Inter) of the Electronic Components



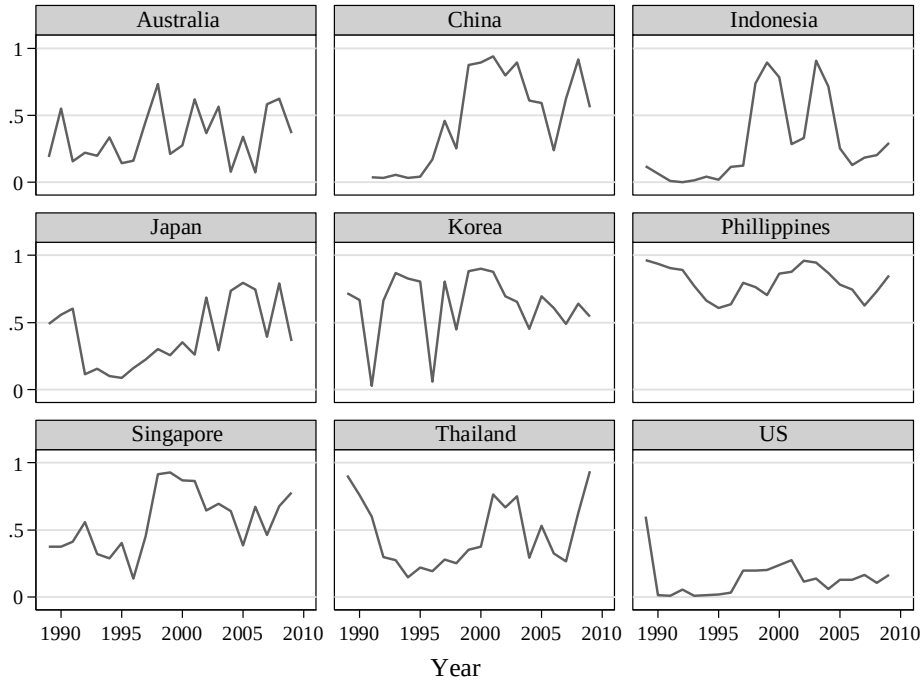
Source: Comtrade and the authors' own calculation.

Note: These measures are calculated using a method proposed by Fontagne and Freudenberg (1997). The lines are trend lines approximated using polynomial functions of degree four or five. NC indicates the proportion of trades whose unit values are not available, and hence are not categorized. See Appendix 2 for the definition of the electronic components.

The increase in intra-industry trade, in particular VIIT, is in line with the findings in the literature. Egger, Egger and Greenaway (2008), for example, find that regional trade agreements among the Organization for Economic Cooperation and Development (OECD) economies increase intra-industry trade and reduce inter-industry trade. Ando (2006) also shows that VIIT in East Asia increased during the 1990s, while one-way trade declined. She attributes this change to the dramatic increase in trade of machinery parts and components. Fukasaku (1992) also finds that intra-industry trade among Asia-Pacific economies had been increasing since the mid-1980s.

The electronics industry in particular tends to exhibit large intra-industry trade. Lall, Albaladejo and Zhang (2004), for example, suggest that fragmentation of an industry depends on four factors: the divisibility of production processes, its factor intensity, its complexity of the technologies, and value-to-weight ratio of the product. They argue that the electronics industry has these four characteristics.

Figure 17. The Proportion of VIIT, HIIT and Inter-Industry Trade (Inter) of the Electronic Components by Trading Partners



Source: Comtrade and the authors' own calculation.

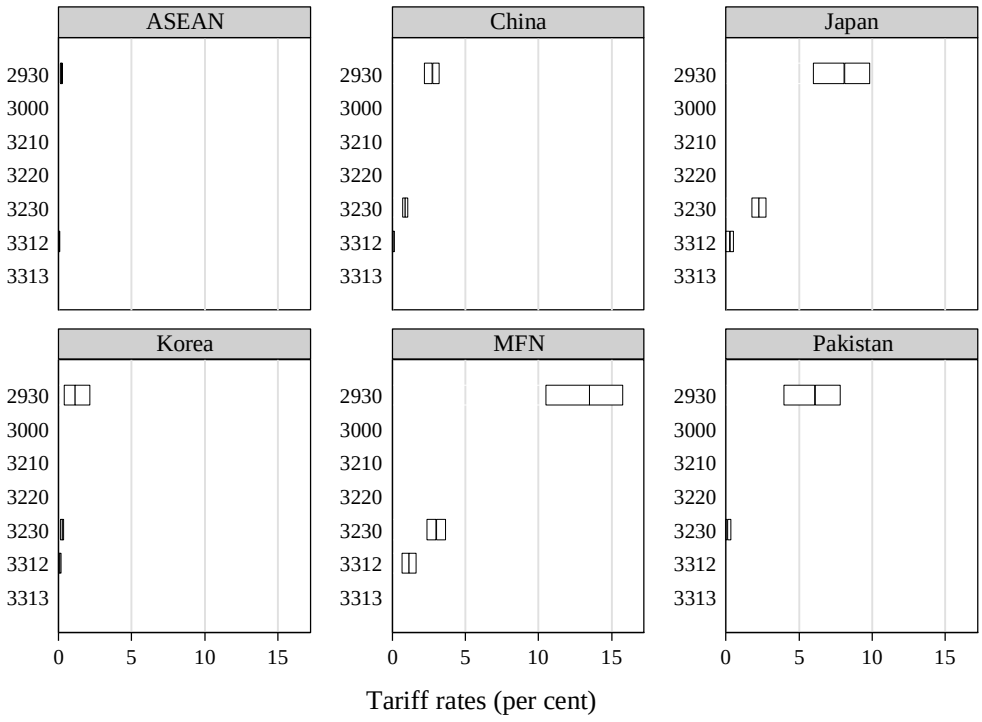
Note: These measures are calculated using a method proposed by Fontagne and Freudenberg (1997). The lines are trend lines approximated using polynomial functions of degree four or five. NC indicates the proportion of trades whose unit values are not available, and hence are not categorized. See Appendix 2 for the definition of the electronic components.

The trends of the proportions of VIIT differ across trading partners, as shown in Figure 17. For example, the proportion of VIIT in the Philippines has always been high. The proportion of VIIT with China increased during the second half of the 1990s. It has fluctuated sharply since, although it has remained high in the later 2000s. The proportion of VIIT with the US, on the other hand, has been low since the 1990s.

3.5. Import Tariffs

Malaysia has been an open economy since its independence, except during the two stints in which Malaysia promoted import substitution policy in the late 1960s and early 1980s. Import tariff rates, therefore, have typically been low. Even in 1965, the average nominal tariff rate was estimated to be as low as 13 per cent (Athukorala, 2005). Since 2006, the average tariff rate has been lower than 8 per cent.

Figure 18. The Averages of Applied Tariff Rates of Electronic Products by FTAs, 2009



Source: WTO's tariff database and the authors' own calculation.

Note: The left side, middle, and right sides of the horizontal bars indicate the minimum, average and maximum rates, respectively. The products are consumer (2930), computers (3000), components (3210), telecommunications (3220), radio communications (3230), and industrial electronics (3312 and 3313). See also Appendix 2 for the definition of the electronic products.

Most electronic products enjoy zero or very low applied tariff rates, as shown in Figure 18. Among the seven electronics products shown in the figure, only consumer electronics is protected to some extent using import tariffs: The minimum, average and maximum of the most-favoured nations (MFN) applied rates are 11, 14 and 16 per cent, respectively. Tariffs of imports of consumer goods from FTAs partner countries are lower, with tariffs for ASEAN member countries to be almost zero.

Lower than 4 per cent tariffs are imposed on radio communications products and electronic instruments, with close to zero tariffs for FTA partner countries. There are no tariffs imposed on computers, components, telecommunications and industrial electronics.

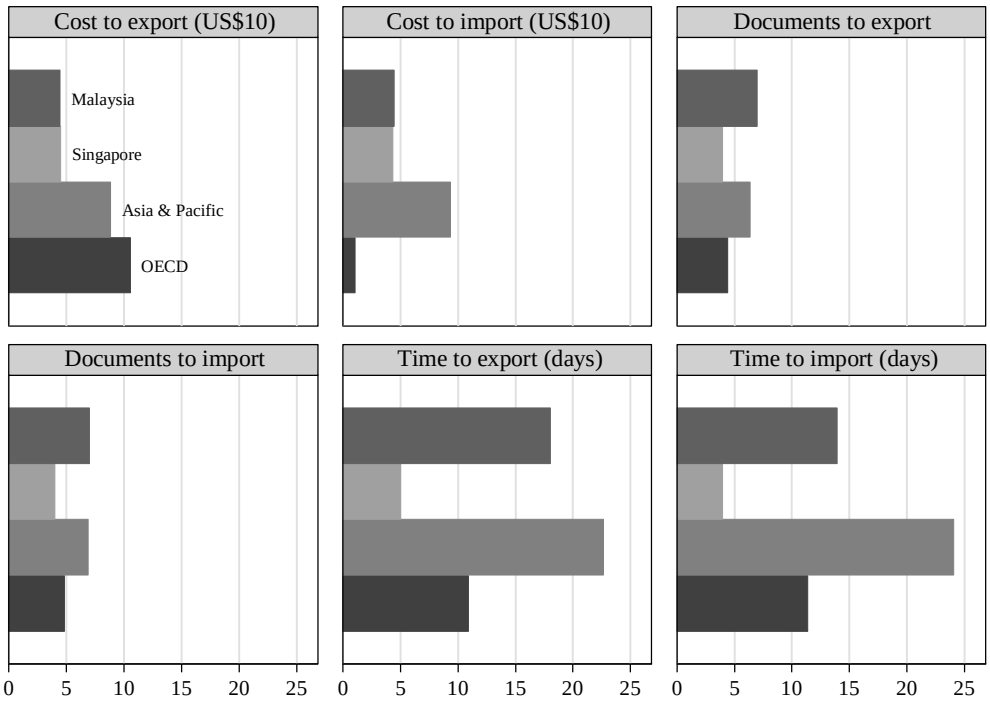
3.6. Trade Facilitation

Malaysia's export-oriented economy facilitates trade relatively well. According to the World Bank's *Doing Business* (2011), for example, Malaysia was ranked at 37 in the world on the measures of trade across borders in 2010 (see Figure 19).

Malaysia sits far ahead of other ASEAN member countries except for Singapore and Thailand. Indonesia, the Philippines and Vietnam, for example, are ranked at 47, 61 and 63, respectively. Malaysia also fares better than China at 50 and India at 100.

Malaysia's costs to export and to import are comparable to Singapore's. They are about half of the average costs of countries in Asia and the Pacific. The numbers of documents required in Malaysia are larger than the numbers in Singapore, though they are similar to the averages of Asia and the Pacific.

Figure 19. Some Measures of Trade Facilitation in 2010



Source: World Bank's *Doing Business*.
Note: Costs to export and import are shown in multiples of US$10; documents are in terms of the numbers of documents required; and time is the number days it takes to export or import one container.

Among the six measures of trading across borders, Malaysia does not do well compared to Singapore and the OECD countries with regard to the time to export and to import. It takes about 3.5 times longer to export and import in Malaysia compared to the time it takes in Singapore. However, Malaysia's time to export and import is still lower than the averages of countries in Asia and the Pacific.

4. Challenges and Impediments to Trade

We now discuss the challenges and impediments to trade faced by firms in the electronics industry in Malaysia. This discussion is based on interviews of managers of firms in the industry. See Table 1 for the summary of the results of the interviews.

First, we briefly describe the profiles of the firms. Second, we examine whether the FTAs affect the design of the supply chains. Then, we discuss trade facilitation issues faced by exporters and importers, their use of provisions of the FTAs, non-trade barriers and regulatory issues in export markets, the government's efforts to promote the use of the FTAs, the firms' research and development activities, and their linkages with SMEs.

4.1. The Profiles of the Firms

We identified five MNCs and one large local manufacturer in the Klang Valley. We also chose three firms from a database of SMEs. We interviewed the managers of three out of the nine firms.

Two of the three firms, henceforth referred to as Firm 1 and Firm 2, produced final goods and components mainly for export markets.[11] They imported components from other ASEAN countries and beyond, a large part of these through intra-firm trade.[12] They also imported final goods that were not produced in Malaysia from their manufacturers overseas.[13]

The other firm, Firm 3, did not manufacture final goods in Malaysia, though it had a manufacturer of passive components in the Klang Valley. These components were

[11] Firm 1 and Firm 2's major export markets for final goods were Japan, US, Europe, Australia and ASEAN member countries. More than 80 per cent of their products were exported. Firm 1 produced LCD TVs, air conditioners, refrigerators, telephone/fax devices, audio/video players, and passive components such as capacitors, resistors and inductors. Firm 2 produced audio and video players, LCD TVs, and passive components.

[12] Firm 2, for example, imported 40-50 per cent of components through intra-firm trade.

[13] Firm 1 imported, among other things, automotive electronics from Thailand, computers from China and Japan, and active components from Singapore. Firm 2 imported, among other things, cameras from Thailand, batteries from Singapore, and active components from Japan.

mainly for export markets.[14] Firm 3 imported final goods from Thailand, Indonesia, Singapore and China, and sold these products in the local market.[15]

The firms were large MNCs with thousands of employees.[16] They were established in Malaysia in the 1970s in the Penang FTZ and in the Klang Valley. They also had manufacturing, sales and services firms in a few other ASEAN member countries, and regional sales offices in Singapore.[17]

[14] These passive components include capacitors, resistors and inductors.

[15] Firm 3 imported LCD TVs from its manufacturer in Indonesia, washing machines and refrigerators from Thailand, and DVD players from China and Singapore.

[16] Firm 1 had about 20,000 employees, while Firm 2 had about 7,000 employees. Firm 1 had 14 subsidiaries in Malaysia.

[17] The three firms had manufacturing firms in Thailand and Singapore. Firm 1 also had manufacturing firms in the Philippines, while Firm 3 had one manufacturer in Indonesia. They all had sales offices in most other ASEAN member countries.

Table 1. Summary of What the Managers Think About Malaysia's FTAs and the Electronics Industry in Malaysia

	What the managers say	Evidence	Reasons provided
The effects of the FTAs on production network	Malaysia's FTAs do not change their business strategies, production network and export-import decisions.	The firms have closed or relocated some of their subsidiaries in Malaysia and Indonesia.	Non-FTA related factors such as political uncertainties, strict labour laws, high labour costs, or blatant corruption.
		The firms produce products in one country to serve local demand and exports.	This strategy has been adopted since the 1970s.
		One of the firms used to disassemble final goods in FTZs in Malaysia, and later have the parts reassembled.	Import duties of final goods used to be high, but have fallen under AFTA.
Trade facilitation issues	They do not have complaints about trade facilitation.	The customs procedures are straightforward, smooth, and fast; the costs of imports and exports are acceptable.	All paperwork can be done online through Dagang Net.
The use of FTA provisions	They aware of the FTAs and use the FTA provisions.	The FTA provisions are used for final goods but not for components.	The tariff rates for components are zero.
		The rules of origin are relatively unimportant.	The procedure of application of certificates of origin through Dagang Net is straightforward.
Regulatory issues and non-tariff barriers	They do not raise any complaints about regulatory issues and non-tariff barriers.	One of the firms is concerned with the Malaysia's STA 2010.	It may take more time to complete the paperwork for exports.
		They are also concerned about issues that are not covered by FTAs such as excise duties.	Import duties are zero, but non-tariff barriers may be high.
Promotion of FTAs	FTAs are promoted by government agencies and the Federation of Malaysian Manufacturers.	The agencies occasionally organize seminars or workshops on FTAs.	They find these training and support helpful, though perhaps it is the SMEs that gain the most.
R&D activities	Their R&D activities are very limited.	The development, design, and engineering of new products are done in the R&D divisions of the parent company.	They do R&D for minor modifications of products only.
Linkages with SMEs	They do not have linkages with SMEs.	The firms sell their electronic components to SMEs; the values of the sales are small, however.	They do not buy many products or services from these SMEs.

Source: Authors' interviews of managers of firms in the electronics industry in Malaysia.

4.2. The Effects of the FTAs on Production Network

Managers of the three firms did not think that Malaysia's FTAs change their business strategies, production network and export-import decisions. Firm 1, however, has closed or relocated some of its subsidiaries in Malaysia to China since the mid-1990s.[18] Firm 1 and Firm 2 have also closed their manufacturing firms in Indonesia.

The managers of Firm 1 and Firm 2 indicated that the main reasons why they closed their manufacturing firms in Indonesia were Indonesia's political uncertainties, strict labour laws, and blatant corruption. Firm 1 moved some of their subsidiaries in Malaysia to China due to, among other things, China's cheaper labour costs and large demand for electronic products. The manager of Firm 1 suggested, however, that they kept 14 manufacturing firms in Malaysia because Malaysia has reliable infrastructure, high-skilled labour, and a good network of supporting industries.

There were some indications that the three firms have designed their supply chains to exploit the FTAs. Firm 1, for example, had manufacturers of automotive electronics in Thailand, but not in other countries in the region. The main reason for setting up the firm in Thailand was that the automotive industry in Thailand is the largest and the most developed in the region. Given the FTAs, Firm 1 then had these automotive electronics exported to other ASEAN member countries, including Malaysia. Firm 1 also had manufacturers of air conditioners in Malaysia, but not in any other countries in the region. In fact, these factories were Firm 1's largest manufacturers of air conditioners in the world, with the products exported not only to other countries in the region, but to countries all over the world. Firm 2 produced batteries and active components in the region only in Singapore and cameras in Thailand. Firm 3 produced LCD TVs in the region only in Indonesia, washing machines and refrigerators in Thailand, and DVD players in Singapore.

It is important to note that the three firms had been adopting this production network since the 1970s. Except for the relocation of factories from Malaysia to

[18] In the early 1990s, Firm 1 had about 40,000 employees. At the time of this study, this had fallen to about 20,000 only.

China, and the closing of manufacturers in Indonesia, the three firms had not changed other aspects of the design of their supply chains.

Firm 3 has changed its business models in Malaysia since the mid-1990s. Since the 1970s, Firm 3 had imported final goods to Malaysia. Due to the high tariff rates, Firm 3 had sub-contractors to disassemble the final goods in free trade zones in Malaysia, transported the parts out of the free trade zones to the Klang Valley, and had the parts reassembled by local manufacturers. However, in the past few years prior to the interview, because of the falling import duties of final goods under AFTA, Firm 3 had been importing these final goods without having them disassembled and reassembled.

This anecdotal evidence on factory relocations and changing business models, suggest that, to some extent, the FTAs do affect the production network and export-import decisions of firms in the electronics industry in Malaysia, although other factors such as infrastructure, labor costs, and political uncertainties may have more important roles.

4.3. Trade Facilitation Issues

The managers of the three firms said that they did not have complaints about trade facilitation in Malaysia.[19] According to them, the customs procedures were straightforward, smooth and fast; the costs of imports and exports were acceptable; the numbers of documents to import and export were minimal; and the time to export and import was satisfactory. Typically, it took two days for customs clearance. Sometimes, it may take four to five days if there was traffic congestion at the ports.[20]

Conversely, findings in the literature shows that trade facilitation issues are one of the reasons why firms do not use FTA provisions. Wignaraja, Lazaro and DeGuzman (2010), for example, find that delays and administrative costs comprise one of the most important impediments to the use of FTAs.

[19] Firm 1 and Firm 2 had trade facilitation handled by their own subsidiaries of supply chain management. Firm 3 hired a freight forwarder to handle its imports and exports. Imports from Thailand and Singapore were typically by land, while from other countries by sea. Given the networks of highways in Malaysia, transportation from the borders or ports to the firms' warehouses was swift.

[20] A manager of Firm 2 said that customs clearance at the North Port, an older port in Malaysia, typically took a longer time.

Besides the fact that the three firms we interviewed were large firms, trade facilitation in Malaysia may not be a problem because it is actually quite good. When firms export or import, all paperwork can be done online through Dagang Net, a government-linked trade facilitation and e-commerce service provider.[21] Firms can submit trade declarations and manifests online.[22] They can also apply for permit approval from permit issuing agencies, apply for certificates of origin, and make customs duty payments through the website. Some of these products are eDeclare, ePermit, eManifest, ePCO (Electronic Preferential Certificate of Origin) and ePayment.[23]

These Dagang Net products minimize paperwork and time to import or export. The eDeclare, for example, provides not only online submission of trade declarations, but also access to the database of tariff codes and rates. Upon approval of permits, Dagang Net electronically sends the permits to Customs for validation and cross-referencing against the Customs Information System. For certificates of origin application, the preparation and submission of costs to the Ministry of International Trade and Industry (MITI), the approval or rejection of the application of costs, and the submission and approval of certificate of origin forms are done online. Upon approval of a certificate of origin, an exporter would just need to print the certificate of origin, and have it endorsed by MITI.[24]

The pricing of the products is reasonable, according to the managers of the three firms. The eDeclare, for example, has a one-off charge of RM500 and annual fees of RM600. Transaction charges are RM0.88 per Kbyte.[25] The ePCO costs an initial RM500 plus RM200 annual fees, and RM5 to RM8 transaction charges per approved certificate of origin.

[21] Dagang Net was established in 1989. It is owned by Khazanah National Berhad, an investment holding arm of the Government of Malaysia, and managed by Time Engineering Berhad. Its website is http://www.dagangnet.com.

[22] There are three modes of submission: (1) complete the data entry online; (2) download forms, complete them, and upload the forms to the website; and (3) install an 'enterprise version' of the software on the firms' own Local Area Network.

[23] The description of these products is available on the Dagang Net website.

[24] The ePCO covers ASEAN Industrial Cooperation, ASEAN Trade in Goods Agreement, FTAs and Generalized System of Preferences.

[25] At about RM3/US$, the one-off charges and annual fees are about US$167 and US$200, respectively. The transaction charges are about 30 cents of US$ per Kbyte.

Dagang Net also offers training programmes on their products at a reasonable price. The eDeclare one-day training, for example, costs RM350 per person or RM750 to RM1,500 per trainer for on-site training. New subscribers are entitled to one day of training free of charge.

If anything, the manager of Firm 3 complained about the time it takes to complete the paperwork for exports of new products. Regular exports and imports take a few days only, but the preparation of paperwork for a new product may take a few months. The manager also suggested that it would save time and resources if the endorsement of certificate of origin could be done online. At the time of writing, after having the certificate of origin approved, it must be printed and sent to MITI for endorsement.

4.4. The Use of FTA Provisions

All three firms were aware of the FTAs and used the FTA provisions for exports and imports of final goods. Firm 1 and Firm 2 used most of the ASEAN+1 FTAs as well as Malaysia's own FTAs. Firm 3 used AFTA as well as FTAs with China and Japan.

The finding that the three firms used FTA provisions is, to some extent, in line with, for example, Takahashi and Urata (2009). From a survey of Japanese firms, they find that larger firms are more likely to use FTAs. It is also in line with Wignaraja, Lazaro and DeGuzman (2010), who find that old firms are more likely to use FTAs. The three firms whose managers we interviewed were large and old ones. Moreover, our finding is similar to Kohpaiboon and Yamashita (2011) that FTA utilization rates of firms in the automotive industry in Thailand are high. However, our finding is in contrast with Wignaraja, Lazaro and DeGuzman (2010) that foreign-owned firms are less likely to use FTAs.

The manager of Firm 3, in particular, said that they always made sure that all of their imports of final goods from Thailand, Indonesia and Singapore satisfied the 40 per cent ASEAN content requirements. Without Form D, which is the certificate of origin for AFTA, Firm 3 would have to pay 10-15 per cent duties for household appliances imported from, for example, Thailand. If its exporter in Thailand

provided Form D, however, Firm 3 would just have to pay the 10 per cent sales tax while the import duties would be slashed to zero.

This finding on the use of FTA provision for final goods is in line with Takahashi and Urata (2009) that many firms are not discouraged by the small tariff preference of FTAs. However, it is in contrast with Hayakawa et. al. (2009), who find that in Malaysia, Japanese firms do not use FTAs because of low or zero tariff rates.

However, for exports or imports of components, the three firms did not use the FTA provisions. The tariff rates for components are zero. Therefore, according to the manager of Firm 1, for example, the use of the FTA provisions becomes pointless.

The three firms' use of FTA provisions did not seem to be notably affected by other measures such as duty drawback schemes and access to special zones. Nevertheless, this might be partly because the three firms had manufacturers outside of the free trade zones.

Access to FTZs used to be important. Until the early and mid-1990s, firms in the free trade zones had enjoyed zero tariff rates as long as they exported more than 80 per cent of their products. At the time of this study, however, because of the zero tariffs rates, according to the manager of Firm 1, locating in the zones did not add value in terms of savings from lower import duties. Manufacturers in the Klang Valley, for example, could also enjoy very low or zero duties if they satisfied the requirements of the FTAs.[26]

The managers also thought that the rules of origin had little importance. The procedure of application of certificates of origin through Dagang Net was straightforward. Even though it took time to have a new application approved, once they had a certificate or origin, regular exports and imports were typically fast and smooth.

This finding on the certificate of origin is in contrast with Takahashi and Urata (2009), who find that the difficulty in acquiring certificates of origin is one of the most important reasons why firms do not use FTA provisions. But, perhaps, because

[26] Firms located outside of the free trade zones could also enjoy benefits such as Pioneer status, which provides a five-year partial exemption from the payment of income tax, or investment tax allowances. See, for example, MIDA (2009).

the three firms whose managers we interviewed were large firms, they could spend resources to learn how to apply for certificates of origin. Our finding is in line with Hayakawa et. al. (2009), who find that most Japanese firms in Malaysia do not think that the procedures of the application of certificates of origin are too complicated.

4.5. Regulatory Issues and Non-Tariff Barriers

In general, the managers of the three firms did not raise any complaints about regulatory issues and non-tariff barriers that they faced in export markets. They did not point out major impediments to trade that they faced when they imported or exported either.

The manager of the Firm 1 was concerned about the Malaysia's STA 2010, which was passed by the Parliament of Malaysia on 5 April 2010, commenced on 1 April 2011, and fully implemented on 1 July 2011.[27] He worried that, given the STA, it would take more time to complete the paperwork for exports of, for example, navigation products. He acknowledged, however, that this worry might be just because the regulation was new, and he had yet to see how strictly the government would implement the Act, and how complicated the application procedures would be.

In any case, Dagang Net offers ePermit STA, an online submission of applications for the STA permit. A firm that wants to use the ePermit STA needs to pre-register, which is subject to an approval by MITI and other agencies. Once the registration is approved, the firm could apply for STA permit as it does for any other permits.

The managers were also concerned about issues not covered by FTAs such as excise duties. Imports of automotive parts from Thailand, for example, may have zero import duties. However, because the automotive industry in Malaysia is protected, Malaysia's Customs may impose 80-90 per cent excise duties on imports of automotive electronics.

As for regulatory issues or non-tariff barriers in export markets, the managers said that they do not face many problems. Their importers overseas enjoyed low or zero import duties as long as they provided the certificates of origin for their exports

[27] The STA 2010 is implemented as required by the United Nations to control exports of goods that may be used to develop and produce weapons of mass destruction and their delivery system.

from Malaysia. They had to comply with the regulations that had been implemented in export markets, however, such as the inspections of technical regulation and standards.

4.6. Promotion of FTAs

MITI occasionally organizes seminars or workshops on FTAs and trade policies in general. The Federation of Malaysian Manufacturers, in cooperation with MITI, for example, organized a one-day seminar on Malaysian FTAs for firms in Malaysia.[28] Malaysia Industrial Development Authority (MIDA) and Malaysia External Trade Development Corporation (MATRADE) also provide support for Malaysian exporters as well as buyers and investors from overseas. MATRADE also publishes booklets on FTAs, which can be downloaded from their website.[29]

Whenever there are new FTAs or regulations that are implemented, the government usually holds seminars and workshops. The Attorney General's Chambers, for example, recently organized a seminar on the STA 2010 to help firms in Malaysia to understand what the Act is and how to comply with the new regulation.[30] Dagang Net also provides training for firms on how to use their products, which includes how to declare trade, apply for permits, and apply for certificates of origin.[31]

The managers of the three firms indicated that they found this training and support helpful, though perhaps it was the SMEs that gained the most benefits from this promotion of FTAs.

In short, the managers of the three firms seemed to be very aware of FTAs. This finding is different from, for example, Takahashi and Urata (2009) and Wignaraja, Lazaro and DeGuzman (2010). They find that the lack of information is the most important impediment to using FTAs.

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[28] The theme of the seminar was 'Create and Expand Your Markets through Malaysian FTAs'. It was held on 20 March 2010 in Kuala Lumpur.

[29] MATRADE's publications on FTAs are available on http://www.matrade.gov.my/cms/content.jsp?id=com.tms.cms.section.Section_MATRADEPublication

[30] The theme of the forum was 'Strategic Trade Act 2010 Forum: Proactive Deterrence against Proliferation of Weapons of Mass Destruction'. It was held on 2-3 March 2011 in Putrajaya.

[31] See the discussion on these training programmes in the section on trade facilitation above.

4.7. R&D Activities and Linkages with SMEs

Firm 1 and Firm 2 had research and development (R&D) divisions in Malaysia, although their R&D activities were very limited. The development, design and engineering of new products were done in the R&D divisions of the parent company overseas.

The manager of Firm 1 said that they do R&D for minor modifications of products only, for example, if the export destination countries require different technical specifications. Neither the sales division of final goods nor the components manufacturer for Firm 3 was engaged in R&D.

The managers also said that their firms' focus on assembling, manufacturing, and marketing of electronic products was likely to stay for a long time. They did not expect that the R&D activities of their firms to increase. Therefore, Rasiah's (2009) finding that Malaysia's electronics industry is trapped in the assembly, packaging and testing of electronic products is likely to hold in the near future.

The three firms did not seem to have linkages with SMEs. Firm 1 and Firm 2 sold their electronic components to SMEs. The values of the sales were small, however, because most of Firms 1 and 2's products were exported. Moreover, the three firms did not buy significant amounts of products or services from these SMEs. The managers of Firm 1 and Firm 2, for example, said that they bought bulky items only from SMEs such as packaging materials.

The managers thought that their relationship with the SMEs would not change much in the near future. It is, therefore, unlikely that we will see stronger linkages between MNCs in the electronics industry and the SMEs in Malaysia.

5. Concluding Remarks and Policy Implications

We have shown that Malaysia's electronics industry has grown fast in the past few decades, and has large intra-industry trade, in particular in electronic components. The co-movement between production of the electronics industry and the world economy is perhaps inevitable, given the export orientation of firms in the industry. However, the stagnant productivity of workers since the early 2000s, and the non-existence of Malaysia's revealed comparative advantage in producing electronic products, are worrying.

Considering the trade liberalization that Malaysia has been adopting, the increase in the fragmentation of the electronics industry, and the eventual creation of a single market for goods and services in the region, the Government of Malaysia would, therefore, need to help addressing several challenges and impediments that firms in the electronics industry are facing.

We offer several policy recommendations. One, even though the firms whose managers we interviewed were aware of the FTAs and used the FTA provisions, it is likely that many SMEs are not. The government, therefore, with the help from Dagang Net and the federations of manufacturers, would need to continue promoting the FTAs and the use of products offered by Dagang Net.

Two, some firms in the electronics industry do not seem to use ASEAN--Australia--New Zealand, ASEAN--Korea, and ASEAN--India; many of them use AFTA, ASEAN--China, and ASEAN-Japan only, in addition to Malaysia's own FTAs. It may take time for firms to start taking advantage of these new ASEAN+1 FTAs, but the government could disseminate information on the FTAs to make sure that firms, SMEs in particular, are aware of the ASEAN+1 FTAs.

Three, the government would need to streamline the procedures of applications used by Dagang Net, in particular the applications for the certificates of origin and the STA permits.

Four, the government would need to remove some of the non-tariff barriers to trade. For example, to make the economy more competitive, the government should consider removing the excise duties currently imposed on automotive electronics.

Five, it may be difficult to increase linkages between large firms and SMEs, but the government could push some of its SMEs development programmes further to help the SMEs to grow so that they have the technological capabilities required by the large firms.

Six, it is unlikely that R&D activities of the firms in the electronics industry will increase in the near future. On the other hand, other countries in the region such as Indonesia and Vietnam may become more attractive to foreign investors given their cheaper labor costs and growing skilled labour force, which may induce some MNCs in Malaysia to relocate their factories to the neighbouring countries. Moreover, ASEAN+1 FTAs and Malaysia's own FTAs would induce firms to engage in further fragmentation of the electronics industry.

Therefore, to graduate into the design and development stage of production in the electronics industry, Malaysia would need to make its economy more attractive to foreign investors by, for example, strengthening the government institutions and amending the NEP further. Moreover, Malaysia also needs to make the economy more attractive to skilled labor. In addition to retaining local talent, Malaysia would also need to attract skilled labor from neighbouring countries. Only if Malaysia has a sufficiently large pool of skilled labor, strong government institutions, and a vibrant network of supporting SMEs will it be able to induce the MNCs in the electronics industry to move from the assembly and manufacturing to higher value-added production of electronic goods.

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Appendix

Appendix 1. The Definition of Electronics Industry Used in the Analyses of Data from Malaysia's Department of Statistics

The Malaysia's Department of Statistics has used the Malaysia Standard Industrial Classification (MSIC) 2000 for its industry statistics since the year 2000. This MSIC 2000 conforms closely to the International Standard Industrial Classification (ISIC) Revision 3.1. For the years 2000-08, therefore, we define the electronics industry as all the items listed in Table A1.

Before the year 2000, DOS had used the MSIC 1972. For the years before 2000, therefore, we define the electronics industry using the MSIC 1972 framework. The electronics industry includes all the items listed in Table A1. DOS did not do industry survey in 1998. The data for the year 1998 are linearly extrapolated using data for the adjacent years.

Table A1. Products Included in the Definition of Electronics Industry Used in the Analyses of Data from Malaysia's Department of Statistics

Items	Descriptions
Years 1990-99	
38199	Manufacture of other fabricated metal products, n.e.c.
38250	Manufacture of office, computing and accounting machinery
38291	Manufacture of refrigerating, exhaust, ventilating and air-conditioning machinery
38321	Radio and television sets, sound reproducing and recording equipment
38322	Gramaphone records and prerecorded magnetic tape
38329	Semi-conductors and other electronic components and communication equipment and
38330	Manufacture of electrical appliances and housewares
38510	Manufacture of professional and scientific and measuring and controlling equipment, n.e.c.
Years 2000-08	
29300	Manufacture of domestic appliances n.e.c.
30001	Manufacture of office and accounting machinery
30002	Manufacture of computers and computer peripherals
32101	Manufacture of semi-conductor devices
32102	Manufacture of electronic valves and tubes and printed circuit boards
32109	Manufacture of other electronic components n.e.c
32200	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
32300	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods
33120	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
33130	Manufacture of industrial process control equipment

Source: The framework used for the years 1990-99 is the Malaysia Standard Industrial Classification (MSIC) 1972. For the years 2000-08 is MSIC 2000.

Appendix 2. The Definition of Electronic Products Used in the Analyses of Comtrade Data

As we explain in Appendix 1, we define the electronics industry as the classes with the following International Standard Industrial Classification (ISIC) Revision 3.1 or the MSIC 2000: Classes 2930, 3000, 3210, 3220, 3230, 3312, and 3313. Then, we regroup these seven classes into six products as shown in Table A2.

Table A2. The Definitions of Products Used in the Analyses of Comtrade Data

ISIC	Descriptions of Classes	Products
2930	Manufacture of domestic appliances n.e.c.	Consumer
3000	Manufacture of office, accounting and computing machinery	Computers
3210	Manufacture of electronic valves and tubes and other electronic components	Components
3220	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	Telecommunications
3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods	Radio communications
3312	Manufacture of instruments and appliances for measuring checking, testing, navigating and other purposes, except industrial process control equipment	Industrial
3313	Manufacture of industrial process control equipment	Industrial

Source: The ISIC is Rev.3.1.
Note: The definitions of the products are authors' own. Classes 3312 and 3313 are categorized as one product, i.e. industrial electronics.

We use the HS 2002 – SITC Revision 3 correspondence table to get the HS codes of each of the six products above.[32] For data that include the period before the year 2002, we convert the HS 2002 into HS 1992 using the HS 2002 – HS 1992 conversion table.[33]

[32] The correspondence table is available at http://unstats.un.org/unsd/cr/registry/regot.asp.
[33] The conversion table is available at http://unstats.un.org/unsd/trade/conversions/HS_Correlation_and_ Conversion_tables.htm.

Appendix 3. The Description of Country Codes

Figures 13, 14 and 15 use the country codes shown in Table A3.
ROW stands for the rest of the world; it indicates other countries not included in each of the figures. It may, therefore, differ from one figure to another.

Table A3. The Descriptions of Country Codes Used in Figures 13-15

Code	Name	Code	Name
AE	United Arab Emirates	KH	Cambodia
AU	Australia	KR	South Korea
BN	Brunei Darussalam	LA	Laos
CA	Canada	MM	Myanmar
CL	Chile	MX	Mexico
CN	China	NL	Netherlands
CR	Costa Rica	NZ	New Zealand
DE	Germany	PH	Philippines
FR	France	PK	Pakistan
GB	United Kingdom	SE	Sweden
HK	Hong Kong	SG	Singapore
ID	Indonesia	TH	Thailand
IE	Ireland	TR	Turkey
IN	India	US	United States of America
IT	Italy	VN	Vietnam
JP	Japan	ROW	The rest of the world

Source: The codes are the two-digit International Organization for Standardization country codes, which are accessible at http://www.iso.org/iso/country_codes/iso_3166_code_lists/country_names_and_code_elements.htm.

CHAPTER 8

ASEAN+1 FTAs and Global Value Chains in East Asia: The Case of the Textiles and Clothing Industry in Sri Lanka

ANANDA JAYAWICKRAMA

Department of Economics, University of Peradeniya

SHANDRE M. THANGAVELU

Department of Economics, National University of Singapore

The position of Sri Lanka in the value chain of the global textiles and clothing industry is identified in this paper. The paper also examines how economic policies and trading arrangements affect the competitiveness of Sri Lanka in the global supply chain network of the textile and clothing industry. The paper includes a brief discussion of the relative growth and human development performance of Sri Lanka in comparison with selected South Asian and East Asian countries. The paper also discusses the general background of the textile and clothing industry in Sri Lanka and analyses the supply chain network of the industry with a discussion on the production of intermediate and final goods. A map of the supply chain of the industry is presented and trade and foreign investment flows are examined. The extent of vertical integration and the impact of FTAs and other bilateral and multilateral trade agreements on the industry are discussed. Policy implications are also presented.

1. Introduction

Given the low cost of labor, the comparative advantage for developing countries is in labor-intensive exports as they liberalize and open up their economies. For many low-income countries, exporting of labor-intensive goods such as textiles and clothing has been a first step for industrialization and export-led economic growth.

The textiles and clothing industry is a large and diverse sector that can be subdivided into distinct parts, which offers comparative advantage for countries with different resource endowments. The traditional division of the textiles and clothing industry is between the production of natural fibre, fabrics and finished clothing. The production of natural fibre is the domain of agricultural economies while the production of synthetic fibre requires the ability to innovate or adopt new technologies. Fabric production is a highly automated capital-intensive activity and susceptible to technological advances. The clothing industry is basically labor intensive and requires specialization for competitiveness in the global market.

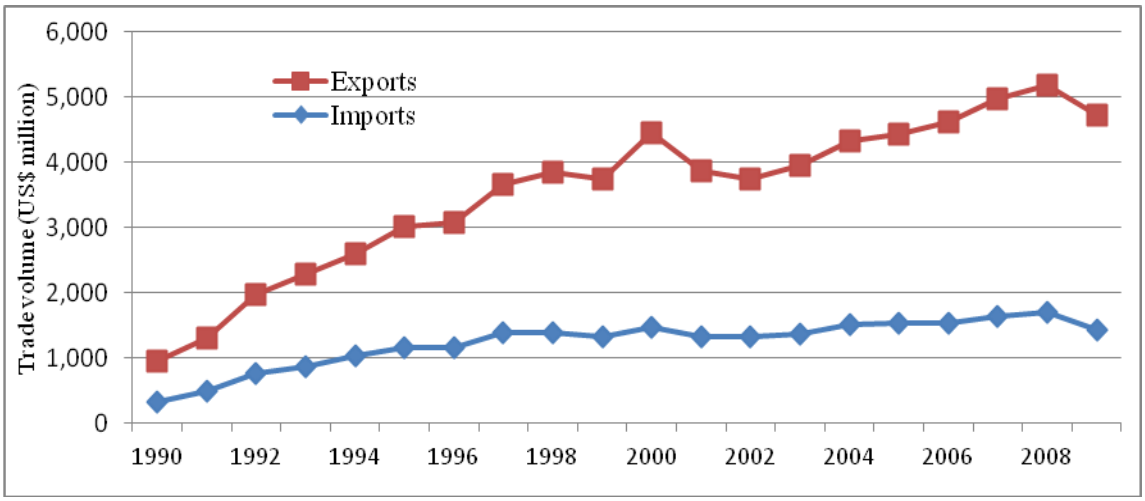
The distribution of production and marketing activities among countries is important in understanding the industry's value chain (Nordus, 2005). After World War II, East Asian countries and many other developing countries experienced a rapid expansion of the textiles and clothing industry and its exports which greatly contributed to their high growth performance. Given the relatively low requirement of capital investment, manufacturing of textiles and clothing is seen as a key opportunity for developing countries to create employment and also to create a foothold in the global export market (Yamagata, 2006; Chan and Sok, 2007).

From the mid-1970s to the mid-2000s, the Multi-Fibre Arrangement (MFA) trade regime imposed quota restrictions on textiles and clothing exports to developed countries which weakened competition among the producer countries. The Uruguay Round Agreement (URA) in 1994 on textiles and clothing envisaged the elimination of the MFA quota system over a 10-year period. In addition, the URA provided for an average tariff reduction of 22 percent on textiles and clothing imposed by developed countries. The removal of the MFA quota system benefited the industry as it led to increased competition which in effect forced producers to reduce the cost of production

and improve productivity. As Deerasinghe (2009) noted, Sri Lanka had fulfilled its commitments relating to the MFA phasing out procedures by 2002. The termination of the MFA quota system at the end of 2004 led the textiles and clothing industry to be liberalized and since then price competition among producer countries has intensified.

Several studies have analyzed the importance of the textiles and clothing industry in terms of macroeconomic indicators such as exports, investment and employment (see Rahman et al., 2008; Kowalski and Molnar, 2009; Harrigan and Barrows, 2009; and Beresford, 2009). Like many other emerging economies, Sri Lanka relies on the performance of its textiles and clothing industry for its export-led growth and employment generation. Before 1977, the textiles and clothing industry in Sri Lanka was dominated by large-scale state-owned enterprises which operated under high protection from the country's infant-industry protection policy. The shift of the country's economic policy from self-sustaining import substitution to export promotion in an open economic policy framework in late 1970s created an industrial base led by the production of textiles and clothing. The industry attracted investment from various multinational companies in East Asia and other countries (Kelegama, 2005). Multinational firms in the industry shifted their operations to Sri Lanka under foreign investment promotion policies which include the creation of Export Processing Zones (EPZs) and the provision of various fiscal incentives. The new economic policy led to a rapid expansion of the textiles and clothing industry in the 1980s, thereby significantly increasing its importance in the economy. Currently, the textiles and clothing industry is Sri Lanka's largest export industry and largest foreign exchange earner. It provides more than 330,000 formal employment positions and creates important backward and forward linkages with other sectors of the economy (Deerasinghe, 2009; Board of Investment (BoI) of Sri Lanka, 2011).

Figure 1. Exports and Imports of Textiles and Clothing, 1990-2009



Source: United Nations Commodity Trade Statistics Database, 2011

Initially, Sri Lanka's textiles and clothing industry was heavily dependent on the quota system offered by developed countries, but this high dependency has gradually been lessened. The textiles and clothing industry of Sri Lanka, however, faces the issue of weakening international competitiveness due to rising labor costs relative to other producer countries such as Bangladesh, Vietnam and Cambodia (Kelegama, 2005). Thus, reducing the cost of trade by eliminating barriers to trade is important to maintain the international competitiveness of the industry (Kelegama and Epaarachchi, 2002). This may require evaluating the country's performance at all stages of the production value chain in the industry and concentrating its efforts only on the most efficient stages of production. The distribution of different stages of production of intermediary and final goods across many countries would allow for such specialization in the supply chain network of this industry.

The main objective of this chapter is to identify the position of Sri Lanka in the value chain of the global textiles and clothing industry, which is important in shaping economic policies to maintain its competitiveness in the global market. The chapter also examines how economic policies and trading arrangements help to sustain the competitiveness of Sri Lanka in the global supply chain network of the industry. T he rest of the chapter is organized as follows. Section 2 provides a brief discussion of the relative growth and human development performance of Sri Lanka in comparison with selected South Asian and East Asian countries. Section 3 discusses the general

background of the textiles and clothing industry in Sri Lanka. Section 4 analyses the supply chain network of the industry with a discussion of the production of materials and finished clothing. This section presents the map of the supply chain of the industry and analyses trade and foreign investment, vertical integration, the impact of FTAs and other bilateral and multilateral trade agreements on the industry. Section 5 draws conclusions and policy implications.

2. Facets of the Sri Lankan Economy

Despite the prolonged civil war from 1983 to 2009 and occasional political disturbances, Sri Lanka's growth performance has been far from dismal (see Abeysinghe and Jayawickrama, 2008). As shown in Table 1, in terms of per capita income, Sri Lanka was well ahead of other South Asian countries but behind other countries such as Malaysia, Thailand and China in 2009. Sri Lanka has also succeeded in achieving a high level of human development. The country has reported a high level of life expectancy at birth, adult literacy rate and infant mortality rate among the countries compared in this exercise.

As a result of progressive trade liberalization measures followed since 1978, Sri Lanka's volume of trade increased over time and it reached 90 percent of the country's gross national income in 2000 (see Table 2). Quantitative restrictions and high tariffs on agricultural imports introduced in recent years, however, reduced the country's trade volume to about 49 percent of its gross national income in 2009. In the early stages of trade reform the country's strategy was to improve its trade competitiveness through unilateral tariff rate reductions. The country had eliminated all export tariffs by the mid-1990s and had lowered import tariff rates significantly in the 1980s and 1990s. As shown in Table 2, it reduced its mean tariff rate from 27 percent in 1990 to 7 percent in 2006. Compared to unilateral tariff reduction, less attention was given to the implementation of preferential trade arrangements with Sri Lanka's trade partner countries in the early stages of trade policy reforms that took place during the 1980s (de Mel et al., 2011). However, the government of Sri Lanka started to pay more attention

to preferential trading arrangements to strengthen bilateral trade and investment relations from the mid-1990s onwards. As all competitor countries introduced unilateral trade liberalization measures, establishment of bilateral and multilateral trade agreements was identified as a strategy to enter into and secure foreign markets under special preferential trading arrangements which were beneficial for all partner countries.

Table 1. Indicators of Economic Growth and Human Development

	Economic indicators				**Social indicators**		
Country	Per capita Gross National Income (US$) 2009	Average annual GDP growth rate %, 2005-09	Gross domestic savings as % of GDP 2009	Gross investment as % of GDP 2009	Adult literacy rate (% of population age 15+) 2009	Life expectancy at birth (years) 2008	Infant mortality rate (per 1,000 live births) 2009
Sri Lanka	1,990	6.4	18	24	91	74	13
India	1,180	8.2	30	32	63	64	50
Bangladesh	580	6.2	17	24	55	66	41
Pakistan	1,000	4.9	11	17	54	67	71
China	3,650	11.4	52	46	94	73	17
Indonesia	2,050	5.6	34	31	92	71	30
Malaysia	7,350	4.1	36	20	92	74	06
Thailand	3,760	3.0	32	24	94	69	12
Philippines	1,782	4.4	16	15	94	72	26
Vietnam	930	7.3	28	35	93	74	20

Source: World Bank, Development Indicators, 2010

Table 2. Indicators of Trade Openness

Country	Trade share*			Tariff barriers (weighted mean tariff rate) %		
	2000	2005	2009	Year	All products	Manufactured products
Sri Lanka	0.9	0.7	0.5	1990	27.0	24.2
				2006	7.0	6.0
India	0.3	0.4	0.5	1990	56.1	70.8
				2008	6.0	6.0
Bangladesh	0.3	0.4	0.5	1989	88.4	109.9
				2007	11.0	13.0
Pakistan	0.3	0.3	0.3	1995	44.4	49.2
				2008	9.0	12.0
China	0.4	0.7	0.5	1992	32.1	35.6
				2008	4.0	4.0
Indonesia	0.7	0.6	0.4	1989	13.0	15.1
				2007	4.0	3.0
Malaysia	2.2	2.1	1.7	1988	9.7	10.8
				2007	3.0	6.0
Thailand	1.2	1.5	1.3	1989	33.0	35.0
				2006	5.0	6.0
Philippines	1.1	1.0	0.6	1990	15.0	15.0
				2007	4.0	3.0
Vietnam	1.1	1.4	1.5	1994	21.0	13.0
				2007	11.0	11.0

Source: World Bank, Development Indicators, 2010.
Note: * Trade share is defined as the sum of exports and imports over gross national income

3. Sri Lanka's Position in the Global Value Chain of the Textiles and Clothing Industry

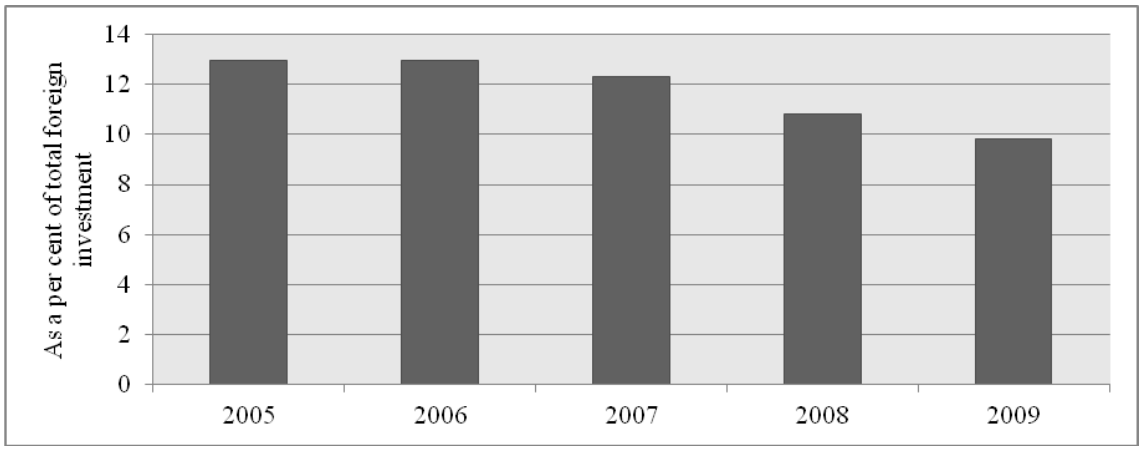
The presence of multinational firms in the country's textiles and clothing industry is an indication of Sri Lanka's integration with the supply chain network of the global textiles and clothing industry. Multinational firms are involved in cross-border transactions in investment, labor, technology, materials and finished products.

From the late 1970s with the liberalization of the economy, the textiles and clothing industry attracted a large amount of foreign direct investment (FDI). The total realized investment in the industry was nearly 56 billion rupees in 2009. More than 66 percent of this total was foreign investment. Major investing countries were: Hong Kong, Germany, UK, Singapore, Belgium, Japan, US, China, South Korea and Australia.

During the 1970s and 1980s, textiles and clothing manufacturers operating in East Asia shifted their production plants to Sri Lanka searching for low cost labor and access to Western markets secured through MFA quotas. Thus, the MFA quota system helped the expansion of the textiles and clothing industry in Sri Lanka. In addition, better infrastructure facilities in EPZs and various fiscal incentives offered by successive governments since 1977 have attracted more investors into the industry. Fiscal incentives and facilities given in EPZs for joint ventures/foreign investment also encouraged domestic entrepreneurs to operate in collaboration with foreign firms. Major multinational companies operating in this industry in Sri Lanka are: MGT Group and Forbes Fashion from Australia; Ahier, Adler, Triumph and ALT United from Germany; Fountain Set and Mega Trend Management from Hong Kong; Indorama Corporation from Indonesia; YKK Zippers from Japan; Kabool, Tongyang, Samdo Corp., Gooryong Co. Ltd and Dae Yong Textile Company from South Korea; Courtaulds, Coats, Christy International, International Trimmings, SR Gents and Textured Jersey from the UK; and Mast, Kellwood, Playknits, Paxar and Shore to Shore from the US. These firms mainly invested in the production of clothing and clothing accessories, fabric and yarn, and other materials and, with their local partners, produce world famous brands of clothing products such as Victoria Secret, Liz Claiborne, Abercrombie and Fitch, Tommy Hilfiger, Polo, Ralph Lauren, Gymboree, Adams,

Tesco, Levi's, Nike, Pierre Cardin, Gap, Marks & Spencer, London Fog, C&A, Next, Calvin Klein, Lucky Jeans, etc.

Figure 2. Foreign Investment in the Textiles and Clothing Industry, 2005-09



Source: Authors' calculation based on BoI of Sri Lanka, 2010

As the BoI of Sri Lanka website reports, major firms in the country's textiles and clothing industry (the country of investment is given in parentheses) are: Brandix Apparel Ltd (Sri Lanka); Smart Shirts Ltd (Hong Kong); Omega Line Ltd (Italy); Slimline (Pvt) Ltd (UK, US, Sri Lanka); Bodyline (Pvt) Ltd (US, Hong Kong, Sri Lanka); Unichela (Pvt) Ltd (UK, Sri Lanka); Shadowline (Pvt) Ltd (Mauritius, Sri Lanka); Linea Clothing (Pvt) Ltd (Maldives, Sri Lanka); Hirdaramani Mercury Apparel (Pvt) Ltd (Sri Lanka); Crystal Martin Ceylon (Pvt) Ltd (Hong Kong); South Asia Textile Industries Lanka (Pvt) Ltd (Singapore, Sri Lanka); and Stretchline (Pvt) Ltd (Hong Kong, Sri Lanka). Many large investors in the textiles and clothing industry of Sri Lanka are from the East Asian region.

Since the country does not have an extensive and efficient industrial base of producing textile materials and clothing accessories, the industry is largely dependent on the import of materials. As Kelegama (2005) noted, the industrial setup of the textiles and clothing industry in Sri Lanka was such that it produced finished clothing by importing most of the materials from various parts of the world. Therefore, it seems that the textiles and clothing industry in Sri Lanka is highly dependent on foreign markets for the sale of finished clothing as well as for the import of materials.

The domestic textile materials industry is not large and is not capable of supplying sufficient quantities of yarn and fabric to the country's clothing industry. Therefore, the government has followed a policy to import textile materials on duty-free or concessionary duty terms since the late 1970s to assist in the promotion of exports of clothing. Zero duty on imported materials made the domestic textile materials industry less competitive. However, during the 1990s the textile materials industry expanded with joint venture investments, as many clothing manufacturers invested in the production of textiles and other materials for use in its own clothing production. Domestic clothing manufacturers set up joint venture fabric plants. One example is Ocean Lanka (Pvt) Limited, fabric knitting and dyeing plant started in 1996. This textiles factory is a joint venture of Fountain Set (Holdings) Ltd – the world's largest knit fabric manufacturer based in Hong Kong – and two leading clothing manufacturers in Sri Lanka. Fountain Set owns 60 percent while two domestic companies have 20 percent each. The fabric plant produces 2-3 million meters of fabric per month. Most of the local clothing manufacturers purchase fabrics from this plant. Owners of one of the factories of major clothing producer stated that their supply agent purchased all of their fabric needs from Ocean Lanka. Ocean Lanka imports raw cotton and other materials and yarn from China, Indonesia and South Asian countries and supply fabrics to local clothing manufacturers. The company re-exports cotton waste and cotton yarn to China and other Asian countries. In addition to Ocean Lanka, many other companies engage in the production of yarn and fabric in Sri Lanka.

3.1. The Supply Chain Network

As discussed above, the world's largest multinational firms in the textiles and clothing industry are operating in Sri Lanka as suppliers of materials, producers of materials, producers of clothing and clothing accessories, trading agencies, etc. These firms are involved in several stages of the supply chain network of the industry. This section analyses the directions of imports of materials and exports of materials and finished clothing. Table 3 shows exports and imports of United Nations Harmonized System (HS) two-digit level product categories in 2009. Product categories from HS50-HS60 are materials of the textiles and clothing industry and HS61-HS63 are finished

clothing products. From total textiles and clothing exports, HS50-HS60 product categories accounted for about 5 percent only, of which about 2 percent was of the HS53 product category which includes exports of coconut fibres. Therefore, Sri Lanka does not export textile inputs and materials on a large scale. However, out of total textiles and clothing imports, more than 95 percent was from the HS50-HS60 product categories. This includes the import of fabric, cotton, fibres and man-made filaments. Therefore, the textiles and clothing industry in Sri Lanka is heavily dependent on the import of textile materials.

The table shows that Sri Lanka heavily exports finished clothing products. HS61 and HS62 product categories accounted for 93.4 percent of the total textiles and clothing exports of the country in 2009. These two product categories mainly cover clothing accessories and finished clothing. Therefore, Sri Lanka mainly exports finished clothing products while it mainly imports textile materials. In the product categories of HS50-HS60, many categories show deficits in the trade balance. These trade deficits are very large in product categories such as cotton, fabrics, man-made fibres and filaments and wool. On the other hand, clothing accessories and finished clothing show large trade surpluses.

3.1.1. Imports of Materials

One of the major issues for Sri Lanka's textiles and clothing industry is its high dependency on foreign inputs. Many people argue this dependence on foreign inputs is associated with very low domestic value content (Kelegama, 2005; Deerasinghe, 2009). Figure 3 shows the composition of textile material imports to Sri Lanka in 2009. Of the total, fibre and yarn accounted for about 73 percent; fabric accounted for 16 percent; and lace, nets, etc, accounted for 4 percent. Textile covering and packing items; sewing thread; and labels, badges etc., each accounted for 2 percent of total material imports. It again implies that the country imports most of its yarn and fabrics necessary for the industry.

Table 3. Composition of Textiles and Clothing Trade, 2009

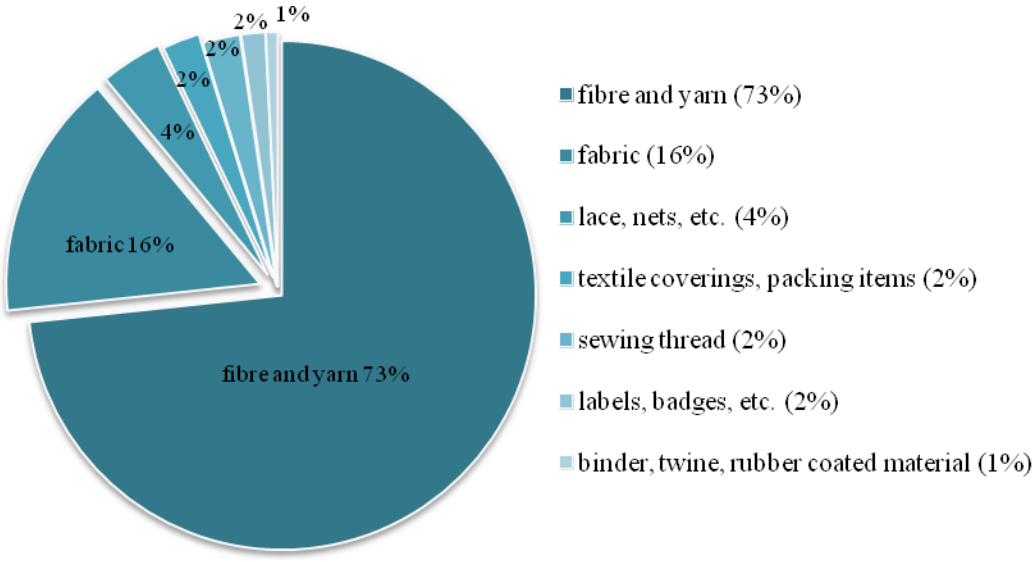
HS Code	Commodity description	Exports		Imports		Trade balance
		US$mn	%	US$mn	%	US$mn
50	Silk	0.0	0.0	5.4	0.3	-5.4
51	Wool; fine or coarse animal hair, horse hair, yarn and woven fabric	0.0	0.0	140.5	6.9	-140.5
52	Cotton	19.2	0.6	605.0	29.8	-585.8
53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn	80.8	2.4	23.5	1.2	57.3
54	Man-made filaments; strip and other like man-made textile materials	5.1	0.1	312.7	15.4	-307.6
55	Man-made staple fibres	20.3	0.6	224.1	11.1	-203.8
56	Wadding, felt and non-woven; special yarn; twine; cordage, ropes and cables and articles thereof	15.3	0.5	22.5	1.1	-7.2
57	Carpets and other textile floor coverings	4.1	0.1	4.0	0.2	0.1
58	Special woven fabrics, tufted textile fabrics; lace; tapestries; trimmings; embroidery	15.4	0.5	139.6	6.9	-124.2
59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use	2.4	0.1	51.2	2.5	-48.8
60	Knitted or crocheted fabrics	17.8	0.5	415.8	20.5	-398.0
61	Articles of apparel and clothing accessories, knitted or crocheted	1,581.2	47.4	34.6	1.7	1,546.6
62	Articles of apparel and clothing accessories, not knitted or crocheted	1,538.1	46.1	42.0	2.1	1,496.2
63	Other made up textile articles; sets; worn clothing and worn textile articles, rugs	38.1	1.1	6.2	0.3	31.9
	Total	3,338.1	100.0	2027.1	100.0	1310.8

Source: Authors' calculation based on UN Comtrade database, 2011.

Of the total material imports of US$1,944 million in 2009, nearly 40 percent was of imports of cotton, cotton yarn and cotton fabric (see Figure 4). Major source countries for these products were China (36%), India (30%), Pakistan (16%), Indonesia (6%) and the US (2%). These five countries accounted for 90 percent of Sri Lanka's supply of cotton, cotton yarn and cotton fabric in 2009. The other largest material import category is synthetic fibre, yarn and fabric. It accounted for about 21 percent of total textile material imports in 2009. Major source countries were China (21%), US (11%),

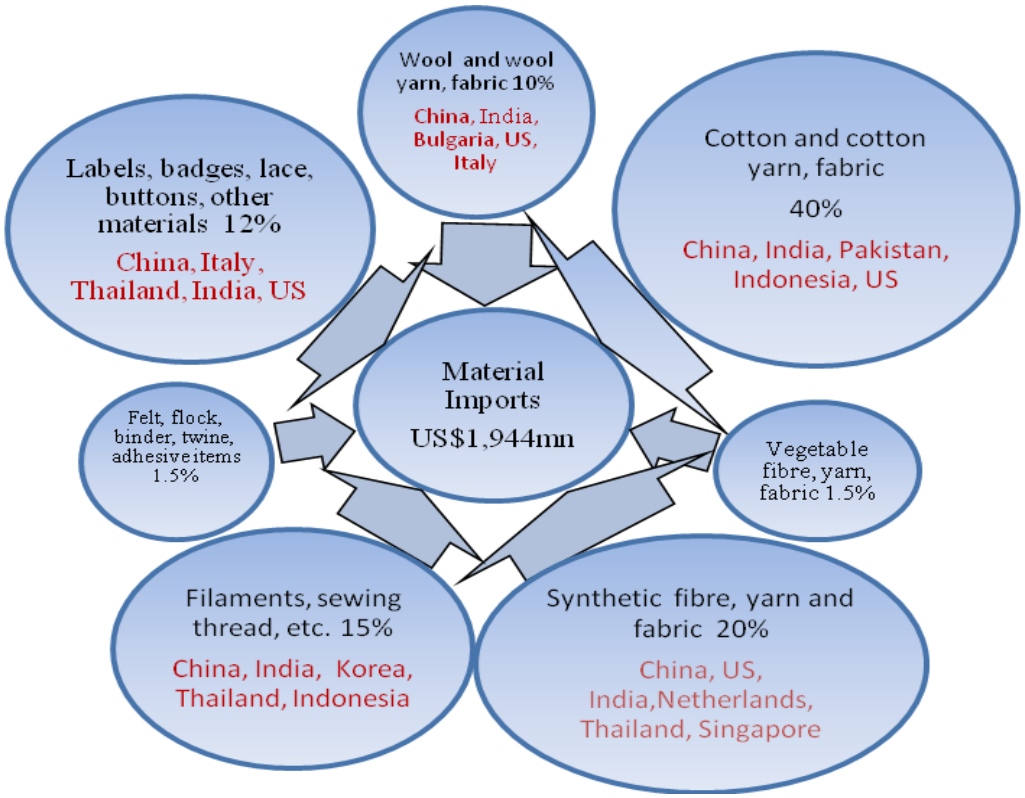
India (9%), Netherlands (7%), Thailand (7%) and Singapore (7%). Imports of man-made filaments, sewing thread, etc. Accounted for nearly 15 percent of total textile material imports. Sri Lanka imported these materials mainly from China (33%), India (15%), South Korea (9%), Thailand (8%) and Indonesia (4%). Labels, badges, lace, buttons and other materials constituted 12 percent of total textile material imports. Sri Lanka imported these items mainly from China (46%), Italy (15%), Thailand (9%), India (5%) and the US (3%). Wool, wool yarn and wool fabric is another important category of textile material imports. It accounted for nearly 10 percent of total textile material imports in 2009 and was mainly imported from China (30%), India (18%), Bulgaria (12%), US (11%) and Italy (7%).

Figure 3. Imports of Textile Materials to Sri Lanka, 2009



Source: Authors' calculation based on UN Comtrade database, 2011.

Figure 4. Composition of Textile Material Imports to Sri Lanka, 2009



Source: Authors' calculation based on UN Comtrade database, 2011
Note: Vegetable fibre, yarn, fabric are imported from mainly China, India, Bangladesh, Pakistan and Italy. Felt, flock, binder, twine, adhesive items are mainly imported from China, India, Malaysia, Germany and Thailand.

The five main categories of textile materials shown in Figure 4 accounted for nearly 97 percent of the total textile material imports in 2009. In all categories of material imports, China has been the dominant source country. As shown in Figure 5, in all textile material imports China accounted for nearly 40 percent while India accounted for about 18 percent and the US for 2.5 percent.

With regard to trading blocs, EU countries accounted for about 12 percent of total material imports, and South Asian countries accounted for 24 percent of which India's contribution was about 18 percent. ASEAN countries accounted for about 10 percent of the total. Interestingly, ASEAN+1 countries have significantly high backward linkages with Sri Lanka's textiles and clothing industry. About 70 percent of total textile materials required for the clothing industry are imported from the ASEAN+1 countries.

Therefore, trade regimes and policy regimes of ASEAN+1 countries will have the greatest impact on the textiles and clothing industry in Sri Lanka compared to the regimes of other countries.

Figure 5. Major Trading Partners in the Sri Lankan Textiles and Clothing Industry, 2009

Import of textile materials (per cent)	
•China	37.8
•India	17.6
•US	2.5
•EU	11.6
•ASEAN	9.5
•ASEAN+1	70.3
•South Asia	24.4

Export of clothing (per cent)	
•US	41.1
•UK	26.9
•Italy	11.1
•EU	51.7
•ASEAN	0.3
•ASEAN+1	1.8
•South Asia	0.3

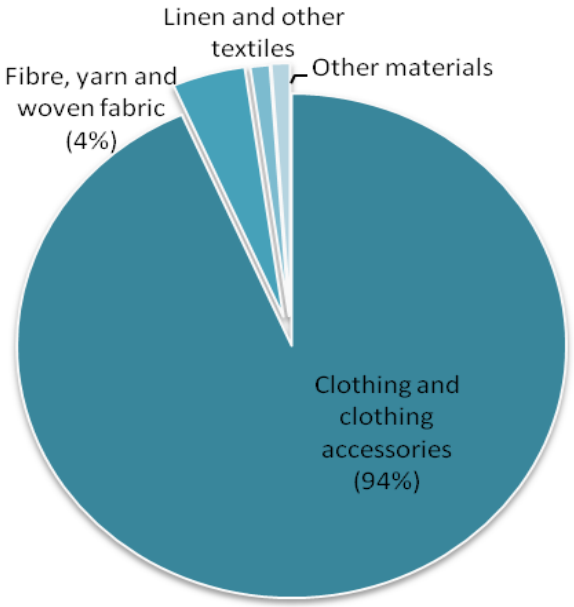
Export of textile materials (per cent)	
•China	17.1
•India	7.5
•US	6.0
•EU	20.2
•ASEAN	10.6
•ASEAN+1	54.8
•South Asia	14.5

Source: Authors' calculation based on UN Comtrade database, 2011.

3.1.2. Exports of Clothing

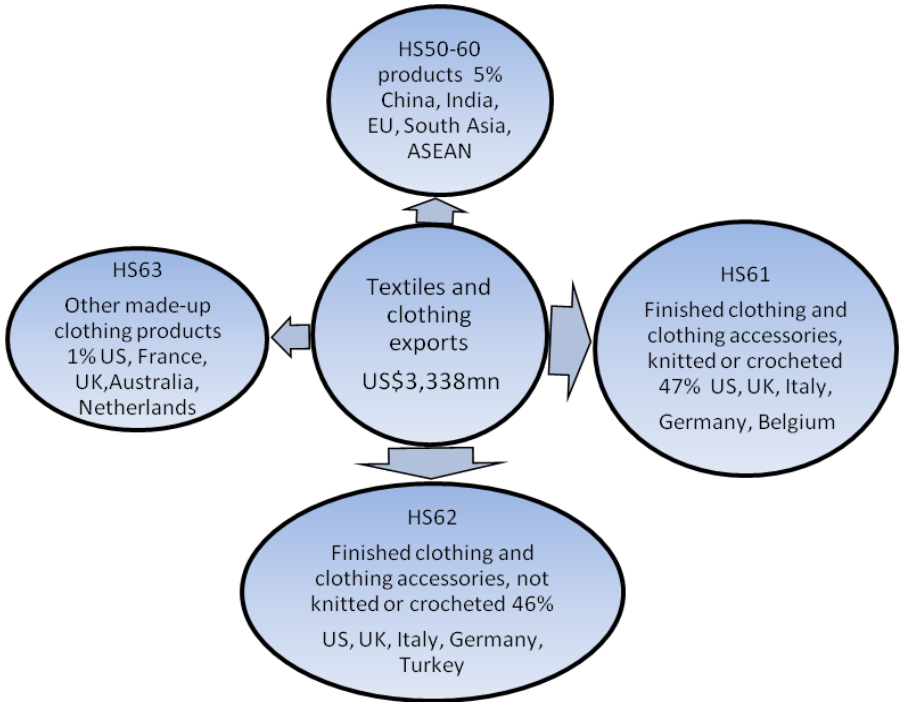
Sri Lanka's textiles and clothing industry is mainly restricted to the export of finished clothing products. In 2009, finished clothing products accounted for about 94 percent of the total textiles and clothing exports of Sri Lanka, as shown in Figure 6. As shown in Figure 7, of the total textiles and clothing exports, knitted and crocheted clothing products and clothing accessories (HS61) accounted for 47 percent while articles of non-knitted and non-crocheted clothing products and clothing accessories (HS62) accounted for 46 percent. Other made-up clothing products (HS63) accounted for only 1 percent of total exports of the textiles and clothing industry. As shown in Figure 5, major destinations of Sri Lanka's clothing exports in 2009 were the US (41 percent) and EU (52 percent). The major importers of Sri Lanka's clothing products in the EU were the UK, Italy, Germany, Belgium and France. Sri Lanka exports a very limited amount of its clothing products to ASEAN and South Asian countries. ASEAN+1 countries accounted for only about 2 percent of total clothing exports from Sri Lanka. Therefore, the finished products of Sri Lanka's clothing industry are not dependent on the markets of ASEAN and ASEAN+1 countries.

Figure 6. Exports of Textile-Related Products, 2009



Source: Authors' calculation based on UN Comtrade database, 2011.

Figure 7. Composition of Sri Lankan Exports of Textiles and Clothing, 2009



Source: Authors' calculation based on UN Comtrade database, 2011.

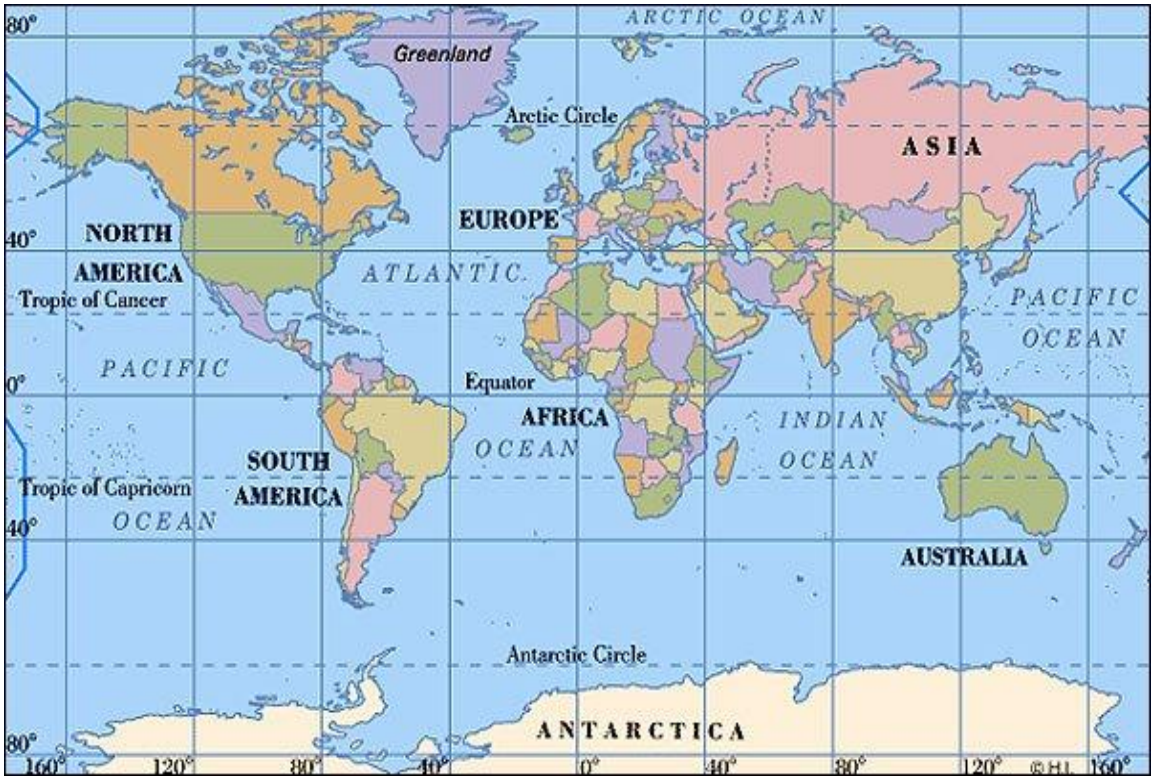
3.1.3. Textile Material Exports

In 2009, Sri Lanka exported textiles and clothing products worth US$3,338 million. Around 5 percent of this was textile materials (HS50-60 categories). Sri Lanka mainly exports these products to countries such as China, India and the US. In terms of trade blocs, EU countries received 20 percent of these exports, South Asian countries received 14 percent and ASEAN countries received 11 percent. ASEAN+1 countries accounted for 55 percent of total textile material exports from Sri Lanka. The high ASEAN+1 share is mainly bought by China and India which are major sources for textile materials for Sri Lanka's clothing industry.

3.2. Supply Chain Map

Figure 8 illustrates the supply chain network of Sri Lanka's textiles and clothing industry. The dark arrows represent the flow of textile material imports into Sri Lanka's clothing industry. China, South Asia, the EU and the ASEAN countries are the major outsourcing destinations for the industry. Sri Lanka mainly exports its final clothing products to the EU and the US. Within Asia, China and India are the dominant buyers for certain materials from Sri Lanka (see Figures 5 and 7). Some EU countries which produce clothing outsource materials from Sri Lanka. The links between Sri Lanka's textiles and clothing industry and ASEAN countries is important as Sri Lanka outsources a significant quantity of materials from ASEAN countries. Sri Lanka exports a sizable amount of textile materials to ASEAN countries such as Vietnam and Cambodia that are expanding their clothing industry at present. The final market for the clothing products of Sri Lanka in 2009 was dominated by the EU countries and the US. The bulk of the finished clothing is produced for the markets in these Western countries. The clothing industry in Sri Lanka has no strong links with Asia and East Asia and therefore there are substantial opportunities to explore that market.

Figure 8. Supply Chain Network of the Textiles and Clothing Industry in Sri Lanka, 2009



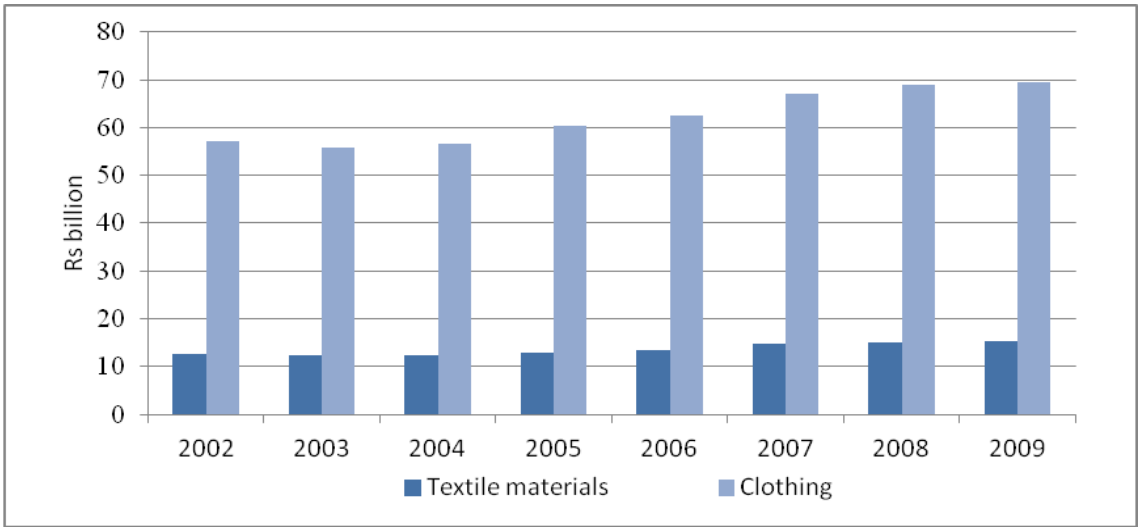
Source: Prepared by authors.

Note: Dark arrows, arrows with diamonds and arrows with dots represent the import of materials, export of final products and export of intermediate products, respectively.

3.3. Domestic Value-Added Components

The textiles and clothing industry in Sri Lanka has failed to create significant backward and forward linkages with the rest of the economy. Kelegama (2009) argued that the MFA quota system and other trade agreements between Sri Lanka and some important trade partners have not improved the competitiveness of the industry. Because of the lack of a fabric and accessory production base, the degree of vertical integration in the industry is also less compared with other competitive producer countries.

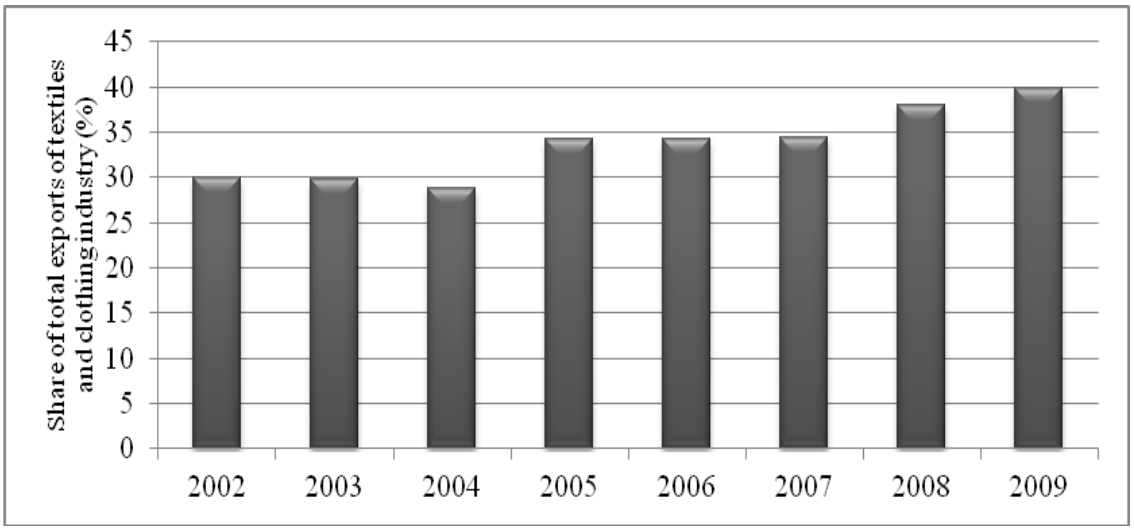
Figure 9. Domestic Value Added in the Textiles and Clothing Industry, 2002-09



Source: Authors' calculation based on Annual Report of the Central Bank of Sri Lanka, 2010.

Figure 9 shows that the domestic value-added content in the textiles and clothing industry increased gradually from 2002 to 2009. However, the increase for the manufacture of clothing was slightly faster than for the manufacture of textile materials. As shown in Figure 10, both the textile materials and clothing production together create domestic value added of about 40 percent of the industry's total export value in 2009, a 10 percentage point increase compared to the 2002 value. The local value-added component rose in recent years as the fabric and other material production expanded. In addition, the increased supply of embroidery, lace and other related materials by domestic small and medium enterprises (SMEs) also contributed to the increase in the domestic value-added component of the clothing industry exports. However, one manufacturer revealed that the local content of the material accounted for, on average, less than 20 percent of the market price of the final product. This 20 percent includes cutting and manufacturing costs, costs of fabric and other materials, packaging and local transport costs.

Figure 10. Domestic Value Added in the Textiles and Clothing Industry, 2002-09



Source: Central Bank of Sri Lanka, Annual Report 2010.

3.4. Fiscal Incentives Offered to the Textiles and Clothing Industry

The government has offered various incentives for the BoI industries since the late 1970s when it moved towards a liberalized open economic policy. In general, if a company has a minimum of 50 million rupees of foreign investment, the company is liable to receive an exemption from profit and income tax for five years from the commencement of the business. Many textiles and clothing manufacturers which have started their operations since the late 1970s used this opportunity to receive income tax exemptions by incorporating their investment into large foreign investment projects. In addition, the textiles and clothing industry also benefited from a law which states that the profits and income of any company engaged in exporting commodities other than tea, rubber and coconut should be taxed at a rate not exceeding 15 percent.

Business entities approved by the Textiles Quota Board (TQB) of Sri Lanka for the manufacture of clothing or provision of services which add value to clothing products are taxed at a rate of 15 percent, on the relevant part of profits or income applicable to the service provided. In addition, fabric imported for the clothing industry is excluded from value added tax (VAT), subject to approval from TQB and BoI. Yarn, dye and other materials used for handloom manufacturing are exempted from VAT. The following are offered deferment of VAT: purchase of fabric produced by a BoI-approved entity for the manufacture of clothing for the purpose of export; any materials

imported by manufactures supplying non-traditional export-oriented companies including approved manufacturers registered with the TQB; and sales of materials by manufacturers supplying non-traditional export-oriented companies including clothing manufacturers registered with TQB and the Export Development Board. In addition, the government has reduced the Economic Service Charge for exports, supply to exporters and sales of BoI-approved trading houses to 0.1 percent from 1 percent which applies for all other exports. Recently, the government has removed the ports and airport levy on export and import items for processing and re-export products which benefits the textiles and clothing industry too.

4. Trade Policy, Trade Agreements and the Textiles and Clothing Industry

Trade restrictions on the textiles and clothing industry have a long history tracing back to the 1930s, when the US and the UK took action to limit textile imports from Japan. The emergence of East Asian countries as producers of textiles and clothing led Western developed countries to negotiate voluntary export restraints. The introduction of the MFA quota system by developed countries provided protection for their domestic textiles and clothing industries. The MFA also provided opportunities for small exporting countries to access large markets and enable them to increase their export earnings. As discussed in section 1, the URA on textiles and clothing envisaged the elimination of the MFA quota over a 10-year period and provided for an average reduction of 22 percent of tariff rates on textiles and clothing. However, the progress of removing quotas in the US and EU markets has been slow. At present many of the quotas offered by the EU markets have been removed and trade in textiles and clothing has been facilitated under various bilateral and regional trade agreements.

Researchers state that trade reforms towards preferential trade agreements were rather slow in Sri Lanka as the country mainly focused on unilateral tariff reforms (see de Mel et al., 2011). However, at present the country has the following trading arrangements with its trading partners: Generalized System of Preferences with the US

and the EU; South Asian Free Trade Area; Indo-Sri Lanka Free Trade Agreement; Pakistan--Sri Lanka Free Trade Agreement and Asia--Pacific Trade Agreement. Each of these agreements is discussed below.

4.1. Generalized System of Preferences

The Generalized System of Preferences (GSP) is a trading agreement through which the EU countries and the US provide preferential access for developing countries into their markets in the form of reduced tariffs. Under the EU GSP scheme Sri Lanka enjoys normal provisions given in the GSP scheme and some additional tariff rate reduction under the GSP+ scheme, a special incentive arrangement for sustainable development and good governance. The textiles and clothing industry enjoys a reduction of duty by 20 percent under the normal GSP scheme. For a product to qualify for GSP provisions, the following requirements should be satisfied: the product must originate in beneficiary countries and proof of originating status; direct shipment from the beneficiary country to the EU; and regional accumulation criteria which would encourage regional cooperation should be satisfied. The following documents are required: certificate of origin, invoice declaration, certificate of movement when goods are exported to beneficiary countries from the EU in the context of bilateral relations, and ex-works (ex-factory) price information. The ex-work price information should include the following details: customs value of imported inputs, local raw materials, labor, others direct costs and overheads costs.

The market establishment under the GSP and GSP+ schemes has greatly benefited Sri Lanka's textiles and clothing industry. In particular, the protection provided under the GSP+ scheme helped domestic clothing producers penetrating the European market, although the facility was withdrawn recently. The utilization of the EU GSP scheme by Sri Lankan exporters has increased since 2004 with the introduction of the GSP+ facility. Wijayasiri and Dissanayake (2008) found that the utilization rate of the EU GSP scheme was at around 40 percent. However, the study found that the utilization rate of the US GSP scheme was higher at 89 percent, due mainly to relatively fewer Rule of Origin (ROO) restrictions.

4.2. Indo-Sri Lanka Free Trade Agreement

The Indo-Sri Lanka Free Trade Agreement (ISFTA) was signed on 28 December 1998 and came into effect from 1 March 2000. ISFTA aims to promote economic linkages between India and Sri Lanka through enhancement of bilateral trade and investment. The agreement only covers trade in goods and requires the two countries to offer market access for each other's exports on a duty-free basis and with concessionary tariffs.

India included clothing products in the negative list of the agreement. The negative list of trade agreements includes commodities that are not opened for negotiations under preferential trade arrangement. However, India has made special provisions under the agreement since 2000 to allow Sri Lanka to export into India 8 million pieces of clothing falling under HS61 and HS62 categories in any one calendar year. It was also agreed that for the manufacture of 6 million pieces out of the 8 million pieces of clothing products, the sourcing of fabrics would be done from India. It was further agreed that not more than 1.5 million pieces would be of any one product category.

Manufacturers are authorized to export to India under the following conditions: a certificate of origin is required; the import of clothing from Sri Lanka to India is allowed through the designated ports of Chennai and Mumbai; a tariff rate quota certificate (TRQC) issued by TQB of Sri Lanka is required. Carry-forward or carry-over of quota from a given year to another year is not allowed and off-shore sales of textiles and clothing products are prohibited under the agreement.

4.3. Pakistan Sri Lanka Free Trade Agreement

The Pakistan Sri Lanka Free Trade Agreement (PSFTA) was signed on 1 August 2002. Following the signing of the framework agreement, the two countries, having conducted several rounds of bilateral negotiations, finalized the annexes to the agreement in December 2004. In addition, the two sides signed a protocol, which aims to expand the scope of the current FTA and move towards a Comprehensive Economic Partnership Agreement, covering trade in services and investment cooperation. The objectives of this agreement are: to promote the development of economic relations between Pakistan and Sri Lanka through the expansion of trade in goods and services; to provide fair conditions of competition for trade in goods and services between Pakistan

and Sri Lanka; and to contribute, by the removal of barriers to trade in goods and services, to the expansion of bilateral as well as multilateral trade. Pakistan has agreed to offer Tariff Rate Quota (TRQ) of 3 million pieces of clothing products per financial year for 21 product categories of HS61 and HS62 classification with a preferential duty margin of 35 percent. The quantity exported under any specific product category is restricted to 200,000 pieces per annum.

4.4. South Asia Free Trade Agreement

The South Asia Free Trade Agreement (SAFTA) was finalized and signed by the Council of Ministers of the member states of the South Asian Association for Regional Cooperation (SAARC) on 6 January 2004. SAFTA aims to enhance the program of regional economic integration through the promotion of preferential trade, which commenced with the establishment of the South Asian Preferential Trading Arrangement (SAPTA) in 1995. This agreement offers different margins of preference for different product categories across countries. The following are the rules of origin: products should wholly be produced/obtained in the territory of the contracting exporting party; products should have a different HS code number from the imported items; the regional aggregate content should not be less than 50 percent of the freight on board (FOB) value; and the domestic value-added content should not be less than 20 percent of the FOB value. Direct shipment from the beneficiary country is required.

4.5. Asia--Pacific Trade Agreement

The Asia--Pacific Trade Agreement (APTA), formerly known as the Bangkok Agreement, was signed on 2 November 2005 and came into effect from 1 September 2006. The APTA member countries of Bangladesh, China, India, Laos, South Korea and Sri Lanka have a total population of about 2.5 billion, a large market with significant trade potential. The third round of negotiations of APTA has offered a maximum of 50 percent margin of preference on existing tariffs among the member countries for a wider coverage of products. With the conclusion of the third round of negotiations, the member countries had exchanged concessions on 4,270 products plus 587 products offered exclusively to less developed countries (LDCs), a marked increase from the 1,721 products plus 112 products for LDCs before the third round.

Sri Lanka's major export items to the APTA member countries were: natural rubber, desiccated coconut, coconut fibre, copra, coconut oil, tea, cloves and crude glycerin. In addition, Sri Lanka was able to secure tariff concessions from APTA member countries for products of spices (such as pepper, nutmeg, mace), cashew nuts, natural graphite, activate carbon, rubber products (tyres, gloves, mats, rings), floor tiles, ceramic, tableware/kitchenware, glassware, semi-precious stones, gems and jewelry, stuffed toys, brooms and brushes, cut flowers, footwear, biscuits, chocolates, clothing, fresh fruits and juices, wooden furniture, mattresses, electric lamps, ornamental fish, fresh/frozen fish and fishery products. However, Sri Lanka does not export a significant part of its clothing products to APTA member countries.

4.6. Ongoing Trade Negotiations with Asian Countries

Sri Lanka is a member of the proposed Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMST-EC) which includes Bangladesh, India, Thailand and Myanmar. The main objective of this new sub-regional grouping is to foster socio-economic progress in the member countries by promoting cooperation in eight priority sectors: trade, investment, industry, technology, infrastructure and transportation, tourism, energy, agriculture and human resource development. Sri Lanka is assigned the role of leading the textiles and clothing industry and coordinating the activities among the group. Further, Sri Lanka is involved in ongoing negotiations with China, Singapore, South Korea and Japan to establish free trade agreements. If the country is able to enter into trade agreements with these countries, it would greatly benefit the textiles and clothing industry because access to these Asian markets through FTAs will provide large market opportunities and reduce the uncertainty of the industry due to the high dependency on Western markets and attract more foreign investment into the industry from the region.

4.7. Preferential Duty Rates Under FTAs

The export of textiles and clothing products is subject to zero duty in Sri Lanka. Therefore, FTAs would have no significant impact on the export trade of textiles and clothing. Table A2 (see Appendix) gives the details of the duty rates applied for textiles and clothing imports into Sri Lanka. Almost all textile materials imports are subject to

zero duty. Exceptions are: woven fabric obtained from strip; binder and baler twine; twine; cordage and ropes; articles of yarn and strip tullors and net fabrics; woven textile wicks; and coconut fibre, which are all subject to 15-30 percent duty. Special duty rates for the above products are offered under ISFTA, PSFTA, SAFTA and APTA bilateral and multilateral trade agreements. For example, for most of these products, a preferential rate of zero percent is offered under ISFTA and PSFTA, 10.83 percent duty rate is offered for SAFTA member countries and rates of 13 percent or less are offered for APTA member countries. Thus, for some textile-related products, countries with trade agreements received zero percent or concessional duty rates compared to other countries. However, one may argue that as the duty rate is zero for most textile-related products, trade agreements would not generate significant preferential benefits for the textiles and clothing industry in Sri Lanka.

Imports of clothing products of HS61, HS62 and HS63 categories into Sri Lanka are generally subject to a 15 percent duty. As noted earlier, together with all other domestic taxes and surcharges the price of imported finished clothing products would be at least 65 percent higher than the prices of domestic clothing products. However, the import of clothing under ISFTA and PSFTA is subject to zero duty. A concessionary rate of 10.83 percent is applied to clothing imports from other SAFTA countries and a concessionary rate of 13.5 percent for some clothing products is applied to APTA member countries (see Table A2).

5. Case Studies

Factories and establishments that are engaged in the textiles and clothing industry in Sri Lanka can be divided into three categories. The first consists of large-scale factories that manufacture clothing for the purpose of exporting, operating in all stages of production and export sales. The following Cases (i) and (ii) are examples for this category. The second category includes large-scale factories that produce clothing for orders of export agencies. Export agencies obtain orders from foreign trade partners, probably multinational textiles and clothing firms, and subcontract to these local

clothing manufacturers. Export agencies supply all materials for the production and product design, and also assess the quality of products before export. The following Case (iii) provides an example for the second category. The third category of clothing producers includes SMEs which produce clothing accessories, other materials and sometimes the final product for large-scale clothing manufactures. Case (iv) provides an example for the third category. Case (v) is an export agency which subcontracts clothing manufacturers and engages in international trade in clothing.

5.1. Case (i): Large-Scale Textiles and Clothing Manufacturer and Exporter

We gathered information from one of the leading clothing manufacturers with a production capacity of 6 million pieces of clothing per month. The company has 12 factories in Sri Lanka and two factories overseas – one in Vietnam and one in Bangladesh. It imports yarn and fabric from suppliers in China, Taiwan, Hong Kong, India, Indonesia and some EU countries. It also produces fabrics in its own fabric plant, which is a joint venture with one of the largest fabric manufacturers in the world. The company has its own product design and development centre, printing and embroidery centre, washing plant and a packaging plant. It produces clothing for international brands such as Marks & Spencer, Lucky, Levi's, Ralph Lauren and Tommy Hilfiger for the markets in the EU and the US.

The export of final products of the company is handled by its own export centre. It also purchases clothing products from other small-scale suppliers for exporting. The company stated that provisions in the EU and the US GSP schemes have benefited the industry in securing markets for its production. According to the company, it has utilized the GSP schemes as the regional accumulation and domestic value-added content has been satisfied in their products. The requirement of domestic value-added content led the company to start its own fabric plant with foreign collaboration. However, the existing bilateral free trade agreements of Sri Lanka with Asian countries will not contribute greatly to the betterment of the industry as their main export market is in the Western countries and duty rates for textile material imports are mostly zero.

5.2. Case (ii): Large-Scale Producer and Supplier to an Export Agency

We interviewed the manager of one of the factories of a large group of companies engaged in the manufacture of clothing in Sri Lanka. The company has production plants in many parts of the country and overseas. In this study, we observed the production process of one of its branch factories which produces ladies' blouses, dresses and jackets with a production capacity of 12,000-15,000 units per day. The factory mainly supplies to Marks & Spencer in the UK through an export agency. The export agency obtains orders from the foreign buyer and subcontracts the producer. All production materials are supplied by the export agency along with production orders. The foreign buyer and the export agency provide design of the garment. Most of the time, the foreign buyer directly feeds the design to the automated cutting machine of the manufacturer. The manufacturer supplies the final product to the export agency and receives the cutting and manufacturing payment from the export agency if the product passes the accepted quality level test. The manufacturing firm has no idea about the impact of free trade agreements on the industry. The manufacturing firm however has concerns and interests relating to the domestic tax policies and incentive schemes.

5.3. Case (iii): Clothing Producer-cum-Exporter Operating Under BoI Law

A clothing manufacturer with foreign investment operating under the BoI law, this company stated that it operates in Katunayake EPZ where various incentives and infrastructural facilities are provided as a means of encouraging foreign investment. The company started operations in the 1980s and, at present, it produces ladies' and children's wares and mainly exports to US and EU markets. It purchases materials from some EU countries, the US and Asian countries. Since the import of raw materials for the clothing industry is duty free in Sri Lanka, the company does not consider FTAs to be important in the import of textile materials. However, the firm has extensively used the provisions in the EU GSP and US GSP schemes to penetrate those two markets for its finished clothing. The company informed us that the utilization rate of the US GSP scheme is higher than the utilization rate of the EU GSP scheme due to less stringent ROO requirements in the former. However, the documentation requirement in terms of domestic value-added content and regional accumulation is a hindrance to the use of these trade facilities. Responding to the question as to whether FTAs facilitate trade,

the company stated that GSP and GSP+ schemes provided opportunities to enter into many European country markets which were highly restrictive otherwise.

The company identifies the ISFTA and PSFTA as having large potential for Sri Lanka's textiles and clothing industry. However, the company reports that non-tariff barriers imposed by India and Pakistan for Sri Lanka's clothing exports play a major role in discouraging the utilization of the ISFTA and PSFTA. In these FTAs, both India and Pakistan included textiles and clothing products in the negative list initially and offered a preferential duty rate for a limited amount of exports later. India allows only 8 million pieces of clothing products to be imported from Sri Lanka for which sourcing of materials should be from India. Further, these products should reach India only through the designated ports in Chennai and Mumbai to qualify for preferential duty under the ISFTA. The PSFTA allows Sri Lanka to export only 3 million pieces of clothing products to Pakistan in a given year. Quantitative restrictions, requirements on sourcing of materials and other non-tariff barriers are obstacles to the utilization of FTAs with Asian countries. In addition, the company states that it would prefer to export to Western countries than to Asian countries with FTAs since the prices in Asian countries are significantly lower than prices in Western countries though there is no significant quality difference in the product.

The company believes that trade agreements with Asian countries such as Japan, China, South Korea, Singapore, Taiwan and Hong Kong, in terms of the textiles and clothing industry, would create a huge market for Sri Lanka's clothing products. Markets in these rich Asian nations would be highly important as their own textiles and clothing industries have moved to other countries. The opening up of the Asian markets through trade agreements would lessen the high dependency of the country's textiles and clothing industry on the Western markets. The company, however, is unaware of the APTA in which Sri Lanka has trade agreements with China and some other Asian countries.

5.4. Case (iv): Subcontracting Small-Scale Clothing Producer

The authors interviewed an owner-cum-manager of a small-scale clothing producer in Sri Lanka. This category includes many SMEs in the production of clothing accessories and final clothing products. Large firms outsource various clothing

accessories from these small firms and subcontract small firms occasionally to produce the final products in order to complete orders on time. The contracting manufacturing firm provides all the materials and cut fabrics to the subcontracting small firm for production and supervises the production process to maintain the accepted quality level imposed by export agencies/foreign buyers. These small firms were unaware of foreign markets, market prices, trade agreements, trade barriers and tariffs, etc. As the trade-related matters were handled by large manufacturing/contracting firms or exporting agencies. In the absence of subcontracts from large manufacturers for the purpose of export, these small-scale firms produce clothing for the local market.

5.5. Case (v): Textiles and Clothing Export Agency

We interviewed one of the textiles and clothing export agencies. This particular export agency is the one referred to in Case (ii) above. The export agency receives orders for clothing from foreign buyers and completes orders by contracting large-scale textiles and clothing producers. The export agency provides all the materials and product design to the producer. Materials are purchased from EU countries, Asian countries and domestic suppliers. The sourcing of materials from various countries has enhanced the production network of the industry and helps to meet the regional accumulation criterion. While having their own quality control mechanisms, the export agency works closely with foreign buyers to identify market needs and new designs. Therefore, the export agency is well aware of the changes in foreign market conditions including prices.

The export agency states that it uses the provisions in given trade agreements, in particularly, the EU GSP scheme. The quota given in the EU GSP and GSP+ schemes greatly benefited the exporting agency in supplying to markets in the UK and other European countries. The exporting agency ranks the EU GSP scheme as 'highly beneficial' for its trading activities. In particular, the EU GSP and GSP+ schemes opened up markets of many EU countries for Sri Lanka's textiles and clothing products. The exporting agency was able to fulfill the ROO requirements and regional accumulation criteria in the EU GSP scheme as a significant part of the material imports are from EU countries, and from South and East Asian countries. However, as the export agency mainly supplies to a foreign buyer in the UK, it does not pay much

interest to the bilateral and regional trade agreements of Sri Lanka with Asian countries such as ISFTA, PSFTA and SAPTA. The exporting agency was unaware of the APTA regional trade agreement. It admitted that there are greater delays at custom clearance due to security concerns and confirmation of regional accumulation and domestic value-added criteria. It did not respond to the question of how FTAs change the regulatory issues that affect the textiles and clothing industry in Sri Lanka.

6. Conclusion and Policy Implications

This chapter has examined the supply chain network of the textiles and clothing industry in Sri Lanka and the impact of FTAs on changing the supply chain pattern of the industry. We find that Sri Lanka's textiles and clothing industry has important backward linkages with South Asia, East Asia, ASEAN and ASEAN+1 countries. Sri Lanka outsources a large part of textile materials from these countries. At the same time, Sri Lanka exports a significant amount of its textile material production to the region. However, the market for the final clothing products of Sri Lanka is dominated by the US and the EU. The supply chain map of the country's textiles and clothing industry clearly illustrates that Sri Lanka's textiles and clothing industry is highly integrated with Asian countries in terms of import and export of textile materials, while its markets for final clothing products depends on Western countries. About 95 percent of total textiles and clothing exports are final products which are exported to the EU and the US.

The MFA quota system was highly beneficial for the textiles and clothing industry of the country. However, the gradual removal of the MFA quota system forced Sri Lankan textiles and clothing producers to be more efficient in order to be competitive in the world market. In the absence of secured markets through the quota system, the government of Sri Lanka tends to reach international markets through preferential trade agreements. The country is currently involved in a few bilateral and multilateral trade agreements such as ISFTA, PSFTA, EU and US GSP schemes, SAFTA and APTA. The country is currently in negotiation with some important Asian countries such as

Japan, China, South Korea and some of ASEAN countries to reach trade agreements.

The EU and US GSP schemes have contributed greatly to the progress of the textiles and clothing industry of Sri Lanka. About 95 percent of total clothing production is exported to the EU and the US mainly under the GSP provisions. Textiles and clothing manufacturers recognize GSP schemes as highly beneficial for the country's textiles and clothing industry. Less stringent ROO and regional accumulation criteria make manufacturers/exporters comfortable in exporting to the EU and the US.

FTAs that the country has with South Asian and some East Asian countries have less contribution to the progress of the textiles and clothing industry. This is for three reasons: first, almost all textile material imports are subject to zero duty in Sri Lanka and exports of clothing products are also subject to zero duty under the existing FTAs. Thus, existing trade agreements do not create a preferential treatment/environment to make a significant impact on the industry. Second, since Sri Lanka's clothing products are mainly exported to the US and the EU countries, FTAs with Asian and ASEAN countries do not generate significant benefits for the country's textiles and clothing industry. Third, although Sri Lanka has free trade agreements with India, Pakistan and other South Asian countries and some East Asian countries, trading of textiles and clothing products is highly restrictive in those agreements.

The experience of some of the manufacturers and exporters in the industry revealed that the utilization rate of the EU and US GSP schemes was high while the utilization rate of FTAs with Asian countries was low/less extensive. Textiles and clothing manufacturers believe that it would be beneficial for Sri Lanka to sign FTAs with ASEAN and ASEAN+1 countries as these countries provide alternative markets for the final clothing products. Also, FTAs with ASEAN and ASEAN+1 countries would make outsourcing of textile materials for the clothing industry of Sri Lanka more efficient and promote investment in the industry. It would also force Sri Lanka to concentrate on the most efficient production points in the global value chain of the textiles and clothing industry.

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Appendix

Table A1. Duty Rates and Other Taxes and Surcharges

HS Code	Product description	UoM	Duty %	VAT %	Cess tax (value)	Cess tax (uom) Rs	PAL %	NBT %	Total w/o Cess (uom) %
5001 5002 5003 5004 5005 5006	Silk-worm cocoons, raw silk, silk waste, silk yarn, yarn spun from silk waste	kg	0	0			5	3	8
5007	Woven fabric of silk and silk waste	kg	0	12			5	3	20
5101 5102 5103 5104	Wool not carded or combed, fine or coarse animal hair (not put up for retail sale), waste of wool or fine and coarse animal hair, garneted stock of wool/fine or coarse animal hair	kg	0	12			5	3	20
5201, 5203, 5205,5206	Cotton not carded or combed, cotton carded or combed, cotton yarn	kg	0	0			5	3	8
5202, 5204, 5207	Cotton waste, cotton sewing thread, cotton yarn retail packed	kg	0	12			5	3	20
5208111	Plain woven fabrics of cotton (cotton 85% or more, not more than 100g/m^2; unbleached)	kg	0	12			5	3	20
5208, 5209, 5210, 5211, 5212	Woven cotton fabrics wt over 200g/m^2, woven cotton fabrics under 85% of cotton over/not over 200g/m^2, woven cotton fabrics nest.	kg	0	12		50	5	3	20
5301,5302, 5303	Flax; true hemp; jute and other textile based fibres, raw and not spun, flax tow and waste	kg	0	12			5	3	20
5305	Coconut, abaca, ramie fibres raw and not spun	kg	30	12			5	3	50
530521, 530529, 530591, 530599	Textile fibres of abaca, ramie , raw, tow and waste	kg	0	12			5	3	20
5306, 5307, 5308, 5309, 5310, 5311,	Flax yarn, yarn of jute and other textile based fibres, yarn of vegetable textile based fibres nest. and paper yarn, fabrics of flax, fabrics of jute and other fibres, fabrics of vegetable based fibres	kg	0	12			5	3	20

HS Code	Product description	UoM	Duty %	VAT %	Cess tax (value)	Cess tax (uom) Rs	PAL %	NBT %	Total w/o Cess (uom) %
5401, 5404, 5405, 5406	Sewing thread of man-made filaments; synthetic monofilaments; artificial monofilaments, man-made filament yarn	kg	0	12			5	3	20
5402, 5403	Synthetic filament yarn	kg	0	0			5	3	8
5407	Woven fabrics of synthetic filament yarn	kg	0	12		50	5	3	20
540720	Woven fabrics obtained from strip	kg	15	12		50	5	3	35
5408	Woven fabrics of artificial filament yarn	kg	0	12		50	5	3	20
5501, 5502, 5504, 5505, 5506, 5507, 5508, 5511, 5512, 5513, 5514, 5515, 5516	Synthetic filament tow, artificial filament tow, artificial staple fibres not carded/combed, waste of man-made fibres, synthetic staple fibres carded/combed, artificial staple fibres carded/combed, sewing thread of man-made staple fibres, yarn of synthetic and man-made fibres, woven fabrics of synthetic, artificial and other man-made fibres	kg	0	12		50	5	3	20
5509, 5510	Yarn of synthetic staple fibres; yarn of artificial staple fibres, not retail	kg	0	0		50	5	3	8
5601, 5602, 5603, 5604, 5605, 5606	Textile wadding and articles, textile fibres nest; felt, impregnated or coated; non woven; rubberized thread and cord; textile covering; rubberized textile yarn	kg	0	12			5	3	20
56011, 560721, 560741, 560749, 560790, 5608	Sanitary towels, tampons, napkins and napkin liners of wadding, binder of bale twine of sisal, binder or bale twine of polythene or polypropylene; other twine, knotted net twine	kg	30	12			5	3	50
560729, 560750, 5609	Cordage, ropes and cables of sisal fibres; twine cordage and cables of other synthetic fibres; articles of yarn like heads of 5404/5408	kg	15	12			5	3	35
5701	Carpets and other textile floor coverings, knotted	mt	15	12	25	50	5	3	60
5702, 5703, 5704, 5705	Carpets and other textile floor coverings, woven not tufted, carpets and floor coverings not tufted; carpets and floor covering tufted; carpets and floor covering felt not tufted, nest	mt	15	12			5	3	35
570220	Floor coverings of coconut fibres (coir), woven	mt	0	12	25	100	5	3	45

HS Code	Product description	UoM	Duty %	VAT %	Cess tax (value)	Cess tax (uom) Rs	PAL %	NBT %	Total w/o Cess (uom) %
5801, 5802, 5804, 5807, 5808, 5809,5810, 5811	Woven pile and chenille fabrics, woven terry fabrics, tulles and other net fabrics, labels, badges and other textile material, braids and ornamental trimmings, embroidery, quilt textile products	kg	0	12		50	5	3	20
5803	Gauze fabrics	kg	15	12		50	5	3	35
580410	Tulles and other net fabrics, not including woven, knitted or crocheted	kg	15	12		50	5	3	35
5901, 5902, 5903, 5904, 5905, 5906, 5907, 5909, 5910, 5911	Textile book cover fabrics, tracing cloth, paint, canvas; tire code fabric of high tenacity yarn; plastic textile fabric coat; linoleum, floor cover with coats on a textile base; textile wall coverings; rubberized textile fabrics; textile hose piping and tubing; transmission/conveyor belts; textile products for special use.	kg, mt	0	12			5	3	20
590310, 5908	Textile fabrics impregnated, coated, covered with polyvinyl and chloride; textile wicks for lamps and gas mantle, etc.	kg	15	12			5	3	35
5907	Coated textile fabrics, theatrical	kg	0	12		50	5	3	20
6001, 6002, 6003, 6004, 6005, 6006	Pile fabrics, fabrics of a width not exceeding 30cm, wrap knit fabrics and other	kg	0	12		50	5	3	20
6101, 6102, 6103, 6104, 6105, 6106	Men's or boys' overcoats, car coats, cloaks, anoraks, wind-cheaters, wind jackets and similar products ; Women's and girls' overcoats, car coats, cloaks, anoraks, wind-cheaters, wind jackets and similar products ; Men's or boys' suits, ensembles, jackets, blazers, overalls, breeches and shorts ; women's or girls' suits, ensembles, jackets, blazers, overalls, breeches and shorts ; men's or boys' shirts (knitted or crocheted); women's or girls blouses, shirts, shirt-blouses (knitted or crocheted)	unit	15	12	30	75	5	3	65
6107, 6108, 6111, 611211, 611212,	Men's or boys' underpants, briefs, nightshirts, pajamas, bath robes, dressing gowns and similar ; women's or girls' slips and petticoats, briefs and panties (knitted or crocheted) ; track suits, ski suits and swimwear;	unit	15	12	25	60	5	3	60
6114, 6116, 6117	Other garments, gloves, mittens and mitts ; other made-up clothing accessories	kg	15	12	25	60	5	3	60

HS Code	Product description	UoM	Duty %	VAT %	Cess tax (value)	Cess tax (uom) Rs	PAL %	NBT %	Total w/o Cess (uom) %
6109, 6110, 6112, 6113	T-shirts, singlet and other vests of cotton; jerseys, pullovers, cardigans, waistcoats and similar products of cotton, man-made fibres and other materials ; track suits, ski suits and swim wear; garments made up of knitted or crocheted fabrics of heading 5903, 5906 and 5907	unit	15	12	30	75	5	3	65
6115	Panty hose, tights, stockings, socks, and other hosiery	kg	15	12	25	625	5	3	60
61178	Other made up clothing accessories, knitted or crocheted	kg	0	12	25	60	5	3	45
61179	Parts of garments or of clothing accessories , knitted or crocheted	kg	0	12			5	2	19
6201, 6202, 6203, 6204, 6205, 6206, 6207	Men's or boys' overcoats, car coats, cloaks, anoraks; women's and girls' overcoats, car coats, cloaks, anoraks, wind-cheaters, wind jackets and similar products ; men's or boys' suits, ensembles, jackets, blazers, overalls, breeches and shorts ; women's or girls' suits, ensembles, jackets, blazers, overalls, breeches and shorts; men's or boys' shirts (not knitted or crocheted); women's or girls blouses, shirts, shirt-blouses (not knitted or crocheted); men's or boys' underpants, briefs, nightshirts, pajamas, bath robes, dressing gowns and similar	unit	15	12	30	75	5	3	65
6208	Women's or girls' slips and petticoats, briefs and panties (not knitted or crocheted)	kg	15	12	25	60	5	3	60
6209, 6210, 6211, 6212, 6213, 6214, 6215, 6216	T-shirts, singlet and other vests; jerseys, pullovers, cardigans, waistcoats and similar products; babies' garments and clothing accessories ; track suits, ski suits and swim wear; garments made up of knitted or crocheted fabrics of heading 5903, 5906 and 5907; other garments; panty hose, tights, stockings, socks, and other hosiery; gloves, mittens and mitts	kg	15	12	30	75	5	3	65
6217	Other made-up clothing accessories (knitted or crocheted)	kg	0	12			5	3	20
6301, 6302, 6304	Blankets and travelling rugs; bed linen, fabric linen, toilet linen, and kitchen linen; furnishing articles	kg	15	12	30	75	5	3	65
630392, 630411	Curtains and interior blinds, bed valances	kg	15	12			5	3	35

HS Code	Product description	UoM	Duty %	VAT %	Cess tax (value)	Cess tax (uom) Rs	PAL %	NBT %	Total w/o Cess (uom) %
6305	Sacks and bags of kind used for the packing of goods	kg	15	12	25		5	3	60
6306	Tarpaulins, awnings and sun blinds, tents, sails for boats, sailboards of land crafts, camping goods	kg	15	12	30		5	3	65
6307, 6309, 6310	Made-up articles of textile materials nest; worn clothing and other worn textile articles ; used or new rags, scrap twine, etc	kg	15	12	30		5	3	65
6308	Needlecraft sets of woven fabrics and yarn	kg	15	12	30	50	5	3	65

Source: Department of Customs, Sri Lanka 2011
Note: UoM is unit of measurement. PAL is Port and Airport Levy and NBT is Nation Building Tax, Cess tax is a specific tax on the commodity.

Table A2. Preferential Duty Rates Offered by Sri Lanka in Bilateral and Multilateral Trade Agreements

HS code	Product description	UOM	General %	Preferential duty rates offered in FTAs %			
				ISFTA	PSFTA	SAFTA	APTA
50	Silk including yarn and woven fabrics	kg					
5001, 5002, 5003, 5004, 5005, 5006, 5007	Silk-worm cocoons, raw silk, silk waste, silk yarn, yarn spun from silk waste, fabric of noil silk	kg	0				
51	Wool and fine or coarse animal hair including yarn and woven fabrics thereof	kg					
5101, 5102, 5105	Shom wool, other wool, carbonized wool, fine or coarse animal hair (not carded or combed)	kg	0				
5111, 5112, 5113,	Woven fabric of wool, woven fabric of combed wool, woven fabric of animal hair	kg	0				
52	Cotton , cotton yarn and woven fabrics	kg	0				

HS code	Product description	UOM	General %	Preferential duty rates offered in FTAs %			
				ISFTA	PSFTA	SAFTA	APTA
53	All other vegetable textile fibre, paper yarn, and woven fabric of paper yarn	kg					
5301	Raw flax	kg	0				
5305	Raw bristle fibre of coconut	kg	30				
53050082, 53050089, 53050099	Tow, noils and waste, other coconut fibre	kg	30		0		
5306, 5307, 5308, 5309, 5310, 5311	Flax yarn, yarn of Jute and other based fibres, yarn of other textile fibres and paper yarn, woven fabric of flax, woven fabric of jute and other based fibres, woven fabrics of other vegetable textile fibres	kg	0				
5401, 5402, 5403, 5404, 5405, 5406, 54071, 54073	Sewing thread of man-made filaments, synthetic filament yarn, artificial filament yarn, synthetic monofilaments, artificial monofilaments, man-made filament yarn, woven fabrics obtained from high tenacity yarn of nylon/polyamides/polyesters, other fabrics	kg	0				
54072	Woven fabric obtained from strip or the like	kg	15	0	0	10.83	
55	Man-made staple fibres	kg	0				
560110	Sanitary towels and tampons, napkin liners for babies of wadding	kg	30				
560121	Sanitary towels and tampons, napkin liners for babies of cotton, man-made fibres, other textile dust	kg	0				
5602, 5603, 5604,	Needle loom and other felt, stitch bonded fibre fabrics, other felt of wool, other textile material, rubber thread and cord, textile covered/with rubber plastic	kg	0				
560721, 560741	Binder or baler twine	kg	30				
560729	Twine, cordage, ropes, and cables etc of other material	kg	15				

HS code	Product description	UOM	General %	Preferential duty rates offered in FTAs %			
				ISFTA	PSFTA	SAFTA	APTA
5607491	Twine, cordage, ropes, etc imported for manufacture of fishing nets	kg	15		0		
5607499	Twine, cordage, ropes, etc imported for other purposes	kg	30		0		
5607509	Synthetic fibre imported for manufacture of fishing nets	kg	15				
56079010	Other material imported for manufacture of fishing nets	kg	15		0		
56079020 - 56079090	Coir twine, coir ropes, other twine of jute or other textile fibres	kg	30		0		
56081-56089	Made up fishing nets and other	kg	30				
5609	Articles of yarn, strip or the like	kg	15				
57	Carpets and other textile floor covering						
57011	Carpets and textile floor covering,	m2	15	0	0	10.83	13.5
5701901, 5701902,	Coir carpets and rugs, jute carpets and other	m2	15	0	0	10.83	7.50
57021, 57022	Hand-woven rugs, floor covering of coconut fibre, wool, animal hair,	m2	15	0	0	10.83	
5702391-5702399	Floor coverings of jute and other vegetable fibres	m2	15	0	0	10.83	7.50
570310	Tufted carpets and other textile floor coverings of wool, nylon or other polyamides, other man-made textile fibres	m2	15	0	0	10.83	13.50
5703901-5703909	Tufted carpets and other textile floor coverings of jute	m2	15	0	0	10.83	12.75
58	Special woven fabrics, tufted textile, lace and other material						
580110	Woven pile fabrics and chenille fabrics of wool, cotton and other man-made fibres	kg	0				
5802-5803	Terry towelling and similar woven fabric of cotton and other fibres	kg	0				

HS code	Product description	UOM	General %	Preferential duty rates offered in FTAs %			
				ISFTA	PSFTA	SAFTA	APTA
5804101	Tullors and net fabrics (knotted netting)	kg	15 or 350/kg	0	0	10.83 or Rs 253/kg	
580421-580430	Mechanically or man-made lace	kg	0				
5805	Woven pile fabrics	kg	0				
5807	Labels, badges and similar articles of textile material	kg	0				
5808	Braids in the piece, ornamental trimmings	kg	0				
5809	Woven fabrics of metal thread and metalized yarn	kg	0				
5810	Embroidery in the piece in strips or in motifs	kg	0				
59	Impregnated, coated, covered or laminated textile fabrics, textile articles of a kind of suitable for industrial use						
5901	Fabrics coated with gum/amylaceous substances	kg	0				
5902	Tyre cord fabric of high tenacity yarn of nylon or other polyamides, polyesters or viscose rayon	kg	0				
59032-59033	Textile fabrics impregnated coated covered laminated with other substance	kg	0				
5904, 5905	Linoleum, textile wall coverings	m2	0				
5906, 5907	Rubberized textile fabrics, textile fabrics otherwise impregnated coated covered painted and canvas	kg	0				
5908	Woven textile wicks	kg	15	0	0	10.83	
5909, 5910, 5911	Textile hose piping and similar textile tubing, transmission or conveyer belts or belting of textile materials	kg	0				

HS code	Product description	UOM	General %	Preferential duty rates offered in FTAs %			
				ISFTA	PSFTA	SAFTA	APTA
60	Knitted crocheted fabrics						
6001, 6002-6003, 6004, 6005, 6006	Pile fabrics, fabrics of a width not exceeding 30cm, wrap knit fabrics and other	kg	0				
61	Articles of apparel and clothing accessories (knitted or crocheted)	unit	15	0	0	10.83	15-13.5
62	Articles of apparel and clothing accessories (not knitted or crocheted)	unit	15	0	0	10.83	15-13.5
63	Other made up articles of textile and garment accessories	unit	15				

Sources: ISFTA, PSFTA, SAFTA and AFTA agreements and Department of Customs, Sri Lanka.

CHAPTER 9

ASEAN+1 FTAs and the Global Supply Chain in East Asia: The Case of the Philippine Automotive and Electronics Sectors

MAUREEN ANE D. ROSELLON

Philippine Institute for Development Studies

ERLINDA M. MEDALLA[1]

Philippine Institute for Development Studies

How are the ASEAN+1 free trade agreements facilitating the flow of goods in the supply chain in East Asia? This chapter looks at the experience of the Philippine automotive and electronic sectors – two sectors that are well integrated into the supply network in East Asia. Using firm interviews, the study outlines the firms' segment of the supply chain and identifies impediments at points critical for firms, particularly in relation to free trade agreements. FTA utilization and awareness, trade facilitation, logistics and government support are some of the issues that come to light.

[1] Research Associate and Senior Research Fellow, respectively, Philippine Institute for Development Studies.

1. Introduction

ASEAN in recent years signed free trade agreements (FTAs) with China, Japan, Korea, India, Australia and New Zealand. ASEAN--China (ACFTA) entered into force in 2005, ASEAN--Japan Comprehensive Economic Partnership (AJCEP) in 2008, ASEAN--Korea (AKFTA) in 2010, ASEAN--India (AIFTA) in 2010 and ASEAN--Australia--New Zealand (AANZFTA) in 2010. As in other free trade agreements that have been forged between countries, the objective is to reduce barriers to exchange of goods and services, in terms of tariffs, quotas, technical standards or regulations (domestic or international) that hinder trade.

In East Asia, trade in parts and components has been getting some attention. This is attributed to the rise in production sharing – sometimes referred to as international production fragmentation or slicing the value chain – which has increasingly characterized world trade during the past decades. Production sharing involves breaking up of the production process into vertically separated stages carried out in two or more countries. This started with the electronics and garments industries and was later picked up by other industries such as automotive (Athukorala, 2010).

Multinational companies from countries including the US, Germany and Japan, recognized locational advantages of countries in East Asia and set up subsidiaries or affiliate companies or manufacturing plants to distribute parts of the production process in different sites/countries in the region. A part or component of a product may be manufactured in one country then sent to another country for component assembly or further processing, then again to another country for final assembly or finishing. A supply chain is established and one which passes through two or more countries.

FTAs, which aim for reduced barriers to trade between countries, e.g. in the form of reduced tariff rates and trade facilitation measures, can facilitate the flow of goods in the supply chain. In this regard, certain aspects of FTAs are crucial. This would include rules of origin and the corresponding documentation as requirements for availing of preferential tariff rates, as well as non-tariff measures (e.g. product standards). It is also important for the domestic environment to complement as well as

facilitate the use of FTAs, and to address the possible impact of these FTAs on the domestic industry.

The Philippines takes part in this production sharing. The country is home to some multinational companies (MNCs) from Japan, the US and the EU or an affiliate or subsidiary which has set up parts manufacturing plants or sub-contracted local firms, to take up a slice of the supply chain, especially in East Asia. As a member of ASEAN, the Philippines is party to the ASEAN+1 FTAs and therefore receives the privilege of FTA provisions, e.g. preferential tariff rates (reduced or zero tariff) and trade facilitation. The question that is often asked is, does the Philippines benefit from these FTAs? How are the 'Plus 1' FTAs facilitating the Philippines' participation in the product fragmentation in the East Asian region? Are there aspects of these FTAs that hinder the free flow of goods, i.e. parts and components, in the supply chain in the region?

In this chapter, we look in particular at the experience of Philippine businesses as far as the ASEAN+1 FTAs and the respective supply chains are concerned in the automotive and the electronic sectors. This chapter aims to view the firms' segment of the supply chain and identify impediments at critical points for the firms, especially in relation to the free trade agreements. To achieve this, interviews of firms were conducted to collect relevant and necessary information. Firms from the automotive and electronics sector were chosen.

The automotive and electronics sectors in the Philippines are alike and different in some ways. Both are participant to and dependent on trade fragmentation and the supply chain in ASEAN and East Asia, but they differ in size and circumstances. The automotive sector is relatively small in terms of share in total Philippine exports, while the electronics sector is a major contributor. The electronics sector is almost four times bigger than automotive in terms of the number of establishments. Despite its size and performance, the government continues to support the efforts to develop and improve the competitiveness of the automotive sector because of its deep forward and backward linkages and potential for technological spillovers. Moreover, the automotive sector is a protected sector with its high tariffs before the FTAs, while electronics even without FTAs has already low or almost zero tariffs. It would be interesting to compare and

contrast the experience of these two sectors as regards supply chain issues and associated FTA concerns.

The chapter is organized as follows. Section 2 discusses FTAs and implications for the supply chain. Section 3 gives a background on the structure of the two case sectors – the automotive and electronics sectors. Section 4 presents the economic and trade performance of the two sectors, and discusses FTA utilization of firms in the Philippines. Section 5 outlines the supply chain of individual firms interviewed, followed by a summary of the impediments at critical points along the chain as encountered by these firms. The last section concludes.

2. Overview of FTA Implications for the Supply Chain

FTAs aim for freer flow of goods and services within the free trade area. With FTAs, production fragmentation and its consequent supply network would be expected to prosper for several reasons. These include the expected facilitation of trade between countries which would improve logistics; reduced tariffs which would lessen costs; and increased market access which would benefit businesses in terms of profitability. In this regard, certain aspects of FTAs are essential. This includes rules of origin (ROOs) and the corresponding documentation as requirements for availing of preferential rates, as well as non-tariff measures (e.g. product standards). At the same time, the domestic environment should complement as well as facilitate the use of FTAs, and also address the possible impact of these FTAs on the domestic industry.

In facilitating the efficient flow of supply chains, cross-border cooperation is imperative – state institutions such as trade or industry ministries and customs agencies play a significant role in the efficiency and efficacy of the supply chain (Banomyong, 2010). The environment in which the supply chain operates – logistic operations, ports and service providers (forwarders, customs brokers) are likewise crucial.

Potential gains from fragmentation of production or slicing of the value chain can be magnified with fewer trade restrictions (i.e. lower tariff or quota restrictions), since the activities across countries involved in the chain have narrow margins, making the

flow of goods highly sensitive even to small tariffs (Athukorala, 2003). In this sense, reduced barriers such as lower tariffs in FTAs facilitate the opportunity for increased benefits for participants in the supply chain.

However, in practice, the process is not always this straightforward. For instance, firms have to go through the customs process, which without enough trade facilitation, could incur additional costs associated with administrative delays. Studies on ROOs have indicated how delays in obtaining certificate of origin (CO) discourage the firms' usage of FTAs.

In addition, in order to avail of lower tariffs or the preferential rates, there are FTA rules on eligibility.[2] For example, a basic ROO criterion usually used for eligibility is local (or regional) content of the product that is to be exported or imported. For instance, a product has to have a minimum value content coming from local suppliers or from the FTA area to establish originating status. The challenge then comes in the documentation to satisfy requirements for obtaining a CO to acquire eligibility of a preferential tariff. Paperwork would include documentation on the origin of the input or raw materials, therefore involving acquiring information from suppliers. Furthermore, the procedure in obtaining origin certification from customs or other authorized agencies, and how and where to get relevant information are some concerns with regard to services provided to assist businesses in taking advantage of preferential tariff rates in FTAs.

With eligibility settled, goods (e.g. parts and components) arrive in the country of destination for further processing or assembly with reduced tariff or zero tariffs. Particularly when eventually most goods will be traded with zero preferential tariffs, establishing originating status supported by proper documentation will be one major concern for businesses, both exporters and importers, and the border agencies (customs).

It would be of interest to see how businesses are coping with rules in FTAs and how these are affecting the flow of goods from suppliers and to customers. For this case study, the Philippine automotive and electronics sectors are examined – two sectors which have been trading in parts and components.

[2] See Medalla and Rosellon in Chapter 6 for more detailed discussion on the nature of ROOs.

3. Sector Structure

3.1. Automotive Sector

The automotive sector in the Philippines has two sub-sectors: the vehicle assemblers (passenger cars, commercial vehicles[3] and motorcycles) accounting for about 17 percent of the total industry players, and the parts and components manufacturers which account for more than 80 percent of the firms in the automotive sector.

3.1.1. Automotive Assemblers

Of the 52 manufacturers of passenger cars, commercial vehicles and motorcycles in the industry, 14 are car assemblers. Five Japanese companies dominate vehicle assembly, namely, in order of market share – Toyota, Mitsubishi, Honda, Isuzu and Nissan. There is one American company – Ford, and one Korean company – Hyundai which has been increasing its market share in recent years.

With about 35 percent of the market share in 2009, Toyota remains the industry leader in automotives in the Philippines. In the 10 years to 2009, the company achieved its highest share in 2006-07 at 38 percent. Coming in consistently second in terms of market share is Mitsubishi, with Honda following at third, among vehicle assemblers.

3.1.2. Auto Parts and Components

The Philippine automotive industry is composed of 256 firms that manufacture auto parts and components, of which: 124 are first-tier suppliers (of the domestic automotive assemblers); and 132 are second- and third-tier suppliers (of the first-tier manufacturers), mostly small and medium enterprises (Aldaba, 2008). The firms are engaged in metalworking, rubber, seats and trims, plastics, and electrical systems for automotives. The products they manufacture include:[4]

- suspension: tyres, steel rims, aluminium wheels, leaf and coil springs
- interior: carpets and seats

[3] Refer to utility vehicles; sports utility vehicles; Asian utility vehicles; Philippine utility vehicles; pick-ups; commuter vans; light, medium and heavy trucks and buses; and special purpose vehicles.
[4] Aldaba (2007); Raymundo (2004).

- electrical system: wiring harnesses, batteries, lamps and relays
- pressed components: mufflers, radiators, seats, frames, seat adjusters, oil and air filters, pedals
- rubber and plastic components: fan belts, rubber hoses and small plastic parts
- mechanical parts: transmission, engine parts, etc.
- cast and forged components: gear blanks, brake disks, brake drums.

Among the parts and components manufacturers, there are 100 percent Filipino-owned firms; small and medium enterprises (SMEs) which are mostly Filipino firms; and firms that are affiliated with MNCs. The last relate to the mother firm exercising vertical integration. For instance, firms from Japan have brought in affiliates or sister firms to supply parts and components to the mother firm (e.g. car assembler) in the country, to Japan or another country. Major auto parts and components manufacturers include: Yazaki-Torres Manufacturing Corp. (wiring harness), United Technologies Automotive Phils. (wiring harness), Temic Automotive (Phils.) Inc. (anti-brake lock system), Honda Engine Manufacturing Phils., Inc. (engines), Asian Transmission Corp. (automotive transmissions), Toyota Autoparts Phils. (automotive transmission), Fujitsu Ten Corp. of the Phils. (car stereos) and Aichi Forging Co., Inc. (forged parts) (source: Aldaba, 2007).

3.1.3. Participation in the Global Production Network

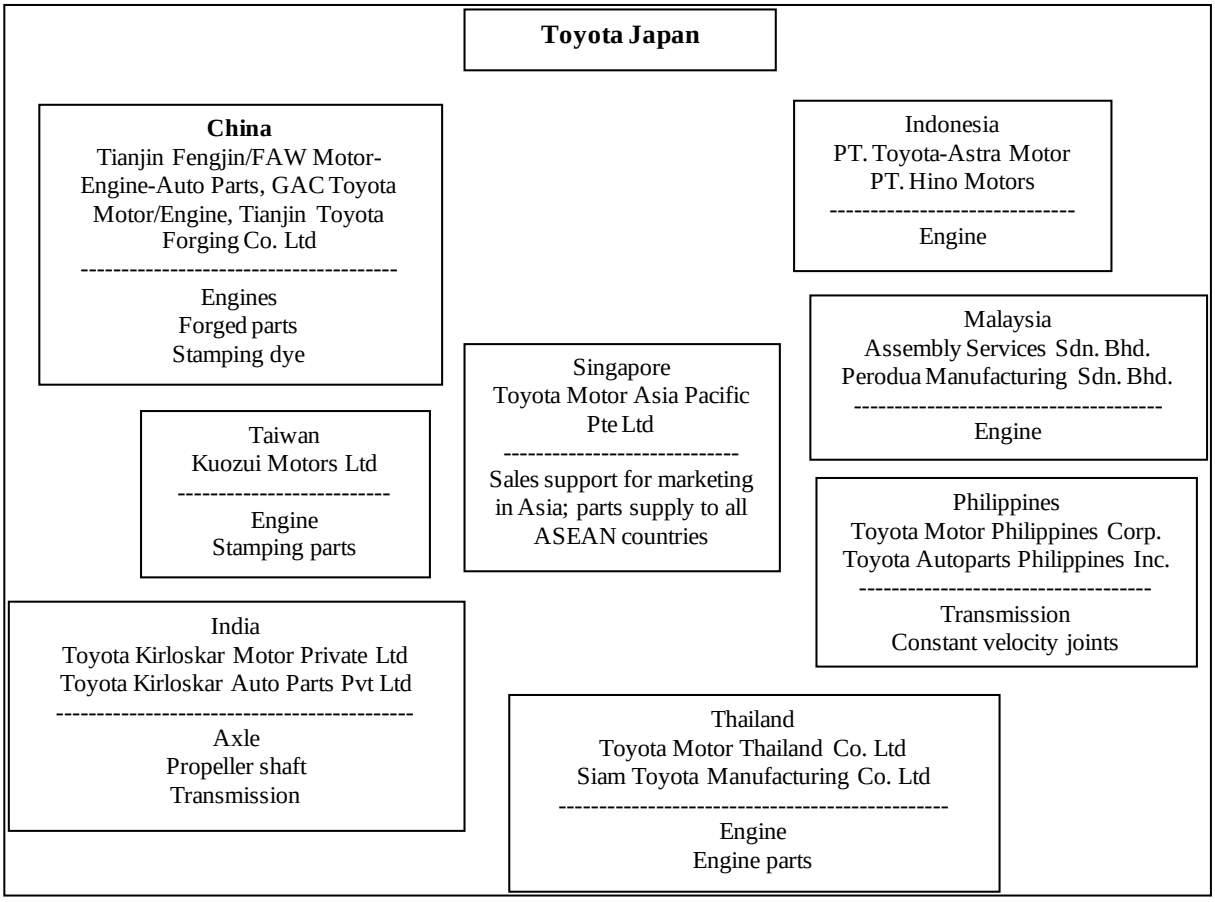
The Philippines is involved in a regional component flow (automotive parts and components) in the ASEAN and East Asia. For instance, Honda Motor Co. Ltd, a Japanese assembler of vehicles and manufacturer of car parts, has plants in Indonesia, Malaysia, Philippines and Thailand. Honda Malaysia produces constant velocity joints (drive shaft), Honda Philippines manufactures intake valves, Honda Indonesia produces engine parts, and Honda Thailand manufactures body and stamping parts. Thailand, as its biggest market in South-East Asia is the company's production base. ASEAN Free Trade Area (AFTA) is said to have changed the firm's business strategy, such that there is exchange of models and engine parts between markets (Raymundo, 2004). For instance, exchange of the Accord from Thailand with the Stream from Indonesia.

One of the automotive MNCs located in the Philippines is the Ford Motor Company. Ford Motor is the Philippines' only exporter of CBU (completely built-up unit) vehicles to ASEAN countries. Within the AFTA framework, the company exports the Ford Focus, Ford Escape, Mazda Tribute, and Mazda 3 sports utility vehicles (SUVs) to Thailand and Indonesia. Ford Motor Philippines previously joined the ASEAN Industrial Cooperation (AICO) scheme but they terminated their involvement in this with their use of the AFTA. Ford launched its export programme in 2002. Under this programme, the company produced 15,000 units,[5] of which 10,000 units were exported. The programme also involves sourcing more parts and components from local suppliers. In Asia, Ford Motor operates with both assembly and engine plants in China and India; assembly in the Philippines, Thailand and Vietnam; and transmission plants in Japan.

Another MNC, Toyota Motor Corp., has two companies – Toyota Motor and Toyota Auto Parts operating in the Philippines. The Toyota Motor plant assembles Innova and Vios, while Toyota Auto Parts manufactures transmissions and constant velocity joints which are exported to Indonesia, Malaysia and Thailand. These two manufacturing firms are part of the many manufacturing companies of Toyota Motor Corporation (Japan) overseas. In terms of parts and components manufacture in Asia, the Japanese corporation operates plants in China, Taiwan, India, Indonesia, Malaysia, Philippines, Thailand, and Singapore which handles sales support for marketing in Asia. Figure 1 presents Toyota Motor Corp.'s operations in automotive parts and components in Asia. It shows that in the ASEAN region, the Philippines is the only supplier of transmissions.

[5] This is about 40 per cent of the plant's optimum capacity (36,000 units a year).

Figure 1. Toyota's Parts and Components Framework in Asia



Source: Toyota Motor Corporation website

3.2. Electronics Sector

The electronics sector set into motion in the mid-1970s when the Philippines was one of the third world countries where industrialized nations relocated their production facilities to control/cut the rising cost of production. The Philippines was said to be an ideal location – not only was it cost competitive, it had an English-speaking labour force, a convenient geographical location, and had attractive government incentives (Board of Investments [BOI], 2011). The sector continues to grow rapidly and has been the top exporting industry since the mid-1990s.

Figure 2 presents the sub-sectors of the electronics industry in the Philippines. Leading manufactures are of semiconductors/components which is about 70 percent of the total exports in the electronics sector, followed by computer peripherals (21%), telecommunications (almost 4%) and consumer electronics (almost 2%). The country is

home to some of the world's biggest semiconductor and electronics companies, and the majority of the sector's output is sold to these parent companies as exports. Mostly consumer electronic products are traded in the domestic market.

There are 936 firms in the sector. Of this, 72 percent have foreign ownership and 28 percent are Filipino owned. The sector is dominated by MNCs, some of which have set up offices/plants in the Philippines, including Intel and Texas Instruments from the US; Continental Temic and NXP (formerly Philips) from Europe; Sony, Toshiba, Hitachi and Fujitsu from Japan; Samsung from South Korea; and Acer and OSE from Taiwan (BOI, 2011). On the other hand, the Filipino-owned firms are described as third-party contractors.

Each sub-sector has multiple players and it has been observed that there is a growing base of components suppliers (BOI, 2011). This is said to complement the sector as it offers a wide variety of products and services from integrated circuits (IC) packaging and printed circuit board (PCB) assembly through to full product assembly. The sector is said to be the most entrenched in the regional/global production network among manufacturing industries in the Philippines (Macasaquit, 2010). Filipino electronic firms are widely accepted to have expertise in back-end semiconductor operations and in assembly and test manufacturing. These are labour-intensive activities that the Philippines is involved in and that are considered to be a small fraction of the semiconductor value chain (Macasaquit, 2010). The country is at the lower tier of the production chain but in recent years has been involved in turn key production. There are firms that are now engaged in Electronics Manufacturing Services (EMS) and a few Filipino SMEs in Original Design Manufacturing (ODM).

Figure 2. Philippine Electronics Industry Sub-Sectors

(1) Semiconductors and Other Components

This is the biggest sub-sector of the electronics industry consisting of companies manufacturing integrated circuits (ICs), transistors, diodes, resistors, capacitors, coils, transformers, printed circuit boards (PCBs) and other components. Major players in this sub-sector are the subsidiaries of some of the world's biggest semiconductor companies such as Texas Instruments, Philips, Amkor, Fairchild Semiconductor, etc.

(2) Electronic Data Processing (EDP) Equipment

This sub-sector consists of companies engaged in the manufacture of computers, peripheral storage and input/output devices. Among the finished products are laptops, desktop PCs, printers, computer monitors, drives: hard disk, optical, ZIP and CD-ROM. Companies engaged in the manufacture of EDP are Toshiba, Wistron Infocomm (formerly Acer), Epson, Fujitsu, Ionics and Sampo Technologies. The Philippines proudly supplies 50 per cent of world demand for 2.5' hard disk drive (HDD) and 10 per cent of world demand for 3.5' HDD.

(3) Office Equipment

This sub-sector includes companies which produce photocopiers, fax machines and electronic calculators. Companies in this sub-sector include Matsushita Business Machines, Sharp and Seiyo Electronics.

(4) Telecommunications Equipment

Included in this sub-sector are companies producing telephone sets, modems, copper communication cables and fibre-optic cables. Manufacturers include ETSI Technologies, Eupen Cable and NEC Technologies.

(5) Communications and Radar

Companies in this sub-sector comprise mainly manufacturers of cellular phones, pagers, closed circuit television (CCTV), citizen's band (CB) transceivers, radar detectors, marine and land mobile radios. Leading players include Matsushita Communication, Uniden, Casio and Euro CB.

(6) Control and Instrumentation

This sub-sector refers to test and measuring instruments such as oscilloscopes, signal generators, ammeters, voltmeters, ohmmeters, cross talk meters, etc. Philippine-based companies in this sub-sector consist of manufacturers of PCB assemblies for instrumentation/testing equipment, digital thermometers, microscopes, automotive test equipment and multi-testers. Players include Precision Microcircuits, Sara Digital Network, Phil Makoto Corp., and Insung Phils. Electronics.

(7) Medical and Industrial

This sub-sector covers equipment used for X-ray and other medical applications, railway signalling, security and fire alarms. Philippine-based companies are involved in the production of spiro analysers and smoke detectors. One of the leading players is P. Imes Corp.

(8) Automotive Electronics

Companies in this sub-sector comprise mainly manufacturers of car stereos, anti-skid brake systems (ABS), and car body electronics (CBE). Major players include Temic Automotive, Fujitsu Ten, Muramoto Audio-Visual Phils., and Clarion Mfg.

(9) Consumer Electronics

Consumer electronics manufacturing in the country primarily consists of TV sets, VCR players, electronic games, radio cassette players and karaoke machines. Major players include Panasonic Manufacturing Philippines Corporation (PMPC), Sony, Sharp, LG–Collins and JVC.

(10) Solar/ Photovoltaics

This emerging sub-sector of the electronics industry consists of devices that make use of solar cells in producing electricity for practical use. The presence of big international companies such as Sun Power Manufacturing Ltd. (SPML) and Solaria Corporation helps in positioning the Philippines as a solar manufacturing hub in Asia.

Source: Philippine Electronics Industry Profile, 23 February 2011, prepared by Other Industries Division - Special Programs Department, Board of Investments.

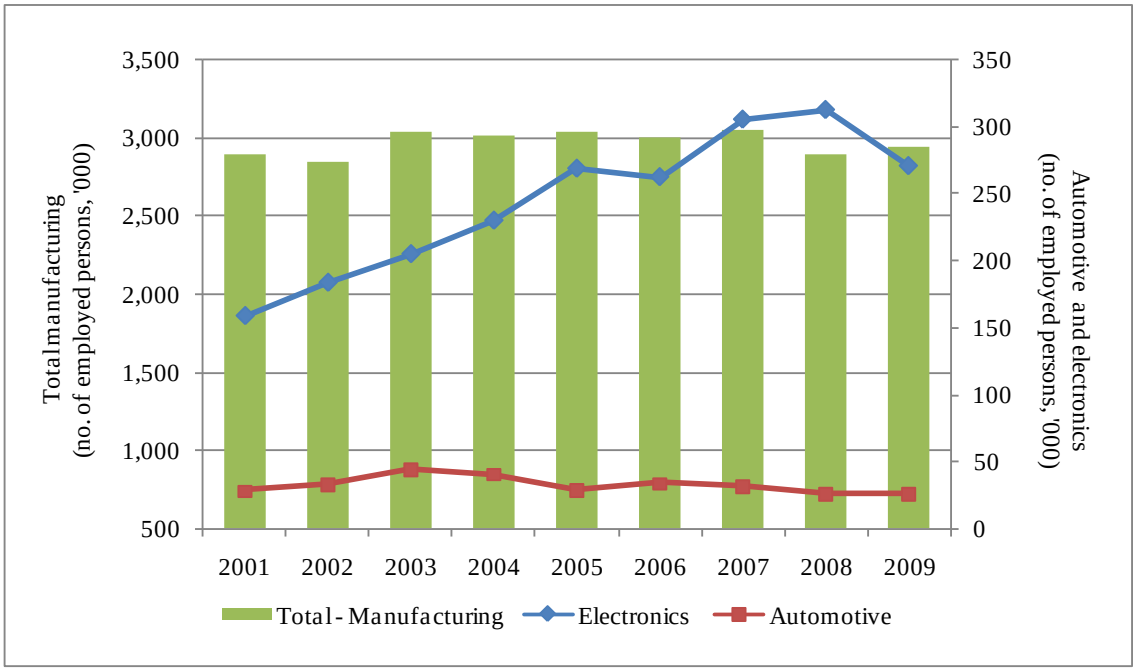
4. Economic Performance of the Two Sectors

As far as size is concerned, the electronics sector has always been ahead of automotive, for instance, with respect to employment and value added. In terms of employment in 2001-09, the electronics sector accounted for an average of 8 percent of total employment in the whole manufacturing sector, while the automotive sector on average composed 1 percent.

As shown in Figure 3, employment in the automotive sector from 2001-09 ranged from 26,000 to 44,000 employed persons out of the manufacturing sector total of about

3 million on average.[6] From 2004 to 2009, the sector mostly experienced a decline in employment, the largest in 2005 (28.3%) and in 2008 (17.4%).

Figure 3. Employment in the Philippine Automotive and Electronics Sectors, 2001-09



Source: National Statistics Office (NSO) Labour Force Survey

Electronics is a different story. Employment, which ranged from 159,000 to 313,000 employed persons in 2001-09, has been increasing steadily except in 2006 and 2009. From 2001-05, employment in the sector increased by 69 percent, and during the eight years from 2001 to 2008, employment almost doubled with a growth rate of 97 percent. One factor contributing to this would be the increasing investments in the electronics sector.

In terms of sectoral value added,[7] the electronics sector accounted for about 13 percent of total manufacturing value added from 2001 to 2008 (Figure 4). During this period, its contribution to manufacturing value added was highest in 2001 (22 percent),

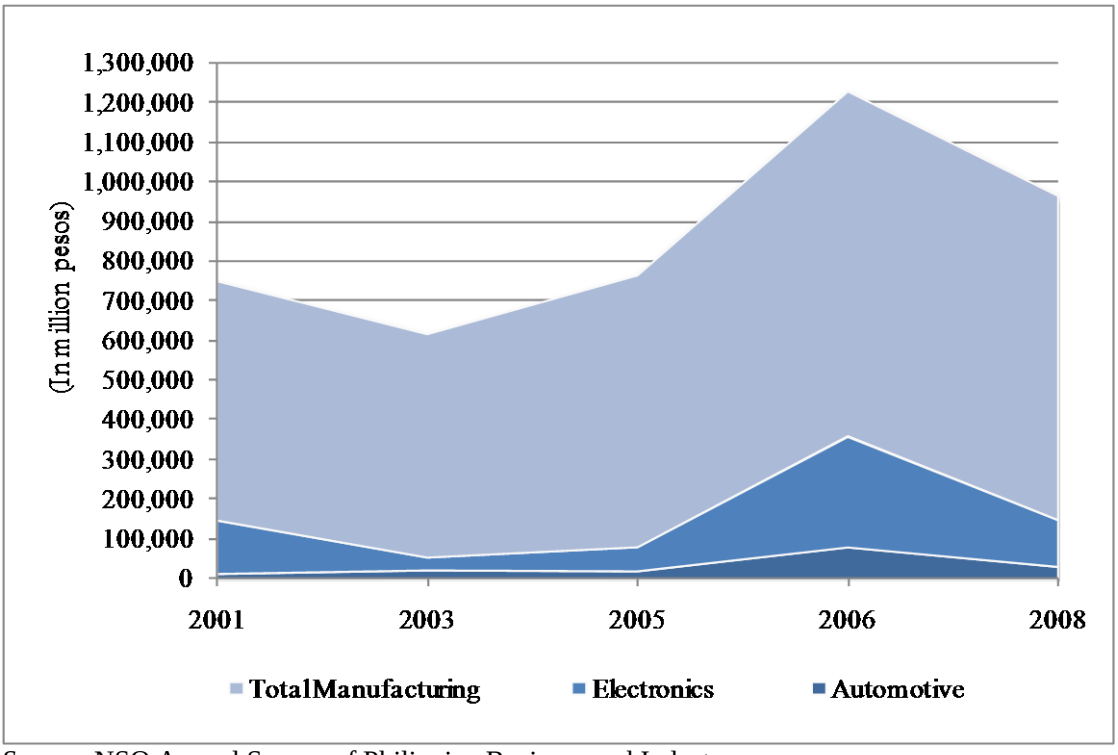
[6] Manufacturing sector employment was on average 9 per cent of total employment in the Philippines in 2001-09.

[7] Based on the Annual Survey of Philippine Business and Industry, a survey of manufacturing establishments with total employment of 20 and over.

but declined to 6 percent in 2003, slowly rising to 14 percent in 2008. On the other hand, the automotive sector share was steady at around 3.5 percent over the period 2001-08.

The automotive sector experienced a gradual increase to 119 percent from 2001 to 2008, except for a 10 percent decline in 2005 and a more than 200 percent increase from 2005 to 2006, which primarily came from the manufacture of bodies for motor vehicles and manufacture of motor vehicles. In contrast, value added in the electronics sector dropped a whopping 75 percent in 2003, but managed to pick up with an 88 percent increase in 2005 and 94 percent increase in 2008. The 2008 value added, however, was 13 percent lower than the 2001 value added. Of the electronics value added, semiconductor devices and other electronic components composed 70 percent in 2008.

Figure 4. Value Added in Automotive and Electronics and Total Manufacturing, Selected Years 2001-08

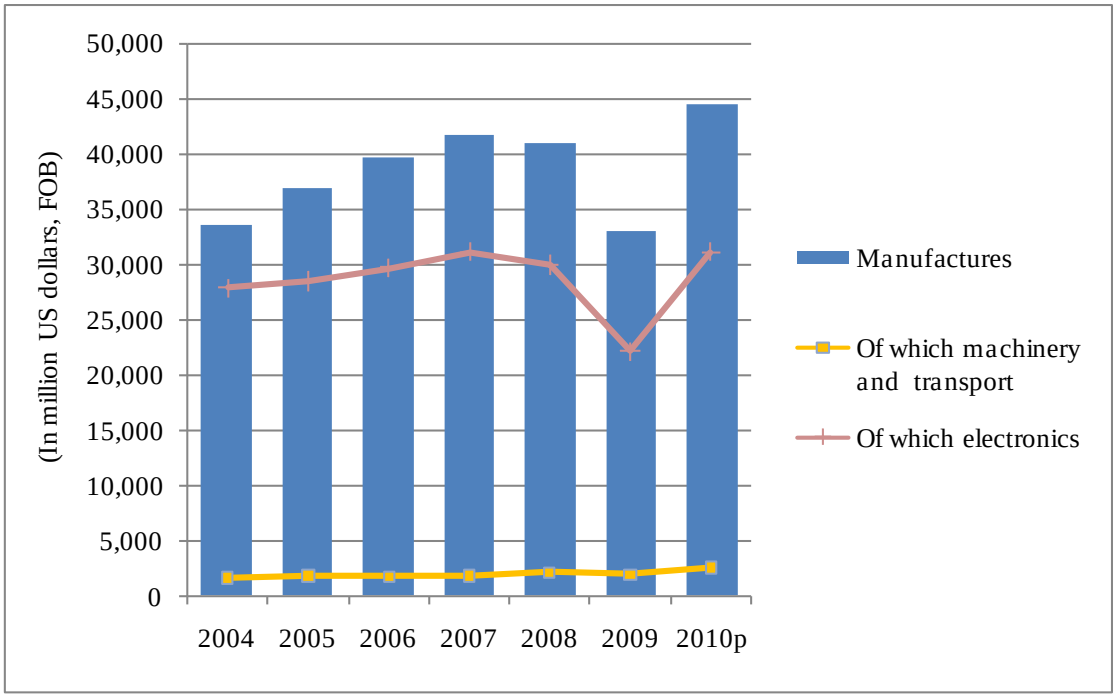


Source: NSO Annual Survey of Philippine Business and Industry

4.1. Trade Performance

Looking at trade in the two sectors, electronics is a top exporting sector in the Philippines, with semiconductor devices and electronic components as the top exported products. From 2004-10, electronics exports composed a big chunk of total manufacturing exports at about 64 percent, and Figure 5 shows how in the series the two variables follow the same trend.

Figure 5. Exports in Automotive, Electronics and Total Manufacturing, 2004-10



Source: National Statistics Office

Exports in electronics had a rather slow rise, growing by 11 percent between 2004 and 2010, with exports declining by 26 percent from 2008 to 2009 following the global financial crisis. However, after the crisis, the sector demonstrated resilience and managed to recover with the value of exports in 2010 (preliminary) catching up with the value of exports in 2007 which was the highest in this period. It was in 2007 and 2010 when investments in the electronics sector were highest.

On the other hand, exports of machinery and transport on average accounted for only 4 percent of total manufacturing in the last decade, way below the value of exports of electronics. However, while the electronics sector experienced slow growth in

exports, the machinery and transport sector paced up at a rate of about 17 percent annually, except for drops in 2006 and 2009. From 2004-10, machinery and transport exports increased by 60 percent.

Looking closely at each of the commodity groups in the automotive sector, motor vehicle parts exports dominated the exports of automotive products, with an average share of 95 percent of total automotive exports from 2006 to 2010, as shown in Table 1. Exports of motor vehicles were a very distant second with an average share of 3 percent. Exports of motor vehicle parts had an annual average increase of about 22 percent, except in 2009. These exports fell by 25 percent in 2009, but managed to recover in 2010.

Table 1 also presents imports of automotive products. The data in the table indicate that the Philippines has been exporting more automotive parts than it has been importing. As had been written in previous studies, the Philippines has relatively low production as well as exportation of vehicles. In recent years the country has been increasing importation of vehicles. This is suggested in the net export figures for motor vehicles from 2006 to 2010, the lowest among automotive merchandise.

Table 1. Automotive Imports and Exports by Commodity (US$ million FOB)

		2006	2007	2008	2009	2010
Motor vehicle parts	Exports	2,439	2,981	3,502	2,605	3,319
	Imports	527	441	462	429	578
	Net-X	1,912	2,539	3,041	2,176	2,741
Motor vehicles	Exports	92	64	96	96	128
	Imports	666	1,011	1,256	1,270	2,000
	Net-X	-574	-947	-1,160	-1,175	-1,872
Motorcycles and parts	Exports	30	29	33	26	33
	Imports	336	411	387	378	319
	Net-X	-306	-382	-354	-352	-286
Trailers/Trucks/etc. and parts	Exports	7	6	6	5	6
	Imports	98	19	23	25	37
	Net-X	-91	-13	-17	-19	-31

		2006	2007	2008	2009	2010
Bicycles/Carriages	Exports	29	38	26	18	26
and parts	Imports	16	25	16	16	26
	Net-X	13	14	10	2	0
Total	Exports	2,596	3,118	3,664	2,750	3,511
	Imports	1,642	1,906	2,144	2,117	2,960
	Net-X	954	1,212	1,520	632	551

Source: National Statistics Office; Department of Trade and Industry; Authors' calculations.
Note: Net-X means net exports (exports less imports)

On the electronics side, the data indicate that semiconductors (components and devices) dominate the exports in electronics, with an average of 70 percent of total electronics exports from 2006 to 2010 (Table 2). This is followed by computers and peripherals which comprised an average of 23 percent. Data indicate that exports of electronics were generally affected by the global financial crisis in 2008 as indicated by the decline in exports, but was able to recover in 2010.

Table 2. Electronics Imports and Exports by Commodity (US$ million FOB)

		2006	2007	2008	2009	2010
Semiconductors	Exports	18,445	18,517	16,688	11,951	18,159
(Components and devices)	Imports	19,428	19,615	15,173	11,035	13,994
	Net-X	-983	-1,098	1,515	916	4,165
Computers	Exports	5,748	5,463	5,218	4,938	5,497
and peripherals	Imports	3,112	3,234	2,740	2,234	2,441
	Net-X	2,636	2,229	2,478	2,704	3,057
Telecommunications	Exports	722	895	971	744	967
	Imports	968	1,042	1,093	1,039	1,014
	Net-X	-246	-147	-122	-295	-46
Consumer electronics	Exports	598	251	296	349	517
	Imports	368	349	348	281	338
	Net-X	231	-98	-52	68	179

		2006	2007	2008	2009	2010
Others	Exports	291	410	404	310	299
	Imports	396	474	258	234	251
	Net-X	-105	-65	146	76	48
Total	Exports	25,804	25,535	23,577	18,291	25,440
	Imports	24,270	24,714	19,612	14,822	18,038
	Net-X	1,534	821	3,965	3,469	7,402

Source: National Statistics Office; Department of Trade and Industry; Authors' calculations
Notes: Net-X means net exports (exports less imports); Others: Office Equipment, Scientific/ Laboratory Apparatus, Security/Safety/Control Apparatus, Measuring /Checking Instruments

In terms of imports, semiconductors and computers/peripherals are also the largest categories with an average of 77 percent and 14 percent of total electronics imports, respectively, in 2006 to 2010. As in the case of exports, importation of electronic products declined in 2008. Moreover, net exports figures indicate that the Philippines is exporting more than importing electronics products, especially for semiconductors and computer/peripherals which may suggest that there exists a strong supplier base for manufacturing these products in the country with less importation.

4.1.1. Top Markets, Top Automotive and Electronic Products

For automotive products, Japan was the Philippines' top source of inputs in 2009, as shown in Table 3, followed by Thailand and Indonesia. Its top five suppliers come from ASEAN and FTA partners. The top export destination was also Japan, receiving 23 percent of total exports, with the other destinations being ASEAN and other FTA partners – Thailand, Indonesia, Australia and China. Outside of the region, Germany and the US were the top export destinations.

For electronics, Japan was the top supplier of inputs in East Asia (the largest supplier globally being the US). On the other hand, the top East Asian destination for products was again Japan in 2009, taking 11.5 percent of total electronics exports. Outside the region, Hong Kong, Netherlands and the US join Japan and Singapore as the five top importers for the Philippines.

Table 3. Top Philippine Markets for Automotive and Electronics Imports and Exports, 2009

Top import suppliers	% Share	2009 Rank	Top export destinations	% Share	2009 Rank
Automotive					
Japan	41.2	1	Japan	22.9	1
Thailand	22.3	2	Thailand	11.5	4
Indonesia	9.5	3	Indonesia	3.0	6
China	7.1	4	Australia	2.4	7
Singapore	3.1	5	Malaysia	2.3	8
Electronics					
Japan	15.6	2	Japan	11.5	4
Singapore	11.1	3	Singapore	10.2	5
China	10.5	4	China	8.2	6
Korea, Rep. of	7.8	6	Korea, Rep. of	5.6	8
Thailand	3.7	8	Malaysia	2.9	10

Source: National Statistics Office; Department of Trade and Industry; Authors' calculations.

Trade in key automotive and electronic products specified at the six-digit Harmonised System (HS) level is presented in Tables 4 and 5. In the automotive sector, exports of lead-acid batteries (of a kind used for starting engines) go mainly to Malaysia, among the East Asian nations. The product has a net trade ratio (NTR) of 1.0, indicating a high level of trade competitiveness. NTR is a measure that can be used to indicate trade competitiveness.[8] Large positive NTRs indicate a high level of trade competitiveness, while relatively lower or negative NTRs indicate lower trade competitiveness (Raymundo, 2004). From the rest of East Asia, the Philippines is predominantly an importer of lead-acid batteries, as shown in Table 4.

In terms of insulated wiring sets, the Philippines has a very high NTR with both Indonesia and Japan, at close to one. Similarly, the country has a high NTR with China for parts and accessories of bodies not elsewhere specified (n.e.s.) for motor vehicles; and with Indonesia and Singapore for gear boxes. In contrast, for the country's largest exports by value – parts and accessories of motor vehicles not elsewhere specified or

[8] Net trade ratio is computed by taking the difference between exports and imports of specific parts or components, divided by the sum of exports and imports of the same parts or components (Raymundo, 2004).

included (n.e.s.o.i.), NTR is relatively low compared to other products. With the exception of China and Malaysia with NTRs of more than 0.7, the rest of the trading partners have NTRs below 0.6, indicating a relatively lower level of trade competitiveness with these countries.

Unlike the automotive sector, the top export in the electronics sector also has the highest NTR in all trading partners, as shown in Table 5 – NTR is either 0.99 or 1.0 for electronic ICs. As has been mentioned in previous studies and claimed by the industry, the Philippines prides itself as a leading producer and exporter of electronic ICs in the region, and even the world, and as can be seen in Table 5, ICs dominate the top electronics exports. Moreover, only in ICs does the Philippines have a positive NTR, the rest are either low or negative, if not highly negative, suggesting that although the Philippines still exports other electronic products, it also imports them to a significant degree. Furthermore, the data validate the suggestion that the Philippines has captured a niche in the electronics market in the production and exportation of electronic ICs.

Table 4. Automotive Imports, Exports, Net Exports and NTR between the Philippines and Selected East Asian Countries, 2009

HS Code	Product Description		ASEAN	Indonesia	Malaysia	Singapore	Thailand	China	Japan	Korea
850710	Lead-acid batteries of a kind used for starting engines	Exports	20,838	0	19,440	979	0	1	20	0
		Imports	9,652	6,919	40	586	956	636	500	309
		Net-X	11,186	-6,919	19,400	393	-956	-636	-480	-309
		NTR	0.37	-1.00	1.00	0.25	-1.00	-1.00	-0.92	-1.00
854430	Insulated wiring sets for vehicles, ships, aircraft	Exports	9,992	1,401	14	471	502	5,252	294,365	176
		Imports	5,531	26	76	1,280	1,464	1,313	2,357	900
		Net-X	4,461	1,376	-63	-809	-962	3,939	292,008	-724
		NTR	0.29	0.96	-0.70	-0.46	-0.49	0.60	0.98	-0.67
870829	Parts and accessories of bodies nes for motor vehicles	Exports	6,389	145	0	0	6,244	13,063	49,506	1,060
		Imports	2,856	167	101	61	2,525	169	7,405	145
		Net-X	3,534	-22	-101	-61	3,719	12,894	42,101	914
		NTR	0.38	-0.07	-1.00	-1.00	0.42	0.97	0.74	0.76
870840	Gear boxes for motor vehicles	Exports	139,073	14,565	0	5,418	115,172	129	23,862	0
		Imports	3,445	1,207	17	42	2,179	23	13,702	38
		Net-X	135,628	13,359	-17	5,376	112,993	106	10,161	-38
		NTR	0.95	0.85	-1.00	0.98	0.96	0.69	0.27	-1.00
870899	Parts and accessories of motor vehicles nesoi	Exports	254,227	44,596	20,896	6,108	153,706	26,568	138,551	135
		Imports	83,322	12,410	2,857	5,930	60,586	3,802	89,808	3,731
		Net-X	170,906	32,186	18,040	178	93,120	22,766	48,744	-3,596
		NTR	0.51	0.56	0.76	0.01	0.43	0.75	0.21	-0.93

Source: UN Comtrade; Authors' calculations.

Notes: Export and import values in US$1,000; ASEAN is Indonesia, Malaysia, Singapore, Thailand and Vietnam; Net-X - net exports (exports less imports); NTR - net trade ratio; nes - not elsewhere specified; nesoi - not elsewhere specified or included.

Table 5. Electronics Imports, Exports, Net Exports and NTR between the Philippines and Selected East Asian Countries, 2009

HS code	Product Description		ASEAN	Indonesia	Malaysia	Singapore	Thailand	China	Japan	Korea
853224	Electric capacitors, fixed, ceramic, multilayer	Exports	557	0	0	557	0	2,559	11	378,845
		Imports	11,174	1	8,959	2,191	23	9,993	27,312	97,230
		Net-X	-10,617	-1	-8,959	-1,634	-23	-7,434	-27,302	281,615
		NTR	-0.91	-1.00	-1.00	-0.59	-1.00	-0.59	-1.00	0.59
854211	Monolithic integrated circuits, digital	Exports	404,370	3	504	403,716	148	35,745	5,903	14,802
		Imports	437,185	2,976	99,553	295,703	38,862	22,765	152,445	432,850
		Net-X	-32,815	-2,974	-99,049	108,013	-38,714	12,980	-146,542	-418,048
		NTR	-0.04	-1.00	-0.99	0.15	-0.99	0.22	-0.93	-0.93
854219	Monolithic integrated circuits, except digital	Exports	125,010	13,963	29,568	69,595	9,539	19,635	2,588	94,197
		Imports	841,284	1,281	91,271	620,610	127,373	637,533	1,212,867	239,911
		Net-X	-716,274	12,682	-61,703	-551,015	-117,833	-617,898	-1,210,278	-145,713
		NTR	-0.74	0.83	-0.51	-0.80	-0.86	-0.94	-1.00	-0.44
854280	Electronic integrated circuits/ microassemblies nes	Exports	1,711,583	10,681	389,781	1,244,506	64,942	842,644	779,573	347,227
		Imports	1,309	50	203	825	232	48	4,067	76
		Net-X	1,710,274	10,631	389,578	1,243,681	64,711	842,596	775,506	347,151
		NTR	1.00	0.99	1.00	1.00	0.99	1.00	0.99	1.00
854290	Parts of electronic integrated circuits and microelectronic elements	Exports	87,195	8,858	25,374	39,218	13,742	46,949	115,875	67,281
		Imports	1,206,989	6,477	283,912	597,563	318,301	562,346	403,793	440,887
		Net-X	-1,119,795	2,381	-258,537	-558,345	-304,559	-515,397	-287,917	-373,606
		NTR	-0.87	0.16	-0.84	-0.88	-0.92	-0.85	-0.55	-0.74

Source: UN Comtrade; Authors' calculations.

Notes: Export and import values in US$1,000; ASEAN is Indonesia, Malaysia, Singapore, Thailand and Vietnam; Net-X - net exports (exports less imports); NTR - net trade ratio; nes - not elsewhere specified.

4.1.2. Intra-Industry Trade with FTA Partners

Having shown the key products imported and exported, as well as their markets, we take a simple assessment of the intra-industry trade between the Philippines and its (or ASEAN) FTA partners. Intra-industry trade (IIT) is defined as a two-way exchange of goods within a standard industrial classification (OECD, 2002). IIT is commonly measured using a Grubel-Lloyd index based on commodity group transactions.[9] This index calculates overlap between exports and imports in all the trade in a given industry. A minimum value of zero indicates there are no products in the same class that are both imported and exported, while a maximum value of 100 indicates that all trade is intra-industry (exports equal imports). The value between 0 and 100, which is considered as the overlap in trade, is considered to be intra-industry trade, the rest (subtracting from 100) being inter-industry trade.

Tables 6 and 7 present Grubel-Lloyd indices for automotive parts and electronics components traded between the Philippines and selected East Asian countries. The data indicate that the extent of the Philippines' intra-industry trade with these countries is lower in the automotive sector than the electronics sector. More specifically, since the products used here are parts and components, the indices indicate that the two-way trade in intermediate goods is higher in the electronics sector than the automotive sector.

In the automotive sector, the extent of IIT was highest with Japan (44 percent on average), declining between 2005 and 2008 but starting to recover in 2009. Product classes with a high extent of IIT include 8536, 8512, 8708 and 8483.[10] The next highest over the period was Singapore (37 percent on average), which also declined in 2006 but

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[9] Grubel-Lloyd index is calculated by: $$IIT_{i,AB} = \left[\frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)}\right] \cdot 100 \qquad (1)$$

$$IIT_{AB} = \sum_i \left[\frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)}\right] \cdot \left[\frac{(X_i + M_i)}{\sum_i (X_i + M_i)}\right] \cdot 100 \qquad (2)$$

Where *i* is the product class, A and B are the partner countries. The second equation calculates bilateral indices for intra-industry trade between country A and country B for total manufacturing trade as the weighted average of the indexes in Equation (1) for all product classes *i* with weights given by the share of total trade of *i* over total trade in *i*.

[10] 8536 – electrical apparatus for switching or protecting electrical circuits or for electrical connection; 8512 – electrical lighting or signalling equipment, windscreen wipers, defrosters and demisters of a kind used for cycles or motor vehicles; 8708 – parts and accessories for motor vehicles of headings 8701 to 8705 (motor vehicles for transport of persons, goods; tractors, special purpose vehicles); 8483 – transmission shafts, bearings, gears, universal joints.

has been increasing since. Following third was Indonesia (33 percent on average). With ASEAN, the Philippines had an IIT in the automotive sector of about 41 percent in 2009, and adding China, Japan and Korea on the list gives only a 1 percent difference. As for Australia and New Zealand, IIT was lower than 5 percent, but was slowly increasing from 2005 to 2009.

Table 6. Intra-Industry Trade Index for Automotive Parts Trade Between the Philippines and ASEAN/FTA Partners

Partner country	2005	2006	2007	2008	2009
Indonesia	30.0	40.2	30.7	38.9	26.6
Malaysia	25.7	20.3	17.0	9.5	16.1
Singapore	37.5	34.4	34.4	39.8	38.6
Thailand	16.8	19.3	20.3	16.2	36.4
Vietnam	1.5	9.3	18.3	17.2	22.7
ASEAN	27.1	33.6	32.1	32.1	41.4
China	37.4	33.1	34.4	22.5	22.9
Japan	55.6	48.7	38.7	36.9	38.1
Korea, Rep.	54.0	43.1	20.3	17.6	16.0
East Asia	46.3	46.7	39.1	36.1	40.4
Australia	2.9	2.9	5.8	1.8	4.0
New Zealand	1.0	0.9	1.5	2.1	2.1

Source: Authors' calculations based on UN Comtrade data at HS four-digit level
Note: East Asia includes China, Japan, Korea, and selected ASEAN countries in this table.

Table 7. Intra-Industry Trade Index for Electronic Components Trade Between the Philippines and ASEAN/FTA Partners

Partner country	2005	2006	2007	2008	2009
Indonesia	50.0	81.9	80.0	38.0	63.1
Malaysia	53.5	42.2	76.5	81.9	94.7
Singapore	72.6	73.8	87.9	74.9	72.5
Thailand	68.5	46.5	62.8	60.0	36.7
Vietnam	0.0	0.3	0.2	2.7	17.9
ASEAN	66.4	74.0	94.5	83.1	86.0
China	37.4	17.3	41.2	42.0	87.9
Japan	43.0	63.3	64.6	79.9	90.4
Korea, Rep.	44.6	27.7	48.2	45.6	66.0

Partner country	2005	2006	2007	2008	2009
East Asia	57.4	54.2	94.4	88.6	92.9
Australia	28.0	33.8	42.5	43.3	28.3
New Zealand	2.4	65.8	15.9	11.9	4.5

Source: Authors calculations based on UN Comtrade data at four digit level
Note: East Asia includes China, Japan, Korea, and selected ASEAN countries in this table.

On the electronics side, the extent of IIT was highest in Singapore with an average of 76 percent in 2005-09, to a large extent occurring in the 8542 product class (electronic ICs and micro assemblies; parts thereof), which is one of the top exports of the Philippines. This was followed by Japan with an average of 68 percent, with a high IIT for the same product class 8542 as well as 8533 (electrical resistors [not heating resistors]). In 2009 though, Malaysia was highest with 94.7 percent IIT, again extensively due to product class 8542. Of all of the Philippines' partner countries in the list, the extent of IIT has been greatly increasing in 2005-09, except for Thailand, Australia and New Zealand.

4.1.3. FTA Utilization in the Philippines

With the elimination of tariffs and other barriers, FTAs are expected to facilitate the flow of goods, services and investment within the partner countries. Trade occurs with more ease and with less risk and costs. Furthermore, if industries in partner countries are involved in a production network, provisions in the FTAs should be able to promote the value/supply chain, hence firms should take advantage. Have Philippine firms capitalized on preferential provisions in FTAs?

Using different measures of AFTA utilization, studies have shown relatively low AFTA usage for the Philippines, especially in recent years if compared with other ASEAN countries. In 1998-99, Baldwin (2007) found that the Philippines had 4-7 percent AFTA utilization rates (measured as the percentage of intra-ASEAN imports that used the preferential tariff) which was at that time higher than other ASEAN countries. Meanwhile, a relatively low level of AFTA usage for the Philippines was found in a survey of Japanese-affiliated firms operating in the ASEAN by Hiratsuka et al. (2009), with the percentage of firms using AFTA as a measure. Together with Vietnam, the Philippines had relatively low usage compared to the rest of the ASEAN

in terms of both export and import operations (Table 8). Usage of AFTA by exporting firms was around 15 percent in 2006-07, and declined to 11.8 percent in 2008, although this drop was hypothesized to be part of the business cycle (Medalla and Balboa, 2009).

Table 8. Utilization of FTA* by Japanese-Affiliated Companies

	Exporting companies			Importing companies		
	2006	**2007**	**2008**	**2006**	**2007**	**2008**
ASEAN (total)	19.7	19.3	23	16	16.7	19.7
Indonesia	18.5	14.7	35.9	20.8	17.7	28.7
Singapore	32.5	27.3	43.2	…	…	…
Thailand	18.2	18.8	22.5	17.7	14.9	25.3
Philippines	15.2	15.7	11.8	10.8	11.4	8
Vietnam	6.6	14.3	9.4	9.5	24	12.5
Malaysia	26.8	23	23.8	15.7	19.3	20

Source: Hiratsuka et al. (2009)
Notes: *ASEAN as FTA partner; … results not presented

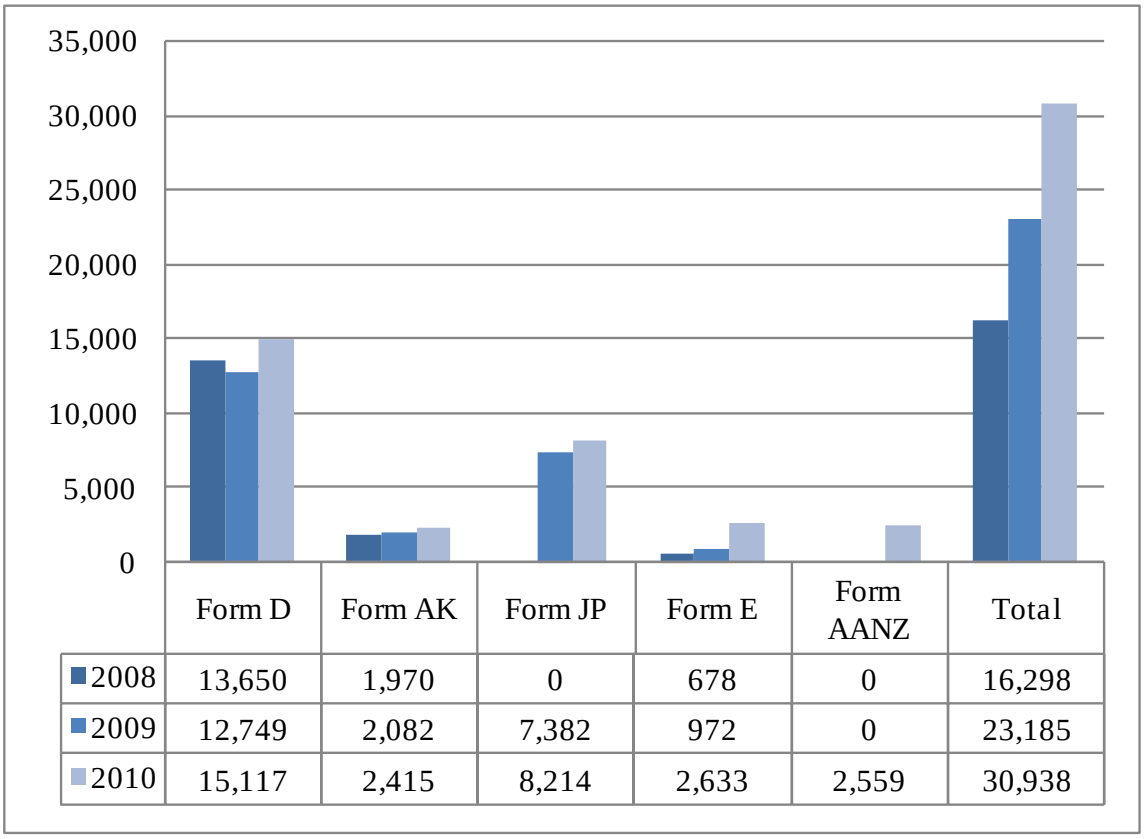
Some studies have measured AFTA utilization in terms of CO issuances. Avila and Manzano (2007), using as a measure the amount indicated in AFTA--Common Effective Preferential Tariff (CEPT) COs issued in the Philippines over the value of Philippine trade with ASEAN, reported an AFTA utilization rate of 15 percent for exporters and 19 percent for importers in the Philippines, with users mostly in the transport sector. Medalla and Balboa (2009) using 2007 data on COs used by Philippine exporters, found a 17 percent usage of the CO for AFTA--CEPT out of the total COs issued.[11]

Looking closely at the number of FTA COs issued in recent years, data from the Philippines' Bureau of Customs from 2008 to 2010 suggest an increasing use of FTAs. The data in Figure 6 indicate an increase in total CO issuances for FTAs, from 16,298 to 30,938 or about 90 percent. Of the different FTAs, CO issuances are highest in the ASEAN Trade in Goods Agreement (ATIGA) (Form D), followed by the Philippines-Japan Economic Partnership Agreement (Form JP) and then AKFTA (Form AK).[12]

[11] CO issuances include those for the Generalized System of Preferences (GSP), the ACFTA and the General/White CO. ACFTA COs composed 0.7 per cent of total CO issuances.
[12] AANZFTA entered into force in 2010, thus there were no issuances in 2008 and 2009. The same is true for the Philippines--Japan Economic Partnership Agreement (PJEPA) for 2008.

ACFTA (Form E) started relatively low in the number COs issued but had the highest increase in 2009-10 of about 170 percent.

Figure 6. Number of CO Issuances by Type of CO Form, 2008-10



	Form D	Form AK	Form JP	Form E	Form AANZ	Total
2008	13,650	1,970	0	678	0	16,298
2009	12,749	2,082	7,382	972	0	23,185
2010	15,117	2,415	8,214	2,633	2,559	30,938

Source: Exports Division, Bureau of Customs

A recent survey by Wignaraja et al. (2010) covering 155 Philippine firms from the transport, electronics and food sectors found that 20 percent of these firms used AFTA, with 41 percent planning to use AFTA or recently/soon-to-be-signed FTAs. Findings further revealed high AFTA utilization rates in the transport sector, in the domestic firms, and in the large firms.

Looking more closely into the transport and electronics sectors, 39 percent of firms that use AFTA were from transport and 11.8 percent from electronics. The high margin of preference, i.e. the margin between the MFN tariffs and the FTA preferential tariffs (5-43 percent) in transport products, and successful implementation of the AICO

scheme[13] are believed to explain high AFTA utilization in the transport sector. By contrast, in the electronics sector, low or zero MFN tariff rates and investment schemes available in export processing zones (e.g. duty-free importation and tax and non-tax incentives) where a lot of electronics firms are located, deter the use of AFTA preferential rates. Furthermore, for most firms, costs and delays associated with compliance to the ROOs is one of the reasons for low utilization or non-usage of AFTA.

Looking at the impact on the operation of business, AFTA's preferential rates allowed user firms to import cheaper raw materials and components, hence reducing their production costs. The Wignaraja et al. survey also revealed that Philippine firms view FTAs as a means of increasing market access and so have shown interest in ASEAN's FTAs with China, Japan, Korea and the EU.

Some similar findings in the Wignaraja et al. study, particularly for the transport and electronics sectors as well as all firms in general, were also found in the firm interviews plus further insights on the utilization of FTAs in relation to the supply chain. These issues raised can be considered as critical points along the supply chain and will potentially impact on its efficiency.

5. Outline of the Firms' Supply Chain

Selected firms from the automotive and electronics sectors were interviewed in order to find out about the supply chain the firms belong to, and the impediments they encounter, in view of participating in FTAs. Questions were asked with the aim of illustrating the firms' segment in the supply chain, and of discussing issues and problems they face at critical points within the chain (e.g. import and export points). Table 9 presents a profile of firms interviewed – three firms from the automotive sector and one firm from the electronics sector.

[13] The AICO scheme is an industrial cooperation programme in the ASEAN that aims to promote joint activities between ASEAN-based manufacturing firms. A major advantage from this scheme is that AICO products can enjoy preferential tariff rates of 0-5 per cent. Honda Cars Philippines, Toyota Motor Philippines, Philippine Auto Components, Inc. and Ford Motor Company have received special preferential rates of 0-5 per cent from AICO arrangements (Wignaraja et al., 2010).

5.1. Profile of Firms

Of the six firms, three were foreign owned, and three locally owned (100 percent Filipino). One automotive firm was an assembler of vehicles; two automotive firms were first tier suppliers, that is, they supply directly to assemblers; and the three electronics firms were second/third tier suppliers. One firm, Firm A, was a small enterprise based on the number of employees; while the rest were, under the same classification, considered large firms. All firms were exporters of at least 60 percent of their production (with ASEAN as one of the markets), as well as importers of inputs/raw materials.

Table 9. Profile of Firms Interviewed

Firm	Sector	Product	Tier	Ownership	% Exports	% Imported inputs	No. of regular employees
	Automotive	wheels	First tier	Australian	60%	40%	29
B	Automotive	motor vehicles	Assembler	MNC-American	70%	60%	610
C	Automotive	electronic and mechanic components	First tier	MNC-German	100%	> 90%	620
D	Electronics	components for HDD	Second/Third Tier	Filipino	100%	50%	850
E	Electronics	semiconductor and microwave components and modules	Second/Third Tier	Filipino	100%	90%	400
F	Electronics	multi-chip packages and modules	Second/Third Tier	Filipino	100%	95%	1,000

Source: Interview of firms

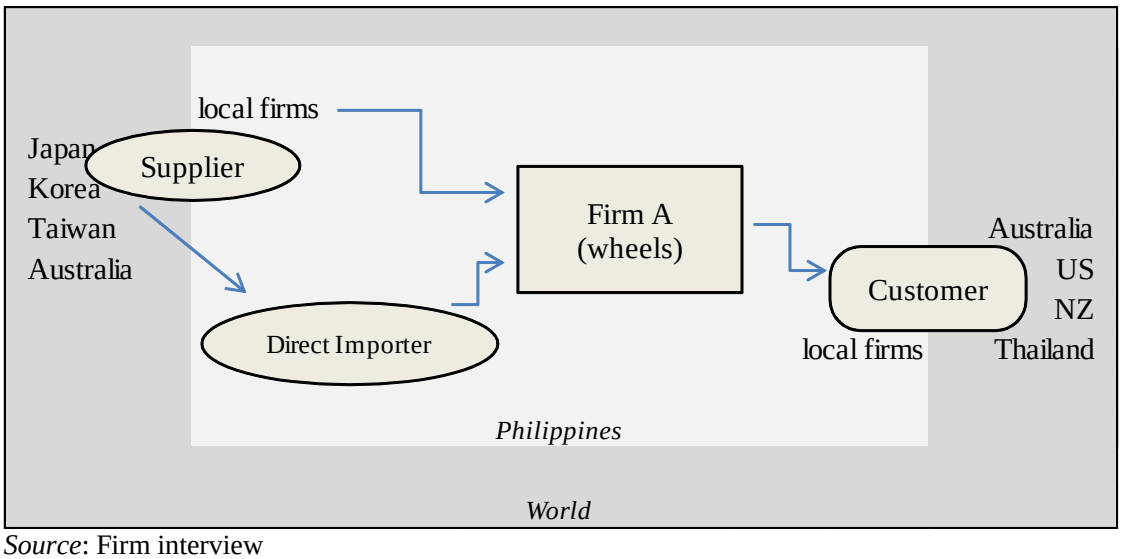
5.2 A Description of the Firms' Supply Chains

Firm A, an Australian-owned automotive firm, designed and manufactured wheels. In the manufacture of wheels, Firm A's main input was steel. Steel composed the biggest component of the raw materials imported from Taiwan, Japan, Korea and Australia (40 percent of imported inputs). The firm however did not directly import the raw materials but bought them from a local firm/trader which was the one importing from the above-mentioned countries. For the steel, this local firm/trader performed cutting and preliminary processing before delivering to Firm A. As for the rest of the inputs, 60 percent came from the local suppliers and were mainly chemicals.

The firm exported 50 percent of production to the firm's mother company in Australia and 10 percent went to the US, New Zealand and Thailand (minimal). Firm A took its request orders from the mother company in Australia. Firm A's customers in the Philippines included Mitsubishi, Nissan and Toyota, where 40 percent of production is sold.

Firm A had just recently known about the AANZFTA, as informed by its mother company in Australia The firm had started using this FTA.

Figure 7. Firm A (automotive)



Source: Firm interview

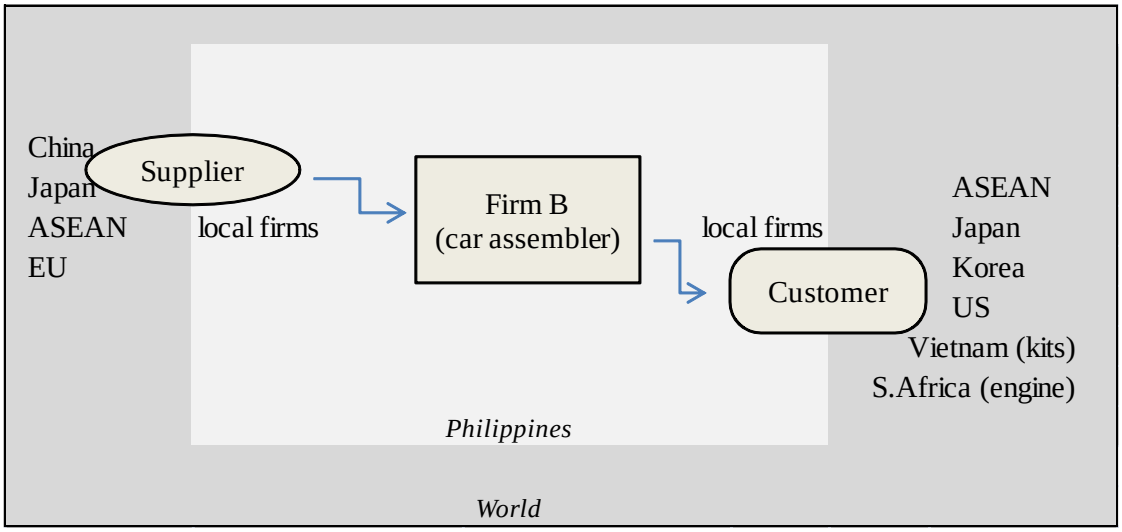
Firm B, a multinational company, assembled motor vehicles (completely built-up [CBU]). The firm also assembled engines and produced vehicle kits and parts for

assembly abroad. In the assembly of vehicles, its main operation, the firm imported 60 percent of its inputs from ASEAN,[14] China, Japan and Europe, and the rest (40%) of inputs were procured locally.

Firm B exported CBUs to ASEAN (Thailand, Malaysia and Indonesia), US, Japan and Korea. Exports of CBUs composed 70 percent of exports. The firm also exported kits and parts to Vietnam (where the kits were assembled into vehicles), and assembled engines for export to South Africa.

Firm B used ATIGA, AFTA and Philippines-Japan Economic Partnership Agreement (PJEPA) and had previously participated in the AICO scheme.

Figure 8. Firm B (automotive)



Source: Firm interview

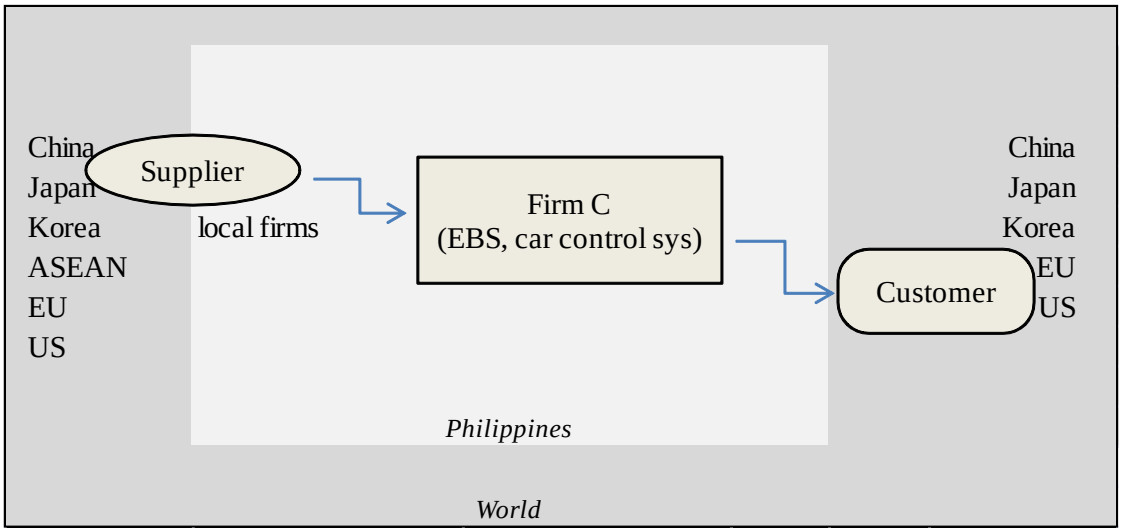
Firm C, a multinational company, produced electronic braking systems, body and security systems (seat control, door control, roof control and access control), and original equipment spare parts. The firm imported electronic parts and equipment parts from different parts of the globe – ASEAN, China, Japan, Korea, the EU and the US. Of its imports, 60 percent came from the EU, US, Japan, China and Korea, which they classified as high-cost countries; while 40 percent came from ASEAN (a small percentage from the Philippines), which they classified as best-cost countries.

[14] Of the imported inputs, 2-5 per cent came from ASEAN.

The firm exported to Japan, China, Korea, the US, Germany and Belgium, basically to the firm's counterpart in these countries (inter-firm trade). The automotive parts/applications that were manufactured in the Philippines were exported to another location of the MNC, for instance, in China or Germany, where further processing was done, i.e. other parts attached to the parts manufactured in the Philippines. For example, an electronic braking system produced in the Philippines would be sent to Germany to attach a hydraulic part, after which the by-product would be sold to car companies.

Firm C utilized the ACFTA, AKFTA and PJEPA. The firm would be studying AIFTA and AANZFTA to assess potential benefits.

Figure 9. Firm C (automotive)



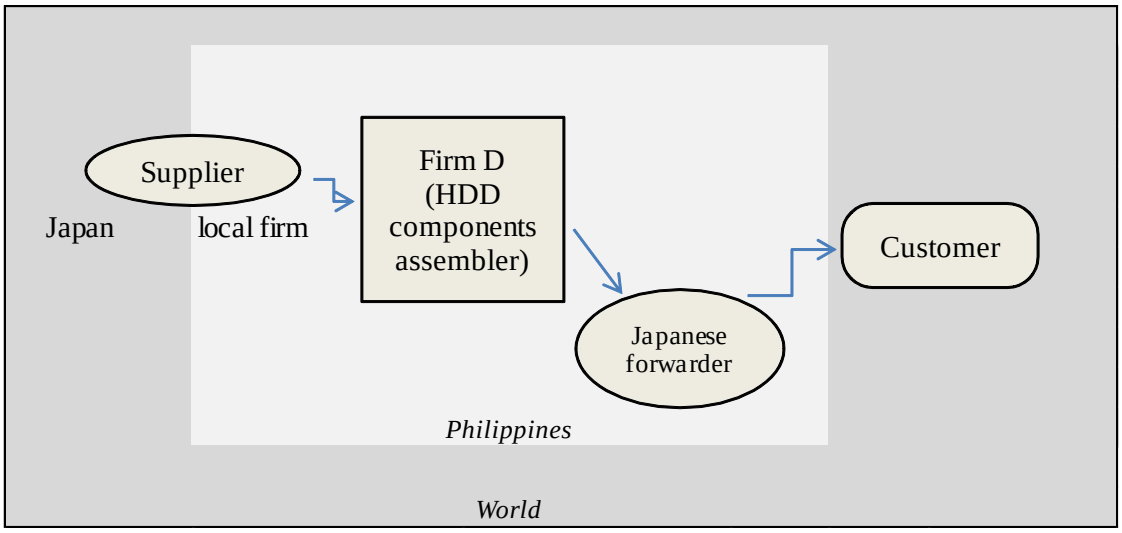
Source: Firm interview

Firm D, a 100 percent Filipino-owned firm, has been engaged in the assembly of hard disk drive (HDD) components. Their inputs came from Japan (50 percent), which were imported directly; and the Philippines (50 percent), through a Japanese firm. Their suppliers were basically dictated by their customers. The firm exported 100 percent of its production, but indirectly via a Japanese firm located in the Philippines, which then forwarded HDDs globally.[15]

[15] The interviewee preferred not to disclose any further information.

Firm D had not used any FTA nor were aware of its provisions. However, the firm would be eager to learn about FTAs as it could be relevant to an upcoming electronics product that they were going to launch.

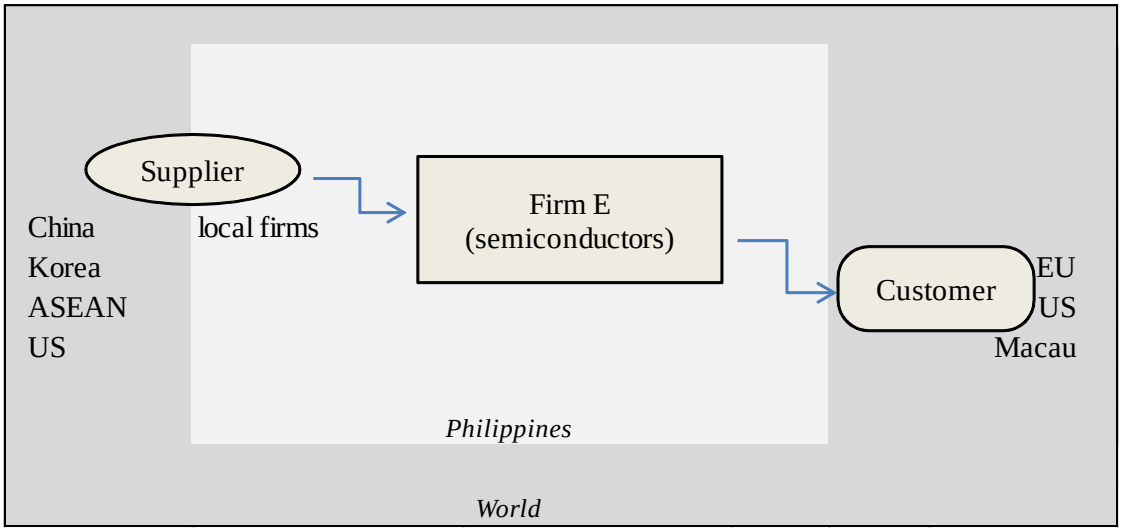
Figure 10. Firm D (electronics)



Source: Firm interview

Firm E, an electronics firm, manufactured semiconductor and microwave components and modules which were used in computers, telecommunications, consumer as well as automotive products. The firm imported inputs from Singapore, Malaysia, Korea, and the US and China (minimal). Local supplies composed 10 percent of total input purchases. The firm exported to the US, Europe and Macau (all production is for export). The firm had not used FTAs, as it was not required by their customers.

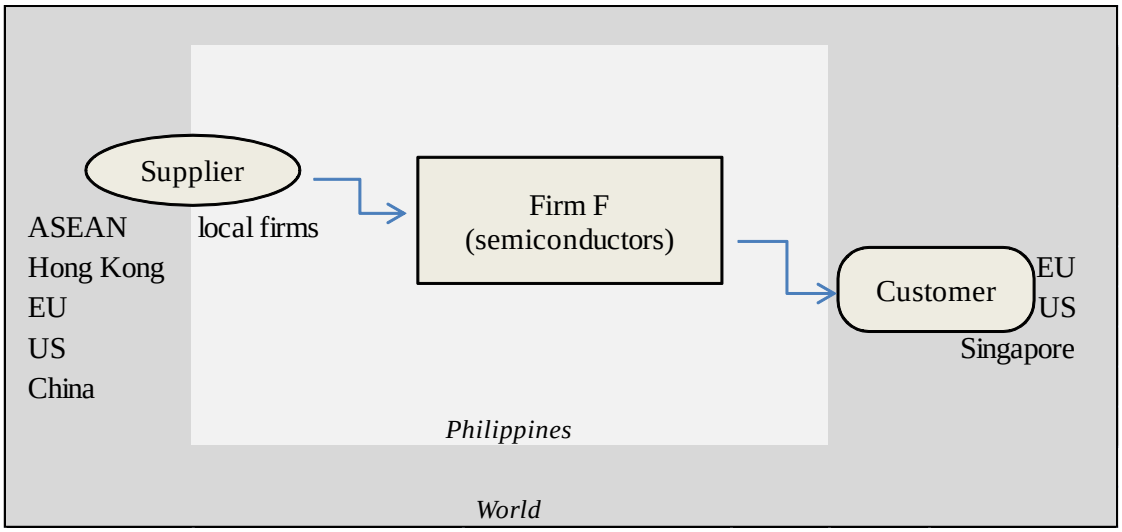
Figure 11. Firm E (electronics)



Source: Firm interview

Firm F, an electronics company, has been engaged in the production of multi-chip packages and modules used in electronic gadgets and equipments. The firm imported inputs from the US, Europe and Asia – Singapore, Hong Kong and China (minimal). About 5 percent of its inputs were locally sourced. All of its production was for export. The firm exported to the US, Europe and Singapore. They had not used FTAs as their customers did not require it.

Figure 12. Firm F (electronics)



Source: Firm interview

5.3. Critical Points in the Supply Chain

The automotive and electronics firms interviewed said that the supply chain they belonged to was already established and running smoothly. Particularly for the Philippines, suppliers as well as customers have been established by a sister/mother firm or affiliate of MNCs. For the others, their continued participation was attributable to the quality of products and good reputation. There are, however, points that need improvement as discussed below, that if addressed will motivate firms to capitalize on benefits of exploring a wider market via the FTAs.

5.3.1. Supply Base in the Philippines

The three automotive firms interviewed all mentioned lack of supply of raw materials in the domestic market. One firm related how behind the Philippines is compared to the roughly 1,000 suppliers in Thailand. Another firm further opined that there is also a need for suppliers to develop their products as acceptable to the sector, and that, as there are not enough suppliers in the domestic market, there is no choice but to import from other countries. This vehicle assembler interviewed pointed out that this makes the cost of inputs more expensive than if they were sourced from the domestic market, because for instance, there would be no freight costs and other costs related to importing. This automotive firm added that, compared to Thailand, it is more expensive to produce cars in the Philippines –a difference of US$1,500-2,000 per unit.

In the Philippines, formal policies for the automotive sector have been issued since the 1970s, but the sector was not able to establish a good number of players, especially suppliers, and volume in production, as compared with its ASEAN neighbours such as Thailand. In 1987, the car development programme was aimed to develop a viable automotive parts manufacturing industry. However, the car programmes in general seemed to aim more at attracting the MNCs to invest and set up production in the Philippines (Quimba and Rosellon, 2011). These car programmes allowed entry of foreign car companies to establish assembling facilities in the country but missed out on developing a base of domestic suppliers.

The electronics industry, on the other hand, is characterized by a supply base of components assembly and testing, and can be considered to be at the lower part of the supply chain, i.e. major products having low value added. What is also apparent in the

country is that the mother firms from a foreign country would put up a subsidiary or an affiliate that will supply raw materials, in the same location or at least near the firms' manufacturing plant.

5.3.2. Logistics

In the automotive and electronics firm interviews, exportation was said to be smooth, especially for those located in an economic zone, where the administrator assists and facilitates the smooth movement of goods. One firm only relates the forwarders' lack of knowledge or education with respect to compliance to FTAs. It was observed that forwarders were not attending trade forums/seminars.

On the importation side, the issue of logistics would be mentioned almost instantly in the firm interviews. There appeared to be a continuing problem of congestion in the ports, causing delay in the delivery of goods and therefore adversely affecting business operations. The interviewed firms that shared this experience suggested giving the needed attention in improving the process and system in the ports of entry in the country. The firms felt that the rate of improvement was not on a par with the industry requirement that is the cause of the problems on the logistics side – importation in particular.

5.3.3. Fiscal Incentives, FTA Preferential Rates

Fiscal as well as non-fiscal incentives[16] are offered by the government to firms as a way of attracting more investments from existing firms and new investments from potential firms. In the Philippines, these incentives are normally given if the firm is registered with the Board of Investments (BOI), or economic zone authority such as the Philippine Economic Zones Authority (PEZA), i.e. located in a special economic zone. Outside economic processing zones, there are tax holidays given to customs

[16] Fiscal incentives include income tax holidays or exemption from corporate income tax for four years after which a special 5 per cent tax on gross income in lieu of all national and local taxes could be availed of; duties and tax exemption on imported capital equipment, spare parts, supplies and raw materials; domestic sales allowance equivalent to 30 per cent of total sales; exemption from wharfage dues and export taxes and fees. Non-fiscal incentives include permanent residence status for foreign investors and immediate family members; employment of foreign nationals; simplified import and export procedures.

manufacturing bonded warehouses. A lot of manufacturing and exporting automotive and electronics firms enjoy these incentives.

Wignaraja et al. (2010) find little interest in the utilization of FTAs for firms where these incentives are available. This is possibly because they make their activity profitable enough such that there is less need to search for more measures especially if such efforts entail additional costs. But perhaps more importantly, the electronics sector already enjoys low or zero MFN tariffs and reduced tariffs from the Information Technology Agreement (ITA) of the World Trade Organization.

The automotive firms interviewed, who were all users of FTAs, were quick to say that the fiscal incentive schemes of the government and the FTA provisions complement each other. As one firm put it, fiscal incentives are there to invite investors to the country and to keep existing investors; while preferential tariff rates are there to encourage and motivate firms to produce or expand production for foreign markets. These statements imply that although fiscal incentives were already in place and help reduce some costs for firms, the FTAs were still needed as they provide incentive for firms to explore potential foreign markets for their products.

Fiscal incentives such as income tax holidays, duty-free importation of capital equipment and raw materials, exemption from export taxes and fees can be availed of only by firms registered with the BOI, PEZA and other special economic zones such as those located in the municipalities of Subic and Clark. In general, export-oriented firms are eligible (those exporting at least 70 percent of their output). A report by the Philippine Exporters Confederation (Philexport) acknowledges a declining trend in exports of many firms, mostly[17] SMEs – on account of global recessions that hit the country and the increasingly competitive environment in global trade. Unless the export sales criterion is lifted (which Philexport is pushing for), then firms that export below the cut-off will, for instance, fail to benefit from a duty-free importation of raw materials and/or export tax exemption which could have helped them be competitive with their foreign counterparts. For these firms, preferential tariff rates in FTAs (especially where MFN rates are high) can be seen as a possible substitute for the local fiscal incentives.

[17] One respondent firm, a small Australian autoparts firm, declared that it has only been able to export around 60 per cent of sales in past years.

However, preferential rates would be a complement to local fiscal schemes, as mentioned above. It would also appear that preferential tariff rates would be irrelevant if a firm's import duties are already zero, but on a wider perspective, FTAs signify greater potential market access and relaxed entry barriers for firms, especially for SMEs or for emerging exporters. One important benefit of FTAs that firms identify, according to the survey of Wignaraja et al., is increased export sales due to greater market access. Wider market access also implies access to new markets. One automotive firm interviewed said it was studying the possibility of importing from/exporting to the Philippines/ASEAN's new FTA partners of India, Australia and New Zealand. This firm was located in an economic zone, therefore benefiting from fiscal incentives, but was still keen to know what potential market the newly-signed FTAs could offer.

What FTAs do, especially for SMEs, is give a signal that trade barriers are relaxed (especially with reduced tariff rates), and as such a push to exploit (if an existing market) and explore (if a new, potential market). Large firms have resources to study the market or go on trade missions abroad to promote their product. For small exporters, this can be a problem. The government in fact has designated agencies that handle international trade expositions and missions, as well as export and trade promotion for the Philippines. These agencies need to be even more active now especially because the FTAs are building up the competition. As it is, Philippine trade shows are said to be not as popular and well-funded by government as those in neighbouring countries.[18]

5.3.4. Customs Procedure

Previous studies of FTA utilization (e.g. Medalla and Balboa, 2009; Wignaraja et al., 2010) have found that the costs and delays related to the administrative procedures are one of the impediments to the use of FTAs. As it appears from the firm interviews, it is fairly easy to get a CO especially for compliant and long-time exporters, and more so for big exporters. However, going through the process can be costly. One firm interviewed – a small, long-time exporter – said it was able to complete documents and could obtain COs easily but it did not come cheap. Two other firms interviewed which

[18] Edu Lopez, 'Philexport bats for lifting of export sales requirement on SMEs', Manila Bulletin online article, 19 May 2011, <http://mb.com.ph/node/319030/philexport-bat>.

were big exporters with an efficient system in terms of CO applications, went though the bureaucracy but declared that they did not have to spend very much or incurred no significant additional cost. These firms preferred not to disclose the cost in total or percentage terms of going through the red tape, but apparently for a small firm it is a big part of its costs.

The small firm said that the paperwork involved, for example, in origin documentation, can be burdensome for a small enterprise like them, and so they hired a broker to take care of such transactions. On the other hand, the two large firms mentioned that they had designated staff that took care of customs matters. As was inferred in Wignaraja et al. (2010), the large firms have their own export or logistics department or staff handling documentation requirements for FTA compliance, and this translates to ease in complying with FTA documentation and thus one reason that encourages use of FTAs.

Most of the interviews indicated that documentation was not difficult to accomplish, a firm will just have to follow the required documents. The firms were also aware of the implementation of an electronic filing system to facilitate the filing of documents – wherein some documents may be sent electronically, and after evaluation a CO may be issued. Some of the firms however pointed out that there have been frequent instances of breakdown in the system. From one firm's observation, the system was not yet robust and the customs personnel concerned were not very knowledgeable with the system such that repairs could not be made immediately. The firm posited that capability and responsibility need attention, and that careful planning would have been needed at the onset.

5.3.5. ROOs in FTAs

The three firms that use FTAs shared the same view that harmonization of ROOs would be beneficial. For instance, a regional value content (RVC) rule for all, with a lower RVC content, would be preferred. Although these firms are able to comply with the 40 percent RVC (those that face this rule of origin), a lower percentage was still favourable. In Wignaraja et al. (2010), they found that lower RVC (than the existing rule) were favoured by firms, and (together with the introduction of self-certification in the origin application process) could possibly double AFTA usage.

As regards the different CO forms, the firms admitted that the information asked from the forms was almost the same and so filling out the forms was not difficult. In addition, with their frequent shipments, they have organized a system and already knew which forms and which particular information were needed.

Another issue is with regard to customs personnel and classification of products and/or origin. A firm related an experience when customs personnel misclassified a product. The firm had to call the attention of the customs administration, which meant some time being wasted. The Wignaraja et al. (2010) study also found one related factor that impedes firms' FTA use – the arbitrary classification of origins, which emanates from differing tariff classification among countries (caused by slow adoption of harmonized tariff classification), and therefore origin and duty determination is going to be in question.

5.3.6. Non-Tariff Barriers

The firms had International Organization for Standardization (ISO) certification requirements– ISO 9001 for quality management system of business, and TS16949 which applies to automotive. There was only one firm without ISO certification. Although its customers require it, it gets away with it since it is the only supplier in the Philippines, aside from them supplying the mother company abroad.

As for standards, the firms claimed that the customers approve the quality of their products and so in essence this is the standard they follow, and which they are able to satisfy. This indicates that there appears to be less constraint as far as customers' standards are concerned, especially for firms that manufacture for parent firms abroad, or that operate as contract suppliers. There was however one issue raised by one firm, a vehicle assembler, with regard to complying with local and international standards. For some completely knocked down (CKD) parts, this firm had to get certification for every export shipment (e.g. seatbelts), which cost 5,000 Philippine pesos (around US$115) each time. Meanwhile, imported vehicles are not subject to such standards, therefore this was seen as unfair and penalizing local assemblers.

5.3.7. Government Support

The interviews indicated that the government support and efforts were found to be lacking, as far as businesses and FTAs were concerned. Firms claimed that there was not much information dissemination when it comes to FTAs or benefits that businesses can get from using FTAs. Government agencies such the Department of Industry hold forums that tackle FTA or general trade or industry issues, but the belief was that there was not enough effort to engage the firms and all stakeholders at these gatherings. The firms appealed for the government to exert more effort to encourage exporters/businesses to use or maximize the use of FTAs so that they may know and eventually earn the benefits. One electronics firm interviewed had no working knowledge of FTAs and what potential benefits it can get. Meanwhile, one automotive firm related having encountered a forwarding company that had limited knowledge on FTA compliance and further added its observation that forwarders are not invited or are not attending forums.

For the firms to use FTAs and participate in the supply chain to their full potential, what they also asked from the government was active promotion of local companies/suppliers and support for them to develop products that are acceptable to their sector– to current and potential customers in the supply chain. The small firm interviewed related the lack of support even coming from fellow local firms, when it is in fact possible to help local suppliers develop through technical knowhow exchange, as a large automotive firm has experienced. If such arrangements can be done by more firms, then the supply network in the Philippines will improve.

On a positive note, there are some people from the government who work towards helping business in matters of investment as well as trade. The Philippines has investment promotion agencies (IPAs). Among the IPAs, the agencies that handle administration of economic zones seem to give the better services to firms. One highly regarded IPA is PEZA, which manages 64 manufacturing economic zones in the country. Firms located in PEZA zones praised the good service that they got from PEZA. Firms interviewed said that the agency responds quickly to consultations and has no bureaucratic procedures, therefore lessening logistics delays. Exportation, as well as importation, is done with relatively more ease than being located outside the PEZA zone or not having an active IPA. The experience with PEZA, however, was in

contrast with what firms experience in dealing with some customs personnel who are observed to lack good understanding and knowledge of FTAs.

The private sector in its own way makes an effort to disseminate information via industry organizations. In the Philippines, there are several industry organizations in the automotive and electronics sectors that are active in lobbying different issues, although only some are very active in terms of free trade issues and some are not. The active ones normally hold forums to tackle the latest issues among members, or in annual gatherings to discuss plans or roadmaps for the industry.

6. Conclusion

This chapter has looked at the automotive and electronics sectors, which have supply chains integrated with the rest of East Asia. Trade data and firm interviews indicate that the Philippines automotive and electronics imports/exports come from/go to East Asia – China, Japan and Korea, and Thailand, Indonesia and Malaysia in ASEAN. Outside the region, the US, Germany and Australia are also top markets for products imported and exported. Thus, insofar as FTAs are concerned, the supply chain could be facilitated as these markets are FTA partners of the Philippines.

As other studies have found – that automotive firms use FTAs more than other sectors such as electronics – the interviewed automotive firms are FTA users, while the interviewed electronics firms are all non-users. The interview results also validate the observation that the margin of preference and domestic incentives received by firms determine whether or not firms use FTAs – margin of preference is high in the automotive sector, while tariffs in electronics are already low and domestic incentive schemes are present. Lack of information and bureaucratic rent-seeking procedures are also cited. It is also observed that the electronics firms interviewed, since they are essentially sub-contractors, are highly dependent on their customers. For instance, a reason cited by two firms for the non-use of FTAs was that their customers (buyers) do not require them to submit documentation for CO.

On another note, firms that were interviewed claimed that the supply chain they belong to has been running smoothly. These firms had been importing and exporting for several years, such that their relationship with suppliers and customers was already established. Moreover, firms welcomed the fiscal and non-fiscal incentives from the government, and for users of FTA, the additional incentives they receive in the form of preferential tariffs, which make production and exchange cost-effective.

What remains to be addressed are: on FTA matters – harmonization of ROOs; and for domestic policy issues – customs procedures, logistic systems, and government support. Highly cited issues that need attention include: the bureaucratic customs procedures which still exist and trouble businesses; more organized and modernized ports to meet the logistics demands of industry; and government support for more awareness of FTAs, promotion of products; more efforts to develop capacities of firms especially in the automotive sector such that the much-needed supplies can be made available locally; and for customs personnel to be well educated on technical systems used in customs management and on matters related to FTAs.

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CHAPTER 10

FTAs and the Supply Chain in the Thai Automotive Industry

ARCHANUN KOHPAIBOON

Faculty of Economics, Thammasat University, Bangkok

NOBUAKI YAMASHITA

School of Economics and Finance, La Trobe University, Melbourne

The impacts of FTAs on the supply chain is assessed in this paper using the Thai automotive industry as a case study. While there are numerous previous studies examining the effects of FTAs, there has been no systematic analysis of industry case studies that focuses on the effects of FTAs on the supply chain. An overview of policy development in the Thai automotive industry is provided, followed by the recent performance of the automotive industry in Thailand. The supply chain development and the impact of FTAs is then examined. Differences between trade in motor vehicles, where the FTA impact is significant, and trade in components, are discussed. Policy implications are then identified.

1. Introduction

The automotive industry in Thailand has grown rapidly over the past two decades. By 2008 annual exports approached US$28 billion from US$0.5 billion in 1995, making Thailand the 13th largest automotive exporter in the world, and the third largest in Asia, after Japan and South Korea. The marked success in the expansion of the automotive industry has transformed Thailand into the 'Detroit of the East' (Economists Intelligence Unit, 2008, p.21), with most of the major players in the international auto industry using the country as a production platform.

Despite the extensive policy framework relating to the automotive industry, insight about the industry's supply chain remains largely unknown. In particular, does becoming more export-oriented create more or fewer domestic linkages? How do multinational car makers make use of the growing importance of product fragmentation – the cross-border dispersion of component production/assembly within vertically integrated product processes in the past two decades (Athukorala and Kohpaiboon, 2010; Yamashita, 2010; Cattaneo et al., 2010)? The issue becomes more complicated in the case of the automotive industry where the manufacture of a vehicle involves a wide range of parts including rubber parts, plastics, electronics, metallic and engine components. Some of these parts are unlikely to be traded across borders due to their bulky nature and to the inventory management strategy popularly used, i.e. just-in-time. The combination might lie between fully global at one end of the spectrum with interlinked, specialized manufacturing clusters and fully local at the other, where manufacturing is tied to the narrow geography of specific location.

This issue is even more pertinent given the proliferation of free trade agreements (FTAs) observed over the past 15 years. As the number of FTAs is still growing, their presence is more likely to affect the operation of the multilateral trading system as well as the day-to-day conduct of cross-border trade. How the proliferation of FTAs affects trade opportunities and how firms respond to these opportunities has not been yet examined through in-depth industry case study analysis although it is central to the debate whether FTAs act as stumbling or building blocks and how FTAs should be designed to complement the existing WTO.

Against this backdrop, this paper assesses the impact of FTAs on the supply chain using the Thai automotive industry as a case study. The automotive industry is suitable for this analysis for two reasons. Firstly, Thailand is one of the major production platforms for the largest players in the international auto industry. Secondly, automotive products and vehicles in particular are still subject to high tariff because they were sensitive items in the WTO multilateral trade liberalization. By contrast, they are usually included in FTAs tariff liberalization program. Hence, it would be interesting to examine the actual liberalization effect on them. While there are numerous previous studies examining the effect of FTAs such as Magee (2003 and 2008); Soloaga and Winters (2001); Bayoumi and Eichengreen (1995); Athukorala and Yamashita, (2006); Wignaraja et al. (2010); Takahashi and Urata (2009); and Kohpaiboon (2010), they mostly undertook a sectoral analysis on a national basis. There has been no systematic analysis of industry case studies that focuses on the effects of FTAs on the supply chain.

The paper is organized as follows: Section 2 presents the research methodology used for the firm-level case study. An overview of policy development in the Thai automotive industry is provided in section 3, followed by the recent performance of the automotive industry in section 4. Section 5 presents the supply chain development and the impact of FTAs. Conclusion and policy inferences are presented in the final section.

2. Research Methodology

Both quantitative and qualitative analyses are undertaken. The former involves a careful analysis of production and trade data. Particularly, the list of auto parts used in this study was developed in Kohpaiboon (2007) and Athukorala and Kohpaiboon (2010). The list includes 84 items selected from the six-digit product classification according to the Harmonized System (HS) 2002 version based on the industry-specific knowledge as well as the firm interview information. It covers HS 39 (plastic parts), 40 (rubber parts), 70 (glass), 73 (metallic), 84 (engine), 85 (electronics) and 87 (auto body). Full details are provided in the Appendix.

In addition, to gain an insight into the nature of the supply chain in the Thai automotive industry, firm interviews were conducted. A flexible interview guide was used that allowed the respondents to relate their experiences in their own words, based on their own sequence of the topics asked in order to minimizes the likelihood of missing important aspects of the story. The interview guide begins by establishing a general company profile, i.e. size, past performance, ownership, production process, product destination, product covers, etc. This is followed by a series of opening probes into firms' supply chain behavior, starting with their general perception of the industry's development. This is followed by asking their opinions about the development of input procurement and recent changes in their procurement. Then questions were asked concerning opinions of the usefulness of FTAs and any potential obstacles such as rules of origin (ROO) constraints and opportunity costs of applying FTA preferential tariffs. Finally, general questions concerning current problems, the role of government and future prospects for the industry were addressed. Interviews were held with top-level managerial staff from five Thai enterprises and four government officers from the public sector during February 2011 to April 2011. All of the interviews were conducted by the author.

3. Policy Environment in the Automotive Industry in Thailand

3.1. Development of the Policy Environment

The Thai policy regime relating to the automotive industry has evolved, as an integral part of the overall industrialization strategy, through two distinct phases. During the period from the early 1960s until the late 1980s import substitution was the basis tenet of development strategy. During this period the Thai government enticed car makers to set up assembly plants in the country by providing tariff protection for vehicle manufacture and imposing local content requirements (LCRs) to promote local parts manufacture. Since the late 1980s there has been a clear shift in Thai automotive policy from domestic market orientation toward global integration, setting the stage for the country to emerge as a centre of automotive and auto parts manufacturing in the region.

As in many other developing countries, in Thailand the automotive industry was one of the first targets of industrial development through import substitution. In the early 1960s, tariffs of 60 percent, 40 percent and 20 percent were imposed on imports of completely built-up units (CBUs) of passenger cars, vans and pick-up trucks, respectively. Tariff rates applicable to imports of completely knocked down (CKD) kits and component parts for each of the three categories were set at half of the CBU rates. High end-product tariffs combined with lower tariffs on imported inputs naturally favored domestic assembly of hitherto imported vehicles. Motor vehicle tariffs were by far the highest in Thailand's overall import duty structure throughout the ensuing four decades.

From 1960 the government embarked on an investment promotion policy to complement the protectionist trade policy regime. The Board of Investment (BOI) was established to approve foreign investment projects and implement investment promotion measures under the Investment Promotion Act (1960). A range of investment promotion measures, including income tax breaks for approved investment projects were offered. Noticeably, unlike in many other developing countries, investment promotion policy in Thailand treated domestic and foreign investors equally. The only exception was the foreign ownership restriction for domestic-market oriented joint-venture firms (firms which sell more than 70 percent of their output in the domestic market). It was abolished in 1998 during the Asian financial crisis.

By the late 1960s, there was a growing concern in Thai policy circles that the nascent automotive industry had failed to set the stage for broad-based industrial growth through backward linkages with the local parts and components industry. In response, the government imposed LCR measures by 1975. Particularly, domestically assembled passenger vehicles had to use locally produced parts equivalent to at least to 25 percent of the total value of the vehicle in order to qualify for the importation of CKD kits and auto parts. The LCR requirement for commercial vehicles and pick-up trucks was set at 15 percent. The introduction of the LCR system was accompanied by an upward adjustment in import tariffs on CBU units of passenger vehicles, vans and pick-up trucks to 80 percent, 60 percent and 40 percent, combined with an increase of the

respective rates on CKD kits to 50, 40 and 30 percent.[1] As a further measure to promote local content, in 1978 an import ban was imposed on CBU passenger vehicles and import duties on CKD kits were increased to 80 per cent.

The new LCR system was introduced in 1983 to counter the implementation problems of the previous LCR system. Under the new system, which came into effect in 1983, every car part was assigned a point and auto assemblers were required to use locally produced parts up to a minimum mandatory total, initially set at 50 points. This was reduced to 45 points in the following year in response to requests by car makers. In addition, the LCR target for passenger cars was set at 54 points based on a two-way classification of auto parts – a mandatory list (Account A) and selective list (Account B) – with LCR points divided equally (27 each) between the two lists. Car makers were required to adhere strictly to Account A in procuring inputs and they were permitted to choose items freely from Account B. If any of the parts in list A were not available locally, car makers could select substitutes from the selective lists to fulfill the requirement. Account A consisted of several parts (e.g. radiator, battery, wiring harness, muffler, wheels and tire, glass doors and rear spring) which most car makers had already been procuring domestically. Thus there was little resistance from the car makers to the new system.

From about 1998 the Thai economy entered a period of rapid growth. The resulting increase in domestic demand caused a shortage of locally assembled vehicles and triggered the shifts toward more liberalized government policies. In 1991, the import ban on brand new cars was lifted. Since then the import trade regime for automotives has remained free of quantitative restrictions, with the sole exception of non-automatic licensing for the importation of certain types of diesel engines and a ban on motorcycle engines and used passenger cars (WTO, 2007, pp.115-16).

During 1998 to 2000, the Thai government honored its commitment under the WTO agreement on Trade Related Investment Measures (TRIMs), becoming the first developing-country WTO member to do so. Abolition of LCR (with effect from January 2000 was announced in 1998. In the area of FDI policy, all selective incentives

[1]As part of the new policy, the government also set limits on the number of models and the engine capacity of each model and minimum capacity of individual assembly plants with a vehicle to rationalizing the domestic auto industry. However, this rationalization policy lasted only six months.

granted to export-oriented activities and 49 percent equity ownership restriction on domestic-market oriented projects were abolished with immediate effect in 1999.

The automotive industry was further liberalized under FTA negotiation. Liberalization through FTAs for the automotive industry began in the mid-1990s through the ASEAN Industrial Cooperation Scheme (AICO) in November 1996.[2] The program aimed to promote trade in parts and components among auto companies operating in ASEAN member countries. It provided for a 50 percent reduction in prevailing import duties on parts and components trade among member countries, while treating these imports as part of the local content in estimating the minimum local content of the final products (40 percent) applicable to duty concessions under the ASEAN Free Trade Area (AFTA). This was used to accelerate the trade liberalization introduced in the ASEAN Free Trade Area in 1995 and expected to have a full effect by the end of 2010 for the original six member countries (Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand).

Since 2002 Thailand has signed a number of bilateral free trade agreements. Of these, the Thai--Australia FTA (TAFTA) and the Thai—New Zealand FTA (TNZFTA) have been in operation since 2005. The FTA with Japan (JTEPA) came into effect in 2007. In general, there were substantial tariff cuts offered in these FTAs. It is especially true for CBUs whose most favored nation (MFN) applied tariff is the highest at 80 percent though its liberalization is selective, that is, tariff cuts for CBU vehicles were offered under AFTA, TAFTA and TNZFTA, not under JTEPA simply because Japan is the major vehicle exporter. Table 1 provides a chronology of key policy changes.

[2] The AICO scheme was the generalized version of ASEAN Brand-to-Brand Complementary (BBC) programme which was in effect between 1988 and 1995. Under the BBC programme, trade liberalization on parts was applied only to the same brand located in different ASEAN members.

Table 1. Chronology of Trade and Investment Policies Impacting on the Thai Automotive Industry, 1960-2008[1]

1961	1960 Industrial Investment Promotion Act provides incentives for the local assembly of automotives.
1962	1962 Industrial Investment Promotion Act announced 50% reduction in tariffs on CKD kits: new rates, passenger cars 30%; pick-ups 20%; and trucks 10%.
1969	Ministry of Industry (MOI) set up Automotive Development Committee (ADC). 20% increase in tariffs on CBU vehicles: new rates, passenger cars 50%; pick-ups 40%; and trucks 30%.
1971	MOI restricted the number of locally assembled passenger car, pick-ups and trucks models. Announced LCR measures to become effective in 1974: domestically assembled vehicles had to use locally produced parts to at least 25% of the total value of the vehicle.
1978	Banned CBU imports and increased import duty on CKD kits to 80%. Suspended approval of new assembly plants to reduce overcapacity. Tariffs of CBU passenger cars and CKD passenger cars were increased to 150% and 80% respectively.
1982	LCR requirement for all vehicles set at 45%.
1985	Mandatory local content list imposed. Ban on imported CBU vehicles with engine capacity over 2,300cc lifted.
1986	LCR for passenger cars lifted to 54%. List for compulsory and non-compulsory parts introduced.
1989	Ceiling on production capacity of existing assembly plans lifted.
1990	Abolished restrictions on domestic production of series and models. Replaced quantitative import restriction (including the ban on imports of CBUs under 2.3 litres) on passenger cars with tariff.
1991	Reduced tariffs on all types of CBUs and CKD kits: CBUs over 2.3 litres from 300% to 100% CBUs under 2.3 litres from 180% to 60% CKDs for cars, pick-ups and vans from112% to 20% Required use of locally produced diesel engines for 1-ton pick-up trucks.
1992	Exempted pick-up trucks from excise tax.
1993	Ban on new assembly plants lifted.
1995	Reduced CKD tariffs from 20% to 2%.
1997	Abolished local ownership requirement on foreign-invested projects (announced 1993; implemented 1997).

1999	Raised tariffs on CKD vehicles from 20% to 30-35% to cushion against the potential adverse impact of impending LCR abolition.
2000	Abolished LCR requirement.
2003	Tariff preferences under AFTA came into full effect: import duties applicable to intra-ASEAN trade down to 0-5%.

Source: Compiled from various government policy reports and press releases.
Note: [1]No significant policy changes after 2003.

3.2. Structure of Applied and Preferential Tariffs

Table 2 provides the structure of applied and preferential tariffs of auto parts in Thailand. Three observations are made. Firstly, auto parts tariff rates are in line with the country's average tariff rate at about 10 percent in 2010. The two digit figure was largely due to the few exceptions (nine out of 84 items) whose tariff rate is greater than or equal to 30 percent. When these exceptions were excluded, the average tariff rate dropped to 7.4 percent. The second observation is that the auto parts tariff in Thailand is close to the regional average. The corresponding figures of India and Malaysia are among the highest at 12.3 and 12.9 percent, respectively. For other countries (Indonesia, Philippines, China, Japan and Australia), their auto parts tariff rate is slightly lower than for Thailand (Table 2).

Table 2. Auto Parts Tariffs Across Countries

	Average	**Max.**	**Min.**
Thailand (2010)	10.4	80.0	0.0
China (2006)	9.0	17.0	0.0
India (2006)	12.3	12.5	0.0
Indonesia (2006)	7.7	20.0	0.0
Philippines (2007)	6.4	22.5	0.0
Korea (2006)	7.5	13.0	0.0
Japan (2005)	0.4	4.8	0.0
Australia (2006)	6.4	10.0	0.0
Malaysia (2006)	12.9	30.0	0.0
Preferential tariffs offered by Thailand			
AFTA	0.0	0.0	0.0
ASEAN--China	6.2	36.1	0.0
Thailand--Australia	0.0	0.0	0.0

	Average	Max.	Min.
Thailand--New Zealand	0.0	0.0	0.0
JTEPA (2011)	8.5	54.6	0.0
Preferential tariffs offered to Thai exporters			
Indonesia	2.8	15.0	0.0
Malaysia	3.4	5.0	0.0
Philippines	2.5	7.0	0.0
Australia	2.6	5.0	0.0
Japan	0.0	0.0	0.0
China (2011)	1.9	15.0	0.0

Sources: Author's calculation from WTO tariff database.
Notes: See details in Appendix Table A1.

Tariff liberalization on auto parts through FTAs occurs in a selective manner. Thailand, on the one hand, offers virtually tariff-free entry under AFTA and TAFTA. On the other hand, the preferential tariffs offered in ASEAN--China and JTEPA seem limited. Given the magnitude of the MFN applied rate, it seems that FTAs would have a limited effect on raw materials sourcing and trade. When restrictions resulting from ROOs is taken into consideration, the positive effect of FTAs on trade would be even lower.

Vehicle tariffs are reported in Table 3. Vehicle tariff rates are among the highest compared to the other countries listed. The average tariff on vehicles in Thailand was 44 percent in 2010. This is second only to India at 48 percent. The highest tariff in this category is passenger vehicles (HS 8703) with a tariff rate of 80 percent. Similar to auto parts, tariff liberalization on vehicles through FTAs is highly selective. Thailand reduced the vehicle tariffs to 5 percent under AFTA and TAFTA only. For JTEPA and the ASEAN--China FTA, tariff cuts are selective. The average preferential tariffs were 20.3 and 20.4 percent for JTEPA and the ASEAN—China FTA, respectively. In ASEAN—China, Thailand expressed reluctance to cut tariffs on passenger vehicles so that the highest tariff under the ASEAN--China FTA is still 80 percent. This is different from JTEPA where tariff cuts occur across items (Table 3).

Table 3. Vehicle Tariffs Across Countries

	Average	Max.	Min.
Thailand (2010)	44.1	80.0	5.0
China (2006)	20.9	28.0	6.0
India (2006)	48.3	100.0	12.5
Indonesia (2006)	28.5	60.0	5.0
Philippines (2007)	19.9	30.0	3.0
Korea (2006)	7.8	10.0	0.0
Japan (2005)	0.0	0.0	0.0
Australia (2006)	5.1	6.7	0.0
Malaysia (2006)	19.2	32.0	2.5
US (2006)	7.7	25.0	0.0
EU (2006)	9.9	16.0	0.0
Preferential tariffs offered by Thailand			
AFTA	4.4	5.0	0.0
ASEAN--China	20.4	80.0	0.0
Thailand--Australia	0.0	0.0	0.0
Thailand--New Zealand	0.0	0.0	0.0
JTEPA (2011)	20.3	58.2	0.0
Preferential tariffs offered to Thai exporters			
Indonesia	4.0	5.0	0.0
Malaysia	2.9	5.0	1.9
Philippines	3.6	5.0	0.0
Australia	3.6	5.0	0.0
Japan	0.0	0.0	0.0
China (2010)	11.1	28.0	0.0

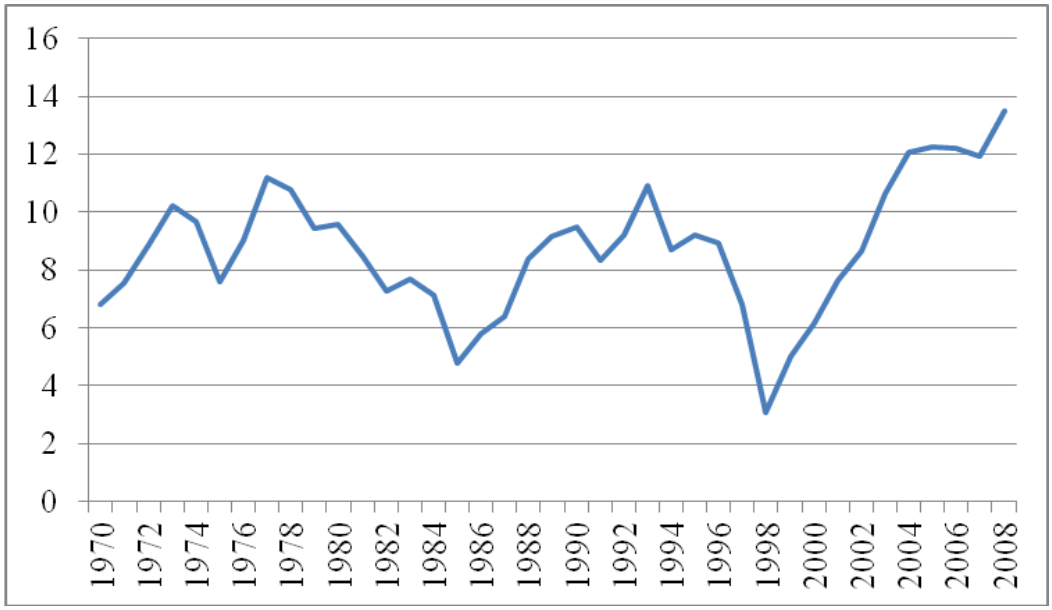
Sources: Author's calculation from WTO tariff database.
Notes: See details in Appendix.

4. Recent Performance of the Thai Automotive Industry

During the period from 1960 until about the late 1990s, the rate of growth of the automotive industry in Thailand was compatible with the overall growth of the manufacturing sector; the share in manufacturing output (i.e. value added) remained around 8 percent (about 2 percent of GDP). The ensuing years have seen much faster growth lifting its share of GDP to about 13.5 percent by 2008 (Figure 1). Employment

in the automotive industry too has grown over time, but at a much slower rate, from about 3.3 percent of total employment in the 1990s to 4.5 percent (around 350,000 workers) in 2008. The gap between output and employment shares reflects the relatively high capital intensity of the automotive industry compared to the average level of capital intensity for the manufacturing sector as a whole. The value added per worker (a rough indicator of capital intensity of production) in transport equipment manufacture is about three times that of total manufacturing (Kohpaiboon, 2006, p.174).

Figure 1. Value Added Share of the Automotive Sector in Total Manufacturing, 1970-2008 (million baht)

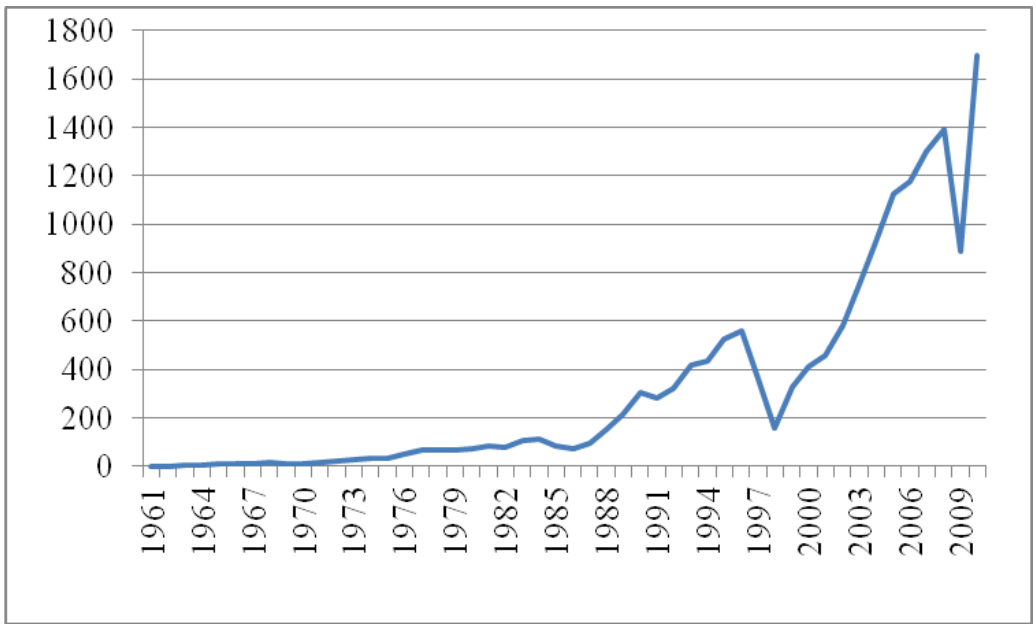


Source: National Economics and Social Development Board

Automotive production increased at an annual rate of over 10 percent from the mid-1980s, passing the half million mark by 1996 (Figure 2). This impressive growth trend was interrupted by the financial crisis during 1997 to 1999, but production recovered to the pre-crisis (1996) level by 2002. Output expansion during the ensuing years, when the industry became increasingly export-oriented, was much faster: between 2002 and 2008, total production increased by 800,000 units to about 1.4 million in 2008, recording an annual compound rate of over 20 percent. This made Thailand one of the world's major vehicle production hub. In 2008, Thailand was the 13th largest auto

producer in the world, accounting for 2.0 percent of total world output.[3] The country was the largest auto producer in ASEAN and ranked the fourth largest in Asia after Japan, South Korea and India. Due to the crisis in the developed countries, vehicle production dropped sharply to 0.9 million units or 63.7 percent of the 2008 figure. Nevertheless, vehicle production experienced quick recovery after the global recession and reached 1.7 million in 2010.

Figure 2. Vehicle Production, 1960-2010 (1,000 units)

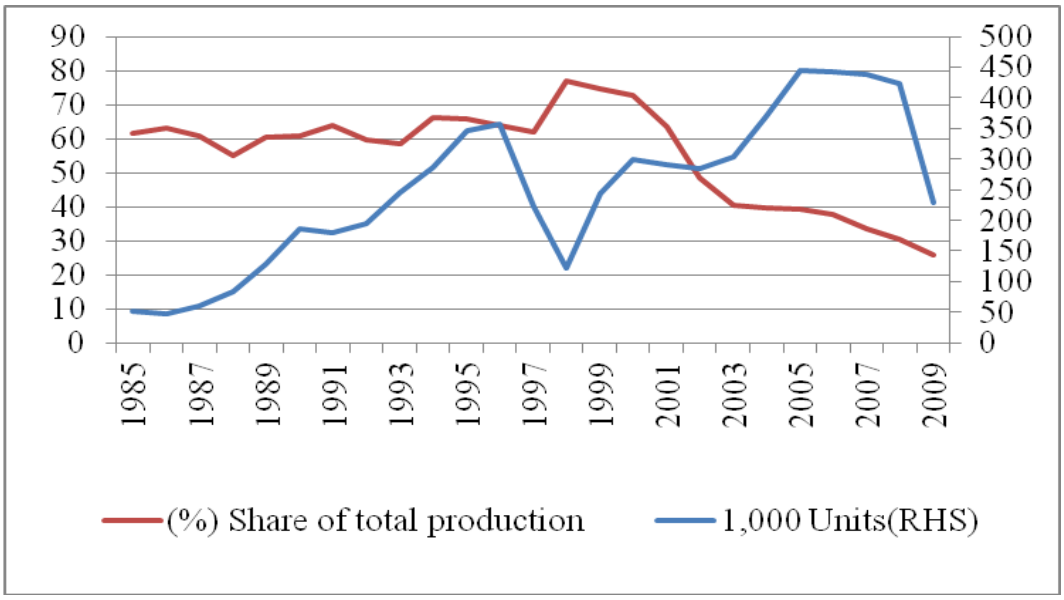


Sources: Automotive Association, Industrial Federation of Thailand

During the early 1980s, commercial vehicles dominated vehicle production in Thailand. Their relative importance has noticeably declined since 2002 due to diversification to passenger vehicles. Production volume of pick-ups increased from 47,000 in 1985 to over 400,000 in 2008. Pick-up production dropped to 200,000 in 2009 due to the global recession. From 2000 while their production continued to grow, the share has recorded a mild but persistent decline. The share increased between 1985 and 1998 and reached 77 percent of total vehicle production. From then on, the share declined persistently to 26 percent in 2009.

[3] Among countries in the periphery, Thailand ranks eighth in automotive production. Note that the term 'countries in the periphery' is used here to refer to countries other than the traditional automotive producers – UK, USA, Japan, Germany, France and Sweden.

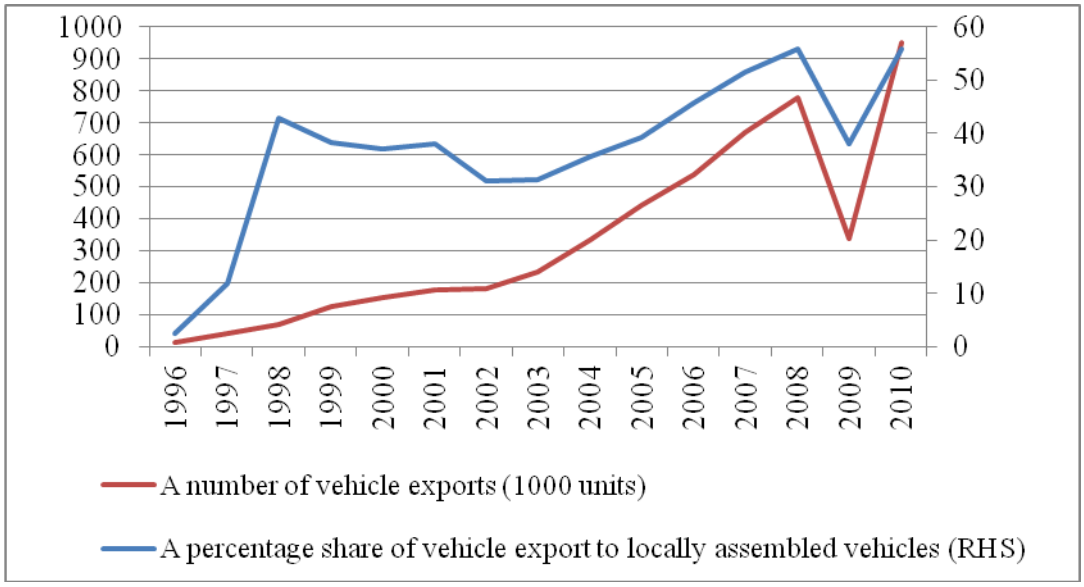
Figure 3. Commercial Vehicle Production and Their Share of Total Production, 1985-2009



Sources: Automotive Association, Industrial Federation of Thailand

The Thai automotive industry has become more export oriented since 1996. The number of vehicles exported increased from 14,000 units in 1996 to 152,800 in 2000. An increase in vehicle exports continued and reached 838,600 units in 2008 (Figure 3). As a result, vehicle exports accounted for around 41 percent of total locally assembled vehicles during the period 2000 to 2008. This is in contrast to the general presumption that the increased importance of vehicle exports would simply be a temporary response to the collapse of domestic demand for vehicles during the onset of the economic crisis. However, the increased importance of vehicle exports would be regarded as a structural change. During the global recession, vehicle exports from Thailand were adversely affected, dropping by around half in 2009 from the year before to 339,000 units, as shown in Figure 4. Correspondingly, the share of vehicle exports to the (parts and vehicles) industry exports fell to 38 percent in 2009. Nonetheless, vehicle exports recovered rapidly after the crisis. In 2010, vehicle exports were back up to 950,000 units, accounting for 56 percent of the industry exports. As a result, CBUs have become increasingly important to the industry's exports.

Figure 4. Vehicle Exports, 1996-2010



Sources: Automotive Association, Industrial Federation of Thailand

By contrast, this change in product composition was not observed for imports. Auto parts remained the industry's major import items and accounted for more than 80 percent of the industry's imports throughout the period from 1999 to 2009, as shown in Table 4. Another interesting trend is the increasing trade surplus of the automotive industry resulting from the rapid expansion of automotive exports. While the import value continued to grow at 13 percent per annum, export value growth averaged about 19.4 percent from 1999 to 2009.

Table 4. International Trade of the Thai Automotive Industry, 1999-2009

	Total exports ($m)	% of total exports		Total imports ($m)	% of total imports		Trade balance ($m)
		Vehicles	Auto parts		Vehicles	Auto parts	
1999	3,018	42.5	57.5	2,446	22.8	77.2	572
2000	3,744	44.1	55.9	3,378	15.4	84.6	366
2001	3,884	49.5	50.5	3,281	11.4	88.6	602
2002	4,325	45.5	54.5	3,741	11.0	89.0	584
2003	5,683	46.7	53.3	4,789	12.8	87.2	895
2004	7,732	47.6	52.4	5,516	12.0	88.0	2,216
2005	10,529	49.4	50.6	6,266	12.7	87.3	4,263
2006	13,118	50.7	49.3	6,458	12.0	88.0	6,660
2007	16,521	49.8	50.2	7,481	13.5	86.5	9,040

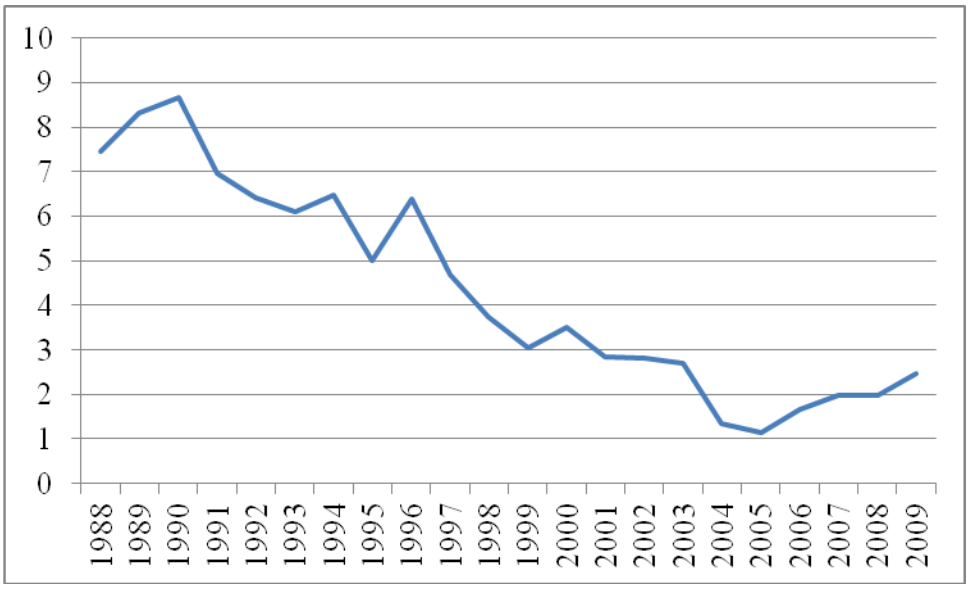
	Total exports ($m)	% of total exports		Total imports ($m)	% of total imports		Trade balance ($m)
		Vehicles	Auto parts		Vehicles	Auto parts	
2008	20,709	52.1	47.9	9,324	16.4	83.6	11,385
2009	15,639	49.3	50.7	7,490	15.9	84.1	8,149

Source: Author's compilation from UN Comtrade database.

A major concern in the debate on national gains from the expansion of the Thai auto industry relates to the extent of its value addition to the national economy. A number of studies conducted in the early 1990s have come up with estimates which suggest very low value added of less than 20 percent. However, the evidence we have collected through firm-level surveys suggests that value added would have significantly increased during the ensuing years as the local production of parts and components have rapidly increased in line with rapid output expansion. The bulk of parts and components embodied in locally assembled cars are now sourced locally, although the import content of some automotive components are admittedly still high.

Data needed for the precise estimation of domestic value added are hard to come by. However, some idea about the overall trends in domestic value-added and output expansion can be obtained by looking at the employment of imported parts and component in domestic automotive production. One way of doing this is to calculate the real value of parts and component imports (after adjusting the import value for changes in prices) per unit of local production (per locally assembled vehicle). Our calculations for the period from 1988 to 2009 are plotted in Figure 5. The real US dollar value of parts and components per vehicle (at 1985 prices) has declined sharply from about $8,500 in the early 1990s to around $2,000 in 2007/08. There was a reversed trend in 2009 where the share rose to about $2,500. This pattern is consistent with the findings from our firm-level survey, discussed below. Interestingly, the rate of decline is much sharper during the period after the abolition of LCR requirements in 2000 compared to the preceding period. This would suggest that the market-driven process of localization of the auto industry has yielded a much better outcome than the LCR regime.

Figure 5. Imported Auto Parts per Vehicle Production in Thailand, 1988-2009 ($1,000 per vehicle)



Thailand specializes in manufacturing and exporting commercial vehicles and one (metric) ton diesel pick-ups in particular (Table 5). The pick-ups alone accounted for more than 50 percent of total vehicle exports throughout the period 1999 to 2005. During the period 2006 to 2009, while the dollar value of one-ton diesel pick-ups continued to increase, the share of pick-up trucks declined to 51 percent from nearly 80 percent in 1999-2001 due to the higher growth rate of passenger car exports. Interestingly, the share of passenger vehicle exports increased from 21.6 percent between 1999 and 2001 to 33.5 and 48.2 percent during the periods 2002 to 2005 and 2006 to 2009, respectively. Thailand's market niche in the manufactured passenger vehicles sector was in small (1,000 to 1,499cc) and medium (1,500 to 3,000cc) gasoline passenger vehicles. To some extent the presence of intra-industry trade in these product lines is due to the nature of MNE production networks in South-East Asia, as discussed below in section 4.

Table 5. Export Item Composition and Destination, 1999-2009

	ASEAN-10	Indonesia	Philippines	Australia	Japan	US	EU-15	Value ($m)
1999-2001								
Passenger vehicles (HS 8703)	11.9	1.5	0.1	14.8	9.7	0.0	45.4	353
Commercial vehicles (HS 8704)	4.5	0.2	0.7	23.8	0.1	0.0	41.8	1,267
Others	73.6	3.1	1.1	1.5	0.3	5.3	3.1	14
All types of vehicles (HS 8701-8704)	6.7	0.5	0.6	21.7	2.2	0.1	42.2	1,634
2002-2005								
Passenger vehicles (HS 8703)	50.1	21.3	10.6	14.9	7.8	0.0	9.5	1,134
Commercial vehicles (HS 8704)	6.8	2.7	0.9	23.0	0.2	0.0	32.4	2,223
Others	77.4	1.0	0.4	1.4	0.5	1.0	2.0	26
All types of vehicles (HS 8701-8704)	21.8	8.9	4.1	20.1	2.7	0.0	24.5	3,384
2006-2009								
Passenger vehicles (HS 8703)	34.2	10.7	9.3	26.3	0.8	0.1	1.3	4,024
Commercial vehicles (HS 8704)	8.8	3.6	1.5	22.2	0.2	0.0	19.9	4,243
Others	87.9	1.7	0.1	6.7	0.3	0.1	0.6	75
All types of vehicles (HS 8701-8704)	21.8	7.0	5.3	24.0	0.5	0.1	10.7	8,341

Source: Author's compilation from UN Comtrade database

Table 6. Sources of CBU Vehicle Imports, 1999-2009

	% of total imports								Value
	Australia	India	China	ASEAN-10	Indonesia	Philippines	Malaysia	Japan	($m)
1999-2001									
Tractor (HS 8701)	0	0	2	1	0	0	0	47	67
Bus (HS 8702)	0	0	0	0	0	0	0	62	64
Passenger vehicles (HS 8703)	6	0	0	6	2	2	1	57	299
Commercial vehicles (HS 8704)	0	0	0	2	0	0	0	73	50
2002-2005									
Tractor (HS 8701)	0	1	2	1	0	0	0	53	126
Bus (HS 8702)	0	0	0	0	0	0	0	77	121
Passenger vehicles (HS 8703)	0	0	0	50	17	33	0	23	323
Commercial vehicles (HS 8704)	0	0	1	2	0	0	0	56	49
2006-2009									
Tractor (HS 8701)	0	2	3	1	0	0	0	78	380
Bus (HS 8702)	0	0	4	5	0	0	4	79	284
Passenger vehicles (HS 8703)	0	0	1	34	10	19	3	33	364
Commercial vehicles (HS 8704)	0	10	1	41	20	0	0	32	98

Source: Author's compilation from UN Comtrade database.

The geographic profile of automotive exports from Thailand has undergone notable changes since the early 1990s (Table 6). The most notable change is the sharp increase in the market share of ASEAN-10 countries – from 6.7 percent during 1999 to 2001 to about 21.8 percent in 2006 to 2009. This increase seems to reflect preferential access to markets in these countries under the CEPT tariff preferences. However, extra-regional exports still account for the lion's share of total motor vehicle exports, with a notable shift from EU-15 to other countries (countries in the Middle East, in particular).

Exports to Japan and the US have accounted for a tiny share in total exports throughout the period reviewed. Japan's smaller share is consistent with the export patterns observed for other manufactured good exports from Thailand (and other countries in the region), and reflects the well-known patterns of Japanese firms using production bases in the other countries in East Asia to export to third country markets (Athukorala, 2005). The smaller export share to the US is understandable because all major international car makers have set up production plants in the US and/or use production bases in Latin America, in particular those in Mexico, to serve the US market.

There are no significant differences in the trends in product mix over time among the major markets. A notable exception is the sharp increase in the share of passenger cars to Australia. The Australian share of total passenger car exports increased from 14.9 percent in 2002 to 2005 to 24 percent in 2006/07. This could well reflect the impact of TAFTA which came into effect in 2006.

On the import side, Japan was the most important source of vehicle imports from 1999 to 2009. The only noticeable change in import source is the increasing importance of ASEAN members particularly Indonesia and Philippines for passenger and commercial vehicles. This is due to the changes in supply chains from national specialization strategies discussed in detail below, and is related to the presence of AFTA.

The export and import structure for auto parts changed slightly between 2002 and 2008. On the export side, parts manufactured in Thailand were increasingly exported to ASEAN-10 so that their share increased from 14.7 percent in 2002 to 2004 to 18.6 percent in 2008, as shown in Table 7. This is associated with the decreasing importance of Japan, whose share dropped from 10.4 percent to 7.6 percent during the same period,

whereas other export destinations remained mostly unchanged. Note that the value of auto part exports to Japan did increase between 2002 and 2008. On the import side, there were notable changes – while Japan remained the most important source, its share steadily declined from 31.4 percent during the period 2002 to 2004 to 27.9 percent in 2008. By contrast, ASEAN-10 became an increasingly important source of auto parts supply for Thailand.

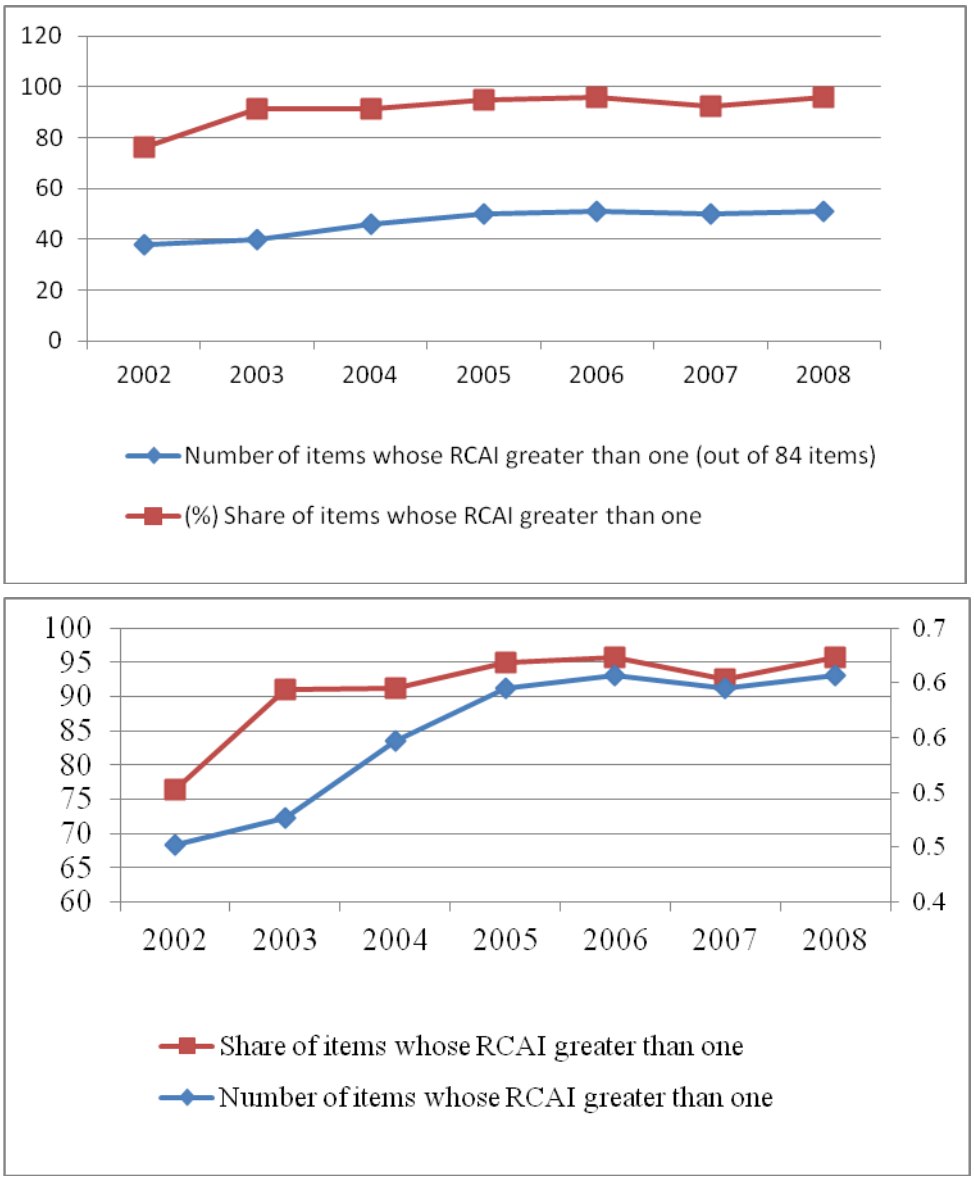
Thailand gained in terms of competitiveness for vehicle production, clearly reflected by its increasing global market share. With regard to auto parts, the widely used index of competitiveness, Revealed Comparative Advantage Index (RCAI), is constructed between 2002 and 2008. As shown in Figure 6, the number of auto part items whose RCAI is greater than one increased during this period. In 2002, 38 out of 84 items had an RCAI greater than one. By 2008, this figure had increased to 51 items. The export share of those items with an RCAI greater than one increased. Out of 84, there are only four items (HS 850300, 853190, 853630, and 870710) with an RCAI of greater than one during the period 2002 to 2003, becoming less than one by 2008. All in all, the RCAI pattern during the period 2002 to 2008 highlights the increasing competitiveness of the Thai automotive industry.

Table 7. Trade Pattern of Auto Parts

	2002-04	2005-07	2008
Export value ($m)	5,157	10,702	15,378
Export destination structure (% of total export)			
ASEAN-10	14.7	16.3	18.6
China	1.5	1.4	1.0
Hong Kong	1.6	0.7	0.5
Japan	10.4	8.5	7.6
Korea	0.8	0.3	0.3
Oceania	1.2	1.7	1.9
South Asia	2.5	3.4	3.2
NAFTA	7.5	4.8	3.8
EU-15	4.2	3.7	3.2
Import value ($m)	7,483	10,683	14,097
Import source structure (% of total import)			
ASEAN-10	6.8	7.8	8.9
China	1.5	2.8	3.4
Hong Kong	0.3	0.2	0.2
Japan	31.4	29.9	27.9
Korea	0.7	1.2	1.5
Oceania	0.2	0.4	0.4
South Asia	0.2	0.5	0.4
NAFTA	1.3	1.8	2.2
EU-15	6.0	3.9	3.7

Source: Author's compilation from UN Comtrade database.

Figure 6. Revealed Comparative Advantage Indices (RCAI) of Auto Parts Exports from Thailand, 2002-08



Source: Author's calculation using data extracted from UN Comtrade database.

5. Supply Chain in the Automotive Industry

5.1. Changes in the Supply Chain

There have been key recent changes in the automotive industry's supply chain. The first change was to output flows. In the 1970s and 1980s, when automotive industries in developing countries were highly protected by cross-border trade protection policies, MNEs set up assembly facilities in each individual country in order to access the highly-protected domestic markets and earn economic rent. Such a strategy has not been feasible since the mid-1980s after governments in a number of these emerging market economies moved away from highly protective policies based on quantitative restrictions and prohibitively high tariffs (Takayasu and Mori, 2004, p.209).[4] The liberalization approach of their automotive industries has taken place faster through a regional rather than a global context (Humphrey and Oeter, 2000, p.42; Humphrey and Memedovic, 2003, p.2). Many countries have formed regional groupings such as the European Union (EU), AFTA, the North America Free Trade Area, and regional integration in the Latin American countries (namely Mercosur, an economic and political agreement between Argentina, Brazil, Paraguay and Uruguay) to liberalize regional trade in cars and their parts. In several cases, extra efforts have been made to accelerate regional liberalization schemes for particular industries. For example, under the AFTA agreement, ASEAN countries strengthened their industrial cooperation program namely ASEAN Industrial Cooperation Scheme (AICO) that would be regarded as a shortcut to benefit ASEAN regional liberalization. This has encouraged MNE car assemblers to become involved with local assembly in these emerging markets.

The principal automotive markets in the Triad regions (North America, Western Europe and Japan), which accounted for over 90 percent of global vehicle sales, have been nearly saturated for the past 10 years (Abrenica, 1998). In contrast, promising growth perspectives for vehicle sales have been exhibited in emerging market economies. As a result, MNEs have shifted their business interest toward the emerging

[4] Two exceptional cases, China and India, should receive special attention. These two countries have gigantic domestic markets as a key to attracting auto maker MNEs to establish affiliates, even though the trade and policy regimes within these two countries are still highly restrictive. See details in Humphrey and Oeter (2000) and Doner et al. (2004).

market economies and are pursuing national specialization in each region. In each region (for example, North America, Latin America, South-East Asia, etc.), there would be a few production bases (countries) that specialized in producing and exporting certain types of vehicle models. Vehicles manufactured within a certain production base would be sold mainly within that region. The exception would be the pick-up truck, which is more or less a world-wide model that consists of a few region-specific features, such as product design and/or safety features.

Figure 7 illustrates the national specialization strategy used by MNE car makers in South-East Asia and Oceania. Toyota uses Thailand as a production and export base for small to medium passenger cars (Vios, Altis and Camry) as well as one ton pick-ups (Hilux). In the meantime, the company uses its production base in Indonesia for other family vehicle models, such as the Avanza and Inova and orders for these models within the region are supplied by Toyota affiliates in Indonesia. Other companies are pursuing more or less the same strategy, although their trade, investment, and production patterns are not necessarily the same. Another example is the Ford and Mazda network which uses Thailand as a base for manufacturing one ton pick-ups (e.g. Ford Ranger, Ford Everest and Mazda Fighter) and the Philippines for producing passenger cars (Ford Laser, Ford Escape, Mazda Protégé and Mazda Tribute). Cost competitiveness is a basic factor determining which models/parts are produced at which locations (countries) and for which markets.

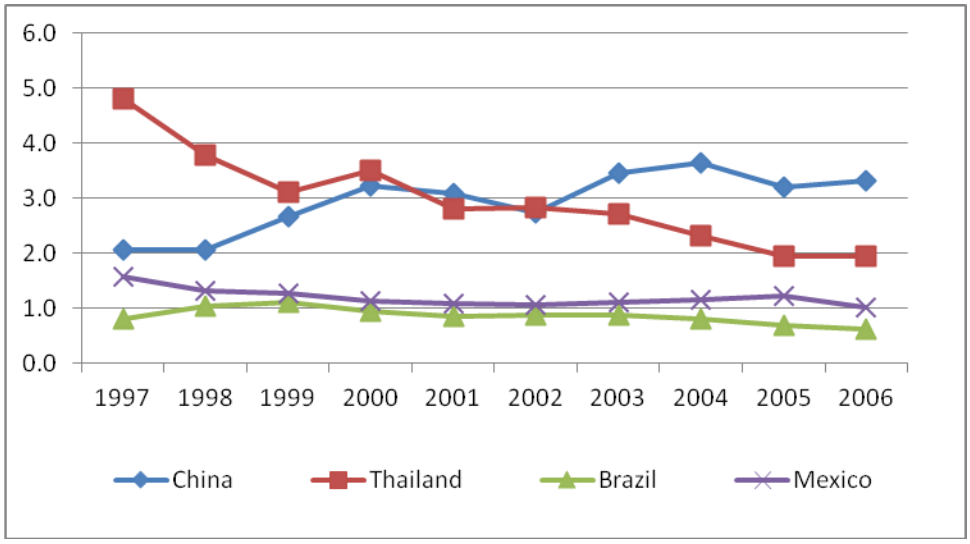
Figure 7. National Specialization in South-East Asia and Oceania

Source: Kohpaiboon (2006)

This would explain the change in product composition toward CBU vehicles observed in Table 5as well as in export destination toward ASEAN-10 and Australia for passenger vehicles. For commercial vehicles, export destination is not limited to the regional market only, with EU-15 and the Middle East also major markets. The import pattern is consistent with the national specialization strategy in which Indonesia and the Philippines are the two major sources of CBU vehicle imports of Thailand and the key import item is passenger vehicles (Table 6).

The second change in the supply chain is the trend toward localization of auto parts manufacture and the development of automotive clusters. As a vehicle consists of numerous parts and components, many of which are non-tradable, there are sizable transaction costs involved in procuring all of the parts. The proximity between car manufacturers and parts suppliers, therefore, saves on the transaction costs, and allows more efficient cooperation between car manufacturers and parts suppliers to match their production plan and delivery schedule. It also reduces exposure to exchange rate risk if they can source local parts. In addition, car manufacturers can exploit their existing comparative advantage as host countries in manufacturing a vehicle. This is consistent with the pattern revealed in Figure 5 where there was a declining trend in the ratio of imported auto parts (value) to vehicle production (unit) between 1988 and 2009. Interestingly, this declining trend was also observed in the other major vehicle production hubs of Mexico and Brazil (Figure 8). Of the four countries shown in Figure 8, China seems to be an outlier as the ratio has been increasing, reflecting more reliance on imported parts.

Figure 8. Ratio of (Real) Import Value of Parts to Locally Assembled Cars in Selected Emerging Markets, 1997-2006

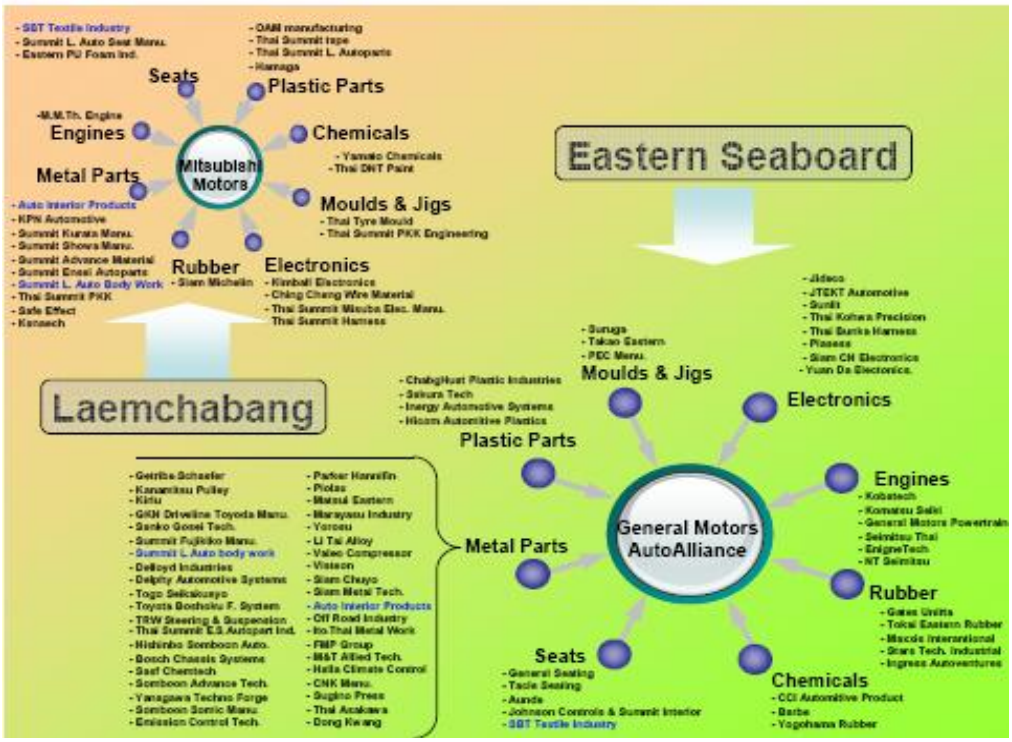


Sources: Production data are compiled from the CEIC Database and import values of parts are from the UN Comtrade Database at http://comtrade.un.org/db/.

Note: Lists of auto parts are compiled from six-digit HS items. The final list covers 84 items from HS 39, 40, 70, 73, 84, 85 and 87.

Geographic clustering of the automotive industry, with car assemblers at the centre surrounded by part suppliers was also observed, as illustrated in Figure 9. Figure 9 shows an industrial clustering in the automotive industry in two parts of Eastern Thailand – the Eastern Seaboard in Chonburi province and Hemaraj Industrial Estate in Rayong province. According to our interview with one of the major Thai parts suppliers, they set up individual factories for each customer (i.e. car makers) for the purposes of cost competitiveness and efficiency. In some parts, suppliers set up two factories (one in the Eastern Seaboard and another in Hemaraj Industrial Estate) to serve customers in each estate although distance between these two estates is less than 100km. The industry sample includes Summit Auto Body Work, SBT Textile industry and Auto Interior products (Figure 9).

Figure 9. Automotive Clusters in Eastern Thailand



Source: Kohpaiboon et al. (2010)

As revealed during our interviews with the car makers there is no explicit requirement for suppliers to be located near car assemblers. In fact, cost competitiveness is the primary concern in their policy for sourcing parts. The interview sample argues that many car makers adopt global bidding and an open-wide bidding process nowadays. As long as suppliers can both fulfill technical requirements and offer the lowest price, location does not matter. This is applicable even for non-traded parts. Even though such parts are not going to be internationally traded, price information from the bidding process would provide a rough benchmark of competitive world prices. Consequently, locating factories near to car assembly plants and/or the same country with the assembly plant is the market-driven response of suppliers in order to keep their cost competitiveness.

This is especially true for the current supply chain where new vehicle models, known as the 'original model', are produced. For the 'original model' car makers do not automatically have the full information for producing a vehicle because it has not

already been produced somewhere else.[5] Car assemblers and parts suppliers must jointly produce all the information necessary for the manufacturing process, based on the input prices available at selected production sites, in order to minimize the total cost of a vehicle. Hence, higher technological capabilities are required from parts suppliers as they are expected to participate in both the product development (i.e. prototype) and product engineering phases of production (identifying engineering qualifications). According to our firm interviews, car assemblers nowadays determine engineering properties and product qualification, as well as assign the spaces where parts have to be fitted to vehicles, over and above meeting the cost requirements of the car makers. For example, radiator suppliers must be able to design a radiator to fit within a space defined by car makers and manufactured radiators must fulfill all required qualifications such as heat dissipation, strength, etc. (as discovered in our interviews with car makers). Furthermore, car manufacturers must have frequent communication and meetings with part suppliers so that the quality of parts can be assured. Geographical proximity facilitates closer communication and also enables car manufacturers to fully adopt just-in-time production schedules which require the prompt delivery of parts to assembly plants – the so-called milk-run system.

5.2. Roles of Indigenous Suppliers

Even though the increased local content of locally manufactured vehicles would bring economic opportunity for local linkages, few indigenous suppliers which were dominant in the 1970s and 1980s can rise to this challenge. In fact, many MNE car assemblers switched from sourcing locally manufactured parts to MNE part suppliers as reflected the huge surge of FDI inflows in the automotive sector during the mid-1990s. Most of the indigenous suppliers were downgraded to become the 'suppliers of suppliers' or Tier-2 suppliers.[6]

[5] This is in sharp contrast to the past, when vehicle models that had already been launched somewhere else were simply replicated in developing countries.

[6] Under the new strategy, car makers adopted a modularization system so that car makers tend to deal with just a few major suppliers which are responsible for key modules, known as the first tier or Tier-1 suppliers. Smaller suppliers which provide individual parts and components are known as the second tier or Tier-2 suppliers. The third tier (Tier-3) supply primary inputs (e.g. plastic compound, steel and synthetic rubbers) for the second tier suppliers. Note that output of the third-tier suppliers is not necessarily automotive specific but can be used in other industries as well. Plastic compound is a

One major reason for this downgrading was that indigenous suppliers had limited capabilities with regard to product development and engineering and these capabilities were demanded from Tier-1 suppliers under the new strategy. As a result, indigenous firms could only participate in the value chain by supplying semi-finished parts to Tier-1 suppliers for further processing. Findings such as this call into question the ability of industrial upgrading policy packages, which include the protection of vehicles and imposition of LCR measures and the like, to promote the Thai automotive industry. It would be difficult to refute the hypothesis that during the import-substitution period, local suppliers did gain technological capability benefits from the presence of LCRs and other protection measures. The relevant question is whether such protection measures generate sufficient benefits to induce sustainable development in the automotive sector, particularly in the auto parts industry where local firms participate. The fact that only a few indigenous suppliers have survived in the new environment suggests that LCR measures are not a sufficient condition for building up the technological capabilities of local suppliers and enabling them to benefit from the gains of dynamic economies. Whilst LCR measures did help local firms to acquire well-established quality-controlled production technology, they failed to provide sufficient motivation for firms to use this technology efficiently and advance to even higher levels of technology.

According to ADC records, 354 out of 641 (or more than 50 per ent) Tier-1 suppliers are indigenous suppliers. However, this figure must be interpreted with care. During our interviews, at present there are less than 10 local firms among the Tier-1 suppliers who are truly involved in the design and manufacture of modules. The others local firms are involved in manufacturing simple inner body parts. In addition, there are 1,100 indigenous suppliers operating in the network at Tiers 2 and 3 in the supply chain.

As the demand for procuring auto parts locally increased, car assemblers enticed MNE parts manufacturers to establish affiliates in Thailand, thereby rapidly increasing FDI inflows in the automotive industry. Original Equipment Manufacturing (OEM) suppliers have been supplanted by MNE affiliates. Some of these parts manufacturers were technology owners and provided such knowledge to local parts suppliers under technology licensing agreements prior to 1990. When the foreign ownership restriction

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clear example of where products may be inputs for automotive, electrical appliances and electronics industries.

was abolished during the onset of the financial crisis in 1997, these technology owners took full control of the OEM market. Local partners are responsible for production for the after-market (i.e. repaired parts for vehicle services and maintenance). Some Thai firms become lower tier suppliers whereas many of them went out of business.

The dramatic increase in the role of MNEs in auto part production, and in particular their dominance at the first tier of the supply chain, has been interpreted by some observers as an indication of 'denationalization' of the Thai auto industry (Doner, 2009). However, this is not a uniquely Thai phenomenon. MNEs dominance at the first tier of the automotive supply chain has become an integral part of the globalization of the auto industry (Klier and Rubenstein, 2008). For example, by the late 1990s in Brazil (a regional automotive hub in Latin America) there was only a single locally-owned firm among the 13 largest component producers (Humphrey and Oeter, 2000). In South Korea, many large auto part firms were taken over by Western first-tier suppliers in the aftermath of the 1997/98 financial crisis (Doner et al., 2004). Given concerns about securing proprietary assets in cutting edge technology in a highly competitive market setting, the fully-owned affiliate has become the increasingly preferred mode of international operation of MNE auto part producers.

The fact that only a few indigenous suppliers have been able to maintain their OEM status suggests that the LCR regime during the 1970s and 1980s has failed to have a significant lasting positive impact on local part suppliers. Of course the LCR regime and other protection measures would have helped local suppliers in gaining technological capability, but the relevant issue is whether such protection measures are capable of laying the foundation for sustainable development of a local auto part sector. The Thai experience suggests that these measures were not a sufficient condition in building up the technological capability of local suppliers and allowing them to benefit from the gains of dynamic economies. Evidence from firm-level interviews suggests that the success of the few local OEM producers has not come from the protection provided by LCR measures, but from their ability to forge links with the car assemblers whose production strategy shifted in the late 1980s toward export orientation. The expansion of production in these firms took place from the mid-1990s when policy reforms, in particular the removal of LCR, enabled them to forge links with world-class part-makers.

At the initial stage of global integration of the automotive industry, opportunities seem limited for local firms to become OEM suppliers on their own (that is without forging links with MNE part suppliers) within the MNE-dominated production network. Their activities are going to be heavily concentrated at the second and third tiers until they gain technological expertise and establish themselves as quality players within the automotive chain. The few local OEM suppliers are currently concentrated in the production of automotive body parts. Designing of body-related parts is normally undertaken by the car assemblers (since these parts are directly related to the appearance of the vehicle). Therefore, production of these parts does not require a high level of technological capability. However, there are indications that the local OME suppliers and some local firms involved at the second tiers have begun to move up the technology ladder. For instance, the Thai company Aapico has emerged as one of the world's best suppliers of low volume tooling. A recent study of the procurement practices of Japanese car makers in Thailand has found many cases of Japanese car makers and first-tier firms expanding their procurement over time of high-tech parts from second-tier local firms (Japan Finance Corporation, 2007).

The number of local firms joining the automotive production chain at the second and third tiers has significantly increased over the past decade or so. They are involved in the production of standard parts and components, and intermediate inputs such as such as plastics, textile products and leather products. Growth prospects in these product lines seem promising because of the high growth of vehicle production and the increased local content of locally assembled vehicles. Evidence from interviews suggests that the process of knowledge and technology transfer from OEM firms and final assemblers to suppliers at the lower tiers has strengthened over time as the auto industry has become increasingly globally integrated.

5.3. Role of FTAs in the Supply Chain Changes

Facts revealed in section 5.1 suggest that vehicle exports from Thailand, particularly passenger vehicles, are primarily destined for regional markets. It is less clear for auto parts where there have not been any significant shifts from inter-regional to intra-regional trade. The major change over the past decade was the increasing importance of ASEAN-10 members as Thailand's auto part export destination and the

decreasing importance of Japan. Nonetheless, it remains unclear the extent to which FTAs have contributed to the changes.

To assess the role of FTAs in the supply chain changes, administrative records of preferential trade are used. Generally, tariff concessions offered by FTAs are not always readily available to the exporters due to the presence of ROO. In other words, actual and preferential trades are different where the latter reflects transactions recorded in administrative records of FTA implementation. Hence, FTA utilization rates, the ratio between administrative records to actual trade ones, are constructed. As revealed in Tables 2 and 3, preferential trade existed largely in AFTA, TAFTA, and TNZFTA so that our emphasis is on these FTAs.[7]

Tables 8 and 9 illustrate FTA utilization rates of vehicles and auto parts exports and imports respectively. Clearly, these FTAs only affect the output flows of the automotive sector's supply chain. Most of the vehicles traded in the region have benefited from preferential tariffs offered under these FTAs, reflected by the very high utilization rate for vehicles on both the import and export sides. The rate is approaching to 100 percent whereas the average utilization for AFTA is less than 30 percent (Kohpaiboon, 2010). Hence, we conclude that the increasing importance of ASEAN and Australia in vehicle trade is due to the presence of FTAs. In our firm interviews, the tariff margin is highlighted as the key reason to apply for FTAs. Automotive vehicles stand out among manufactured goods as their manufacture involves parts made from a range of materials, including plastic, rubber, electronics, metallic and glass. Hence, the change in tariff classification (CTC) ROO type is unlikely to represent a barrier for firms in accessing preferential tariffs. In addition, under the new business strategy of the car manufacturing industry, local content in a manufactured vehicle tends to increase so that it can easily fulfill the regional content requirement ROO type. Overall, the long experience in dealing with the LCR measures which were used from the mid-1970s to 2000 made it easier for Thai car makers to deal with ROO.

[7] Note there is no official record of preferential trade under the TNZFTA due to the use of a paperless system.

Table 8. FTA Utilization Rate of Thailand's Vehicle Industry, 2003-08

	ASEAN-10		Australia	
	Export	Import	Export	Import
2003	71.8	97.5	n.a.	n.a.
2004	73.7	98.8	n.a.	n.a.
2005	74.0	99.2	112.8	69.5
2006	74.3	97.1	95.0	73.7
2007	95.0	100.0	106.8	66.6
2008	90.6	68.4	98.1	0.0

Sources: Trade data are from the UN Comtrade database; administrative records of preferential exports from Bureau of Preferential Trade, Ministry of Commerce; administrative records of preferential imports from Custom Duty, Ministry of Finance.
Notes: n.a. = not available due to the agreement was effective in 2005 onward

By contrast, these FTAs have not had any significant impact on input flows in the automotive sector's supply chain as the utilization rate has been very low so far. On the export side (Thailand's exports to its FTA partners), the utilization rate was less than 5 percent on average. The maximum utilization rate was 70 percent in 2006 for the ASEAN-6 partners. The low utilization rate seems consistent with the low tariff rate for auto parts shown above, so that the expected tariff margin would be rather narrow. Clearly, any changes in auto parts exports are not largely related to presence of FTAs.

On the import side, the utilization rate on average is higher than that on the export side, reaffirming the role of the tariff margin in the decision to apply for FTA preferential trade. Auto parts tariffs in Thailand are generally higher than for Thailand's FTA partners. An interesting pattern of utilization rate on the import side is observed, i.e. the rates increased from 20 percent in 2003 to 50 percent in 2005 and then dropped to 21 percent in 2008. The top five items which applied for AFTA preferential tariffs are rubber products whose tariffs were further cut in 2005 according to the tariff reform implemented during 2005 to 2010 (Jongwanich and Kohpaiboon, 2007, Table 1). Again this highlights the relative importance of the tariff margin.

Overall, the presence of ROO matter for certain parts. A plastic bullets multinational company covered in our interviews points to the prime reason to not use FTA simply because the company must reveal details of the product's cost structure. Note that in Thailand, revealing the cost structure details is a compulsory step for FTA preferential tariff application (to receive a reference number used in certificate of origin application) regardless of what types of ROO are applied.

Table 9. FTA Utilization Rate of Thailand's Auto Parts Industry, 2002-08

Export	ASEAN-6			Australia			Japan		
	Average	Max.	Min.	Average	Max.	Min.	Average	Max.	Min.
2003	0.8	9.5	0.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2004	1.0	38.8	0.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2005	1.1	20.8	0.0	1.3	4.3	0.0	n.a.	n.a.	n.a.
2006	1.0	69.4	0.0	1.7	25.0	0.0	n.a.	n.a.	n.a.
2007	1.4	10.0	0.0	2.0	66.0	0.0	n.a.	n.a.	n.a.
2008	1.5	34.8	0.0	2.1	10.9	0.0	0.5	9.2	0
Import	ASEAN-6			Australia			Japan		
	Average	Max.	Min.	Average	Max.	Min.	Average	Max.	Min.
2002									
2003	20.5	99.0	0.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2004	36.1	100.0	0.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2005	50.3	100.0	0.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2006	29.2	100.0	0.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2007	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2008	20.8	88.0	0.0	1.2	11.0	0.0	0.0	0	0

Sources: Trade data are from UN Comtrade database; administrative records of preferential exports from Bureau of Preferential Trade, Ministry of Commerce; administrative records of preferential imports from Custom Duty, Ministry of Finance.

Notes: n.a. = not available due to the agreement was effective in 2005 onward

6. Conclusion and Policy Implications

This paper demonstrates the supply chain of Thailand's automotive industry with emphasis on the recent changes in its composition and the impacts of FTAs. A systematic analysis of production and trade data are conducted and further supplemented by insights from in-depth firm-level interviews conducted between February and April 2011. The key finding is that there were changes in the automotive industry's supply chains after the country was selected to be a production platform for most of the major players in the international auto industry. The first observed change is the change in emphasis in export composition from auto parts to CBU vehicles. The second change is that the locally manufactured vehicles are not served only domestic market but also by the regional market. There is an exception of one-ton pick-up trucks which are sold world-wide including to Europe and the Middle East. The final change in the supply chain is the steady increase in the vehicle's local content.

We conclude that FTAs have contributed to the recent changes in the nature of Thai automotive supply chains, but only for outputs, not inputs. In particular, the preferential tariff offered under FTAs with ASEAN and Australia have facilitated regional vehicle trade. All vehicles traded between Thailand and ASEAN members, and Australia, applied for preferential tariff rates offered in the FTAs. In other words, official records of preferential trade are more or less the same as the actual trade (i.e. 100 per cent of FTA utilization). The high FTA utilization rate is due to the huge tariff margin, the nature of the production process and the long experience in dealing with government officials. By contrast, we find that FTAs do not have any significant impact on auto parts regional trade. While changes in the international trade pattern were observed, such changes naturally happen, without any influence from FTAs. The low FTA utilization rate was due to the low tariff margin and the restrictive effect of ROO on auto parts trade so that the role of FTAs on these trade flows seems to be limited.

Two policy lessons can be drawn from our paper. Firstly, changes in the nature of the supply chain are largely driven by economic fundamentals and business opportunities. There is limited room for policy-makers to influence such changes in favor of their indigenous suppliers. Secondly, FTAs have the potential to promote trade

for items which remain subject to high tariffs, such as CBU vehicles. Their trade-promoting effects are subject to certain conditions, including specific characteristics of the automotive industry which is highly concentrated and led by a handful of car makers; the nature of the production process in which local content increases naturally; and the long experience of car makers which are familiar with measures like ROO. It seems risky to generalize the example of vehicles to other industries. By contrast, the pattern of utilization rate between imports and exports suggests that the tariff margin matters. When the tariff margin is low, the presence of ROO discourages firms to make use of FTA preferential trade. To promote the use of FTAs for narrow tariff margins, ROO-free items should be introduced.

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Appendix

Table A1. Lists of Auto Parts

HS	Description
392630	Fittings for furniture, coachwork etc, of plastics
400921	Pipe, reinforced/combine w/metal only, w/o fitting
400922	Pipes, vulc rub, reinf/combo with metal,w/ fitting
400931	Pipe, reinforced/combine w/ textiles, w/o fitting
400932	Pipe of vul rub,reinf w/ text only mat,w/fittings
400941	Pipe, reinforced/combine w/ material, w/o fitting
400942	Pipe, reinfrcd/comb w/other textile mat,w/fitting
401011	Conveyor belts or belting reinforced with metal
401012	Conveyor belts reinforced with textile materials
401019	Conveyor belts/belting of vulcanize rubber, nesoi
401310	Inner tubes of rubber for mot cars, buses & trucks
401693	Gasket, washers & other seals, of vulcanized rub
700711	Toughnd safety gls of size a shape for vehcls etc
700721	Laminated safety glass for vehicles, aircraft etc.
700910	Rear-view mirrors for vehicles
732010	Leaf springs and leaves therefor, of iron or steel
732020	Helical springs of iron or steel
830230	Others bs metl mountngs fttngs etc for motor vehicles
840729	Inboard engines for marine propulsion
840733	Spark-igntn recrctng pistn eng etc >250 nov1000cc
840734	Spark-igntn recprcting piston engine etc > 1000 cc
840790	Spark-igntn rcprctng/rotary int combstn eng, nesoi
840820	Compression-igntn int combustion piston engine etc
840991	Spark-ignition int combustion piston eng pts nesoi
841330	Fuel, lub/cooling med pumps for int comb pistn eng
842123	Oil or fuel filters for internal combustion engine
842131	Intake air filters for internal combustion engines
842542	Jacks and hoists,hydraulic,exc blt-in jack systems
848210	Ball bearings
848220	Tapered roll brg, incl cone & roller assemblies
848230	Spherical roller bearings
848240	Needle roller bearings
848250	Cylindrical roller bearing nesoi
848280	Oth ball or roll brg, inc combined ball/roll brgs
848291	Balls, needles and rollers for bearings
848299	Parts of bearings, nesoi
848310	Transmission shafts (inc cam-&crank-shaft), etc.
848320	Housed bearings, incorp ball or roller bearings
848330	Bearing housings; plain shaft bearings
848340	Gears; ball or roller screws; gear boxes, etc
848350	Flywheels and pulleys, including pulley blocks
848360	Clutches & shaft couplings (inc universal joints)
848390	Toothed wheels,chain sprockets&oth trans elem; pts
848410	Gaskets, metal layers, or other matl, mech seals
848490	Sets or assortments of gaskets and similar joints
850131	DC motors & generators w output n ov 750 w
850220	Generating set w spark-ignition int combustion eng
850300	Parts of electric motors, generators & sets
850710	Lead-acid batteries of a kind used for stg engines
851110	Internal combustion engine spark plugs

851120	Internal combustion engine magnetos, magneto-dynam
851130	Distributors; ignition coils
851220	Elect lighting/visual signlng eq ex for bicycles
851230	Electrical sound signaling equipment for mtr vhl
851240	Windshield wipr dfrstr & dmstr for cycle/mtr vehcle
853190	Parts of electric sound or visual signaling aprts
853340	Variable resistors inc rheostat & potntiomtr nesoi
853610	Fuses for voltage not exceeding 1000 v
853630	Other apparatus for protecting elc crts =< 1000 v
853641	Relays for a voltage not exceeding 60 v
853661	Lampholders for voltage not over 1000v
853669	Elect plugs & sockets f voltage not over 1000 v
853910	Sealed beam electric lamp units
853921	Tungsten halogen electric filament lamps
853922	Filament lamp power nov 200 w & voltage over 100 v
853929	Filament lamps ex ultraviolet/infrared lamps nesoi
854420	Insulated coaxial cable & oth coaxial elect condct
854430	Insulated wiring sets for vehicles ships aircraft
870710	Bodies f mtr car/vehicles for transporting persons
870810	Bumpers and parts, for motor vehicles
870821	Safety seat belts for motor vehicles
870840	Gear boxes for motor vehicles
870850	Drive axles with differential for motor vehicles
870870	Road wheels & pts & accessories for motor vehicles
870880	Suspension shock absorbers for motor vehicles
870891	Radiators for motor vehicles
870892	Mufflers and exhaust pipes for motor vehicles
870893	Clutches and parts thereof for motor vehicles
870894	Steering wheels, columns & boxes f motor vehicles
870899	Parts and accessories of motor vehicles, nesoi
902920	Speedometers and tachometers; stroboscopes
903210	Thermostats
903220	Manostats
940120	Seats of a kind used for motor vehicles

Source: Kohpaiboon (2009)