

Menon, Jayant

**Working Paper**

## Supporting the Growth and Spread of International Production Networks in Asia: How Can Trade Policy Help?

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## ADB Working Paper Series on Regional Economic Integration



### Supporting the Growth and Spread of International Production Networks in Asia: How Can Trade Policy Help?

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Jayant Menon

No. 112 | May 2013





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\*Lead Economist, Office of Regional Economic Integration, Asian Development Bank, 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines. [jmenon@adb.org](mailto:jmenon@adb.org)

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## Contents

Abstract	iv
1. Introduction	1
2. The Proliferation of FTAs in Asia	2
3. The Growth in Product Fragmentation Trade	3
4. Preferential Tariff Reductions and Product Fragmentation Trade	4
5. Trade Facilitation	9
6. Conclusion	12
References	13
ADB Working Paper Series on Regional Economic Integration	32
Figures	
1. FTAs by Status – Total Asia (cumulative, selected years)	17
2. FTAs by Status – Asia, 2013	17
3. FTAs by Scope – Asia (cumulative, selected years)	18
4. FTAs by Country—Asia, 2013	18
5. FTAs—Asia and ASEAN+6 (cumulative, selected years)	19
Tables	
1. Bilateral FTAs by Geographic Area – Asia, 2013	20
2. Plurilateral FTAs by Geographic Area – Asia, 2013	21
3. FTAs between South and East Asian Countries	22
4. Bilateral FTAs—ASEAN+3 and ASEAN+6, 2013	23
5. Share of Network Products in Manufacturing Trade, 2009/10 (%)	24
6. Representative ITA Products and Number of HS Codes, by Attachment	25
7. ITA Membership of Asian Countries	26
8. ITA Exports as a Share of Each Country's Exports	27
9. ITA Imports as a Share of Each Country's Imports	28
10. Asian ITA Members' ITA Exports	29
11. Asian ITA Members' ITA Imports	30
12. Depth of South and East Asian FTAs	31

## **Abstract**

Free trade agreements (FTAs) have been proliferating in Asia for more than a decade. International fragmentation of production and the resultant cross-border production networks have been growing for a much longer period. Although FTAs are not necessary for the formation of production networks, can they support their further growth or spread? Empirical studies of this issue have produced mixed results, presumably because the causality can run either way. Therefore, this paper employs a qualitative approach that carefully examines the characteristics of both product fragmentation trade and FTAs in Asia to ascertain possible linkages. We find the relationship to be tenuous for a number of reasons. First, most product fragmentation trade already takes place at zero or low tariffs because of the International Technology Agreement, various duty-drawback schemes, and the location of most multinationals in duty-exempt export processing zones. Second, much of fragmentation trade is unlikely to benefit from FTA tariff concessions given the inability to satisfy rules of origin (ROOs) because of limited value-addition and/or classification problems relating to tariff-line shifting. Third, almost all FTAs involving Asian countries are relatively shallow, limiting their ability to promote production networks. Even if they were to deepen over time, it is difficult or costly to remove the non-tariff barriers that affect this trade in a preferential manner. For these reasons, it would be more useful if FTA preferences were multilateralized, and other accords were offered to all on a most-favored nation basis. This, combined with national liberalization actions that deal with incumbency issues irrespective of nationality, would be the best way to support the growth of production networks involving current participants and the spread to new ones.

*Keywords:* Production networks, product fragmentation, free trade areas, trade facilitation, Asia

*JEL Classification:* F14; F15; F23

## 1. Introduction

One of the defining characteristics of trade patterns in East Asia is the high share of manufacturing trade taking place with global production networks ('fragmentation trade') in regional trade, so much so that the description "Factory Asia" is now common-place. This share is much higher in East Asia than in more integrated regions of the world, such as the European Union (EU) and in North America under the North American Free Trade Agreement (NAFTA). If fragmentation trade characterizes trade flows, then trade policy in the region has come to be dominated by the proliferation of free trade agreements (FTAs), particularly since 2000. The growth in the number of FTAs has been so rapid that it is now known as the "noodle bowl" of criss-crossing and often over-lapping FTAs. Are the two related and, if so, how? Asian countries' engagement in global production sharing began well before the new-found penchant for forming FTAs. Thus clearly the real issue here is not whether FTAs are necessary for this form of international exchange but if FTAs can promote further growth of production network trade. This paper attempts to answer these questions.

Empirical testing of the FTA-network trade nexus is complicated by an endogeneity problem- the possibility that the causation can run either way (Baier and Bergstrand 2007): These countries' engagement in global production networks pre-dates the formation of FTAs; trade expansion through global production sharing could well have facilitated the formation of FTAs (Grunwald and Flamm 1985). Since about 2000, the proliferation of FTAs and rapid expansion of network trade have gone hand in hand; coexistence (determined by various common 'third' factors) does not mean causation. In addition to this, there are difficulties in isolating the impact of intra- versus inter-regional FTAs, since they have not only spread concurrently, but are likely jointly determined (Menon 2009). Indeed, these factors may account for the mixed findings of previous empirical studies, leaving no clear conclusion on the existence, nature, or direction of the relationship, and literature cited therein (Hayakawa and Yamashita 2011, Orefice and Rocha 2011, Brooks and Ferrarini 2012). Therefore, this paper employs a qualitative approach that carefully examines the characteristics of both product fragmentation trade and FTAs in Asia to ascertain possible linkages.

In doing this, it seeks to address questions such as the following: Given differences in the characteristics of product fragmentation trade and trade in final goods, are FTAs the right instrument to promote the former? Can rules of origin (ROOs) be designed in a way that can accommodate product fragmentation trade? Does the existence of other agreements, such as the International Technology Agreement (ITA) and various duty drawback schemes, affect the efficacy of FTAs in promoting product fragmentation trade? Are Asian FTAs deep enough to affect this type of trade, and if not, is deepening these agreements the answer? What other trade policy instruments need to be considered in promoting the growth and spread of production networks? These are key questions that need to be addressed in a comprehensive manner in order to understand the relationship between FTAs and production networks. The existing literature has failed to do this in a systematic way, and we hope to fill this gap.

We begin in Section 2 by reviewing the rapid rise in the number of FTAs in Asia. In Section 3 we examine the growth in product fragmentation trade in Asia and the pattern



of such trade, including its geographic and commodity composition, and assess the quality of FTAs in Asia in order to judge how they may affect product fragmentation trade. Since product fragmentation trade can be affected by either changes in tariffs or other trade costs such as trade facilitation, we examine each separately. Section 4 focuses on tariffs, while Section 5 deals with trade facilitation. A final section concludes.

## 2. The Proliferation of FTAs in Asia

The Doha Round of the World Trade Organization (WTO) has stalled, indefinitely. Partly as a reflection of this, bilateral free trade agreements (BTAs) have proliferated. Every country in the world today, with the exception of Timor-Leste, is a member of at least one plurilateral free trade agreement (PTA) and/or BTA, and most are members of multiple BTAs.

While Asia<sup>1</sup> was a relative latecomer to preferential liberalization through participation in FTAs, the region has been catching-up rapidly of late. Asia has been at the center of a massive surge in the number of FTAs in a little less than a decade. Figure 1 tracks the growth of FTAs that involve at least one country from the region, together with their status of implementation. Between 1983 and 1999, the number of FTAs in the region grew at a slow but steady pace. From 2000, however, this growth started to accelerate. Between 2000 and 2004, the number of FTAs proposed, under negotiation, or signed more than doubled from 55 to 132; since 2004, this number nearly doubled again to reach 257 by January 2013.

Of these 257 FTAs, 132 have been signed and 109 of these are already in effect. But the surge in FTAs has been driven by a significant rise in the number agreements proposed or under negotiation. At the moment, there are 75 FTAs that are currently under negotiation, and another 50 that have been proposed (Figure 2). This last category in particular keeps increasing.

The rapid growth in FTAs has been largely driven by the proliferation of BTAs. The number of BTAs has been growing at an incredible pace in Asia, increasing by almost fourfold from 48 in 2000 to 189 by January 2013. This accounts for close to three-quarters of all FTAs in the region to date (Figure 3). Table 1 presents the geographic distribution of BTAs. The numbers clearly show that the vast majority of BTAs involve one Asian country and one country outside of the region. This same trend can be seen in the geographic distribution of plurilateral FTAs (Table 2).

Countries in East and Southeast Asia have been the most active in establishing linkages outside of the region. In South Asia, India and Pakistan have been actively pursuing FTAs with countries outside the subregion, particularly in East and Southeast Asia (Table 3). However, the smaller South Asian countries have been keener to establish links within the subregion. Countries in Central Asia have been as equally interested in signing FTAs with outside countries as with each other, presumably to restore favorable trading conditions that existed prior to the collapse of the Soviet Union.

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<sup>1</sup> Defined here to include countries in the Pacific, including Australia and New Zealand.

A breakdown of the FTAs by country reveals that the Association of Southeast Asian Nations (ASEAN)+6 countries—the 10 ASEAN members plus Australia, the People’s Republic of China (PRC), India, Japan, the Republic of Korea (KOR), and New Zealand—sit at the top of the table. As of January 2013, Singapore leads the group with a total of 37 FTAs, of which 18 are currently in effect. India comes in second with a total of 34 FTAs, 13 of which are in effect. The Republic of Korea (KOR) has a total of 32 FTAs, while the PRC and Japan have 27 and 26 FTAs, respectively. Within ASEAN, Malaysia, Thailand, and Indonesia are not far behind with 25, 25, and 20 FTAs, respectively (Figure 4).

FTAs involving ASEAN+6 countries have increased at an even faster rate than Asia’s FTAs as a whole, growing more than six-fold from 27 in 2002 to 179 in January 2013. To date, ASEAN+6 countries account for 70% of the total FTAs in Asia (Figure 5). Not surprisingly, of the 179 FTAs involving ASEAN+6 countries, most (130) are BTAs. Only one-third (42) of these BTAs involve two ASEAN+6 countries, while 67 involve an ASEAN+6 country and a trading partner outside Asia (Table 4).

The outcome of this proliferation of often overlapping BTAs and PTAs has been described as the “spaghetti bowl” effect, or in the Asian region, the “noodle bowl” effect. It refers to the increased cost of doing business, and welfare losses associated with trade diversion, due to inconsistencies between various elements of the agreements.<sup>2</sup> But there are those who contend that FTAs have played and will continue to play a key role in stimulating product fragmentation trade. Is this in fact the case?

### 3. The Growth in Product Fragmentation Trade

The share of trade emanating from production networks worldwide is much higher in East and Southeast Asia than in any other region in the world (Table 5). In 2009/10, product fragmentation exports accounted for 62.5% of total manufacturing exports in the region, compared with the world average of 52.8%. Parts and components accounted for more than half of total product fragmentation exports in the region during the same period. This share is much larger than the share of parts and components among world exports and intra-regional exports in the EU and NAFTA.

While a high and rising share of intra-regional exports consists of fragmentation trade, the bulk of final goods are exported to countries outside the region (Athukorala 2011). As noted in the previous section, despite recent increases in South–South trade, much of developing Asia’s trade prospects is still dependent on markets outside the region.

One option under consideration in Asian policy circles for supporting regional trade growth in the face of slow growth in world demand is to form a region-wide FTA. The ASEAN-led Regional Comprehensive Economic Partnership (RCEP), formally endorsed at the 19th ASEAN Summit held in November 2011, is one such example. The RCEP will

<sup>2</sup> These include, for instance, different schedules for phasing-out tariffs, different ROOs and exclusions, conflicting standards, and differences in rules dealing with anti-dumping and other regulations and policies (Pangestu and Scollay 2001).

initially include all ASEAN+6 countries in forming the largest FTA in Asia. Apart from potentially harmonizing the various intra-regional BTAs, the formation of such blocs is often touted as carrying the potential to support the growth and spread of production networks. The argument put forward is as follows: trade within global production networks is expected to be more sensitive to tariff changes than trade in final goods because of multiple border crossings. Consequently, a one percentage point reduction in tariff rates within the consolidated bloc leads to a decline in the cost of production of a vertically integrated good by a multiple equal to the number of borders crossed within the bloc, rather than a 1% decline in the cost of a final good. Tariff reductions may also make it more profitable for goods that were previously produced entirely in one country to become vertically specialized. Consequently, in theory, the trade-stimulating effects of FTAs would be higher for product fragmentation trade than for trade in final goods, other things remaining unchanged.

#### **4. Preferential Tariff Reductions and Product Fragmentation Trade**

It is sometimes argued that the proliferation of FTAs has supported intra-regional trade through the spread of production networks, and that their continued growth will be enhanced by expanding or increasing the number of FTAs. The logic behind this assertion rests on the fact that unlike trade in final goods, product fragmentation trade generally involves multiple border crossings. With this difference between the two, it is argued that trade within global production networks is generally more sensitive to tariff changes than is trade in final goods (Yi 2003). Since a tariff can be levied each time a good-in-process crosses a border, the reduction or elimination of tariffs within the free trade area can lead to a multiplier effect whereby the cost savings is a multiple determined by the number of border crossings within the FTA. Furthermore, tariff reductions of this type may make it more profitable for goods that were previously produced entirely in one country to become vertically specialized, exploiting differences in cost competitiveness across members of the FTA. Consequently, in theory, the trade-stimulating effects of FTAs could be higher for product fragmentation trade than for trade in final goods, other things being equal. This theoretical possibility alone has led some to conclude, somewhat prematurely it would seem, that FTAs, or their expansion, can support production networks (eg. Kawai and Wignaraja, 2013).

How does this pan out in practice in Asia? Should policymakers pursue more FTAs to capture the multiplier effect from tariff reductions on production fragmentation trade? There are a number of reasons for policymakers to be wary in considering this option for Asia. The compelling reason for avoiding the FTA option is that it is simply unnecessary. First and foremost, for a number of reasons most if not all product fragmentation trade already travels duty-free or at very low tariffs across the region. Most important is the Information Technology Agreement (ITA), a multilateral agreement of the WTO. As noted earlier, most product fragmentation trade in Asia involves products classified as electronics parts and components. Products covered under the ITA include computer hardware and peripherals, telecommunications equipment, computer software, semiconductor manufacturing equipment, analytical instruments, and semiconductors

and other electronic components (Table 6). This covers almost all constituent products involved in fragmentation trade classified to this category.

As shown in Table 7, all of the key players in production networks in Asia are signatories of the ITA, including the People's Republic of China (PRC); Japan; the Republic of Korea (KOR); the five original ASEAN members (ASEAN5); Hong Kong, China; and Taipei, China. Asian countries had the largest volumes of trade upon joining the ITA in the period spanning from 1997 to 2008. They continue to be the biggest users of the agreement (Tables 8, 9). In 2010, Asian members accounted for around two-thirds of global ITA exports and nearly half of global ITA imports (Tables 10, 11). The three largest users of the ITA were the PRC; Singapore; and Taipei, China. When combined with the Republic of Korea (KOR) and Japan, these five countries accounted for over half of total ITA exports. As Anderson and Mohs (2010, p. 13) point out, "[a] prominent feature of expanding ITA trade is the broadening participation of Asian countries, particularly [the PRC], and an increasingly important role for other developing countries." Furthermore, since ITA participants must eliminate their tariffs on a most-favored nation (MFN) basis, even non-ITA signatories that are members of the WTO will enjoy duty-free access to these products. The initiative to update the agreement to create ITA II will further enhance its use, by expanding membership and product coverage, as well as dealing with technological changes that affect product classification.

How about fragmentation trade outside the electronics parts and components sector? Here again it appears that FTAs have little to offer since most of the firms involved in production networks (mostly multinational enterprises) are located in export processing or free trade zones (EPZs or FTZs). Those operating outside FTZs normally enjoy import duty exemptions under duty-drawback and bonded warehouse schemes.

These factors operate against a backdrop of low and falling tariffs on parts and components, which have more to do with unilateral actions than preferential ones. In this respect, Vezina (2010) suggests that a highly liberalizing race-to-the-bottom unilateralism occurred in emerging Asia in the 1980s and 1990s (see also Baldwin 2010 and 2011). Vezina (2010) argues that unilateral tariff-cutting in Asia's emerging economies has been driven by competition to attract foreign direct investment (FDI) from Japan. As a result, the trade-weighted preference margin for intra-ASEAN trade in 2008 was a mere 2.3 percent, while 72.9 percent of trade traveled at a 0 MFN rate (WTO 2011). Using spatial econometrics, he shows that tariffs on parts and components, a crucial locational determinant for Japanese firms, converged across countries following a contagion pattern, driving them to lower and lower levels. In a study on autos, auto parts, and hard disk drives in ASEAN, Cheewatrakoolpong et al. (2013) conclude that investment promotion policies contributed more to the emergence of international production networks than FTAs. The many country-sector studies by UNESCAP (2011a) also come to the general conclusion that FTAs, in their current form, have had little or no impact on production networks in the region.

The findings of Vezina (2010), Cheewatrakoolpong et al. (2013), and UNESCAP (2011a) apply to emerging Asia, and mainly the original ASEAN economies of Malaysia, Thailand, Singapore, Indonesia, and the Philippines. How about other Asian economies in South Asia and Central and West Asia? Tariffs and other barriers to trade remain

relatively high in many parts of South Asia, and many Central Asian countries are not yet members of the WTO. As noted in Section 2, a number of these countries are also actively pursuing FTAs. If FTAs have not played much of a role in promoting the growth or spread of production networks in Southeast Asia, can they help countries in these other regions participate in production networks? The short answer is that it is highly unlikely, for a number of reasons. A key factor relates to a defining characteristic of FTAs, which is their preferential nature.

Even if we put aside the ITA, FTZs, and duty-drawback schemes, it appears that FTAs are still unlikely to play an effective role in promoting this type of trade due to their need to protect the provision of preferences by excluding non-members. The impact that preferential tariff reductions can have on product fragmentation trade relates to the need to implement rules of origin (ROOs) in order to exclude trade that does not comply with or meet minimum requirements. First, unlike trade in final goods, formulating and implementing ROOs for production network trade is far more complicated. If the conventional value-added criterion is employed, it is highly unlikely that intermediate inputs emanating from outside the region will qualify. This is because the activities involved are low value-added by their very nature. If, on the other hand, the change in tariff-line-based ROOs is applied, then this may disqualify inputs from both outside and inside the region once they travel across the next border. This is because trade in parts and components generally belong to the same tariff codes at the HS-6 digit level, which is the normal base for designing this type of ROO. The following illustrative example, provided by Athukorala and Kohpaiboon (2011), is compelling: electrical appliance assembly plants in Thailand, which use imported bare printed circuit board (BPCB) together with other locally procured electronic components (e.g., diode, integrated circuits, semi-conductors) to printed circuit board assembly (PCBA) for export are not eligible for FTA concessions because BPCBs and PCBAs belong to the same HS code (853690).

Second, the process of international production fragmentation is characterized by the continuous emergence of new products. Given the obvious administrative problems involved in revising ROOs in tandem, these product inventions and innovations naturally open up room for unnecessary administrative delays and/or the tweaking of rules as a means of disguised protection (Elek 2008).

Therefore, countries in South and Central Asia are unlikely to be able to use FTAs as a trade policy instrument to promote their engagement in production networks in an effective way. This is not to suggest that FTAs cannot have an impact in these countries. Highly preferential concessions provided on a bilateral basis in an otherwise highly trade-restrictive environment is bound to have an impact. Indeed, these conditions provide an almost perfect setting for trade diversion to thrive. In this environment, utilization of FTA concessions could become firm or industry specific, presenting economy-wide distortions that reduce national welfare as ramifications of the well-known theory of the second-best. Furthermore, they are likely to mainly affect intensive margins—the amount of a good traded, rather than extensive margins—the range of goods that are traded, further limiting potential benefits of participating in production networks. They are also self-limiting by nature. The preferential nature of FTAs stands in the way of what we have observed to be the natural expansion of production networks in

countries and regions actively involved in the process. By limiting the scope to members only, or specific firms of industries, growth is likely to be choked-off over time. Production networks survive by growing and spreading across countries and sectors, in response to relative factor price adjustments and related developments, and FTAs are not designed to accommodate either of these features of their expansion.

A living example of successful spread, or of a new entrant successfully joining production networks, is provided by the experience of Viet Nam. In recent years, regional production networks have begun to spread beyond their original Southeast Asian bases to Viet Nam in particular (Athukorala and Tien 2012). This appears to have little to do with FTAs but instead the market-oriented policy reforms which started in the late 1980s and that gathered momentum in the 1990s. Most, if not all, of these reforms were national actions undertaken unilaterally, as part of the *doi moi* reform program, as well as related factors such as satisfying requirements of WTO accession. To date, Viet Nam remains one of the least active in pursuing FTAs in this region. From about the late 1990s, part and component assembly began to emerge, mostly with the involvement of small- and medium-scale investors from Taipei, China and Republic of Korea and only one major global player, Hitachi from Japan. When Intel arrived in February 2006 to set up a \$300 million testing and assembly plant (subsequently increased to \$1 billion) in Ho Chi Minh City however, a whole host of other manufacturers soon followed suit (see Athukorala and Kohpaiboon, 2013).

In sum, when it comes to tariff liberalization, it appears that FTAs have been largely irrelevant. Although FTAs may provide a framework for foreign multinationals looking to invest, many of the safeguards are usually already in place these days, arising from the competition to attract FDI that predates most FTAs. For instance, important safeguards such as protection against nationalization of investment, or repatriation of profits, are usually provided for in the respective Constitutions of host countries (see Athukorala and Menon 1997). Again, there is little that late-comer FTAs can add to these domestic initiatives and, if and where there are gaps, these are better addressed by investment agreements or treaties. The factors described above combine to account for the embarrassingly low utilization rates of FTAs in Asia reported in almost all studies, directly contradicting the assertion that FTAs matter in promoting this or any other type of trade. Indeed, the estimated impacts of these FTAs in studies assuming full utilization may greatly exaggerate their benefits (Menon 2013a). Rather than promoting production networks, it is more likely that product fragmentation trade has prospered despite the noodle bowl of overlapping FTAs in the region.

The preferential nature of FTAs can also thwart the natural expansion of production networks by limiting their growth to members of the bloc. This applies particularly to countries trying to participate in production networks for the first time, using FTAs to substitute for generally high tariffs and other barriers. The process of production fragmentation, which involves not only part and components but also final assembly, is a global rather than a regional phenomenon. Not only are parts and components production and final assembly usually conducted in different countries, and usually quite a number of them with the former, final demands for the finished products are generally found in countries outside the region (Athukorala and Kohpaiboon 2012).

Even proposals for mega-FTAs, such as the recently proposed Regional Comprehensive Economic Partnership (RCEP), would exclude about two-thirds of the countries in the region, depending on how Asia is defined. Experience also suggests that creating such mega-FTAs tends to be possible only through resorting to the lowest—rather than highest—common denominator, thereby making their concessions weak or even redundant (Menon 2009).<sup>3</sup> This is often necessary in order to secure consensus. Putting aside the difficulties in creating such consolidated mega-blocs, every South Asian country (except India) and all Central Asian countries would fall outside RCEP. This would not only disadvantage the excluded countries, but it would also hurt RCEP's members by limiting the switching and spreading of tasks that serves to sustain production networks. Therefore, to support the natural growth of production networks, it would be more useful if these preferences were multilateralized, and offered to all on an MFN basis, rather than consolidated within discriminatory FTAs, however large. Apart from supporting the growth of production networks, it would also remove trade diversion and the costs associated with implementing ROOs, while increasing the benefits that flow from non-discriminatory trade. Baldwin (2013) raises considerable concern over the recent trend to group regional blocs around the world together to create mega ones, pointing to how they can only lead to further "fragmentation and exclusion," and goes further to call for a new institution—a second WTO—to govern the process of liberalizing global supply chain trade. Although the likelihood of a new institution emerging is low, the decision to pursue a multilateral agreement on trade facilitation, expected before the WTO's Ministerial Summit in Bali in October 2013, may serve to deliver the kind of reforms required to support production networks (see Section 5).

Although the creation of consolidated regional blocs, or the expansion of FTAs to include other members of the region, appears unlikely to be able to support the growth or spread of production networks, what about cross-regional FTAs? If an FTA is concluded with a country or bloc that represents a major destination for final goods, then the prospects for the FTA to affect production networks could be different. Take, for example, the case of a potential Japan–US FTA. If the concessions within the FTA are sufficient to promote a significant increase in exports of final goods from Japan to the US, then the FTA could potentially support the growth—although not necessarily the spread—of production networks within the region. Similarly, the recent trend to pursue tie-ups between plurilateral FTAs (Economist 2012c) could indirectly spur product fragmentation trade if the linkages result in increased demand for final goods. That is, an increase in demand for final goods produced within production networks would drive an increase in product fragmentation trade in the region. Although this may support the growth in product fragmentation trade involving existing participants within production networks, it may not affect the spread to new members.

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<sup>3</sup> In South Asia, for instance, the establishment of a region-wide FTA had little effect on intra-regional trade, and no effect in neutralizing existing BTAs. To the contrary, the FTA has been largely rendered redundant while the BTAs have thrived. For instance, 93% of Sri Lanka's exports to India currently enter duty-free under the relevant BTA. The Bangladeshi Minister of Commerce, Amir Chowdury, explains why: "When it comes to (our) regional FTA, big economies like India and Pakistan may not offer handsome duty cuts due to distinct interests with an individual country. But they may offer large duty cuts in bilateral FTAs with Bangladesh." And this is why Bangladesh and other South Asian countries continue to pursue BTAs with each other (and outsiders) even after the formation of the consolidated FTA (see also Hill and Menon 2008).

## 5. Trade Facilitation

Production fragmentation trade is the output of complex production systems characterized by the establishment of global value chains. These networks are dependent on efficient logistics and the reduction of "services link cost" (Jones and Kierzkowski 1990; Hesse and Rodrigue 2004). As Memedovic et al. (2008) point out, the benefits arising from production networks cannot be realized without co-developments in modern logistics services underpinned by innovations in containerization, intermodal transport, and the application of information technology in physical distribution and materials management. Logistics is a wide-ranging concept, but from the point of view of cross-border movements of product fragmentation trade, the relevant aspect is trade facilitation.<sup>4</sup> Countries involved in production networks and the trade that they generate stand to gain the most from facilitating trade. The question then is how effective are FTAs in moving forward the trade facilitation agenda. Even though production networks preceded the proliferation of FTAs, has the growth in product fragmentation trade led to a deepening of existing FTAs, or the advent of new, deeper ones, particularly in relation to trade facilitation?

If FTAs are largely redundant when it comes to reducing tariffs on product fragmentation trade, then they have proven largely incapable of addressing trade facilitation aspects that matter when it comes to promoting this type of trade in Asia.

A number of studies also confirm the failure of many of the FTAs involving an Asian partner to deepen their coverage, and to deal adequately with trade facilitation issues. In a major study assessing the quality of FTAs, WTO (2011) finds that most of the FTAs show relatively limited WTO-plus or GATS-plus commitments in their design. In particular, ASEAN countries other than Singapore have shown relatively limited WTO-plus or GATS-plus commitments. Sally (2007) argues that Asian FTAs are by-and-large preferential tariff agreements on a limited range of goods. Even the better ones are trade-light and barely WTO-plus in that they do not seriously tackle non-tariff and regulatory barriers. In short, almost all FTAs involving Asian countries are relatively shallow, focusing on tariff reductions. Even when new WTO-plus issues are covered by FTAs, the areas embodying legally enforceable—and therefore substantive—commitments are relatively few; generally avoid trade facilitation; and tend to address investment, competition policy, intellectual property rights, and the movement of capital. Table 12 illustrates this for a selection of FTAs between countries in South and East Asia.

In sum, Asian FTAs generally tend to focus on tariff liberalization rather than trade facilitation or other WTO-plus or GATS-plus issues. In this way, Asian FTAs appear

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<sup>4</sup> Although there is no universally accepted definition of trade facilitation, it is usually taken to refer to reforms aimed at making complicated and time-consuming cross-border trade procedures less inefficient. In other words, the idea is to cut the often excessive amount of red tape at the border. More formally, the Doha Ministerial Declaration (WTO 2001) refers to trade facilitation as "expediting the movement, release, and clearance of goods, including goods in transit." Persson (2008) suggests that another popular way to define the issue is to refer to the simplification and harmonization of international trade procedures, where such procedures are the activities, practices, and formalities involved in collecting, presenting, communicating, and processing data required for the movement of goods in international trade. This is the broad definition that we employ here. See also WTO (2007).



unlikely to be able to support the growth or spread of production networks by facilitating the trade in parts and components.

Since production fragmentation trade continues to grow within certain subregions of Asia, a related question is whether higher levels of trade in parts and components increase the likelihood of signing deeper agreements. In other words, does the causation run in the reverse direction, from increased product fragmentation trade leading to deeper FTAs over time, rather than vice versa? There is some evidence to support the reverse causality argument, but the relevant studies are not confined to Asia. For instance, Orefice and Rocha (2011) examine 96 FTAs reported to the WTO between 1958 and 2010. After taking into account other FTA determinants, they find that a 10% increase in the share of product fragmentation trade over total trade increases the depth of an agreement by approximately 6 percentage points. Hayakawa and Yamashita (2011) consider over 250 FTAs with trade flows distinguished into parts and components and final goods for 1979–2008. Their gravity equation estimates suggest that the concurrent year effects of FTA formation on trade in parts and components are unseen, whereas FTAs have positive and pervasive effects on both types of trade flows 6 years and 9 years after FTA formation.

Although it is likely that these results are heavily influenced by the deeper FTAs signed between developed countries, could it be that Asian FTAs will evolve to be the same over time, and eventually contribute to the growth and spread of production networks? To the contrary, there is an emerging sentiment of resistance towards the upgrading of FTAs into deeper Comprehensive Economic Partnership Agreements (CEPAs) in the region. To cite just a few recent examples, the Indonesian Chamber of Commerce has voiced concern over such progression in a general way, while Sri Lanka has also rejected calls for a CEPA with India. The deepest of the proposed mega-blocs, the Trans-Pacific Partnership (TPP), has missed its target for completion by end-2012, and is now looking to do so by end-2013 (Business Standard 2012; Economist 2012b; Jakarta Globe 2012). On 8 October 2012 in Lexington, Virginia, US presidential candidate Mitt Romney complained about how "this President had not signed a single free trade agreement in the past four years".<sup>5</sup> Even if this is a temporal issue, however, there is a fundamental reason for avoiding FTAs as a trade policy instrument in promoting trade facilitation or other forms of liberalization in support of production networks.

That fundamental reason, as with tariff liberalization, relates to the need to be preferential or discriminatory in the provision of the concession or reform. But unlike tariff liberalization, it is often difficult or costly to remove non-tariff barriers or measures (NTBs, NTMs) in a preferential manner. It is usually impractical for these types of concessions to be exchanged in a discriminatory fashion—once an NTB or NTM is removed, the cost of excluding non-members is likely to be high, if not prohibitive, like

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<sup>5</sup> Confirming the bipartisan confusion over motivation, this statement appeared amid concerns over the situation in the Middle East, as part of a "major speech on foreign policy." Similarly, almost one-third of the press statement issued by US Secretary of State Hillary Clinton on 15 March 2012 on the coming into force of the US–Republic of Korea Free Trade Agreement (KORUS) is devoted to non-economic issues: "...it will strengthen the US partnership with a key ally in a strategically important region. This is a powerful signal of America's commitment to the Asia–Pacific and to securing and sustaining our role as a regional leader and Pacific power."

with most public goods. This difficulty and associated cost vary by type of measure. While export subsidies or export licensing, for example, could be offered or applied preferentially, production subsidies cannot be reduced in the same way. With reducing production subsidies arguably the biggest barrier to reforming agricultural trade, the problem is real.

Even if it were possible to exclude third parties, this could seriously derail the reform program. A recent study by UNESCAP (2011b) notes that preferential treatment negotiated with selected trading partners typically involves additional documentary requirements. The study presents evidence of significant delays associated with such requirements since FTAs have adopted different approaches to the rules on substantive measures relating to trade facilitation. Moreover, differences in their scope, depth, and level of detail have often translated into varying degrees of administrative inefficiency, through a maze of different procedures applied to respective trading partners under different FTAs.

If the costs associated with complying with FTA-based trade facilitation provisions are high, then the benefits that flow are also generally quite low, when compared with other modalities of liberalization. The results reported in Dee (2006) show that if deep economic integration initiatives were limited to reform of regulations that explicitly discriminated against foreigners, and that the reforms were undertaken on a preferential basis, they would add only trivially to the gains from preferential liberalization of tariffs on merchandise trade. Dee (2006) therefore concludes that “there may be a few limited areas where FTAs can usefully supplement a domestic regulatory reform program... [but] because they tend to be preferential—even in their “new age” provisions—they tend to focus reform efforts away from where the big gains are to be made.” These big gains can only be realized through unilateral regulatory reform in the East Asian region. Because of more comprehensive coverage that targets the non-discriminatory restrictions that add to real resource costs, comprehensive unilateral reform would yield gains of more than five times that of an FTA.

Although such unilateral actions that also deal with incumbency, whether domestic or foreign, are optimal, is there a role that the WTO can play in coordinating the reform effort in a non-preferential manner? The difficulty of reaching agreement on Doha’s ambitious all-or-nothing single-undertaking program, aimed at addressing a wide variety of issues, is becoming increasingly clear. Attention has therefore shifted towards a compromise involving sectoral deals, including one that addresses trade facilitation. The heads of all the multilateral development banks recently signed a petition promoting such a deal (World Bank 2012). Enthused by this prospect, *The Economist* (2012a) has dubbed it the “Global Recovery Round.” The benefits to be derived from successfully concluding a sectoral deal on trade facilitation should not be underestimated. Indeed, they are expected to be quite significant, and the prospect of concluding one by the time of the Bali Ministerial in December 2013 is a further plus. On average, trade-weighted tariffs account for about 5% of trade costs, while logistical and other trade facilitation costs are about double that at 10%. The WTO-based trade facilitation negotiations aim to bring these logistical costs down by half, or to an average of 5%, which is the equivalent of removing all tariffs. These are potential gains that are substantial enough to warrant serious consideration and perhaps counter concerns over the reduced

incentives to conclude a more comprehensive deal that has been elusive for a very long time. The impact of such an agreement on the growth and spread of production networks is likely to be significant.

## 6. Conclusion

It is sometimes argued that the proliferation of FTAs in Asia has supported intra-regional trade through the spread of production networks, and that their continued growth will be enhanced by expanding or increasing the number of FTAs. However, empirical studies have produced mixed results, possibly resulting from dual causality and difficulties in isolating the impact of intra- versus inter-regional FTAs, which have increased concurrently. Therefore, this paper employs a qualitative approach that carefully examines the characteristics of both product fragmentation trade and FTAs in Asia to ascertain possible linkages. Although it is clear that FTAs are not necessary for the growth or spread of production networks, since product fragmentation trade preceded the advent of FTAs, can their promotion support the further growth or spread of these networks? In this paper, we argue that there are a number of reasons for policymakers to be wary of pursuing this option. First is the fact that almost all studies point to low utilization rates of FTAs, directly contradicting the assertion that they matter in promoting this or any other type of trade. Indeed, the estimated impacts of these FTAs in studies assuming full utilization may greatly exaggerate their benefits. Second, and this may explain the reason behind the first reason, most if not all product fragmentation trade already travels at duty-free or at very low tariffs across the region, either because of the ITA, which covers trade in electronics parts and components; various duty-drawback schemes; or the fact that most multinationals operate out of export processing zones, where they are duty-exempt.

Rather than promoting production networks, it is more likely that product fragmentation trade has prospered despite the noodle bowl of overlapping FTAs in the region. Intra-regional FTAs appear to have had little effect on either the growth or spread of production networks. Inter-regional FTAs, on the other hand, may have been able to indirectly support the growth of production networks among existing members but not the spread to new ones. FTAs are designed to promote trade in final goods, or goods which are produced from beginning to end in a given country, and not the type of fragmentation trade involving parts and components and final assembly within production networks. Also, almost all FTAs involving Asian countries are relatively shallow, focusing on tariff reductions rather than addressing trade facilitation and other NTBs that could have a greater impact on promoting production networks. Even if they were to deepen over time, it is difficult or costly to remove NTBs in a preferential manner. For these reasons, it would be more useful if FTA preferences were multilateralized and other accords offered to all on an MFN basis. This would remove trade diversion and the need to implement ROOs, along with the associated cost and confusion, as well as increase the benefits that flow from non-discriminatory trade. Combined with national liberalization actions that deal with incumbency issues, irrespective of nationality, this would be the best way to support the growth of production networks in current participants and their spread to new ones.

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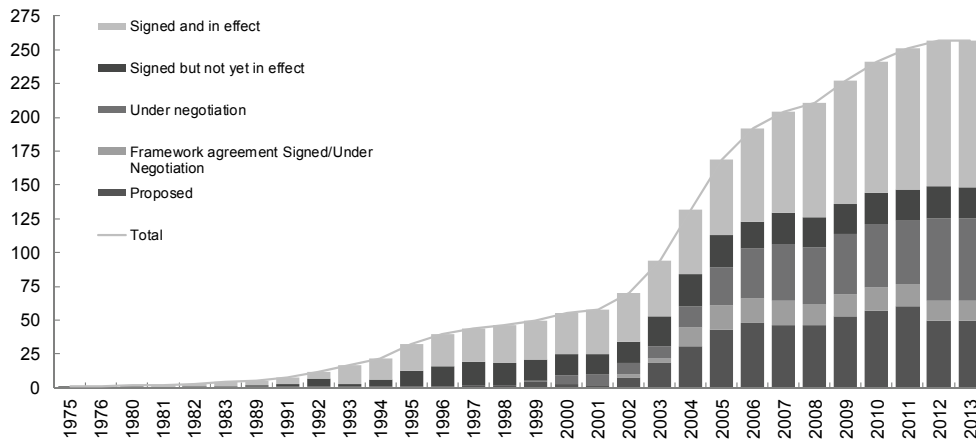
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**Figure 1: FTAs by Status – Total Asia (cumulative, selected years)**

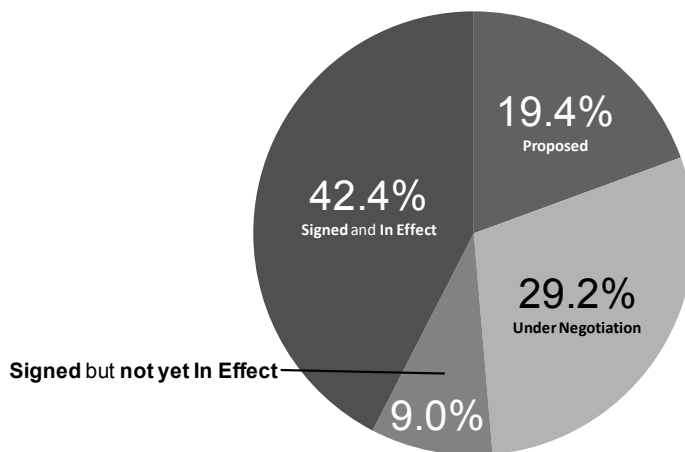


FTA= free trade agreement.

Notes: 1. Proposed = the parties consider an FTA; governments or relevant ministries issue a joint statement on its desirability or establish a joint study group/joint task force to conduct feasibility studies. 2. Framework agreement signed/under negotiation = the parties, through relevant ministries, negotiate the contents of a framework agreement (FA) that serves as a framework for future negotiations. 3. Under negotiations = the parties.

Source: ARIC FTA database (as of January 2013), Asian Development Bank.

**Figure 2: FTAs by Status – Asia, 2013**



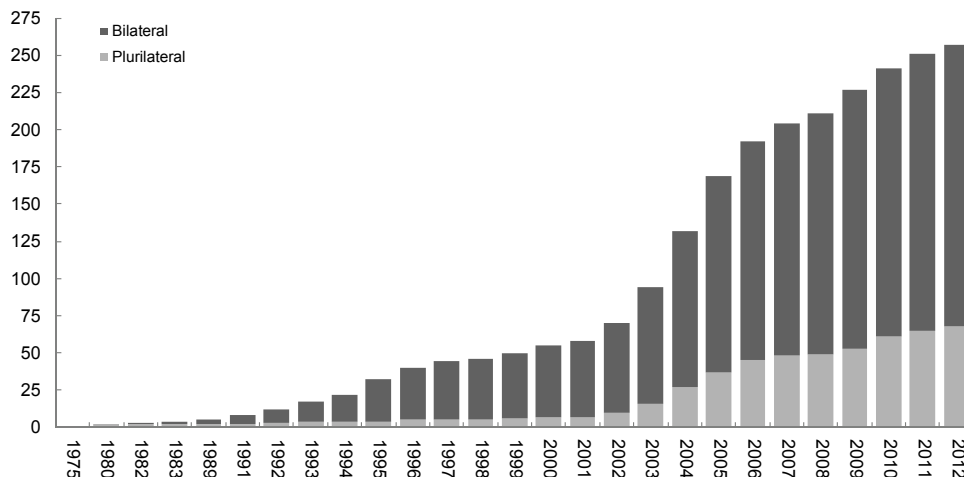
FTA= free trade agreement.

Notes: 1. Proposed = the parties consider an FTA; governments or relevant ministries issue a joint statement on its desirability or establish a joint study group/joint task force to conduct feasibility studies. 2. Under negotiations = the parties, through relevant ministries, negotiate the contents of a framework agreement that serves as a framework for future negotiations, or declare the official launch of negotiations, or start the first round of negotiations. 3. Signed but not yet in effect = the parties sign the agreement after negotiations have been completed, but the agreement has yet to become effective. 4. Signed and in effect = FTA provisions become effective, after legislative or executive ratification.

Source: ARIC FTA database (as of January 2013), Asian Development Bank.



**Figure 3: FTAs by Scope – Asia (cumulative, selected years)**

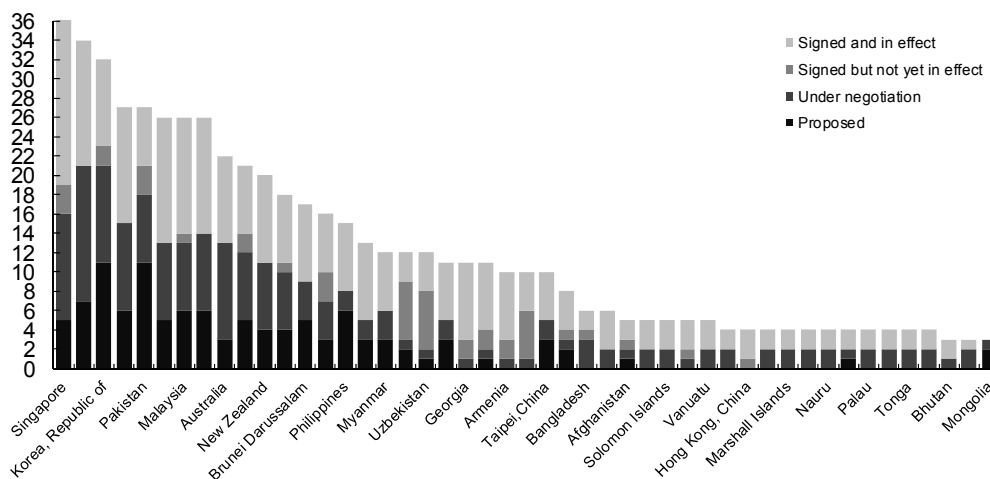


FTA= free trade agreement.

Notes: 1. Bilateral refers to a preferential trading arrangement involving only two parties. 2. Plurilateral refers to a preferential trading arrangement involving more than two parties.

Source: ARIC FTA database (Data as of January 2013), Asian Development Bank.

**Figure 4: FTAs by Country—Asia, 2013**

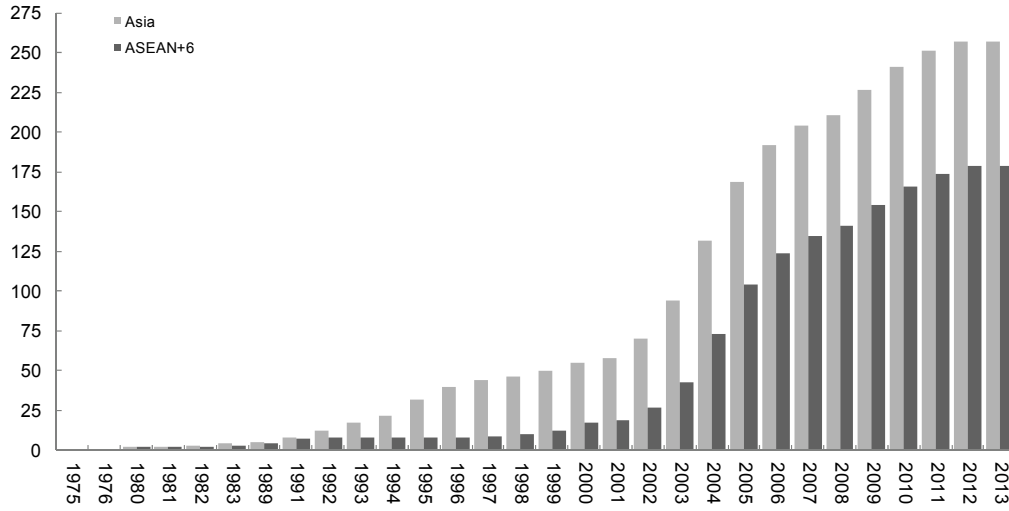


FTA= free trade agreement; FSM = Federated States of Micronesia; Lao PDR = Lao People’s Democratic Republic.

Notes: 1. Proposed = the parties consider an FTA; governments or relevant ministries issue a joint statement on its desirability or establish a joint study group/joint task force to conduct feasibility studies. 2. Under negotiations = the parties, through relevant ministries, negotiate the contents of a framework agreement that serves as a framework for future negotiations, or declare the official launch of negotiations, or start the first round of negotiations. 3. Signed but not yet in effect = the parties sign the agreement after negotiations have been completed, but the agreement has yet to become effective. 4. Signed and in effect = FTA provisions become effective, after legislative or executive ratification.

Source: ARIC FTA database (Data as of January 2013), Asian Development Bank.

**Figure 5: FTAs—Asia and ASEAN+6 (cumulative, selected years)**



FTA= free trade agreement; ASEAN+6 = ASEAN plus Australia, the People's Republic of China, India, Japan, Republic of Korea, and New Zealand.

Source: ARIC FTA database (Data as of January 2013), Asian Development Bank.

**Table 1: Bilateral FTAs by Geographic Area – Asia, 2013**

<b>Bilateral FTAs</b>	<b>2013</b>
<b>Within sub-region</b>	
Central and West Asia	17
East Asia	7
South Asia	8
Southeast Asia	1
The Pacific	2
<b>Across sub-region</b>	
Central and West Asia + South Asia	2
East Asia + South Asia	4
East Asia + Southeast Asia	15
East Asia + The Pacific	8
Southeast Asia + South Asia	11
Southeast Asia + The Pacific	7
The Pacific + South Asia	2
<b>With Non-Asian Countries</b>	
Central and West Asia + Non-Asia	21
East Asia + Non-Asia	31
South Asia + Non-Asia	18
Southeast Asia + Non-Asia	26
The Pacific + Non-Asia	9
<b>Total</b>	<b>189</b>

## Notes:

1. Central and West Asia - Armenia; Azerbaijan; Georgia; Kazakhstan; Kyrgyz Republic; Tajikistan; Turkmenistan; Uzbekistan
2. East Asia - People's Republic of China; Hong Kong, China; Japan; Republic of Korea; Mongolia; Taipei, China
3. South Asia - Afghanistan; Bangladesh; Bhutan; India; Maldives; Nepal; Pakistan; Sri Lanka
4. Southeast Asia - Brunei Darussalam; Cambodia; Indonesia; Lao People's Democratic Republic; Malaysia; Myanmar; the Philippines; Singapore; Thailand; Viet Nam
5. The Pacific - Australia; Cook Islands; Fiji; Kiribati; Marshall Islands; Federated States of Micronesia; Nauru; New Zealand; Palau; Papua New Guinea; Samoa; Solomon Islands; Timor-Leste; Tonga; Tuvalu; Vanuatu

Source: ARIC FTA database (as of January 2013), Asian Development Bank.

**Table 2: Plurilateral FTAs by Geographic Area – Asia, 2013**

<b>Bilateral FTAs</b>	<b>2013</b>
Asian Plurilateral	12
Asian Plurilateral + Asian Country	7
Cross-regional Plurilateral	10
Non-Asian Plurilateral + Asian Country	33
Asian Plurilateral + Non-Asian Plurilateral	2
Cross-regional Plurilateral +	1
Cross-regional Plurilateral + Asian Country	2
Cross-regional Plurilateral + Non-Asian Plurilateral	1
<b>Total</b>	<b>68</b>

## Notes:

1. Asian Plurilateral - refers to groupings of more than two countries where all the members are Asian countries.
2. Cross-regional - refers to groupings of more than two countries where the members are a combination of Asian and non-Asian countries.

Source: ARIC FTA database (as of January 2013), Asian Development Bank.

**Table 3: FTAs between South and East Asian Countries**

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**In Effect**

1. Asia Pacific Trade Agreement (1976)
2. India-Singapore CECA (2005)
3. Pakistan–People's Republic of China FTA (2007)
4. Pakistan–Malaysia CEPA (2008)
5. India-Republic of Korea CEPA (2010)
6. India-ASEAN CECA (2010)
7. India-Malaysia CECA (2011)
8. India–Japan CEPA (2011)

**Signed (Not in Effect)**

9. Pakistan-Indonesia FTA
10. Preferential Tariff Arrangement-Group of Eight Developing Countries
11. Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)
12. Trade Preferential System of the Organization of the Islamic Conference
13. India-Thailand Free Trade Area

**Under Negotiation**

14. India-Indonesia CECA
15. Pakistan-Singapore FTA
16. Regional Comprehensive Economic Partnership

**Proposed**

17. Comprehensive Economic Partnership for East Asia (CEPEA/ASEAN+6)
  18. People's Republic of China-India RTA
  19. ASEAN-Pakistan FTA
  20. Pakistan-Brunei Darussalam FTA
  21. Pakistan-Philippines FTA
  22. Pakistan-Thailand FFTA
  23. Singapore-Sri Lanka CEPA
- 

Source: ARIC FTA database (as of January 2013), Asian Development Bank.

**Table 4: Bilateral FTAs—ASEAN+3 and ASEAN+6, 2013**

<b>Region</b>	<b>Number</b>
<b>Within sub-region</b>	
ASEAN+3	19
ASEAN+6	42
<b>Across sub-region (within Asia)</b>	
ASEAN+3 + Non-ASEAN+3	34
ASEAN+6 + Non-ASEAN+6	21
<b>With Non-Asian Countries</b>	
ASEAN+3 + Non-Asia	51
ASEAN+6 + Non-Asia	67
<b>TOTAL: ASEAN+3</b>	<b>104</b>
<b>TOTAL: ASEAN+6</b>	<b>130</b>

FTA = free trade agreement; ASEAN+3 = ASEAN plus the People's Republic of China, Japan, and the Republic of Korea. ASEAN+6 = ASEAN plus Australia, the People's Republic of China, India, Japan, Republic of Korea, and New Zealand.

Notes: Within subregion means both countries are ASEAN+3 (ASEAN+6) members. Across subregion means one is an ASEAN+3 (ASEAN+6) member with its partner an Asian country but not an ASEAN+3 (ASEAN+6) member.

Source: ARIC FTA database (as of January 2013), Asian Development Bank.

**Table 5: Share of Network Products in Manufacturing Trade, 2009/10 (%)**

	Parts and Components	Final Assembly	Total Network Trade
<b>(a) EXPORTS</b>			
Developing East Asia	35.2	27.3	62.5
People's Republic of China	25.7	32.5	58.2
Taipei, China	44.2	25.6	69.8
Republic of Korea	43.2	28.4	71.6
ASEAN	44.7	24.8	69.5
Indonesia	21.5	17.7	39.1
Malaysia	54.6	22.2	78.8
Philippines	73.3	14.5	87.8
Singapore	49.5	17.2	66.7
Thailand	30.1	34.3	64.4
Viet Nam	11.2	7.6	18.8
India	12.3	4.2	16.5
Developed countries	25.2	23.6	48.8
Developing countries	47.3	44.5	55.6
World	29.2	23.6	52.8
<b>(b) IMPORTS</b>			
Developing East Asia	42.2	17.1	61.3
People's Republic of China	44.0	19.8	63.7
Hong Kong, China	48.5	13.5	62.1
Taipei, China	38.9	16.8	55.7
Republic of Korea	31.9	17.4	49.3
ASEAN	47.9	16.2	64.1
Indonesia	21.8	15.8	37.7
Malaysia	50.0	22.0	72.0
Philippines	61.3	17.4	78.6
Singapore	60.4	17.3	77.7
Thailand	36.1	12.4	48.5
Viet Nam	19.1	9.7	28.5
India	22.9	17.0	39.9
Developed countries	23.4	25.5	48.9
Developing countries	33.6	19.9	53.5
World	27.3	23.3	50.7

ASEAN = Association of Southeast Asian Nations

Source: Athukorala (2011).

**Table 6: Representative ITA Products and Number of HS Codes, by Attachment**

	<b>Number of HS Codes</b>	<b>Sample Products</b>
Attachment A1	112	<p>Computers and computer peripherals: Personal computers, laptops, work stations, monitors, keyboards, hard drives, CD-ROM drives, smart cards, printers, scanners, and other input/output units</p> <p>Telecommunications equipment: telephone sets, cordless phones, mobile handsets, pagers, answering machines, switches, routers, hubs, modems, fiber optic cables</p> <p>Semiconductors: microprocessors, integrated circuits, printed circuits, diodes, resistors</p> <p>Software: magnetic tapes, unrecorded media</p> <p>Office equipment: certain photocopy machines, fax machines, cash registers, adding machines, calculators, automatic teller machines (ATM)</p> <p>Scientific and measuring devices: spectrometers, chromatographs, flow meters, gauges, optical radiation devices</p> <p>Other: Loudspeakers, still digital cameras, parts</p>
Attachment A2	78	Semiconductor manufacturing equipment (SME): etching and stripping apparatus, vapor deposition devices, sawing and dicing machines for wafers, spinners, ion implanters, wafer transport, handling and storage machines, injection molds, optical instruments, parts and accessories
Attachment B	131	Computers, electric amplifiers, flat-panel displays, network equipment, monitors, pagers, CD and DVD drives, plotters, printed circuit assemblies, removable storage devices, set-top boxes

Notes: Attachment B products are covered regardless of where they are classified in the HS system. ITA Committee members have made attempts to narrow divergences in the customs classification of some Attachment B products (WTO G/IT/W6/Rev.3), though there is no agreed-upon list. The authors use such codes as a proxy.

Source: Anderson and Mohs (2010).



**Table 7: ITA Membership Asian Countries** (ITA Trade upon Joining the Agreement)

Country	Year Joined ITA	Total ITA Trade (\$ mil) upon Joining Agreement	Share of ITA Trade (%)	
			Total Asia	Total ITA
Malaysia	1997	58,416	16.18	13.13
People's Republic of China	2003	250,202	69.32	56.23
Thailand	1997	22,368	6.20	5.03
Philippines	1997	21,460	5.95	4.82
India	1997	3,077	0.85	0.69
Georgia	1999	38	0.01	0.01
Viet Nam	2007	5,375	1.49	1.21
Kyrgyz Republic	1999	26	0.01	0.01
Total Asia		<b>360,962</b>	100.00	81.13
Total ITA member countries <sup>1</sup>		<b>444,937</b>		

<sup>1</sup>Only includes members, which joined the ITA between 1997-2008.

Source: Anderson and Mohs (2010).

Table 8: ITA Exports as a Share of Each Country's Exports

Rank	Main Exporters	Value (US\$ bn)		Share of Total Exports (%)		Share of Manufactured Goods Exports(%)		Share of SITC 7 Exports (%)		Share of SITC 75-77 Exports (%)						
		1996	2005	1996	2005	1996	2005	1996	2005	1996	2005	1996	2005			
1	People's Republic of China	11.3	186.8	386.5	7.5	24.5	24.5	8.9	26.7	26.2	32.0	53.0	49.5	44.7	66.5	67.1
4	Singapore <sup>1</sup>	38.1	103.9	122.5	30.5	45.2	34.8	36.7	56.6	48.3	46.2	77.0	68.2	53.1	91.1	85.9
5	Taipei,China	33.4	66.0	100.6	28.9	34.8	36.8	31.0	38.4	41.1	57.4	70.0	74.7	78.1	90.1	93.4
6	Republic of Korea	25.6	78.3	97.9	19.7	27.5	21.0	22.3	30.3	23.8	37.9	45.1	37.1	63.9	79.5	79.3
7	Japan	81.9	98.7	84.5	19.9	16.6	11.0	21.0	18.1	12.4	28.7	25.9	18.4	65.6	70.4	58.1
8	Malaysia	21.7	56.2	60.5	27.7	39.7	30.4	36.7	53.2	45.4	50.1	73.5	69.3	56.4	80.2	77.9
10	Thailand	8.9	21.9	31.3	16.0	19.9	16.0	23.2	26.3	22.4	42.2	44.5	38.0	54.0	68.4	65.6
11	Philippines	8.6	26.1	29.2	41.9	63.3	56.7	50.6	71.1	66.6	74.0	85.0	80.9	78.3	93.3	88.8
15	Viet Nam	0.0	1.2	5.0	0.0	3.7	6.9	0.0	7.4	10.8	0.0	38.3	43.6	0.0	53.3	58.6
16	India	0.5	1.0	4.3	1.5	1.0	2.0	2.5	1.7	3.7	18.2	9.5	13.5	52.6	36.3	50.3
17	Indonesia	1.6	4.7	3.9		5.5	2.5		11.7	6.7		34.6	19.9		47.0	30.8
21	Hong Kong, China	4.9	3.9	1.9	2.7	1.3	0.5	3.0	1.4	0.5	8.4	2.6	0.8	10.5	2.8	0.9

<sup>1</sup> Includes significant re-exports.

Sources: WTO (2012) and UNCTAD UNCTADStat database.

Table 9: ITA Imports as a Share of Each Country's Imports

Rank	Main Exporters	Value (US\$ bn)		Share of Total Exports (%)		Share of Manufactured Goods Exports (%)		Share of SITC 7 Exports (%)		Share of SITC 75-77 Exports (%)						
		1996	2005	1996	2005	1996	2005	1996	2005	1996	2005					
2	People's Republic of China	12.9	169.3	291.7	9.3	25.7	20.9	11.8	34.5	32.8	23.6	58.3	53.1	62.8	83.5	81.1
4	Singapore <sup>1</sup>	25.4	75.6	86.7	19.3	37.8	27.9	23.5	50.3	43.1	33.4	67.7	60.2	47.5	88.0	85.1
5	Japan	40.6	64.3	69.1	11.6	12.5	10.0	21.7	23.4	20.0	47.7	48.6	42.8	75.2	73.4	63.0
6	Taipei, China	14.3	46.3	56.5	14.0	25.5	22.5	19.4	35.4	34.6	35.3	62.1	62.2	60.7	95.7	99.1
8	Republic of Korea	19.7	45.1	54.5	13.1	17.3	12.8	20.3	28.5	22.7	36.0	54.6	44.2	81.8	85.3	79.8
9	Malaysia	14.2	44.3	50.2	18.2	38.8	30.5	22.1	49.1	41.7	30.4	67.4	61.6	47.5	86.7	85.4
10	Thailand	6.6	20.2	26.9	9.1	17.1	14.7	11.9	25.1	22.2	19.3	44.9	41.8	42.9	76.6	73.0
12	Philippines	7.7	22.9	18.8	22.2	46.3	32.2	28.6	60.6	48.1	42.8	80.0	68.3	69.2	93.6	91.2
13	India	1.0	10.5	16.7	2.6	7.5	4.8	4.9	13.9	11.7	9.7	27.3	23.5	35.6	60.8	52.0
17	Hong Kong, China	10.7	10.9	14.1	5.3	3.6	3.2	6.2	4.1	3.8	14.5	7.0	5.7	19.8	7.9	6.3
19	Indonesia	2.1	1.8	11.5		2.4	8.5		3.8	13.3		7.2	24.4	18.6	64.5	
24	Viet Nam	0.3	2.1	6.3	2.7	5.7	7.4	3.5	8.2	10.3	9.5	22.8	25.4	25.4	57.8	55.7

<sup>1</sup> Includes significant re-exports.

Sources: WTO (2012) and UNCTAD UNCTADStat database.

**Table 10: Asian ITA Members' ITA Exports**  
(Volume, Share of World Trade, and Average Annual Growth)

Rank	Main Exporters	Value (US\$ bn)			Share of World ITA Trade (%)			Average Annual Change (%)	
		1996	2005	2010	1996	2005	2010	1996- 2010	2005- 2010
1	People's Republic of China	11.3	186.8	386.5	2.1	15.8	27.5	29	16
4	Singapore <sup>1</sup>	38.1	103.9	122.5	6.9	8.8	8.7	9	3
5	Taipei, China	33.4	66.0	100.6	6.1	5.6	7.2	8	9
6	Republic of Korea	25.6	78.3	97.9	4.7	6.6	7.0	10	5
7	Japan	81.9	98.7	84.5	14.9	8.4	6.0	0	-3
8	Malaysia	21.7	56.2	60.5	4.0	4.8	4.3	8	1
10	Thailand	8.9	21.9	31.3	1.6	1.9	2.2	9	7
11	Philippines	8.6	26.1	29.2	1.6	2.2	2.1	9	2
15	Viet Nam	0.0	1.2	5.0	0.0	0.1	0.4	45	32
16	India	0.5	1.0	4.3	0.1	0.1	0.3	17	35
17	Indonesia	1.6	4.7	3.9	0.3	0.4	0.3	7	-4
21	Hong Kong, China	4.9	3.9	1.9	0.9	0.3	0.1	-7	-14

<sup>1</sup> Includes significant re-exports

Sources: WTO (2012) and UNCTAD UNCTADStat database

**Table 11: Asian ITA Members' ITA Imports**  
(Volume, Share of World Trade, and Average Annual Growth)

Rank	Main Exporters	Value (US\$ bn)			Share of World ITA Trade (%)			Average Annual Change (%)	
		1996	2005	2010	1996	2005	2010	1996-2010	2005-2010
2	People's Republic of China	12.9	169.3	291.7	2.3	13.6	18.8	25	11
4	Singapore <sup>1</sup>	25.4	75.6	86.7	4.6	6.0	5.6	9	3
5	Japan	40.6	64.3	69.1	7.4	5.1	4.5	4	1
6	Taipei, China	14.3	46.3	56.5	2.6	3.7	3.6	10	4
8	Republic of Korea	19.7	45.1	54.5	3.6	3.6	3.5	8	4
9	Malaysia	14.2	44.3	50.2	2.6	3.5	3.2	9	3
10	Thailand	6.6	20.2	26.9	1.2	1.6	1.7	11	6
12	Philippines	7.7	22.9	18.8	1.4	1.8	1.2	7	-4
13	India	1.0	10.5	16.7	0.2	0.8	1.1	22	10
17	Hong Kong, China	10.7	10.9	14.1	1.9	0.9	0.9	2	5
19	Indonesia	2.1	1.8	11.5	0.4	0.1	0.7	13	44
24	Viet Nam	0.3	2.1	6.3	0.1	0.2	0.4	25	24

<sup>1</sup> Includes significant re-exports

Sources: WTO (2012) and UNCTAD UNCTADStat database

**Table 12: Depth of South and East Asian FTAs**

<b>FTA</b>	<b>Government Procurement Chapter</b>	<b>Investment Chapter</b>	<b>Trade Facilitation Chapter</b>	<b>Competition Policy</b>	<b>Intellectual Property Rights</b>	<b>New Issues (overall)</b>
APTA (1976)	No Provision	No Provision	No Provision	No Provision	No Provision	Shallow
India-Singapore CECA (2005)	No Provision	Standard	Standard	No Provision	Standard	Limited
Pakistan – People’s Republic of China FTA (2007)	No Provision	N/A	No Provision	No Provision	No Provision	Shallow
Pakistan - Malaysia CEPA (2008)	No Provision	Standard	Above Standard	No Provision	Standard	Limited
India-Republic of Korea CEPA (2010)	No provision	Above Standard	Above Standard	No Provision	Standard	Moderate
India-ASEAN CECA (2010)	No Provision	No Provision	Standard	No Provision	No Provision	Shallow
India-Malaysia CECA (2011)	No Provision	Above Standard	Above Standard	No Provision	No Provision	Limited
India Japan CEPA (2011)	Standard	Standard	Above Standard	Standard	Above Standard	Moderate

Source: Author’s computation.

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## **Supporting the Growth and Spread of International Production Networks in Asia**

### How Can Trade Policy Help?

Can FTAs support further growth or spread of production networks in Asia? Empirical studies have produced mixed results, since causality can run either way. We employ a qualitative approach that examines the characteristics of both product fragmentation trade and FTAs to ascertain possible linkage. We find the relationship to be tenuous. Therefore, national liberalization actions that deal with non-tariff barriers and incumbency issues would be the best way to support the growth and spread of production networks.

### **About the Asian Development Bank**

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.7 billion people who live on less than \$2 a day, with 828 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.