APEC Study Center Consortium Conference 2012

Key Findings and Policy Recommendations:

- trade and investment liberalization, regional economic integration;
- strengthening food security;
- establishing reliable supply chains;
- intensive cooperation to foster innovative growth.

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APEC Study Centers Consortium Conference Agenda

May 26-27, 2012
Kazan, Russia

Saturday, May 26, 2012	
9.00 – 9.30	**WELCOME AND OPENING REMARKS** *Chair:* ***Pavel Kadochnikov,*** *Executive Director, Russian APEC Study Center* **Linar Latypov**, Vice-Rector for international Relations/Director of the Institute of Oriental Study of Kazan (Volga Region) Federal University, Russia **Ivan Timofeev**, Program Director, Russian International Affairs Council, Russia
9.30 – 10.00	**KEYNOTE ADDRESS** **Nadira Mailewa**, Director Program, APEC Secretariat **Tammy Hredzak**, Policy Support Unit, APEC Secretariat
10.00 – 10.30	**Coffee Break**
10.30 – 12.30	**PANEL 1: Trade and investment liberalization, regional economic integration** *Chair:* ***Vittoriya Idrisova****, Head of Trade Policy Department, Russian APEC Study Center* **Ippei Yamazawa**, Hitotsubashi University, ASC Japan: "How can we strengthen APEC's New IAP process toward 2020?" **Erlinda Medalla**, Philippines APEC Study Center Network, Philippines: "Managing the ASEAN Economic Integration Process in the Philippines: Trade Liberalization and Facilitation and the Ways Forward" **Barbara Stallings**, Brown University, USA: "Regional Economic Integration in East Asia: The Role of ODA" **Kaoru Nabeshima**, Inter-disciplinary Studies Center Institute of developing Economies (IDE-JETRO), Japan, **Hayakawa Kazunobu and Fukunari Kimura**: "Non-conventional Provisions in Regional Trade Agreements: Do They Enhance International Trade?" **Kuboon Charumanee**, Mahasarakham University, Thailand: "ASEAN Economic Community (AEC) 2015 and its implication on APEC"
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14.00 – 16.00	**PANEL 1: Trade and investment liberalization, regional economic integration (***continuation***) and Strengthening food security**

	*Chair: **Vittoriya Idrisova**, Head of Trade Policy Department, Russian APEC Study Center* **Chenyang Liu**, APEC Study Center of China at Nankai University, China: "The Development of and Significance of the China-Japan-Korea FTA" **Jose Rangel Delgado, Francisco Mares Bañuelos,** APEC Study Center University of Colima, Mexico: "Labor Migration & Regional Integration in Asia Pacific beyond the Borders" **Sri Adiningsih**, Center for Asia Pacific Studies Universitas Gadjah Mada, Indonesia: "APEC Needs to Improve Its Financial Market Integration and Collaboration" **Chen-Sheng Ho**, Chinese Taipei APEC Study Center, Chinese Taipei: "Analyzing the APEC Process and Future APEC Goals" **Robert Scollay**, New Zealand APEC Study Centre, New Zealand: "Integrating Regional Food Markets" **Braulio Vargas**, Peruvian Network for Asia-Pacific Studies (REDAP), Peru: "Managing Food Security: A policy-making approach to a theory of innovation systems in the agricultural sector"
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18.00	**CULTURAL PROGRAMM**
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9.30	**Photo of the group**
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10.00 – 10.10	**KEYNOTE ADDRESS** **Nadira Mailewa**, Director Program, APEC Secretariat
10.10 – 12.00	**PANEL 3: Establishing reliable supply chains** *Chair: **Gleb Ivashentsov**, Ambassador, Deputy Director, Russian APEC Study Center* **Gloria Pasadilla and Ngiang Boon Loong**, Asian Development Bank Institute, Tokyo, Japan: "Analysis of Financial Services Agreement in Asia-Pacific FTAs: an Assessment" **Hikari Ishido**, Chiba University, Japan: "Establishing Reliable Supply Chains

	through Liberalization of Trade in Services" **Kenneth Waller**, Australian APEC Study Centre at RMIT University, Australia: "Developing a Framework for Supply Chain Risk Assurance for APEC economies" **Aekapol Chongvilaivan**, Singapore APEC Study Centre at the Institute of Southeast Asian Studies (ISEAS), Singapore: "Managing Global Supply Chain Disruptions: Experience from Thailand's 2011 Flooding"
12.00 – 14.00	**LUNCH**
14.00 – 16.00	**PANEL 3: Establishing reliable supply chains (***continuation***) and Intensive cooperation to foster innovative growth** *Chair: **Gleb Ivashentsov**, Ambassador, Deputy Director, Russian APEC Study Center* **Jane Drake-Brockman and Sherry Stephenson**, Asia Pacific Business School Chinese University of Hong Kong, Hong Kong, China: "Implications for 21st Century Trade and Development of the Emergence of Services Value Chains" **Maddaremmeng Panennungi**, APEC Study Center University of Indonesia (ASC UI), Indonesia: "Improving Export Performance through Logistics Cost: Evidence from APEC Economies" **Tagir Khuziyatov**, APEC Study Center, Far Eastern Federal University, Vladivostok, Russia: "How to Optimize Transborder Logistics within APEC" **Daisuke Hiratsuka**, Japan External Trade Organization (JETRO), Japan: "Establishing Reliable Supply Chains: Lessons from Disasters in Japan and Thailand"
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17.10 – 17.30	**Conference ends** ***Pavel Kadochnikov,** Executive Director, Russian APEC Study Center*

Trade and investment liberalization, regional economic integration

How Can We Strengthen the APEC's New IAP Process?

By Ippei Yamazawa

Abstract:

All 21 APEC economies start its new IAP process this year. Will , APEC be able to achieve its Bogor Goals by its final year 2020? APEC Leaders announced their mid-term assessment of the 13 economies' achievement toward the Bogor Goals in 2010 with 'not much progress in liberalization but big progress in facilitation'. The delay of liberalization in sensitive sectors cannot be condemned under APEC's modality of non-binding voluntary liberalization, while the WTO's DDA negotiation has got stumbled after ten years. However, many FTAs of both bilateral and sub-regional have mushroomed among APEC member economies so that we should depart from the conventional APEC practice of regarding only MFN measures but incorporate the FTA effects into our review process. After reviewing the APEC leaders' commitment to continuing the IAP process toward the Bogor Goals, I will suggest how the new IAP process can be strengthened in the interaction with TPP, ASEAN ++, other FTAs in order to achieve its final goals toward the FTAAP. It is the important task of us, ASC academics to monitor closely and give advices on the APEC's main track of regional integration.

1. Start of the New IAP Process

Regional economic integration, the core activity of APEC since its inception, has entered in its second stage since 2011 and the new IAP process has started this year. All 21 APEC economies have submitted their individual action plans (IAPs) according to the revised formula. It is the most important task of Russia as its host economy to make a successful start dash. However, a variety of FTAs, both bilateral and sub-regional, have mushroomed in the Asia Pacific region and are recognized by the APEC leaders as legitimate parallel roadmaps toward its long-term goal of FTAAP. How can they be interacted effectively with the APEC's REI process?

2. Mid-term Assessment at APEC 2010 Yokohama

Throughout 2010 APEC/SOM undertook a detailed examination of individual economies' achievement toward the Bogor Goals. Only the group assessment was published of its thirteen economies, five industrialized economies designated to achieve the free and open trade by 2010 plus eight volunteered economies (Chile, Hong Kong China, ROK, Malaysia, Mexico, Peru, Singapore, and Chinese Taipei). Its report said that APEC economies had achieved a high growth for the past fifteen years and drug the world economy owing to the members' efforts to achieve the Bogor Goals. However, it also indicated that impediments still remained in six sectors of tariffs, non-tariff measures, services, investment, intellectual property rights, and government purchase and stressed that all APEC economies should continue their efforts of eliminating them for the remaining ten years until 2020.

This was a fair assessment of APEC's achievement, considering the severe constraints that the WTO/DDA negotiation has now got stumbled and the Bogor process has been implemented under the modality of non-binding liberalization. APEC's TILF process will continue for all APEC economies, including the 13 economies mentioned above.

3. New IAP Peer Review Process

Leaders committed in Yokohama to continue the TILF process toward the final Bogor Goals in 2020. SOM2 May 2011 in Montana adopted 'the new IAP peer review Process' for all 21 members to remove remaining barriers toward 2020.

- New IAP should cover all 14 areas of Osaka Action Agenda plus those added afterwards (transparency, RTAs/FTAs, and other voluntary reporting areas). 2010 economies (13 economies which were assessed

in 2010) might give emphasis to those areas where shortcomings were highlighted by Leaders, cited above).

- Economies should describe, in brief points only significant new developments under each chapter heading.
- Economies would report in 2012, 2014, 2016, and 2018. The final assessment would be undertaken in 2020.
- Policy Support Unit support SOM in this new IAP peer review process. It will prepare a short one-two page report with key highlights on members' main achievements and remaining areas for improvements in the year of review. PSU reports will be discussed at SOMs and finally made public.

These responded to often heard criticism of the previous IAP peer review process and, if implemented faithfully, the new IAP process will be much strengthened. The concise and pinpointing ways of addressing achievements will help the new IAPs accessible by more readers both among APEC officials and outside watchers. In prior for APEC 2010 Yokohama, I conducted an independent quantitative assessment of all 21 economies' achievement toward the Bogor Goals in eight are as of Osaka Action Agenda. I found that the thirteen economies differed greatly in their achievement and remaining eight economies have achieved much less toward the Bogor Goals. They may be treated differently according to their different extent of liberalization and facilitation. The six sensitive areas suggested by Leaders above are consistent with my findings.

Here I would like to make three points based on my past endeavor. First individual assessment rather than their group assessment (as adopted at the Mid-term assessment) should be released publicly. It is no use of keeping the 'no name, no shame' modality but make individual economies' achievements known to outside APEC officials. Second not only the current liberalization efforts but also their accumulated achievement should be made easily identified so that it shows the remaining impediments toward the Bogor Goals. IAPs need to be changed from the current 'positive list' formula to 'negative list' formula in due course. Lastly the IAP review process needs to be opened from its 'peer review' within SOM and MRT to a wider outside critics. APEC may keep its modality of non-binding and voluntarism but should be strengthened so as to be effective in urging all member economies to work harder toward its final goal.

4. Need for incorporating the FTA effects

Here I would like to stress the importance of incorporating the analyses of the effects of various FTAs mushroomed among the APEC economies in to our review process. FTA with its trade-diverting effects is never the best policy measures for economic integration. Nevertheless, its vast spread makes it impossible for us to ignore its dynamic impacts in promoting regional integration. The new IAP formula instruct all members to report on FTAs both concluded and still in negotiation but we need to include its impacts on the liberalization and facilitation practice of member economies.

For example, each economy reports simple average tariffs for all and by sectors in its IAP as the measure of liberalization in commodity trade. Some add weighted average tariffs calculated respective all or sector import values as weights. It has been the common practice within APEC of non-binding unilateral liberalization to show only tariffs applied on MFN basis. I bet few economies report average tariffs weighted by import values of sectors by country of origins, which reflect actually applied tariff level. The latter has deviated far from the simple average tariff after the wide spread of FTAs for the past two decades. Of course we should encourage all APEC economies to report their MFN tariffs and reduce them toward the FTAAP. However, we should depart from our conventional practice of reporting them only.

The same argument can be applied to other areas than tariffs. Nowadays APEC economies apply to their FTA partners preferential treatment in other liberalization and facilitation areas as well. We cannot neglect these preferential treatment even under the APEC's nonbinding unilateral modality. We need to take into account their impacts in our review process of the new IAPs.

Russian senior official proposed that FTAs emerged as dynamic integrating instruments and should be utilized so as to converge to FTAAP. This is consistent with my suggestion above. APEC has already adopted 'Best Practice for FTAs' (2006) and 'FTA/RTA Model Measures' (2009) in order to guide these FTAs so that their detailed rules be consistent and help avoiding the Spaghetti Bowl effects.

However, sub-regional FTAs such as TPP and ASEAN++ cannot be converged smoothly only by these technical regulations but require direct appeal to their promoters. APEC' s own REI process should be utilized as the ground base for the converging efforts and its new IAP process should be strengthened along this line.

5. Alternative processes toward FTAAP

At APEC 2010 Yokohama APEC Leaders declared as'FTAAP should be pursued as a comprehensive FTA by developing and building on ongoing regional undertakings such as ASEAN+3, ASEAN+6, and TPP. To this end APEC will make an important meaningful contribution as an incubator of a FTAAP by providing leadership and intellectual input into the process'. (Pathway to FTAAP , APEC/LM 2010c). We academic should monitor the progress of individual paths and advise so that they will merge toward FTAAP. Otherwise, TPP and ASEAN plus proceed separately so that two blocs be formed dividing Asia, and 'free trade in Asia Pacific' will end in dream.

At the APEC 2011 Honolulu, Japan, Canada, and Mexico expressed their wish to join the TPP negotiating group. Their accession negotiations have recently started toward its final stage. Canada and Mexico will clear additional hurdles of liberalization easily thanks to their membership of NAFTA. Japan is reported to face strong requests by the U.S. and Australia on her liberalization of agricultural products. Nevertheless, all existing members of the TPP negotiation welcome the three economies' accession in principle since it will increase the scale economy merit of TPP.

However, it will never be easy to successfully conclude the TPP negotiation. It is not only in Japan alone that vested-interest groups resist to moves to open economic regime. Requests for exclusion are made in many economies including the U.S. How can we stress them to minimum and achieve a high level of trade and investment liberalization principle. We need to incorporate China, Indonesia, and other Asian economies which carry the high growth of the Asia Pacific region.

On the other hand, ASEAN+3 and +6 had been examined together by a task force of member governments' officials, following the suggestions of ASEAN+3 Summit and East Asian Summit. China proposed East Asia FTA (EAFTA) consisting of ASEAN+3, while Japan proposed Comprehensive Economic Partnership for East Asia (CEPEA) consisting of ASEAN+6. However, as is apparently urged by the TPP negotiations, China and Japan made a compromise proposal of 'ASEAN +α', not specifying either +3 or +6 at the ASEAN Economic Ministers' meeting in Indonesia in August 2011.

Dynamics of competitive liberalization has urged Asian economies to accelerate their FTA moves. In the week following APEC Honolulu, ASEAN Summit in Bali proposed Regional Comprehensive Economic Partnership (RCEP), accelerating ASEAN plus FTAs under ASEAN initiative. Japan-ASEAN economic ministers' meeting in Tokyo in late April agreed on the start of the ASEAN ++ FTAs within this year.

On the other hand, China, Japan, and ROK, whose combined GDP amounts to 70 percent of all Asia, have continued the preparatory study of their trilateral FTA. The study group reported to their leaders that its possible impact would be huge because of their close business connection as well as their huge size and recommended the early start of its negotiation. At the trilateral summit in Beijing on May 13th, three leaders signed the first Trilateral Investment Treaty and agreed on starting the negotiation for the trilateral FTAs.

Japanese Prime Minister Noda expressed his wish to promote both TPP and Asian FTAs in parallel. However, how can we connect TTP without China with Asian FTAs without the U.S? Neither TPP nor ASEAN++ FTAs is conducted within APEC, the sole inter-governmental network for Asia Pacific cooperation. APEC has continued liberalization and facilitation as its core activities for the past fifteen years. Media has not paid much attention to its proper activities, leaving public audience as well as young scholars unaware of them. I would suggest that we should make better use of APEC including both China and the U.S. Japan can claim it on the basis of her hosting and achievement of APEC Yokohama in 2010.

6. APEC more than an Incubator

Here I would like to stress that APEC can play a positive role in merging TPP and ASEAN++, which will have a narrower coverage of commodity trade, services trade, investment, and Ecotech and is likely

to remain at a lower level of liberalization than TPP. The new IAP Peer Review mentioned above has a comprehensive coverage, including WTO plus areas and is close to the TPP's high standard, except for its non-binding modality. APEC, with its two decade experience in Ecotech and capacity building, helps developing economies to implement various facilitation programs, thus inviting them to join high level FTAs. Above all APEC is their least common multiple, that is, includes all members of the Asia Pacific. TPP and ASEAN++ pull the Asia Pacific from above, while APEC pushes it up from behind.

As regards the follow-up of the new IAP process, Policy Support Unit (PSU) is assigned an important job of organizing this process for effective liberalization and facilitation programs. It should not merely summarizing individual IAPs but helping them publicizing their commitments and achievements. I wish to see my three points suggested in Section 3 incorporated in the PSU report. A mapping exercise can be attempted to clarify the differences among the three. If necessary, ASC experts can provide assistance. This will encourage SOM to get concerned about reducing differences of the three so that their possible convergence will be seen toward 2020. I expect the final assessment of the new IAP process dated in 2020 will announce the converging stage toward FTAAP.

The new IAPs with supplemented PSU report will be released after MRT reviewed it. ASC experts must monitor it closely and provide advices and assistance toward its final goal.

Managing the ASEAN Economic Integration Process in the Philippines: Trade Liberalization and Facilitation and the Ways Forward

By Erlinda M. Medalla, PIDS Fellow

Abstract:

This paper is part of the Philippine study for the Economic Research Institute for ASEAN and East Asia (ERIA) project on the Mid-Term Review (MTR) of the ASEAN Economic Community (AEC) Blueprint. A milestone in ASEAN Economic Cooperation is the Cebu Declaration on the Acceleration of the Establishment of an ASEAN Community by 2015 during the 12th ASEAN summit in 2007, and subsequently the passing of the ASEAN Charter. A midterm review of where the member countries are in moving toward the ASEAN Economic Community is thus timely. At the core of ASEAN integration is free flow of trade in goods. An essential part of the midterm review is an assessment of progress in the area of trade liberalization and facilitation. Toward this end two sets of surveys are undertaken by the study: (1) a Mid Term Review (MTR) Questionnaire for Government Officials, and (2) Firm MTR Survey on Import/Export and Customs Clearance. The questionnaire for government officials aims to gather information on aspects of ASEAN customs development and integration and the implementation of the National Single Window (NSW) and ASEAN Single Window. The survey of firms will provide the view from users by getting their experience on customs clearance and permit release process in other government agencies. Recommendations of the ways forward are then suggested.

Regional Economic Integration in East Asia: The Role of ODA

By Professor Barbara Stallings, Brown University (USA) and Ewha Women's University (Korea)1

Regional integration has been on the agenda in East Asia for nearly five decades. In formal organizational terms, the most important event was the formation of ASEAN in 1967 and its gradual evolution and expansion in the following years. In informal economic terms, the emergence of the "flying wild geese" model was the dominant force, dating from more or less this same time period. Both of these trends, however, have been restructured by the increasing presence of China in the region, and the Asian financial crisis stimulated important new developments.

This paper is mainly concerned with economic integration. Most of the discussion of this topic has centered on foreign trade and investment and specifically how different groups of countries were incorporated into East Asian production networks through trade and investment links. In recent years, monetary integration has also appeared on the agenda. One topic that has not been prominent in these discussions is the role of Official Development Assistance (ODA). In this paper, we will ask if ODA has played a significant role in unifying the nations of East Asia and, if so, what the mechanisms have been and how they relate to other economic processes.

To answer this general question, we will need to ask some more specific ones: Who are the main Asian donors? What share of their funds goes to East Asia? To what countries do these funds go? For what purposes are they used? How much of recipient countries‟ ODA comes from donors in the region? Have regional donors tried to use their funds to increase cohesion and to incorporate new nations? These questions will be addressed through an examination of quantitative data on ODA flows and a case study of Vietnam.

Trends in East Asian Regionalism: A Literature Review

There is an enormous volume of literature on regionalism in East Asia, and we make no attempt to summarize it here.2 The aim is more modest: to lay out a time line of the evolving mechanisms that have been emphasized in promoting East Asian regional integration in the last five decades and to extract some hypotheses on the role of ODA.

During the 1960s, two potentially complementary processes began to take shape in the region, but they generally operated in isolation from each other. One was what some academics now call "regionalization," that is, the de facto integration of some of the economies of East Asia through trade and investment. Although governments played a role behind the scenes, the main actors were private firms. The key paper that tried to make intellectual sense of the process was Akamatsu (1962), who introduced the concept of the "flying wild geese" model.3 Based on theories of dynamic comparative advantage, the model postulated that East Asia would catch up with the west through the transfer of production technologies from leader to follower nations. In the 1960s, the leader was Japan and the followers were the four East Asian newly industrialized economies (NIEs) – Korea; Chinese Taipei; Hong Kong, China; and Singapore. Later, other generations of followers would be incorporated.

Also in the early 1960s, the Southeast Asian countries began to work on the creation of a sub-regional institution. In contrast to regionalization as embodied in the flying wild geese concept, the Southeast Asians were interested in "regionalism," or politically constructed integration. The ASEAN (Association of South East Asian Nations) treaty was signed in 1967 and had as members Indonesia, Malaysia, Philippines, Singapore, and Thailand. Initially ASEAN was more concerned with political and security goals rather than with the economy. As Stubbs (2008: 456) reminds us, the five countries were preoccupied with conflicts among themselves as well as with the Vietnam War and the spread of communism in the region. Their modus operandi evolved in a way that still influences broader East

[1] This paper was funded by a grant from the WCU (World Class University) program through the National Research Foundation of Korea, funded by the Ministry of Education, Science and Technology of the Republic of Korea (Grant No: R32-20077).

[2] For recent overviews, see Chia (2010), Ravenhill (2008), Munakata (2006), Pempel (2005).

[3] For other important contributions on this topic, see Ozawa (2005), Yamazawa (1990).

Asian regional discussions: non-interference in the affairs of neighbors, peaceful settlement of disputes, and work by consensus.

After the 1985 Plaza Accord, which raised the value of the Japanese yen vis-à-vis the dollar and also impacted the other currencies of the region, Japan and the four NIEs began to invest heavily in Southeast Asia (Chia 1993). Thus the flying wild geese model expanded into ASEAN as a second generation of economies, but the two types of regional integration continued to operate on separate tracks. It would not be until after the 1997 financial crisis that they would come together in a significant way when a broader regional institution would take up various economic challenges.

In the meantime, the increasing presence of China began to place new strains on both regionalization and regionalism in East Asia. Initially many thought that China – together with Vietnam, Cambodia, Laos, and Myanmar – would simply be a third generation within the flying wild geese formation. But soon it became clear that China's economic and political power would disrupt the regional economic model and have profound ramifications for political relations as well. China became a magnet for the foreign direct investment that had previously gone to ASEAN countries, and it began to compete with them in exports (Lardy 1994, 2002). Moreover, its new economic power – together with its military might and international influence – meant that China also rose in political importance in the region. Increasingly, it began to compete with Japan for regional leadership (Bergsten et al 2008).

The 1997 crisis was a watershed that changed both political and economic processes in East Asia (Park 2006). First, it cemented China's economic position in the region, when its government did not devalue the RMB and thus became a source of stability for its neighbors. This position was further enhanced as Japan continued in the recession it had suffered since the end of the 1980s (Pempel 1999, especially chp. 10; Noble and Ravenhill 2000, especially chp. 7). Second, it convinced East Asian governments that they could not rely on the international financial system, with the IMF as lynchpin, to rescue them from future economic problems. Rather, they would have to develop their own mechanisms (YW Lee 2008). Third, institution building came onto the agenda and ASEAN was broadened into ASEAN +3 (Japan, China, and Korea). ASEAN+3 was especially important in the monetary sphere, but it assumed more general coordination and decision-making functions as well (Stubbs 2002; Terada 2003).

By the beginning of the second decade of the 2000s, then, the core of the East Asian region consists of 12 economies: Japan, China, and Korea at the top of the pyramid; the original five ASEAN economies in the middle; and other countries that had joined ASEAN (Cambodia, Laos, Myanmar, and Viet Nam) at the bottom. The group operates at political and economic levels. The main political forum is ASEAN+3. Economic processes focus on trade and investment, but monetary relations are also important, including the Chang Mai Initiative (CMI), the Asian Bond Fund (ABF), and even discussion of a common currency.

Missing from this picture is ODA. ODA was important earlier in the postwar period for most countries in the region, but the majorty of those resources came from the United States and Europe. The question in this paper is whether ODA from the region itself is making a contribution to regional integration today. In the rest of the paper, we will investigate three hypotheses with respect to regional integration in East Asia:

- ODA in East Asia is important for incorporating new countries into regional networks;
- ODA in East Asia is oriented to export to recipients an East Asian development model;
- The regional role of East Asian ODA is partially offset by donors‟ other foreign policy priorities.

The Role of ODA in East Asia

With these hypotheses in mind, we begin by examining some statistical information on ODA flows by the four leading donors in the East Asia region: Japan, Korea, China, and the Asian Development Fund (AsDF), which is the concessional loan vehicle of the Asian Development Bank. Together the four account for 40-50% of the ODA in the region.

Japan was a founding member of the OECD‟s Development Assistance Committee (DAC) and is one of the world's leading donors. Indeed, in the 1990s, it was the single largest donor, surpassing the United States. One reason is that Japan sought to substitute its lack of participation in international

military activities by providing foreign aid; this was its contribution to international "burden sharing" (Islam 2001). For some time, Japan was heavily criticized by other donors for its tied aid and the links between its ODA and contracts for Japanese firms, especially its trading companies. Eventually its ODA became legally untied, but there is still criticism that Japanese firms obtain a disproportionate share of project work. Another early criticism of Japanese aid was that it was not conditioned on democracy and human rights in recipient countries. That also began to change with the adoption of the ODA Charter in 2003.

Korea, by contrast, is the newest member of the DAC having acceded in early 2010 although it had had a formal aid apparatus for two decades. It was itself heavily dependent on foreign aid from the United States in the 1950s and 1960s after the Korean War. The country's subsequent development to its current status as one of the world's leading economies is one of the relatively few clear aid success stories. Not surprisingly, then, Korea sees its own experience as one of the assets it can provide to recipients. The Knowledge Sharing Program (KSP) is the embodiment of this approach. Korea was eager to join the DAC as evidence of its "arrival" on the global stage. It is trying hard to adjust its structures and policies to DAC standards – even though some of its own officials are dubious about the changes (interviews).

China is a larger ODA donor than Korea, but simultaneously remains a recipient of ODA. The lack of information on the quantity of its aid, its geographical distribution, or its purposes makes it difficult to evaluate or even describe it. China's aid – although the government prefers the term "South-South Cooperation" – dates back to the 1950s. It generally operates separately from other aid donors, and its ODA is hard to disentangle from commercially-based transactions with developing countries. Overall its economic assistance (including ODA) is frequently directed toward securing access to natural resources. Another characteristic is its lack of economic or political conditionality – except allegiance to the One China policy and access to the resources it helps to finance. Often projects are carried out by Chinese personnel.

The AsDF is the fourth important provider of ODA from within the East Asian region. As part of the ADB, it obviously has different characteristics than the three countries just discussed. The ADB has its own commercial loan window, while the AsDF provides grants and concessional loans. Internal documents describe the mission of the AsDF as helping the poorest countries in the Asian region begin to catch up with their more successful neighbors. The agency also supports regional integration activities to promote public goods and backward and forward linkages with the fast-growing Asian countries.

The relative size of the ODA contributions made by these four donors is shown in Table 1. The table provides calculations based on various definitions of ODA – commitments, gross disbursements, and net disbursements – for the year 2008. Several items are worth noting. First, by all three measures, Japan is by far the largest donor. Its commitments are about ten times those of Korea or the AsDF; no information on commitments is available for China. Its gross disbursements are also much larger than its three counterparts. Second, there is a much larger gap between gross and net disbursements for Japan since it is an older donor and recipients are repaying earlier loans. Third, Korea is increasing its ODA much faster than the others (with the possible exception of China). Its commitments are nearly three times the size of its gross disbursements for 2008. Fourth, the share of ODA going to East Asia is generally largest for Korea. The average of the East Asian share for the three measures shown in Table 1 is 34% for Korea, 30% for the AsDF, and only 18% for Japan. The latter is lowered substantially by the fact that its net disbursements are low in general, in comparison with its gross disbursements, and this is especially the case for East Asia. Several of Japan's largest East Asian borrowers (Indonesia, Philippines, and Thailand) are repaying more than they receive.

Table 1

Table 1. Main ODA Donors in East Asia: Total Bilateral Aid and East Asian Share, 2008

	Japan	Korea	China	AsDF
Status	DAC member since 1961	DAC member since 2010	Non-DAC member	Multilateral institution
Commitments	16900	1455	NA	1745
East Asia share	23.7	34.3	NA	38.9
Gross disbursements	14697	579	3046	2330
East Asia share	30.2	34.7	NA	24.5
Net disbursements	6823	539	NA	1654
East Asia share	0.3	33.0	NA	25.8

Sources: OECD/DAC Online Statistics (Creditor Reporting System) for Japan, Korea, and AsDF; Brautigam (2009: App. 6) for China in 2007.

[a] East Asian recipients include Cambodia, China, Indonesia, North Korea, Laos, Malaysia, Mongolia, Myanmar, Philippines, Thailand, and Vietnam.

The geographical distribution of ODA from the four East Asian donors varies. A recent official source indicates that around 45% of Chinese funds go to Sub-Saharan Africa (PRC 2011). With respect to the other three donors, we saw in Table 1 the varying shares of gross disbursements that go to East Asia: 30% from Japan, 35% from Korea, and 25% from the AsDF. Table 2 shows how each donor allocates the rest of its funds. Japan's allocation focuses on South and Central Asia (22%), the Middle East (14%), Africa (13%) with lesser amounts to Latin America and Eastern Europe. Korea provides a larger share to Africa and Latin America (19 and 12%, respectively), but a smaller share to other Asian countries (13%) and to the Middle East (5%). Since the AsDF only provides funds to Asian countries, the remainder of its resources go to South and Central Asia (especially Bangladesh, Pakistan, Afghanistan, Nepal, and Sri Lanka). These shares vary significantly from those for other donors, where the regional allocations are 38% to Africa, 11% to South and Central Asia, 11% to the Middle East, 8% to Latin America, 6% to East Asia, and 5% to Europe.

Table 2

Table 2. Geographical Distribution of ODA by East Asian and Other Donors (gross disbursements), 2008

Recipients	Japan		Korea		China		AsDF		Other donors[a]	
	$mn	%	$mn	%	$mn	%	$mn	%	$mn	%
All bilateral ODA	14697	100.0	579	100.0	3046	100.0	2330	100.0	114315	100.0
Africa	1910	13.0	107	18.5	1380	45.3	0	0.0	43770	38.3
Asia (East)	4429	30.1	201	34.7	NA	NA	571	24.5	7065	6.2
Cambodia	115	0.8	35	6.0	NA	NA	141	6.1		
China	1200	8.2	19	3.3	NA	NA	12	0.5		
Indonesia	1324	9.0	23	4.0	NA	NA	60	2.6		
Korea, North	0	0	0	0.0	NA	NA	0	0.0		
Laos	68	0.5	12	2.1	NA	NA	62	2.7		
Malaysia	220	1.5	1	0.2	NA	NA	0	0.0		
Mongolia	75	0.5	17	2.9	NA	NA	29	1.2		
Myanmar	42	0.3	7	1.2	NA	NA	0	0.0		
Philippines	471	3.2	26	4.5	NA	NA	4	0.2		
Thailand	119	0.8	2	0.3	NA	NA	1	0.0		
Vietnam	795	5.4	59	10.2	NA	NA	262	11.2		
Asia (South and Central)	3195	21.7	75	13.0	NA	NA	1734	74.4	12980	11.4
Europe	520	3.5	15	2.6	NA	NA	0	0.0	6209	5.4
Latin America	769	5.2	70	12.1	NA	NA	0	0.0	8826	7.7
Middle East	2069	14.1	31	5.4	NA	NA	0	0.0	12877	11.3
Oceania	167	1.1	3	0.5	NA	NA	25	1.1	1350	1.2
Unspecified	1638	11.1	76	13.1	NA	NA	0	0.0	21238	18.6

Sources: OECD/DAC Online Statistics (Creditor Reporting system) for Japan, Korea, and AsDF; Brautigam (2009: App. 6) for China in 2007.

[a] All donors, bilateral and multilateral, except Japan, Korea, and AsDF.

What do these geographical patterns tell us about ODA from the three donors? My interpretation is that they indicate that ODA plays a somewhat different function within the foreign policies of Japan, Korea, and China. As mentioned above, the Japanese government sees its ODA partially as a way to mollify the United States for its small defense budget and its reluctance to use the Self-Defense Forces abroad. This can be seen most clearly in the fact that Japan's largest recipient in 2008 was Iraq, which alone counted for 11% of gross disbursements of ODA (18% of net disbursements). Afghanistan was the 11th largest recipient. These were not traditional recipients for Japan, but they are where U.S. interests are currently centered. Among East Asian countries in Japan's top ten recipients were included China, Indonesia, Philippines, and Malaysia – all middle income countries. Of the poorest East Asian countries, only Vietnam was among the top 15.

Korea appears to be following a pattern more typical of DAC recommendations, i.e., aid to low-income countries for poverty reduction. As a new DAC member, it may be particularly concerned to burnish its reputation as a "good" donor. In its top 15 recipients are included Vietnam, Cambodia, Philippines, Angola, Sri Lanka, India, China, Mongolia, Dominican Republic, Jordan, Laos, Turkey, Liberia, Senegal, and Honduras. Of these, five are classified as low-income countries by the World Bank; all of the poorest East Asian countries are included.

From the little we know, China represents a third pattern. Sub-Saharan Africa is the largest regional recipient of Chinese funds. As mentioned above, the most authoritative estimate (PRC 2011) suggests that Africa receives about 45% of China's ODA. Nearly all African countries that follow the One China policy receive some resources, but the largest recipients are reported to be Angola, Ethiopia, Sudan, Tanzania, and Zambia (Davies 2007). Outside of Africa, China provides aid to its East Asian neighbors and has recently been moving into Latin America as well (Roett and Paz 2008). Many, if not most, of these countries are important sources of natural resources for China. Aid in obtaining access to the resources is clearly an aim of ODA as well as of other Chinese resources.

As a multilateral institution, the AsDF is more tied to multilateral guidelines and, in particular, to those of the Asian Development Bank. All funds must be given to members, and poverty is a key criteria. The top 15 recipients of AsDF funds include Pakistan, Bangladesh, Vietnam, Sri Lanka, Cambodia, Nepal,

Georgia, Afghanistan, Laos, Indonesia, Tajikistan, Kirghiz Republic, Mongolia, China, and Azerbaijan. Of these seven are low income recipients; the remaining eight are in the lower-middle income category.

Greater similarity among the East Asian donors is found with respect to the sectoral distribution of ODA funds in East Asia, which contrasts with other donors‟ allocation in the region (Table 3). First, the three East Asian donors for which we have information provide 50% of their ODA for economic infrastructure and production sectors, while other donors spend only 24% in these two categories. It appears that nearly all of China's aid also goes for economic infrastructure and productive activities (PRC 2011). Second, East Asian donors provide a weighted average of 26% of gross disbursements for social sector activities in East Asia, compared to 53% for other donors. Third, the remaining categories are more difficult to characterize. They include multi-sector loans (including environmental loans), budget relief, debt relief, humanitarian assistance, refugees, support for NGOs, and administrative costs. For both Asian and non-Asian donors, these categories account for 20-25% of the total. The strong support for economic infrastructure and production within the East Asian region provides a way to link ODA to home-country firms, whether the tendency is for aid to be openly tied (Korea) or formally untied (Japan). China is well known for having its own firms implement the projects it finances.

Table 3

Table 3. Sectoral Allocation of ODA to East Asia by East Asian and Other Donors (gross disbursements), 2008[a]

Sector	Japan		Korea		China		AsDF[b]		Other donors[c]	
	$mn	%	$mn	%	$mn	%	$mn	%	$ mn	%
Total	4429	100.0	201	100.0	NA	NA	571	100.0	7065	100.0
Social	1159	26.2	69	34.3	NA	NA	131	22.9	3759	53.2
Economic	1721	38.9	89	44.2	NA	NA	286	50.1	1148	16.2
Production	467	10.5	20	10.0	NA	NA	0	0.0	563	8.0
Other	1082	24.5	23	11.5	NA	NA	154	27.0	1595	22.6

Sources: OECD/DAC online (Creditor Reporting System) for Japan, Korea, and AsDF; Brautigam (2009: Appendix 6) for China in 2007.

[a] East Asian recipients include Cambodia, China, Indonesia, North Korea, Laos, Malaysia, Mongolia, Myanmar, Philippines, Thailand, and Vietnam.

[b] Figures represent sectoral distribution all Asian Development Bank members; average of 2006-08.

[c] All donors, bilateral and multilateral, except Japan, Korea, and AsDF.

Finally, we need to examine data from the viewpoint of the recipients. On average, the ten East Asian recipient countries we have been following obtain 38.5% from the three East Asian donors (excluding China). This share is broadly similar with the following exceptions. Malaysia and the Philippines get a much larger than average share (80 and 52%, respectively) from East Asian donors. This is presumably since other donors consider that their per capita income is too high for ODA. Surprisingly, Laos gets a smaller than average share from East Asian donors (26%). Myanmar, which has been ostracized for political reasons, receives most of its ODA from other bilateral donors and the multilaterals. Finally North Korea appears to get no funds from Asian donors, but this is misleading. South Korea provides over $500 million per year, but these funds are counted as domestic transactions (OECD 2008; interviews).

Table 4

Table 4. Geographical Distribution of ODA by Recipient in East Asia (gross disbursements), 2008

Country	Total ODA	Total ODA from East Asia		Japan	Korea	AsDF
	$ mn	$ mn	%	$ mn	$ mn	$ mn
East Asia	13506	5201	38.5	4429	201	571
Cambodia	762	291	38.2	115	35	141
China	3162	1231	38.9	1200	19	12
Indonesia	3523	1407	39.9	1324	23	60
Korea, North	221	0	0	0	0	0
Laos	542	142	26.2	68	12	62
Malaysia	277	221	79.8	220	1	0
Mongolia	288	121	42.0	75	17	29
Myanmar	534	49	9.2	42	7	0
Philippines	959	501	52.2	471	26	4
Thailand	326	122	37.4	119	2	1
Vietnam	2912	1116	38.3	795	59	262

Source: OECD/DAC Online Statistics (Creditor Reporting System).

In summary, East Asian donors have a much higher concentration of their ODA in East Asia than do DAC countries as a whole. East Asian donors also show a strong preference for financing economic infrastructure over social services, budget support, and humanitarian aid. This again contrasts with other DAC donors. On average, nearly 40% of the ODA of East Asian recipients comes from East Asian donors. These statistics provide the necessary but not sufficient conditions to support our hypotheses: that East Asian donors support regional integration through providing a large share of their ODA to East Asian countries and try to replicate their own development model in recipient countries through an emphasis on economic infrastructure and production facilities. Nonetheless, they must also attend to other international priorities – whether this is global political obligations (Japan), the search for natural resources (China), or the desire to establish a "good" reputation among ODA peers (Korea).

A Case Study of Vietnam

To get a better understanding of the goals and processes and to further test the hypotheses, we turn to a case study of Vietnam. Vietnam was chosen because it is the largest ODA recipient in East Asia, and it is easier to find materials on donor intentions and activities. We begin with a brief look at the political-economic characteristics of Vietnam and its recent history. Then we turn to the subject of finance for development and the role that ODA plays. This is followed by a study of the particular approaches of Japan, Korea, China, and the ADB and the way the Vietnam government interacts with foreign actors involved in providing finance.

We can date modern Vietnamese history from the end of the Vietnam War in 1975 and the resulting reunification of north and south. The fourth congress of the Communist Party in 1976 declared that Vietnam would be managed as a centrally planned economy under single party control. After the invasion of Cambodia (which alienated western powers and tightened links with the Soviet Union), the brief invasion of Vietnam by China, and the failure of two five-year plans, a major transformation came about in economic policy. In 1986, "Doi Moi" – varyingly translated as renewal, renovation, or reconstruction – was instituted in Vietnam and brought the gradual marketization of economic relations although political centralization under the Communist Party continued.4

[4] On Doi Moi policies, see Riedel and Comer (1998); on the process of Doi Moi, see Rama (2008).

Vietnam is a medium-sized country (85 million inhabitants in 2008) with a fairly high adult literacy rate (92%, according to the latest UNESCO figures). In the early 1990s, it was one of the poorest countries in the world. Since then, however, growth has accelerated and the country has enjoyed one of the world‟s highest GDP growth rates. Average annual growth between 1990 and 2008 was 7.4%. Other than the early 1990s, the only times that growth fell below 7% were in the aftermath of the Asian financial crisis and during the current crisis (see Figure 1).5 Other aspects of the strong performance in the last two decades include high rates of investment and export growth, rapid reduction of poverty and, until 2007, a low rate of inflation.

Figure 1

Clearly the change of economic model can be considered a major success. One component of the new model was foreign finance, which flowed rapidly into the country. Vietnam received many types of foreign financial flows, with the composition changing over time. ODA began to arrive in large volume in the early 1990s, and FDI picked up in the same period. Later these two types of flows were supplemented by remittances (Table 5). In the cases of both ODA and FDI, commitment of funds has substantially exceeded the amounts actually invested. Estimates by the Ministry of Planning and Investment for 2005, for example, suggest that only about half of the commitments are fulfilled in the same year – although of course further amounts may arrive in succeeding years.6 To arrive at the net figures shown in Table 5, repayments and capital withdrawals must be subtracted, but until now these have not been large. Other types of flows – which were quite unstable and thus did not make a significant contribution to development – included bank loans and equity investment in the local stock market.

[5] The decline following the current crisis was only partially due to the international context. Vietnam also suffered from the overheating of its economy and consequent macroeconomic problems; see Riedel (2009).

[6] Data on the ODA disbursement ratio comes from Hang (2007); for FDI, information is from Ahn and Thang (2007).

Table 5

Table 5. Financial Flows to Vietnam, 1996-2008 (millions of dollars and as share of GDP)

Year	Net ODA	Net FDI	Remittances	Flows/GDP (1)	Flows/GDP (2)
1996	936	2395	NA	13.5	NA
1997	998	2220	NA	12.0	NA
1998	1177	1671	NA	10.5	NA
1999	1429	1421	NA	9.9	NA
2000	1681	1298	NA	9.6	NA
2001	1423	1300	2000	8.3	14.5
2002	1280	1400	2714	7.6	15.4
2003	1772	1450	2700	8.3	15.2
2004	1846	1610	3200	7.6	14.7
2005	1913	1889	4000	7.2	14.8
2006	1845	2315	4800	7.0	15.0
2007	2511	6516	5500	13.1	21.2
2008	2552	9279	7200	13.1	21.0

Source: World Bank, World Development Indicators, online.

(1) Net ODA plus net FDI as share of GDP.

(2) Net ODA plus net FDI plus remittances as share of GDP.

As can be seen from the last two columns in Table 5, net ODA and FDI alone reached very high proportions of GDP in the mid-1990s. Even at the lowest point in 2006, they accounted for 7% of gross domestic product. The acceleration in 2007-08 is seen by many experts as a major source of the overheating of the economy. When remittances are added in, the share is extraordinary, varying between a low of 15% and a high of 21%. It should be noted that these inflows do not imply a current account deficit of this order of magnitude, since remittances and part of the ODA flows are components of the current rather than the capital account. Nonetheless, such large inflows can create inflationary pressures as indeed happened in 2007.

Who was providing these resources? In particular, we are interested in the role of East Asian donors and investors. Beginning with ODA, the first panel of Table 6 shows commitments from the ten largest donors in 2008. The single largest donor in terms of commitments was the International Development Association (IDA), the concessional arm of the World Bank (27%). The next three in rank order were Japan (26%), the AsDF (12%), and Korea (6%). Together the three Asian donors committed 48% of the total. The next five were European donors, followed by the United States; the western group accounted for 29% of commitments.

Table 6

Table 6. Largest ODA Donors to Vietnam, 2008 (percent)

Panel A. Commitments		Panel B. Gross Disbursements	
Donor	Share	Donor	Share
IDA	29.3	Japan	27.9
Japan	28.5	IDA	25.2
AsDF	12.8	AsDF	9.2
Korea	6.6	France	7.0
United Kingdom	5.2	United Kingdom	4.5
Germany	4.0	Germany	4.2
France	2.7	Australia	2.8
Denmark	2.5	Denmark	2.4
European Union	2.5	European Union	2.4
United States	2.3	United States	2.3
Total	96.4	Total	87.9

Source: OECD/DAC Online Statistics (Creditor Reporting System).

The second panel of the table shows gross disbursements of ODA in 2008. The ordering is similar. Japan is the largest donor by this measure, followed by the IDA, the AsDF, and five European donors. This time, however, Korea comes in as eleventh largest donor. The difference, as we saw earlier, owes to the rapid increase in Korean ODA such that its commitments rank it much higher than its disbursements. The Asian total of gross disbursements was 39%.

The data available on country origin of net FDI flows are for the cumulative total of the 1988-2006 period. They show that the Asian share was even higher than for ODA. Table 7 indicates that the top five home economies for FDI to Vietnam were all from Asia. In rank order, they are Chinese Taipei, Singapore, Korea, Japan, and Hong Kong, China which taken together provided 57% of Vietnam's FDI. The second tier includes the British Virgin Islands, the Netherlands, France, the United States, and Malaysia. Both the British Virgin Islands and (to a lesser extent) Hong Kong, China are not the "real" origin of the investments; rather they are locations that investors use for tax purposes or to disguise their true origin. We could also think of Hong Kong, China as an indicator of investment from China.

Table 7

Table 7. Largest Foreign Investors (FDI) in Vietnam, 1988-2006

Country	No of Projects	Share	Registered Capital[a]	Share
Taiwan	1550	22.8	3577	13.5
Japan	735	10.8	3277	12.4
Korea	1263	18.5	3229	12.2
Singapore	452	6.6	2982	11.3
Hong Kong	375	5.5	1953	7.4
Netherlands	74	1.1	1373	5.2
France	178	2.6	1340	5.1
United States	306	4.5	1151	4.3
British Virgin Islands	275	4.0	1134	4.3
Malaysia	200	2.9	763	2.9
Total	5408	79.3	20779	78.6

Source: Han (2007: 11).

[a] Millions of dollars.

A final important set of data involves the sectoral distribution of ODA and FDI. Here we see a more extreme version of the patterns found in the previous section of the paper. As seen in Table 8, the western donors, both bilateral and multilateral, put a strong emphasis on social sector funds. Excluding Asian donors, 45% of total ODA to Vietnam goes to the social sector. Economic infrastructure and production together account for 35%, and other sectors (including environmental projects, humanitarian assistance, debt relief, and budget support) represent 20%. For the three Asian donors, by contrast, the weighted average of social sector donations is 20%, economic infrastructure and production are 72%, and other sectors are 8%. This difference is highly significant and, we will argue later, is a good indicator that a different development model is being promoted in Vietnam by the Asian donors.

Table 8

Table 8. Sectoral Distribution of ODA to Vietnam, 2008 (percent)

Sector	Japan	Korea	AsDF	Other Donors[a]
Social	16.6	30.4	26.0	44.8
Economic	65.0	64.7	74.0	24.9
Production	6.9	1.7	0.0	10.4
Other	11.6	3.2	0.0	20.0
Total	100.0	100.0	100.0	100.0

Source: OECD/DAC Online Statistics (Creditor Reporting System).

[a] All donors, bilateral and multilateral, except Japan, Korea, and AsDF.

Vietnam has many ODA donors, and a lively debate has been going on about the best use of ODA funds. The chief protagonists are the World Bank and the "like-minded donor group" (Australia, Canada, and eight European donors) versus the East Asian donors. This does not imply that there is no cooperation between the two groups. A cooperative venture, for example, is the "six bank group" that includes the Japanese and Korean Eximbanks, together with the World Bank, ADB, France's Agence Française de Developpment, and Germany's Kreditanstalt für Wiederaufbau. Moreover Japan is participating with the World Bank and the western group in providing budget support to the Vietnamese government. Nonetheless significant differences do remain (interviews).

The Asian approach to ODA draws heavily on its own very successful economic history. All three Asian bilateral donors – Japan, Korea, and China – have exceptional trajectories of growth and development in the postwar period despite the different timing. The ADB is heavily influenced by these same Asian members and thus embodies similar views. Not surprisingly, the Asian donors want to recommend the policies that proved beneficial for them. This is especially the case for recipient countries in the same region, which they are eager to incorporate into regional economic networks. The construction of economic infrastructure and production facilities are part of this effort. The view is that poverty reduction will follow from high growth and industrialization, a sequence that is considered preferable to concentrating on poverty reduction per se as the western donors are prone to do.

Japan has taken the lead in Vietnam as the largest bilateral donor and the largest Asian contributor to the ADB. Vietnam is Japan's sixth largest ODA recipient, representing 5% of Japanese ODA (OECD/DAC online). One of the leading policy intellectuals in Japan has tried to explain the Japanese

approach. She defines East Asian development as driven by trade and investment, as a collective phenomenon, as catching up (rather than poverty reduction), and as participation in regional and global production networks (Ohno 2002). Stressing the need for policies designed to fit individual country needs, she says that Japan's efforts are directed toward concrete goals with particular emphasis on increasing industrial capacity and building on countries‟ comparative advantages (Ohno and Ohno 2008). This approach is reflected in the Vietnam priorities of Japan's newly merged aid agencies (now called Japan International Development Agency or JICA). Of the approximately $1 billion of JICA‟s annual commitments, 35% was designated for the social sector and 60% for economic infrastructure and production facilities. The remaining 5% was for other activities (OECD/DAC on line).7 While project formulation used to be done by Japanese companies, JICA is now in charge but tries to coordinate with the private sector (interviews).

Korea is increasingly interested in Vietnam as seen by the rapid growth in its ODA commitments. Vietnam is currently Korea's largest ODA recipient and receives 7% of its total ODA (OECD/DAC online). Korea's private sector is a major source of FDI, and there is a close relationship between ODA and private sector finance. In comparison with Japan, Korea is much more open about its aim of transmitting lessons from its own development experience. Korean officials in Hanoi say that the Vietnamese government sees their country as a model and has requested that Korea provide information on its experience to the World Bank Consultative Group (interviews). As mentioned earlier, an important part of Korea's ODA apparatus is the Knowledge Sharing Program (KSP), which focuses on transmitting the Korean model. The first KSP project was in Vietnam in 2004; it focused on finance for export promotion (TH Lee 2008). With respect to 2008 ODA commitments, 57% was for economic infrastructure and production, while 43% was for social sectors. Within the latter category, most of the money was designated for construction of education and health facilities (OCED/DAC online and interviews).

China's relations with Vietnam are colored by a difficult history. The most recent conflict was the Chinese invasion in 1979; relations between the two countries were not restored until 1991. Like Chinese aid in general, no systematic quantitative data are available for Vietnam. A recent project comparing Japanese and Chinese aid to Mekong River Basin countries provides some scattered information on the topic (Kagami 2009). In general, funds began to flow in the late 1990s and focused on upgrading Vietnamese factories that had been financed by China in the 1970s. Later projects seem to have centered on electricity generation, transport, and telecommunications. In these and other projects, however, it is virtually impossible to determine the interface between grants, concessional and non-concessional loans, trade credits, and foreign direct investment, but all sources of finance focus on production facilities and economic infrastructure. Two Vietnamese researchers in the Mekong project (Van and Sam 2009) also indicate that – as has been discussed extensively with respect to Africa – Chinese activities in Vietnam have often been geared to stimulate Chinese exports and to provide access to natural resources.

Finally the ADB and the AsDF have also been active in Vietnam. Vietnam is the third largest recipient of AsDF funds (11% of the total); it also receives commercial rate loans from the bank. The ADB is dominated by its regional members who collectively have 67.6% of voting rights. The largest shareholders are jointly Japan and the United States, but the bank's president is traditionally a Japanese national. China has the fourth largest voting share and Korea the eighth largest.8 While it does not follow obviously from the bank's power structure, the ADB‟s loan and grant pattern in the Vietnamese case is very similar to the other three Asian donors. Economic infrastructure represented 74% of commitments in 2008 and social infrastructure only 26%. In addition to its lending activities, the ADB explicitly promotes regional integration. A recent publication (ADB 2008) outlines five priority activities: integrating production, integrating financial markets, managing macroeconomic interdependence, making growth inclusive and sustainable, and creating an architecture for cooperation. Vietnam is central to this vision of a more integrated Asia.

[7] JICA officials in Hanoi provided a somewhat different breakdown. According to their estimates, some 40% is for transport, 40% for energy generation, and 20% for other activities (including waste management, telecommunications, and some social sector projects).

[8] Other shareholders in the top ten are Pakistan (#3), India (#5), Australia (#6), Indonesia (#7), Canada (#9), and Germany (#10).

While these four donors have significant influence in Vietnam, it should not be assumed that they are "imposing" a development model from the outside. The Vietnamese government has a clear vision of its goals as reflected in the five-year plans. It also convenes meetings to coordinate donors and is known as a tough negotiator that frequently proposes projects to the donors. Of course it is hard to get a clear understanding of donor-recipient relations. In this case, it is even more difficult since there appears to be a substantial overlap between the preferences of the Asian donors and Vietnamese officials. Both emphasize economic development, perhaps at the cost of short-term social goals. Governance, as defined by the World Bank and western donors, is a lower priority for donors and recipient alike (interviews).

Conclusions

The aim of this paper is to investigate the role of ODA in fostering regional integration in East Asia. More specifically, it tests three hypotheses: ODA is important in incorporating new countries into regional networks; ODA is used to export the East Asian development model to new countries; but ODA donors have other priorities that may partially offset regional goals. These hypotheses have been supported by the evidence presented in the paper.

With respect to the quantitative section, we found the following: (1) East Asian ODA goes preferentially to East Asian recipients. A weighted average of the gross disbursements of the three East Asian donors for which we have information indicates that 30% goes to East Asian recipients, while other donors provide only 6% to East Asia. For commitments, the East Asian share is nearly 40%. (2) The sectoral distribution of East Asian ODA also differs substantially from that of other donors. The former emphasizes production and economic infrastructure over social sectors. A weighted average of the three East Asian donors‟ gross disbursements of ODA shows that 70% goes to economic sectors, 20% for social sectors, and 8% to others. For other donors, the numbers are 35%, 45%, and 20%, respectively. (3) The sectoral distribution reflects the East Asian development pattern, which emphasizes economic growth with the idea that social development will follow. More generally, there is interest in exporting the Asian development model to neighboring countries. Korea is the most explicit about this aim. (4) Not all ODA goes to East Asia; indeed, the majority goes to other regions. This responds to other goals and responsibilities in the world. Japan is a world power that must meet expectations with respect to many regions and many priorities. Korea is just getting started as a member of the donors‟ club, and it wants to show that it meets international norms and standards. The AsDF and the ADB specifically target their resources to Asian members and so are freer to reflect Asian priorities. Nonetheless, they have important non-Asian members who represent other development priorities. In the case of China, about which we have very little information, the search for natural resources has given its aid an especially large role in Sub-Saharan Africa.

Vietnam reflects these general patterns and displays them in more specific terms:

(1) There is a very explicit emphasis on economic growth and industrialization in Vietnam among East Asian DAC members; the goal is catch-up with the rest of the region. China‟s activities also reflect these priorities according to the scanty information we have on China and Vietnam. (2) The situation in Vietnam suggests some degree of conflict over ODA approaches between East Asia and the "like-minded group" of European donors and the World Bank. The former stresses economic development in the short to medium term, while the latter is more concerned about immediate poverty reduction. (3) Vietnam provides clear evidence of the intertwining of public and private finance. ODA agencies from Japan and Korea are concerned to complement and support the private sector in their home countries. Moreover ODA, FDI, and export credits are all seen as part of a package that together can lead to development. This was the experience of the wealthier countries of East Asia, and they assume it will be effective for their poorer neighbors too.

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Non-conventional Provisions in Regional Trade Agreements: Do They Enhance International Trade?

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Abstract:
The scope of recent regional trade agreements (RTAs) is becoming much wider in terms of including several provisions such as competition policy or intellectual property. This paper empirically examines how far advanced, non-conventional provisions in RTAs increase trade values among RTA member countries, by estimating the gravity equation with more disaggregated indicators for RTAs. As a result, we find that the provision on competition policy has the largest impacts on trade values, following that on government procurement. Our further analysis reveals that the more significant roles of these two provisions can be also observed in the impacts on the intensive and extensive margins.

Keywords: Gravity; RTA; Extensive and intensive margins
JEL Classification: F15; F20; F53

Introduction

The coverage and depth of preferential treatment varies from one regional trade agreement (RTA) to another. Modern RTAs, and not exclusively those linking the most developed economies, tend to go far beyond tariff-cutting exercises. They provide for increasingly complex regulations governing intra-trade (e.g. with respect to standards, safeguard provisions, customs administration, etc.) and they often also provide for a preferential regulatory framework for mutual services trade. The most sophisticated RTAs go beyond traditional trade policy mechanisms, to include regional rules on investment, competition, environment and labour.

The scope of recent RTAs is becoming much wider. RTAs had been traditionally taken as a means to mainly reduce tariff rates. While their elimination is still the major purpose of RTAs, recently-concluded RTAs include various provisions on mobility of persons, government procurement, competition policy, intellectual property, E-commerce, dispute settlement, labor standards, environmental policy, technical cooperation, institutional mechanism, and so on. The coverage and depth of these provisions go beyond those in the WTO agreements such as the Government Procurement Agreement (GPA) or the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). For example, with the provision on government procurement, RTAs can lead to lower trade barriers in government procurement in developing (and some developed) countries that did not sign the GPA. Also, the provision on government procurement in RTAs can require lower monetary thresholds for contracts than the case of GPA. In turn, such “extended RTAs” not only reduce tariff rates but also enhance the cooperation and linkage in various economic fields among member countries.

In this paper, we empirically examine how far advanced, non-conventional provisions in RTAs increase trade values among RTA member countries. There are significant varieties among RTAs on which provision the RTA includes. For example, ASEAN-China Free Trade Area, South Asian Free Trade Area agreement, Australia-Chile Free Trade agreement, and Economic Cooperation Organization Trade Agreement do not include a provision on government procurement, that of intellectual property, that of competition policy, and that of dispute settlement, respectively. In contrast, North American Free Trade Agreement (NAFTA) incorporates all of these four provisions. As a result, if the existence of each provision has significant trade creation effects, such differences in RTAs’ scope can lead to heterogeneous impacts on trade among RTAs, even though the magnitude of tariff reduction is identical among RTAs. In short, our

analysis will contribute to detecting heterogeneous impacts of RTAs as well as to clarifying which provision matters in terms of the magnitude of trade creation effects. The results from our analysis can be useful in designing an RTA that would maximize the trade creation effects.

In order to assess such heterogeneous impacts of RTAs, we estimate the well-known gravity equation. In the literature of RTA evaluation, several studies have estimated the gravity equation with RTA dummy variables (e.g. Baier and Bergstrand, 2007; Caporale et al., 2009; Medvedev, 2010; Vicard, 2009). The typical dummy variable is the one taking unity if trading countries belong to the same RTA and zero otherwise. We decompose this simple one-zero RTA dummy into five variables. Among these five variables, one is applied bilateral tariff rates in order to capture the primary trade creation effects, i.e. the effects of tariff reduction. The rest of the variables are dummy variables indicating the existence of various non-conventional provisions in RTAs, namely government procurement, competition policy, intellectual property, and dispute settlement. For example, the government procurement dummy takes unity if the concerned RTA includes the provision on government procurement and zero otherwise. Other dummy variables are similarly defined. These four provisions are chosen because of the relative ease in identifying them in the agreements.9 We investigate whether the coefficient for each of those variables in the gravity equation is estimated to be significantly positive or not.

Our decomposition of trade creation effects of RTAs contributes to the above-mentioned literature of RTA evaluation by gravity equations. In particular, our paper may be closest to Vicard (2009). He decomposes the simple one-zero RTA dummy variable according to the form/type of RTA, i.e., into four dummy variables of preferential arrangements, free trade agreements, customs unions and common markets. The assumption underlying in his analysis is that the coverage of RTAs is different among RTA types. For example, the preferential arrangement is expected to have the least coverage. Contrary to this expectation, his finding is that the magnitude of trade creation effects is not significantly different among those RTA types. Against his paper, as mentioned above, we decompose the simple RTA dummy according to specific functions of RTA. In other words, this paper explicitly measures the depth of RTAs by identifying several functions of RTA individually and examines the relationship between each function and its trade creation effects. Such an analysis will be a more direct and appropriate analysis on the relationship between the depth of RTAs and their trade creation effects.

In this paper, we also examine trade creation effects in more detail, by differentiating them into so-called “intensive margin” and “extensive margin”. Recently, the literature has investigated changes in trade values by decomposing those into changes in the number of varieties traded (extensive margin) and changes in trade values per variety (intensive margin). Some studies point to the importance of the extensive margin while others, the intensive margin. So far, the existing literature has produced mixed results. For example, Felbermayr and Kohler (2006) find that from 1950 to 1997, 40% of world trade growth came from extensive margin. Also, Debaere and Mostashari (2010) examine the changes in the impact of tariff reduction on extensive margin and find small effects of tariff reductions on extensive margin, relative to the overall growth in international trade. On the other hand, Liu (2009) finds that GATT/WTO has promoted trade in not only extensive margin but also intensive margin. In order to reach some conclusions, we need to further examine closely the changes of intensive and extensive margins.

Also in our context, it is important to examine the impacts of the above-mentioned provisions in RTAs on the extensive and intensive margins. To our best knowledge, few papers have investigated the impacts of RTAs on those margins. In particular, no studies have explored the impacts of the provisions in RTAs on those margins. In contrast, it is invaluable for policymakers to know whether RTAs increase more greatly the intensive margin or the extensive margin. If the trade creation effects are mainly realized through intensive margin, then the political support for RTAs will be limited to firms and industries that are already trading. Contrary to this case, if those effects come mainly from extensive margin, then the political support can be broader to include those firms and industries that are currently not exporting but potentially can.

[9] The existence of non-conventional provisions such as investment chapter is not examined in this paper because the depth of those provisions varies wildly among RTAs.

As a result, if each provision on RTAs affects intensive margin and extensive margin differently, it may be possible to design RTAs so as to not only maximize the increase of trade values but also broaden the political support for the conclusion of RTAs. In short, our analysis can potentially derive an important implication from the political point of view.

The rest of this paper is organized as follows. The next section takes an overview of RTAs according to their coverage of provisions. Section 3 specifies our empirical framework to examine the impacts of those provisions on trade values, i.e. gravity equations. Their estimation results are reported in Section 4. We also examine the impacts of those provisions on the intensive and extensive margins separately. Lastly, Section 5 concludes.

Heterogeneous Regional Trade Agreements

Each RTA includes many provisions in different combinations. For example, as listed in Table 1, NAFTA has 22 chapters. In this paper, we focus on the role of four kinds of provisions in RTAs because those are relatively easy to be identified in the agreements; government procurement, intellectual property, competition policy, and dispute settlement. Taking the case of NAFTA as an example, we first take a brief look at the content of each provision.

Table 1. Table of Contents in NAFTA

PART ONE: GENERAL PART	
Chapter One	Objectives
Chapter Two	General Definitions
PART TWO: TRADE IN GOODS	
Chapter Three	National Treatment and Market Access for Goods
Chapter Four	Rules of Origin
Chapter Five	Customs Procedures
Chapter Six	Energy and Basic Petrochemicals
Chapter Seven	Agriculture and Sanitary and Phytosanitary Measures
Chapter Eight	Emergency Action
PART THREE: TECHNICAL BARRIERS TO TRADE	
Chapter Nine	Standards-Related Measures
PART FOUR: GOVERNMENT PROCUREMENT	
Chapter Ten	Government Procurement
PART FIVE: INVESTMENT, SERVICES AND RELATED MATTERS	
Chapter Eleven	Investment
Chapter Twelve	Cross-Border Trade in Services
Chapter Thirteen	Telecommunications
Chapter Fourteen	Financial Services
Chapter Fifteen	Competition Policy, Monopolies and State Enterprises
Chapter Sixteen	Temporary Entry for Business Persons
PART SIX: INTELLECTUAL PROPERTY	
Chapter Seventeen	Intellectual Property
PART SEVEN: ADMINISTRATIVE AND INSTITUTIONAL PROVISIONS	
Chapter Eighteen	Publication, Notification and Administration of Laws
Chapter Nineteen	Review and Dispute Settlement in Antidumping/Countervailing Duty Matters
Chapter Twenty	Institutional Arrangements and Dispute Settlement Procedures
PART EIGHT: OTHER PROVISIONS	
Chapter Twenty-One	Exceptions
Chapter Twenty-Two	Final Provisions
ANNEXES	

The provision on government procurement lowers trade barriers in government procurement through better transparency in awarding contracts, information access, market access, and national treatment. The monetary thresholds for contracts are also often lowered to make public procurement a more contestable market. In the case of NAFTA, Chapter 10 establishes the clause on government procurement. It requires each country to accord national treatment and non-discrimination in its procuring goods and services including construction services to federal government entities, government enterprises, and state and provincial government entities in other member countries. Such entities are explicitly set out in Annexes of the agreement. Also, the value of the awarded contract for those goods and services must be equal to or greater than a certain threshold, which is calculated and adjusted according to the U.S. inflation rate. This chapter is also important in the sense that Mexico, which does not sign the GPA, accords. As a result, the provision on government procurement gives foreign firms the access to government procurement market, which typically accounts for more than ten percent of GDP, resulting in increasing trade among member countries in this economically important and often highly protected market.

The provision on intellectual property includes the implementation of high protection of intellectual property required, or an agreement to forgo transition periods and privileges that developing countries and countries in economic transition negotiated during and after the Uruguay Round of GATT. In the case of NAFTA, Chapter 17 establishes intellectual property. Article 1701 prescribes that each country shall provide in its territory to the nationals of other member countries, adequate and effective protection and enforcement of intellectual property rights. Furthermore, it requires member countries to give effect to the provisions of several conventions such as the Paris Convention for the Protection of Industrial Property. This chapter also includes the protection of encrypted program carrying satellite signals, which is not included in TRIPS. As a result, the provision on intellectual property plays a role of strengthening its protection beyond that required by the WTO TRIPS Agreement and thus plays a role of increasing trade particularly of goods incorporating high technology among member countries.

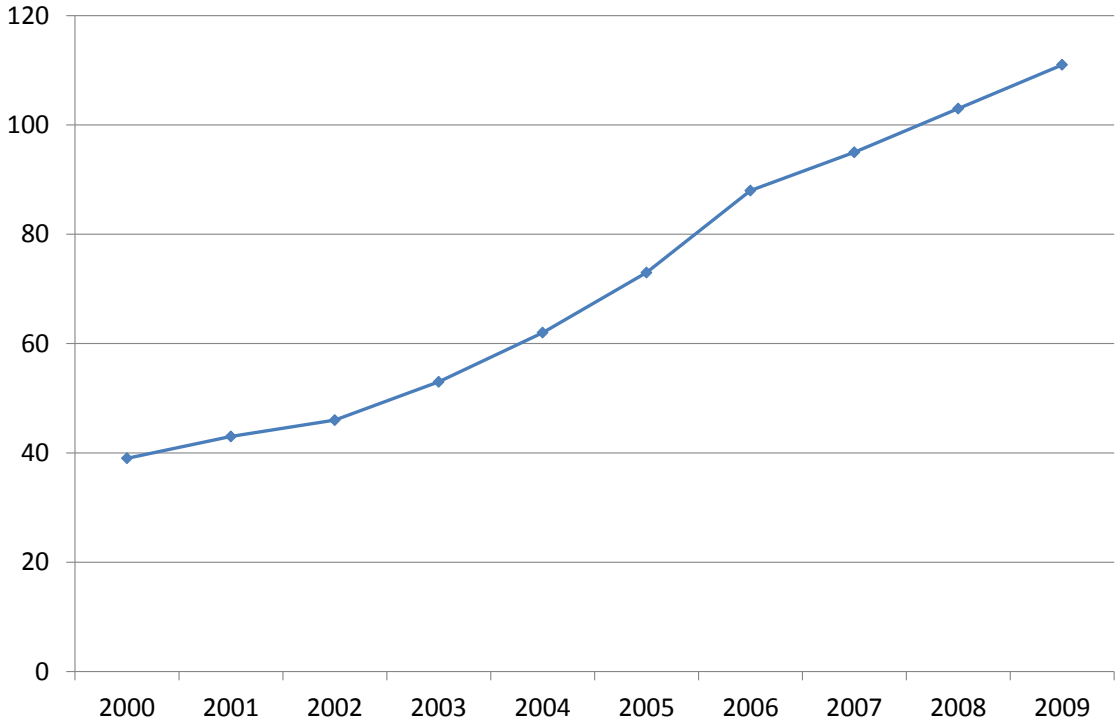
The competition policy chapter contains commitments to ensure that anticompetitive business practices are proscribed, monopolies do not abuse their powers, there are avenues for complaints of unfair practices to be initiated, and the relevant authorities commit to cooperate and consult one another to facilitate enforcement. Chapter 15 in NAFTA establishes competition policy. It requires member countries to adopt or maintain measures to proscribe anticompetitive business conducts and to take appropriate actions with respect thereto (Article 1501). FTA members are to consult and cooperate on the effectiveness of their national competition laws and to cooperate on the enforcement of those laws via mutual legal assistance, notification, consultation, and the exchange of information. In turn, the provision on competition policy contributes to minimizing the distortion of trade creation effects through the existence of anticompetitive policy.

The provision on dispute settlement requires consultations, makes available good offices, mediation, and conciliation, and provides for some form of arbitration if consultations are unsuccessful.10 In the case of NAFTA, Chapter 20 establishes dispute settlement. NAFTA members are required to try to resolve Chapter 20 disputes through government-to-government consultations. If consultations are unsuccessful, the countries may request a meeting of the NAFTA Free Trade Commission (comprising of the trade ministers of the member countries). If the commission cannot resolve the dispute, a country may call for an establishment of a five-member arbitral panel, which is entitled to seek assistance from scientific experts. NAFTA permits countries to choose whether to resolve trade disputes through arbitration within NAFTA or before the WTO. As a result, with the provision on dispute settlement, firms' risk of causing diplomatic embarrassment becomes low, and thus firms do not need to become atrophic in expanding their trade.

[10] For more details, see Asian Development Bank (2008).

Next, we take a look over these provisions not only in NAFTA but also in other RTAs. To do that, we employ the Asia - Pacific Trade and Investment Agreements Database provided by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). This database provides detailed descriptive and updated information on the provision of RTAs applicable to the ESCAP region. The latest available version of the database covers all the agreements reported to the WTO in which at least one party is in the ESCAP region. It also includes other agreements that have not been notified but for which there is official information readily available. For some RTAs, we also incorporate the data from the Free Trade Agreement Database for Asia provided by the Asia Regional Integration Center, the Asian Development Bank. As a result, we can examine 111 RTAs in the ESCAP region, which entered into force by 2009 (see Appendix A). Figure 1 depicts the change of the number of RTAs in the ESCAP region, showing the dramatic rise from around 40 in 2000 to above 100 in 2009.

Figure 1. Number of RTAs in ESCAP Region



Source: Asia - Pacific Trade and Investment Agreements Database (UN ESCAP).

Table 2 shows the existence of each provision in our sample of RTAs. In the upper area of this table, we can see that all RTAs do not necessarily include all of the four provisions of our interests. While more than a half of the sample RTAs includes the provision on dispute settlement, the provisions on government procurement, competition policy, and intellectual property are less likely to be included (less than 50%). This may indicate that dispute settlement mechanism is perceived to be more essential in maximizing the trade creation effects of RTAs. Moreover, only 36% of RTAs include the government procurement provision. Given the fact that the government procurement issue was removed from the Doha agenda in 2004, its inclusion may be relatively difficult also in the negotiation for concluding RTAs.

Table 2. Existence of Provisions in Sample RTAs

Government Procurement	Competition Policy	Intellectual Property	Dispute Settlement	Number	Percent
YES				40	36
	YES			46	42
		YES		53	48
			YES	67	60
YES	YES	YES	YES	27	24
YES	YES	YES	NO	4	4
YES	YES	NO	YES	4	4
YES	NO	YES	YES	3	3
NO	YES	YES	YES	2	2
YES	YES	NO	NO	0	0
YES	NO	YES	NO	1	1
YES	NO	NO	YES	1	1
NO	YES	YES	NO	3	3
NO	YES	NO	YES	5	5
NO	NO	YES	YES	8	7
NO	NO	NO	YES	17	15
NO	NO	YES	NO	5	5
NO	YES	NO	NO	1	1
YES	NO	NO	NO	0	0
NO	NO	NO	NO	30	27

Source: Asia - Pacific Trade and Investment Agreements Database (UN ESCAP)

The lower area of the table lists more detailed descriptions on the provisions. From this area, we can see that a half of RTAs are either those with all provisions (24%) or those without any provisions (27%). That is, there are still a significant number of RTAs that do not have any provisions. The rest of RTAs are widely different in terms of the coverage of provisions. The case with the relatively large share is the RTAs with only the provision on dispute settlement (15%). Thus, again we may say that dispute settlement mechanism is a relatively essential provision in RTAs. In addition, we can see that there are no RTAs that include only the provision on government procurement. This may also again indicate its difficulty in including this particular provision in RTAs. In other words, RTAs with the provision on government procurement are likely to include the other provisions. This wide variety of RTAs in terms of the depth and coverage has been the missing factor in the literature, leading to mixed results. By differentiating these provisions, our aim is to estimate the trade creation effects more precisely and to identify which provisions are more effective.

Empirical Framework

In this section, we first provide our empirical specification to examine the heterogeneous impacts of RTAs. After briefly introducing the traditional gravity equation, we present our extended gravity equation. Then we also discuss some empirical issues on the estimation of gravity equation for RTA evaluation, in addition to presenting our data sources.

Gravity Equation

In international economics, it is well known that a gravity equation is one of the most successful tools for quantitatively analyzing bilateral merchandise trade patterns. The gravity equation in international trade is formalized as follows:

$$\ln T_{ij} = \beta_0 + \mathbf{X}_i \boldsymbol{\beta}_1 + \mathbf{X}_j \boldsymbol{\beta}_2 + \mathbf{t}_{ij} \boldsymbol{\beta}_3 + \varepsilon_{ij}.$$

where T_{ij} represents bilateral goods exports of country i to country j. $\mathbf{X}_i$ and $\mathbf{X}_j$ are a vector of exporter-specific elements and a vector of importer-specific elements, respectively. $\mathbf{t}_{ij}$ is a vector of pair-specific elements. ε is a disturbance term. The traditional gravity equation has logs of importer's and exporter's GDPs as an importer-specific element and an exporter-specific

element, respectively, and a log of distance between trading partners as a pair-specific element. Its estimation result always presents us with an excellent empirical fit. Relying on such properties, a large number of scholars have employed the gravity equation for the investigation of bilateral trade.

The recent issue in the gravity equation is the control for so-called "multilateral resistance terms". Under the usual assumptions in horizontal differentiation models based on the CES utility function, Anderson and van Wincoop (2003) derive the gravity equation including exporter's and importer's price indices, which are called "multilateral resistance" terms. As is known as an omitted-variable bias, the exclusion of the multilateral resistance terms from the gravity equation makes its OLS estimates biased. The most common way of controlling those terms, which is proposed by Feenstra (2002), is the inclusion of importer and exporter fixed effects (u_i and u_j) into the gravity equation as the following:

$$\ln T_{ij} = \mathbf{t}_{ij}\boldsymbol{\beta}_3 + u_i + u_j + \varepsilon_{ij}.$$

Their inclusion forces us to drop exporter-specific elements and importer-specific elements due to the perfect multicolinearity.

In the literature, several variables are introduced as pair-specific elements. In addition to the geographical distance, three dummy variables are commonly introduced:

$$\ln T_{ij} = \beta_1 \ln \text{Distance}_{ij} + \beta_2 \text{Contingency}_{ij} + \beta_3 \text{Language}_{ij} + \beta_4 \text{Colony}_{ij} + \beta_5 \text{RTA}_{ij} + u_i + u_j + \varepsilon_{ij}.$$

Contingency takes unity if two countries share the national border and zero otherwise. Language is a dummy variable taking unity if a common language is spoken by at least 9% of the population in both countries and zero otherwise. Colony is a binary variable indicating whether the two countries have had a colonial relationship. For the evaluation of RTAs, the simple RTA dummy is often included, which takes unity if two countries are the members of the same RTA and zero otherwise. This equation is also our baseline equation to be estimated.

We decompose this RTA variable into five variables to analyze more precisely the impacts of RTA on trade values. Specifically, our extended gravity equation is given by:

$$\ln T_{ij} = \beta_1 \ln \text{Distance}_{ij} + \beta_2 \text{Contingency}_{ij} + \beta_3 \text{Language}_{ij} + \beta_4 \text{Colony}_{ij} + \beta_6 \ln (1+\text{Tariff}_{ij}) + \beta_7 \text{Government}_{ij} + \beta_8 \text{Competition}_{ij} + \beta_9 \text{Intellectual}_{ij} + \beta_{10} \text{Dispute}_{ij} + u_i + u_j + \varepsilon_{ij}.$$

Tariff_{ij} indicates the applied tariff rates of country *j* on goods from country *i*. This variable captures the main role of RTAs, namely, tariff reduction. Government, Competition, Intellectual, and Dispute are dummy variables taking unity if two countries conclude on an RTA which includes the provisions on government procurement, competition policy, intellectual property, and dispute settlement, respectively. Unless two countries share the same RTA, these variables are set equal to zero. By estimating this equation, we investigate whether or not each provision contributes to boosting bilateral trade in addition to the impacts of tariff reduction.

Empirical Issues

We estimate these equations for manufacturing trade among 73 countries in year 2009, of which list is provided in Appendix B. The data on trade values are obtained from the UN Comtrade. We aggregate the HS1992 6-digit level trade values into the single trade values of manufacturing industry (Sectors 2 to 4 in CPC provisional classification[11]) using the conversion table between CPC provisional classification and HS1992 available in the website of United Nations Statistical Division (UNSD).[12] The source of Distance, Contingency, Language, and Colony is the Centre d'Informations Internationales (CEPII) website. The information on RTAs is derived from the same source as in Section 2.

Our data source for tariff rates for manufacturing trade comes from the World Integrated Trade Solution (WITS)[13], which is now the most powerful software on tariff rates developed by the

[11] Sector 2 is food products, beverages and tobacco; textiles, apparel and leather products; Section 3 is other transportable goods, except metal products, machinery and equipment; Sector 4 Metal products, machinery and equipment.

[12] http://unstats.un.org/unsd/cr/registry/regdnld.asp?Lg=1

[13] http://wits.worldbank.org/WITS/

World Bank, UNCTAD, International Trade Center (ITC), UNSD, and WTO. In addition, some other sources are used for identifying exact tariff schemes for each trading partner.[14] In particular, we need to construct a list of member countries for WTO and each RTA. Also, the GSP beneficiaries are different across importers. The information on WTO and RTA are obtained from the WTO website. We use "The Regional Trade Agreements Information System" for obtaining the member list of RTA.[15] As for the GSP beneficiaries, we used several documents available in the United Nations Conference on Trade and Development (UNCTAD) website[16] in addition to official documents in the website of national customs in each country. We treat non-ad valorem tariff rates simply as missing. Also, for simplicity, we use the lower rates for mix tariff rates, though these treatments underestimate tariff rates to some extent. However, our focus on manufacturing industry obviously decreases the magnitude of these kinds of underestimation because non-ad valorem tariff rates and mix tariff rates are mostly applied in non-manufacturing industries.

We estimate the above gravity equations with the pseudo poisson maximum likelihood (PPML). In the literature, zero-valued trade is also becoming a major issue. As Melitz (2003) suggests, the trade values can be systematically zero. However, taking logarithms drops such observations from the sample because zero trade is undefined in gravity equation. Since there is a systematic reason for zero trade, dropping observations with zero trade leads to our getting rid of potentially useful information and to yielding the sample selection bias. In order to naturally include zero trade in our sample, we employ the PPML estimation technique proposed by Silva and Tenreyro (2006). It enables us to estimate a gravity model which includes zero trades because the dependent variable is not log of trade but the actual trade value. Furthermore, since the independent variables enter in logs, their coefficients can be still interpreted as elasticities.[17]

Last, it is worth noting endogeneity issues on RTA-related variables. In the literature, there is no doubt that one-zero RTA dummy is not an exogenous random variable: countries decide systematically whether they conclude an RTA or not. Furthermore, the elements having influence on international trade between them also affect the decision on the RTA conclusion (see, for example, Baier and Bergstrand, 2004). Hence, one-zero RTA dummy is possibly correlated with the disturbance term. Without accounting for the endogeneity on the RTA dummy, the estimation of gravity equation with the one-zero RTA dummy by OLS results in yielding biases in the estimates. Baier and Bergstrand (2007) examine closely the endogeneity issue in the RTA dummy. As a result, they demonstrate that the most plausible estimates of the RTA impacts on international trade are obtained from the gravity estimation using panel data with bilateral fixed effects.

However, our use of cross-sectional data does not allow us to account for this issue with the similar method as Baier and Bergstrand (2007). There are two reasons why we could not construct the panel data. The first is because our RTA dataset does not include RTAs ineffective before 2010. Ignoring such ineffective RTAs will yield biases on our estimates. The second reason is because we do not know the year in which each provision is included in agreements. Although our database on RTAs includes the year of their entry into force, those provisions are sometimes included into agreements several years after RTAs' entry into force. Again, ignoring the difference in entry year between RTAs and their provisions will give rise to biases on our estimates. In

[14] We assume that all firms use the tariff schemes with the lowest rates though some firms may be forced to use the higher general tariff rates such as MFN rates because it is necessary to incur some kinds of fixed costs for the use of preferential tariff schemes (Demidova and Krishna, 2008).

[15] http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx

[16] http://www.unctad.org/Templates/Page.asp?intItemID=1418&lang=1

[17] Another approach, which is proposed by Helpman, Melitz, and Rubinstein (2008), takes such a systematic sample selection into account (HMR method). This is the extended technique of the Heckman two-step estimation. The first step estimation examines the probability that two countries have positive trade values, and the second step estimation restricts to country pairs with positive trade and then examines its magnitude taking the results of the first step estimation into account. While the PPML assumes that the zero trade does not have anything special in spite of its systematic reason, this HMR method succeeds in accounting for the zero trade issue with taking the selection mechanics of trade into account. We employ the modified version of this HMR method in Section 4.2.

particular, these kinds of biases may be more serious than the endogeneity biases. Nevertheless, we may need to interpret our estimates under the cross-sectional data carefully.

Empirical Results

In this section, we first present our estimation results on gravity equations specified in the previous section. Then, we examine the impacts of each provision in RTAs on the intensive margin and the extensive margin separately.

Gravity Results on RTA Variables

Our baseline result is reported in column (I) in Table 3. This equation includes the typical one-zero RTA dummy variable in most empirical studies. All coefficients have expected signs, though the coefficient for Colony is estimated to be insignificant. The geographical distance between trading partners is negatively correlated with trade values. The linguistic commonality and sharing of the national border encourage active trade between two countries. As is consistent with the findings in the previous studies, we obtain a significantly positive coefficient for the simple RTA dummy variable, indicating the positive trade creation effects. Specifically, RTAs increase bilateral trade by 23% (i.e. $e^{0.206}$-1).

Table 3. PPML Estimation for Gravity Equations

	(I)	(II)	(III)	(IV)	(V)	(VI)
Distance	-0.613***	-0.670***	-0.615***	-0.623***	-0.596***	-0.591***
	[0.042]	[0.047]	[0.043]	[0.043]	[0.044]	[0.045]
Language	0.326***	0.224**	0.207*	0.198*	0.199*	0.252**
	[0.109]	[0.101]	[0.107]	[0.105]	[0.112]	[0.113]
Contingency	0.247*	0.16	0.168	0.153	0.269**	0.268*
	[0.129]	[0.126]	[0.132]	[0.132]	[0.135]	[0.137]
Colony	0.137	0.201*	0.219*	0.216*	0.218	0.184
	[0.134]	[0.111]	[0.120]	[0.119]	[0.133]	[0.129]
RTA	0.206**					
	[0.084]					
Tariff		-2.487**	-2.061**	-1.885**	-2.683**	-2.983**
		[1.056]	[0.924]	[0.866]	[1.192]	[1.275]
Government		-0.229	0.490***			
		[0.169]	[0.103]			
Competition		1.049***		0.553***		
		[0.194]		[0.096]		
Intellectual		-0.187			0.196**	
		[0.138]			[0.089]	
Dispute		-0.241*				0.12
		[0.124]				[0.086]
Number of Observations	2,862	2,840	2,840	2,840	2,840	2,840
R-squared	0.9184	0.9433	0.9337	0.9372	0.9253	0.9242
Pseudo log-likelihood	-4.4E+11	-3.8E+11	-4.1E+11	-4.0E+11	-4.3E+11	-4.3E+11

Notes: ***, **, and * show 1%, 5%, and 10% significance, respectively. In parenthesis is a semi-robust standard error.

We decompose this simple RTA dummy variable into five components. The result is reported in column (II). The results in the variables included in (I) are qualitatively unchanged. The variable of bilateral tariff rates has a significantly negative coefficient, as is consistent with our expectation. The results in four dummy variables on RTAs' provisions are not necessarily consistent with our expectation. The significantly positive coefficient can be found only in the variable for competition policy. The dummy variables for government procurement and intellectual property have insignificant coefficients. Furthermore, the provision on dispute

settlement has significantly negative effects on the trade. However, these results might be due to high correlation among those variables, namely multi-collinearity.

Next, we introduce four variables on RTAs' provisions separately in order to avoid multi-collinearity in a simple way. All of their coefficients are estimated to be positive. The provision on competition policy has the largest impacts on trade values (74%). The similar magnitude of trade creation effects can be found in the dummy variable for government procurement. Its provision increases trade values by 63%. The coefficient for intellectual property provision dummy is also significantly positive, though its magnitude is relatively small (22%). Contrast to these variables, the provision on dispute settlement has an insignificant coefficient. This insignificant result may indicate that (at least except for a limited number of large companies) each company does not care about the risk of causing diplomatic embarrassment.

We further control for one more variable, a WTO membership dummy variable. It takes unity if both of two countries are the member of WTO and zero otherwise. As mentioned before, the depth and coverage of provisions in the recent RTAs go beyond those in the WTO agreements. In order to confirm that these depth and coverage contributes to trade creation in addition to WTO effects, we examine the trade creation effects of each provision, while controlling for the WTO membership. The results are reported in Table 4. As is consistent with our expectation, the coefficients for WTO are estimated to be significantly positive, indicating that the WTO membership also contributes to increasing bilateral trade values (237%-411%). Importantly, the results in the above-introduced RTA dummy variables on provisions are qualitatively unchanged. Thus, our estimation reveals that the deeper provisions in RTAs than those in WTO agreements contribute significantly to trade creation.

Table 4. Robustness Checks: Including WTO Dummy Variable

	(I)	(II)	(III)	(IV)	(V)	(VI)
Distance	-0.619***	-0.679***	-0.623***	-0.631***	-0.604***	-0.601***
	[0.042]	[0.046]	[0.042]	[0.043]	[0.044]	[0.044]
Language	0.304***	0.198**	0.201*	0.191*	0.184*	0.244**
	[0.107]	[0.099]	[0.106]	[0.104]	[0.110]	[0.111]
Contingency	0.230*	0.148	0.15	0.134	0.243*	0.248*
	[0.127]	[0.122]	[0.129]	[0.129]	[0.130]	[0.133]
Colony	0.058	0.145	0.145	0.144	0.14	0.106
	[0.119]	[0.106]	[0.110]	[0.109]	[0.121]	[0.117]
RTA	0.185**					
	[0.082]					
Tariff		-1.971**	-1.590*	-1.408*	-2.015*	-2.467**
		[0.972]	[0.875]	[0.817]	[1.064]	[1.205]
Government		-0.246	0.471***			
		[0.169]	[0.102]			
Competition		1.023***		0.537***		
		[0.195]		[0.095]		
Intellectual		-0.106			0.218**	
		[0.133]			[0.088]	
Dispute		-0.281**				0.108
		[0.122]				[0.084]
WTO	1.632***	1.214***	1.263***	1.244***	1.535***	1.406***
	[0.343]	[0.347]	[0.326]	[0.324]	[0.362]	[0.348]
Number of Observations	2,862	2,840	2,840	2,840	2,840	2,840
R-squared	0.9214	0.9444	0.9350	0.9385	0.9271	0.9259
Pseudo log-likelihood	-4.3E+11	-3.8E+11	-4.0E+11	-3.9E+11	-4.2E+11	-4.2E+11

Notes: ***, **, and * show 1%, 5%, and 10% significance, respectively. In parenthesis is a semi-robust standard error.

Lastly, we also consider the lagged effects of each provision. The previous studies using the simple one-zero RTA dummy variable examine the lagged effects of RTA, based on the fact that the actual implementation of an RTA involves a "phase-in" period, typically over five or ten years. For instance, NAFTA had 10-year phase-in period before its full implementation. The same kind of story could be obviously applied into our case. For example, each provision seems to take some time to work effectively. Its performance may get better through a kind of "learning-by-doing". As a result, the entire effects of each provision on trade values cannot be fully captured in the concurrent year only. Therefore, we include five-year lagged dummy variables of provisions. The results are reported in Table 5. Interestingly, all of the coefficients for provision variables are estimated to be significantly positive. Furthermore, their magnitudes are larger than those in contemporaneous estimation. These results imply that some gestation period may be needed for the fuller effects of each provision on trade to be realized.

Table 5. Robustness Checks: 5-year Lagged Effects of Provision

	(I)	(II)	(III)	(IV)
Distance	-0.613***	-0.613***	-0.564***	-0.569***
	[0.042]	[0.042]	[0.044]	[0.044]
Language	0.214**	0.213**	0.231**	0.311***
	[0.105]	[0.105]	[0.103]	[0.103]
Contingency	0.099	0.094	0.069	0.148
	[0.124]	[0.123]	[0.131]	[0.135]
Colony	0.155	0.156	0.225*	0.121
	[0.107]	[0.107]	[0.121]	[0.116]
Tariff	-1.308	-1.255	-1.859*	-2.447**
	[0.863]	[0.852]	[1.036]	[1.208]
Government	0.607***			
	[0.125]			
Competition		0.627***		
		[0.125]		
Intellectual			0.537***	
			[0.133]	
Dispute				0.278***
				[0.097]
WTO	1.214***	1.214***	1.553***	1.287***
	[0.316]	[0.315]	[0.359]	[0.329]
Number of Observations	2,836	2,836	2,836	2,836
R-squared	0.9335	0.9335	0.9377	0.9311
Pseudo log-likelihood	-4.0E+11	-4.0E+11	-4.1E+11	-4.2E+11

Notes: ***, **, and * show 1%, 5%, and 10% significance, respectively. In parenthesis is a semi-robust standard error. Each dummy variable of provisions is five-year lagged.

Intensive Margin versus Extensive Margin

In the previous analysis, we found that each provision contributes to increasing trade values among member countries. In this section, we examine where such an increase of trade values comes from, the increase in the number of traded variety (extensive margin) or the increase in trade values per variety (intensive margin). Following Flam and Nordstrom (2011), we use the count of traded varieties (HS 6-digit level) as the measure of extensive margin. Total trade values divided by the count of traded varieties are used as the measure of intensive margin.

Flam and Nordstrom (2011) modify the method proposed by Helpman, Melitz, and Rubinstein (2008)[18], which controls for firm level heterogeneity and sample selection on the intensive margin, by further controlling for the pervasive presence of heteroscedasticity in trade data. Their estimation strategy is the following. In the first stage, they estimate the gravity equation for the extensive margin of trade, under the addition of instrumental variables in order not to let the identification of the extensive margin estimates depend solely on the normality assumption for unobserved trade costs. Then, the second stage estimates the gravity equation for the intensive margin of trade, under the introduction of a polynomial in the predicted number of traded varieties from the first stage estimation as a proxy for the fraction of exporting firms (possibly zero). In both stages, they employ the PPML estimation technique in order to further control for the heteroscedasticity in trade data. Also, the use of PPML enables them to include zero trade values per variety in the second stage and thus to take care of the selection biases.[19]

We follow this method proposed by Flam and Nordstrom (2011). We need to carefully choose instrumental variables in the first stage estimation. From the theoretical point of view, those variables should be associated with fixed trade costs such as regulation in trading (Helpman et al., 2008). In light of this, we use the sum of importer's and exporter's fragility indices. The Fragility Index, which is prepared by the Center for Systemic Peace[20], scores each country on both effectiveness and legitimacy in four performance dimensions: security, political, economic, and social. It ranges from 0 ("no fragility") to 25 ("extreme fragility"). A country's fragility is closely associated with its state capacity to manage conflict; make and implement public policy; and deliver essential services and its systemic resilience in maintaining system coherence, cohesion, and quality of life; responding effectively to challenges and crises, and continuing progressive development. Thus, this variable will be well related to fixed trade costs and thus serve as good instruments.

The results for the estimation on extensive margin and intensive margin are reported in Tables 6 and 7, respectively. There are four points to be noteworthy. First, coefficients for the usual gravity variables mostly have expected signs in both extensive and intensive margins. Moreover, as is consistent with the findings in the previous studies, estimates for the extensive margin are uniformly smaller in value than estimates for the intensive margin. Second, the simple RTA dummy has positively significant coefficients in both margins. Thus, the conclusion of RTAs increases both the number of traded varieties (15%) and the trade values per variety (180%), though the latter magnitude may be too high. Third, as is consistent with the finding in Liu (2009), WTO membership increases both margins significantly, though again the impacts on intensive margin are too high. Fourth, as expected, the state fragility in trading pairs, which is used as a proxy for fixed trade costs, significantly decreases the number of traded varieties.

[18] Also see footnote 9.

[19] With this method, Flam and Nordstrom (2011) find that the firm heterogeneity and selection biases are small whereas the heteroscedasticity bias is large.

[20] http://www.systemicpeace.org/inscr/inscr.htm

Table 6. PPML Estimation for Gravity Equations: Extensive Margin

	(I)	(II)	(III)	(IV)	(V)	(VI)
Distance	-0.384***	-0.391***	-0.375***	-0.373***	-0.388***	-0.379***
	[0.029]	[0.032]	[0.031]	[0.031]	[0.033]	[0.031]
Language	0.200***	0.175***	0.162***	0.161***	0.169***	0.175***
	[0.051]	[0.048]	[0.049]	[0.049]	[0.049]	[0.052]
Contingency	0.006	-0.043	-0.032	-0.034	-0.01	-0.018
	[0.099]	[0.097]	[0.096]	[0.095]	[0.096]	[0.098]
Colony	0.305***	0.292***	0.322***	0.314***	0.333***	0.328***
	[0.079]	[0.076]	[0.077]	[0.076]	[0.081]	[0.080]
RTA	0.140***					
	[0.031]					
Tariff		-1.803	-1.508	-1.261	-2.213	-2.124
		[1.345]	[1.262]	[1.215]	[1.525]	[1.401]
Government		-0.115	0.215***			
		[0.114]	[0.051]			
Competition		0.478***		0.268***		
		[0.111]		[0.049]		
Intellectual		-0.168**			0.037	
		[0.079]			[0.054]	
Dispute		-0.008				0.075**
		[0.051]				[0.037]
WTO	0.808***	0.637***	0.716***	0.705***	0.791***	0.752***
	[0.190]	[0.191]	[0.192]	[0.190]	[0.203]	[0.197]
Fragility	-0.061	-0.073*	-0.075**	-0.070*	-0.081**	-0.075*
	[0.038]	[0.038]	[0.038]	[0.037]	[0.038]	[0.039]
Number of Observations	2,862	2,840	2,840	2,840	2,840	2,840
R-squared	0.8724	0.8784	0.8767	0.8781	0.8749	0.8734
Pseudo log-likelihood	-1.3E+05	-1.2E+05	-1.3E+05	-1.3E+05	-1.3E+05	-1.3E+05

Notes: ***, **, and * show 1%, 5%, and 10% significance, respectively. In parenthesis is a semi-robust standard error.

Table 7. PPML Estimation for Gravity Equations: Intensive Margin

	(I)	(II)	(III)	(IV)	(V)	(VI)
Distance	-2.418***	-2.113***	-2.042***	-2.174***	-1.921***	-2.005***
	[0.767]	[0.652]	[0.633]	[0.669]	[0.589]	[0.641]
Language	0.985***	0.607**	0.584**	0.632**	0.502**	0.641**
	[0.369]	[0.280]	[0.267]	[0.278]	[0.254]	[0.285]
Contingency	0.417**	0.191	0.222	0.165	0.275	0.292*
	[0.180]	[0.154]	[0.176]	[0.183]	[0.173]	[0.174]
Colony	1.592**	1.429***	1.422**	1.502**	1.447***	1.402**
	[0.665]	[0.529]	[0.592]	[0.609]	[0.553]	[0.602]
RTA	1.031***					
	[0.289]					
Tariff		-7.854***	-6.545**	-5.894**	-8.535**	-8.893***
		[2.940]	[2.525]	[2.303]	[3.294]	[3.425]
Government		-1.082***	1.156***			
		[0.382]	[0.383]			
Competition		2.694***		1.681***		
		[0.859]		[0.495]		
Intellectual		-0.202			0.656***	
		[0.346]			[0.160]	
Dispute		-0.197				0.452***
		[0.167]				[0.172]
WTO	5.165***	3.752***	4.032***	4.204***	4.114***	4.110***
	[1.747]	[1.266]	[1.459]	[1.490]	[1.439]	[1.511]
Predicted number of varieties	-4.080**	-3.092*	-3.158*	-3.460*	-2.698*	-2.989*
	[1.975]	[1.673]	[1.686]	[1.791]	[1.538]	[1.695]
Square of predicted number	-0.271***	-0.309***	-0.266***	-0.291***	-0.293***	-0.271***
	[0.068]	[0.072]	[0.076]	[0.073]	[0.074]	[0.076]
Cube of predicted numer	0.017***	0.020***	0.017***	0.018***	0.018***	0.017***
	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]
Number of Observations	2,862	2,840	2,840	2,840	2,840	2,840
R-squared	0.8989	0.8992	0.8956	0.8953	0.8998	0.8969
Pseudo log-likelihood	-1.1E+09	-1.1E+09	-1.1E+09	-1.1E+09	-1.1E+09	-1.1E+09

Notes: ***, **, and * show 1%, 5%, and 10% significance, respectively. In parenthesis is a semi-robust standard error.

The results for the decomposed RTA variables are as follows. First, the coefficients for bilateral tariff rates are insignificant in extensive margin but significantly negative in intensive margin. These results may be consistent with the finding in Debaere and Mostashari (2010) that tariff reduction has small impacts on extensive margin. Second, contrary to the results in Tables 14 and 15, the coefficients for dispute settlement are estimated to be significantly positive in both margins, after controlling for the firm heterogeneity (a polynomial in the predicted number of traded varieties). In other words, this result may indicate that omitting firm heterogeneity yields biases in the estimators. Third, the coefficient for intellectual property is estimated to be insignificant in the extensive margin. Thus, the provision on intellectual property encourages existing exporters to export more rather than facilitating entry of new firms into export markets. Last, like in the case of trade values, the provision on competition policy has the largest impacts on both margins, following the provision on government procurement. This seems to make sense. The aim of the competition policy is to ensure that anticompetitive behavior is curbed. This typically encourages entries of new firms, domestic or foreign. Similarly, by having a provision on government procurement, it is facilitating trades in goods that were not realized in the past, since procurement markets were highly protected in the past. By opening up this large protected

market for trade can induce more goods to be traded. Thus, both of these provisions would have positive impacts on extensive and intensive margins.

Relative to intensive margin, our results on extensive margins are relatively smaller. There are two reasons for this. One is that simply there is little scope left for expansion of trade when measured in a number of varieties that are traded among countries because of the past success through WTO and other agreements. If that is the case, then it is critical for RTA to have provisions that would go beyond WTO to open up sectors that were highly protected in the past. A provision on government procurement seems to be one area that is successful in doing so from our analysis. Secondly, our analysis is static. If taken a dynamic view as in Besedes and Prusa (2011), these new entrants/commodities would continuously be benefitted from the RTA (especially given the results on the larger impacts detected from the lagged RTA specification). Thus, having these provisions, especially competition policy and government procurement can slowly but surely broaden and solidify the supports for RTAs for the existing and new exporters.

Concluding Remarks

The scope of recent regional trade agreements (RTAs) is becoming much wider in terms of including several provisions such as competition policy or intellectual property. This paper empirically examines how much each provision in RTAs increases trade values among RTA member countries. In order to do so, we estimate the gravity equation with the PPML estimation technique with more disaggregated indicators for each RTA that is in force. As a result, we find that the provision on competition policy has the largest impacts on expanding trade, following that of government procurement. Our further analysis reveals that the more significant roles of these two provisions can be also observed in the impacts on the intensive and extensive margins. These results suggest that it is important to include the provisions of competition policy and government procurement not only for maximizing trade creation effects of RTAs but also for widening the political support for concluding RTAs.

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Appendix A. List of RTAs in ESCAP Region (111)

ACFTA, AJCEPA, ANZCERTA, APTA, ARMENIA-EU, ARMENIA-KAZAKHSTAN, ARMENIA-MOLDOVA, ARMENIA-RUSSIAN FEDERATION, ARMENIA-TURKMENISTAN, ARMENIA-UKRAINE, ASEAN, AUSTRALIA-CHILE, AUSTRALIA-THAILAND, AUSTRALIA-US, BHUTAN-INDIA, BIMSTEC, CHINA-CHILE, CHINA-HONG KONG, CHINA-MACAO, CHINA-PAKISTAN, CHINA-PAKISTAN-SERVICES, CHINA-SINGAPORE, CHINA-THAILAND, CISFTA, ECOTA, EFTA-KOREA, EFTA-SINGAPORE, EurAsEC, GEORGIA-ARMENIA, GEORGIA-AZERBAIJAN, GEORGIA-KAZAKHSTAN, GEORGIA-RUSSIAN FEDERATION, GEORGIA-TURKEY, GEORGIA-TURKMENISTAN, GEORGIA-UKRAINE, GSTP, GUAM, INDIA-AFGHANISTAN, INDIA-BANGLADESH, INDIA-CHILE, INDIA-GCC, INDIA-MERCOSUR, INDIA-NEPAL, INDIA-SINGAPORE, INDIA-SRI LANKA, INDIA-THAILAND, JAPAN-BRUNEI, JAPAN-CHILE, JAPAN-INDONESIA, JAPAN-MALAYSIA, JAPAN-MEXICO, JAPAN-PHILIPPINES, JAPAN-SINGAPORE, JAPAN-SWITZERLAND, JAPAN-THAILAND, JAPAN-VIET NAM, KAZAKHSTAN-UZBEKISTAN, KOREA-CHILE, KOREA-SINGAPORE, KYRGYZSTAN-ARMENIA, KYRGYZSTAN-KAZAKHSTAN, KYRGYZSTAN-MOLDOVA, KYRGYZSTAN-RUSSIAN FEDERATION, KYRGYZSTAN-UKRAINE, KYRGYZSTAN-UZBEKISTAN, LAO, PDR-THAILAND, MALAYSIA-PAKISTAN, MALAYSIA-UNITED STATES, MOLDOVA-UZBEKISTAN, MSG, NAFTA, NEW ZEALAND-CHINA, NEW ZEALAND-SINGAPORE, NEW ZEALAND-THAILAND, PAKISTAN-IRAN, PAKISTAN-MAURITIUS, PAKISTAN-SRI LANKA, PANAMA-SINGAPORE, PATCRA, PICTA, SAFTA, SINGAPORE-AUSTRALIA, SINGAPORE-JORDAN, SINGAPORE-PERU, SPARTECA, THAILAND-BAHRAIN, TRANS-PACIFIC SEP, TURKEY-ALBANIA, TURKEY-BOSNIA AND HERZEGOVINA, TURKEY-CROATIA, TURKEY-EC, TURKEY-EFTA, TURKEY-EGYPT, TURKEY-FYROM, TURKEY-ISRAEL, TURKEY-MOROCCO, TURKEY-PALESTINE, TURKEY-SYRIA, TURKEY-TUNISIA, UKRAINE-AZERBIJAN, UKRAINE-KAZAKHSTAN, UKRAINE-RUSSIAN FEDERATION, UKRAINE-TAJIKISTAN, UKRAINE-TURKMENISTAN, UKRAINE-UZBEKISTAN, UNITED STATES-AFGHANISTAN, UNITED STATES-ASEAN, UNITED STATES-LAO PDR, UNITED STATES-SINGAPORE, UNITED STATES-VIET NAM, US-CA TIFA

Appendix B. List of Sample Countries

Area	Country	Area	Country
Africa	Algeria	Asia	Pakistan
Africa	Morocco	Asia	Philippines
Africa	Mozambique	Asia	Russian Federation
Africa	Nigeria	Asia	Saudi Arabia
Africa	Sudan	Asia	Singapore
Africa	Tanzania, United Rep. of	Asia	Sri Lanka
Africa	Tunisia	Asia	Thailand
Africa	Zimbabwe	Europe	Albania
America	Argentina	Europe	Austria
America	Bolivia	Europe	Belarus
America	Brazil	Europe	Belgium and Luxembourg
America	Chile	Europe	Bosnia and Herzegovina
America	Ecuador	Europe	Bulgaria
America	Mexico	Europe	Croatia
America	Nicaragua	Europe	Cyprus
America	Paraguay	Europe	Czech Republic
America	Peru	Europe	Finland
America	Trinidad and Tobago	Europe	France
America	United States of America	Europe	Germany
America	Uruguay	Europe	Greece
America	Venezuela	Europe	Hungary
Asia	Afghanistan	Europe	Ireland
Asia	Armenia	Europe	Latvia
Asia	Azerbaijan	Europe	Macedonia (the former Yugoslav Rep. of)
Asia	Bhutan	Europe	Moldova, Rep.of
Asia	China	Europe	Netherlands
Asia	India	Europe	Portugal
Asia	Indonesia	Europe	Romania
Asia	Israel	Europe	Sweden
Asia	Japan	Europe	Switzerland
Asia	Jordan	Europe	Turkey
Asia	Kazakstan	Europe	Ukraine
Asia	Korea	Europe	United Kingdom
Asia	Kyrgyzstan	Pacific	Australia
Asia	Malaysia	Pacific	Fiji
Asia	Nepal	Pacific	New Zealand
Asia	Oman		

ASEAN Economic Community (AEC) 2015 and its implication on APEC[21]

By Kuboon Charumanee[22]

The Association of Southeast Asian Nations (ASEAN) has been the representative of regional economic cooperation and integration among developing countries. As part of the structural changes of the world economy, ASEAN has implemented intra-regional economic cooperation since 1976. The new goal is the establishment of the ASEAN Community which consisted of three pillars; ASEAN Political-Security Community, ASEAN Economic Community, and ASEAN Socio-Cultural Community. Since ASEAN has also been an important axis of regional economic cooperation and free trade agreements (FTA) in Asia and Pacific's. A big step toward realization of ASEAN Community is the Southeast Asia regional economic integration into ASEAN Economic Community (AEC) within 2015.

As economic integration, AEC is dealing directly with economic stuffs. The part of AEC that impacts directly not only the ASEAN's entire members, which all of them are APEC's member economies too, but also represent the possibility and potentiality of a real regional integration, rather it be successfully established among the economics vary of members, or facing obstacles of cooperation. This paper will study about ASEAN preparations for AEC, its situations, challenges and how AEC impacts on APEC as a portrait of regional economic integration.

ASEAN and its blueprint on AEC

The Association of Southeast Asian Nations (ASEAN) has been the representative of regional economic cooperation and integration among developing countries, within the structural change of the world economy. In East Asia, ASEAN has been the sole source of regional cooperation. Founded in 1967, ASEAN has promoted deepening and widening of regional cooperation since its founding, deepening its political and economic cooperation and fostering other types of cooperation. The five original members in 1967—Indonesia, Malaysia, the Philippines, Singapore, and Thailand— welcomed Brunei in 1984, Vietnam in 1995, Laos and Myanmar in 1997, and Cambodia in 1999. Consequently, ASEAN presently extends throughout Southeast Asia.

ASEAN has implemented intra-regional economic cooperation since 1976. A Common Effective Preferential Tariff (CEPT) scheme to promote the free flow of goods within ASEAN lead the ASEAN Free Trade Area (AFTA)[23]. The AFTA is an agreement by the member nations of ASEAN concerning local manufacturing in all ASEAN countries. The AFTA agreement was signed on 28 January 1992 in Singapore. When the AFTA agreement was originally signed, ASEAN had six members, namely, Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand. Vietnam joined in 1995, Laos and Burma in 1997, and Cambodia in 1999. The latecomers have not fully met the AFTA's obligations, but they are officially considered part of the AFTA as they were required to sign the agreement upon entry into ASEAN, and were given longer time frames in which to meet AFTA's tariff reduction obligations[24].

The next step is the establishment of the ASEAN Economic Community (AEC), including AFTA, with main objectives are to create a: single market and production base, highly competitive economic region, region of equitable economic development, region fully integrated into the global economy. Since 2007, the ASEAN countries gradually lower their import duties among them and targeted will be zero for most of the import duties at 2015. And Since 2011, AEC has agreed to

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[21] The paper for The annual conference for the APEC Study Centers Consortium, held on May 26-27, 2012 Kazan, Russia.

[22] A Lecturer at College of Politics and Government, Mahasarakham University, also a Ph.D. student at School of International Relations, Saint Petersburg State University.

[23] Sim, Edmund "Introduction to the ASEAN Economic Community", http://www.asil.org/aseanevent/Sim_Intro_to_ASEAN.pdf

[24] "Overview". www. aseansec.org. Retrieved 17 May 2012

strengthen the position and increase the competitive edges of small and medium enterprises (SME) in the ASEAN region[25].

The world economy has been in a wave of structural change and has been unstable.

Globalization due to the growth of international economic interdependence, especially the growth of the international capital movement, has been the base of development for ASEAN countries since the mid-1980s. However, this led to the Asian economic crisis in 1997, and has also helped create global imbalances, the subprime loan problem and the current world economic crisis. As part of these structural changes of the world economy, ASEAN has promoted deepening and widening of regional cooperation.

The ASEAN Economic Community (AEC) is one of the three ASEAN Community Councils. It's goal is to seek regional economic integration by 2015. The areas of cooperation include human resources development and capacity building recognition of professional qualifications consultation on economic and financial polices trade financing infrastructure and communications connectivity electronic transactions through e-ASEAN industrial integration to promote regional sourcing enhancing private sector involvement for the building of AEC In short, the AEC will transform ASEAN into a region with free movement of goods, services, investment, skilled labor, and freer flow of capital.

From ASEAN to AEC

A key characteristic of the AEC is a single market and production base. Progress was made in this area with the signing of three key agreements: a) the ASEAN Trade in Goods Agreement, b) the Protocol to Implement the 7th Package of Services Commitments, and c) the ASEAN Comprehensive Investment Agreement, at the 14th ASEAN Summit in Thailand, 2009. These agreements provide a streamlined, consolidated, predictable and transparent set of rules to achieve the goal of a single market and production base by 2015.

Building a highly competitive economic region is another prominent feature of the AEC. To promote fair competition and business practices, efforts are underway to support the ASEAN Member States to put in place competition policies and laws. Recognizing that a robust infrastructure is vital to a region's competitiveness, three key agreements relating to air freight services, air services and inter-state transport were signed in 2008. Other elements that contribute towards this goal are intellectual property rights, consumer protection, taxation and e-commerce. Narrowing the development gap in ASEAN and the development of Small and Medium Enterprises (SMEs) are key to achieving equitable economic development in the region. The second work plan for the Initiative for ASEAN Integration (2009-2015), or IAI Work Plan 2, was developed to drive efforts in narrowing the development gap towards AEC by 2015. Strategies will also be developed to engage and enhance the competitiveness of SMEs. In the pipeline is a stock-taking exercise of the ASEAN Policy Blueprint for SME Development (2004-2014)[26]. Recognizing the interdependency with world economies and the importance of an outward-looking posture, ASEAN continues to pursue full integration into the global economy. ASEAN recently signed a comprehensive economic agreement with Australia and New Zealand collectively, and an investment agreement with the Republic of Korea.

In addition, ASEAN endeavors to maintain ASEAN centrality by strengthening its commitment towards achieving the AEC by 2015. This process is facilitated by the AEC Scorecard mechanism which tracks the implementation of measures contained in the blueprint and the progress towards the vision. The participation of key stakeholders in the process is also crucial, and this is where the AEC Communications Plan plays a part – to inform and engage them in community building. In conjunction with the AEC Awareness Year 2008, several activities have been carried out by the ASEAN Member States such as seminars, forums and the production of information materials. Amidst the backdrop of the global economic turmoil, ASEAN's best strategy

[25] http://www.miti.gov.my/cms/content.jsp?id=com.tms.cms.article.Article_b5e22087-c0a81573-aba0aba0-ab12873b, Ministry of international trade and industry, Malaysia. Retrieved 17 May 2012.

[26] http://www.business-in-asia.com/asia/asean_economic_community.html, Retrieved 17 May 2012.

moving forward is to stay focused on economic integration, on regional cooperation and on wider ASEAN Community building[27].

According to the roadmap for ASEAN Community 2015 each members state are focusing and preparing on developing their regulations, logistics including capacity on trade and investment for it. Under the AEC, a single regional common market of ASEAN countries will be created by 2015. The regional integration's objective is to create a competitive market of over 600 million people in ASEAN countries. There will be free flow of goods, services, investment capital and skilled labor following the liberalization. These will include tariff reductions and streamlining of certain administrative procedures. Many businesses have begun preparing themselves three years ahead of time to meet the challenges and opportunities of the AEC.

Even though, the AEC Scorecard at the moment shows the region behind schedule, having achieved only 73.6% of Phase 1 goals, it still offers a big opportunity in Asia as it will be viewed as a single large market. Further, the integration will help increase ASEAN competitiveness with China and India. The delayed issues, such as agriculture, non-tariff barriers, integration of the less-developed CLMV (Cambodia, Laos, Myanmar, Vietnam) members, and financial integration remain to be worked out. According to the US International Trade Commission report on AEC[28], the challenges were seen in the area of importing and exporting which vary widely among ASEAN members. For example, procedures for trading are relatively easy to complete in Singapore, Thailand, and Malaysia, but very difficult in Laos and Cambodia. The quality of logistics services also varies among the ASEAN members, such as customs brokerage, freight forwarding, and express delivery. Logistics services are world-class in Singapore but poor in Laos, Cambodia, and Myanmar. In many ASEAN countries, restrictive regulations hamper the delivery of high-quality logistics services.

Advantages of the AEC

It will open more *regional cooperation* and will improve the scale efficiencies, dynamism and competitiveness of ASEAN members. AEC will enable easier movement of goods, services, investment, capital and people. Ultimately, it will offer new ways of coordinating supply chains, or access to new markets for established products.

All ASEAN countries are *more important to foreign investors* if they are considered as one node in a larger regional market of nearly 600 million people - a single market. The ASEAN Free Trade Agreement will be expanded to zero tariffs on almost all goods by 2015. ASEAN plans to remain engaged with the global economy through regional-level free trade agreements - today, ASEAN has such agreements with China, Japan, Korea, India, Australia and New Zealand.

The United States International Trade Commission's (USITC) ASEAN: Regional Trends in Economic Integration, Export Competitiveness, and Inbound Investment for Selected Industries Report noted that the AEC is coming at a time when it is recognized that *investment in emerging markets is more desirable than in the US and Europe*. "There will be no shortage of funding coming from within ASEAN, the Asia Pacific or even the US and Europe. These investments can bring about badly needed capital for some countries, allowing them to leapfrog from the 20th century into the 21st in terms of competition in mature countries such as Thailand and Malaysia", said the report[29].

SMEs accounted for 96% of enterprises and between 50-85% of domestic employment across ASEAN. Integrating these SMEs and supporting them in the initial period will be a challenge throughout ASEAN but particularly in the lesser developed ASEAN countries. For instant, Singapore, it is obvious that the Singapore government fully realizes the challenge and the opportunity that the AEC will represent to SMEs and is putting both the planning talent and the resources to better support their SMEs. Also in Vietnam and Thailand and although both countries are starting to verbalize and meet to develop more effective plans for SME integration and

[27] ASEAN, Implementing the roadmap for an ASEAN Community 2015: http://www.aseansec.org/publications/AR09.pdf

[28] www.usasean.org/ASEAN/pub4176.pdf, Retrieved 18 May 2012

[29] http://www.business-in-asia.com/asia/asean_economic_community.html, Retrieved 17 May 2012

support, it is obvious that these plans are probably behind where they need to be. In countries, such as Cambodia, Laos and Myanmar, plans are even further behind and more in need of support and resources.

Tourism opportunity. Asians travels more in the region and there are more travelers from other countries that have begun to reach out to Asia as new visitors. The trends were evident at the recent Hub City Forum, held by the Pacific Asia Tourism Association (Pata), where more than 100 travel industry executives discussed the tourism potential, government's spending to upgrade facilities both for leisure attractions like museums; and also facilities such as convention centers, reported the newspaper. Tourism opportunities are particularly large and hopefully countries that have the most experience in this area such as Thailand and Singapore will render their assistance to those with weak experience - recent examples of this are Thailand with Vietnam and also some talk in Thailand about rendering assistance in Laos and possibly Cambodia[30].

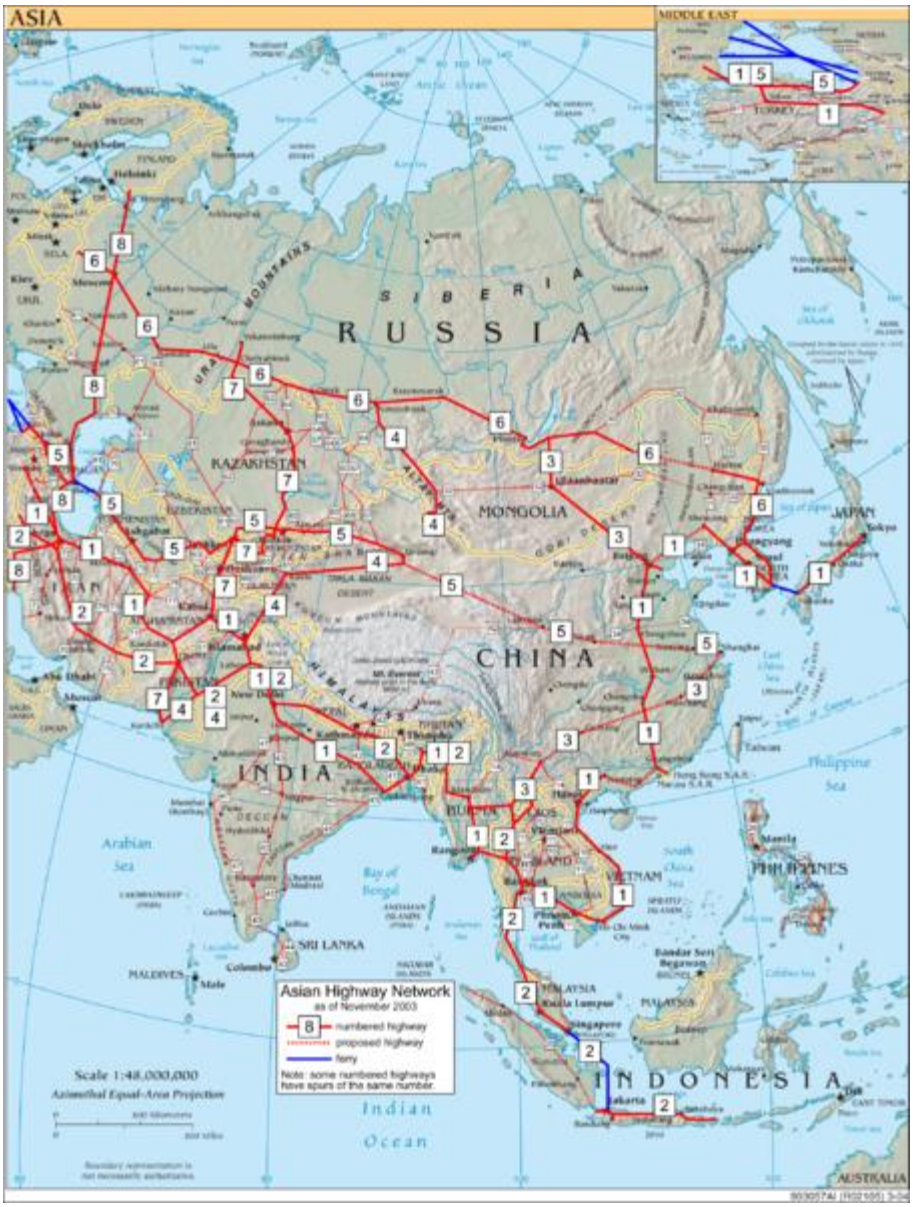
Internationalization of health care under the AEC. Health care is one of the sectors to be internationalized. This is definitely a big challenge as it is more complicated than just the popularity of Singapore and Thailand's "medical tourism" that patients travel from one country to another seeking better care at lower cost. The legal and licensing frameworks are still needed to be worked out. However, it offers potentials for the free-flow of health services, etc. in the region. Recent examples here were noted in the Bangkok Post in mid-March which noted programs by Thailand's largest medical service BGH and other Thai hospital groups to step-up the pace of mergers and acquisitions and joint ventures in other AEC countries to help give them a better platform to better take care of developing AEC opportunities.

Current Situation

The AEC development has been criticized for being "*too slow*" and some observers have said that the issues that have been delayed were those of importance and could make or break the success of the integration. Some specialists also commented about the lack of leadership on this issue - the role of ASEAN chairmanship is a rotating position and a series of officials from the poorer, less developed ASEAN countries will be the chair of ASEAN for the next few years which means that leadership will be inexperienced and possibly be less interested in pushing ahead quickly with integration on all fronts. Furthermore, ASEAN will suffer the departure of a strong leader as the current ASEAN Secretary General, Thai diplomat Surin Pitsuwan[31], is completing his 5-year term as ASEAN Secretary-General this year. As an experienced diplomat Surin Pitsuwan and prior to him the equally experienced Ong Keng Yong from Singapore have pushed ahead on integration. Some observers' note that the less experienced officials from poorer and less developed ASEAN countries set to follow them will not have the same leadership skills, experience or knowledge and that this will tell on future progress. - *Infrastructure development* among the ASEAN countries: both the development of hard infrastructure such as roads, ports, airports, etc. and soft infrastructure such as human resource and training are being concentrated. Hard infrastructure: Many countries' governments have plans to upgrade their infrastructure, such as the plan of three highways linking Asean - the North/South one linking South China through Myanmar, Thailand, Lao and Vietnam; the East/West Corridor linking Myanmar, Thailand, Laos, and Vietnam; and the South/South one linking Myanmar's Dawei deep seaport, Thailand's Laem Chabang and Cambodia. Thailand's government has also been talking to China about the high-speed train project linking Laos and Thailand's Nong Khai to the southern border and Malaysia.

[30] Ibid.

[31] The first ASEAN Secretary-General with significant political background in Thailand. He was confirmed by the ASEAN Foreign Ministers during their 40th annual meeting in Manila in July 2007 and succeeded Ong Keng Yong from Singapore on January 1, 2008. His term of office is five years.



Asian Highways, From Wikipedia, the free encyclopedia, Retrieved 18 May 2012

For soft infrastructure, better English speaking countries in ASEAN, such as Singapore, Malaysia and the Philippines will have an advantage over countries like Thailand. According to the Bangkok Post, Thailand has established the ''English Speaking Year 2012'' program in preparation for the merging of the AEC. This is a step in the right direction but what is ultimately needed is not only a program but a new mind-set. Thailand has not given enough attention to improving English skills throughout its education system and now is in a somewhat weaker position to countries such as Vietnam who have given increased attention to this and also benefit from having a western alphabet that makes learning of English both reading and writing easier than in Thailand.

- *The banking sector* will particularly need to stay ahead of the game to facilitate investors and to support their moves throughout the region. Singaporean and Malaysian banks and telecoms, for instance, have invested heavily in the region and seem to be slightly ahead of other competitors in better preparing themselves for the AEC. - *Executives have to adjust strategy.* Inside the AEC, managers will increasingly have to pursue sales opportunities across the region while focusing relentlessly on cost efficiencies by integrating their operations across the region, managing through lean techniques but also developing effective corporate centralization. Externally, managers in countries such as the US, Canada and Europe are going to have to start paying better attention to this new opportunity. Many of them right now seem to have eyes for only China and India. Asia is much more than either of these two countries and western managers

need to study and better understand the opportunities that the AEC presents. In China and India, the AEC also is not fully appreciated nor understood and both Indian and Chinese managers need to also focus more attention and to travel and address the opportunities that the AEC presents.

- *ASEAN members still view each other as competitors,* for inbound investment and jobs, reported USITC. Ultimately, these distinctions should start to fade to some extent but in the future the line between competitor and collaborator within ASEAN may become less clear. The ASEAN members will need legally binding means to enforce compliance with the objectives of the roadmaps, suggested the report.

Challenges for AEC

These are vast and ambitious pursuits, and 2015 is less than three years away. Businesses need to have an international mindset, which gives them the appetite and ability to make cross-border investments and acquisitions. Momentum has been established, as seen from many investments and merger and acquisition activity that has occurred in the region. In Thailand, Siam Cement, one of Thailand's largest conglomerates, is gearing up to spend 75% of its $5-billion investment budget for 2012-16 to acquire assets, many in ASEAN countries, according to the Bangkok Post[32], and there are other large companies such as CP or BGH that are doing the same. In the Philippines, the Philippine pharmaceutical company Unilab markets its affordable analgesics and cough and cold mixtures all over Southeast Asia through joint ventures, while the Axiata group of mobile operators is looking into network-sharing, according to the Manila times. Indonesia's AirAsia, Asia's largest budget airline, is opening a regional office in Jakarta to engage with the ASEAN Secretariat there and work toward a single ASEAN sky and aviation authority, reported the Jarkata Post. In late 2011, a group of business luminaries, including the CEOs of CIMB Bank[33], AirAsia, Bangkok Bank and Ayala Group launched the Asean Business Club, a private-sector initiative to engage in ASEAN's community building efforts[34].

To narrow the development gap, the Initiative for ASEAN Integration will serve as the platform for identifying and implementing technical assistance and capacity building programmes for both public and private sectors in ASEAN Member Countries, in particular, CLMV and the other sub-regions such as The Indonesia-Malaysia-Thailand Growth Triangle : IMT-GT and The East ASEAN Growth Area: BIMP-EAGA within ASEAN. This is to allow them to be equal partners in the development of regional production and distribution networks[35]. The objective of AEC is also to make ASEAN a more dynamic region to compete in the global supply chain and to remain an attractive base for foreign direct investment . In this respect, ASEAN will work towards maintaining “ASEAN Centrality” in its external economic relations, especially in its negotiations for free trade areas (FTAs) and comprehensive economic partnership (CEPs) agreements.

The AEC is definitely a work in progress. Some efforts will go faster and bear quicker fruit than others; others will face more challenges and may be less crisply implemented. Still, the future is clearly in favor of the AEC and that it offers clear opportunities and challenges that all businesses need to be thinking about and preparing for. Those who fail to do so, have no one to blame but themselves for missing out on a wonderful new opportunity for sales, investment and engagement with Asia.

Implications on APEC

Asia-Pacific Economic Cooperation: APEC is the only inter governmental grouping in the world operating on the basis of non-binding commitments, open dialogue and equal respect for

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[32] Asean Economic Community is coming in 2015, http://www.thai-aec.com/139 Retrieved 18 May 2012

[33] AEC 2015: is Corporate Asean ready? http://www.asianewsnet.net/home/news.php?id=23512, Retrieved 18 May 2012.

[34] http://www.mondaq.com/x/170214/Trade+Customs/reparation+for+the+AEC+Free+Flow+of+Goods, Retrieved 18 May 2012.

[35] http://www.miti.gov.my/cms/content.jsp?id=com.tms.cms.article.Article_b5e22087-c0a81573-aba0aba0-ab12873b, Ministry of international trade and industry, Malaysia. Retrieved 17 May 2012.

the views of all participants. Unlike the WTO or other multilateral trade bodies, APEC has no treaty obligations required of its participants. Decisions made within APEC are reached by consensus and commitments are undertaken on a voluntary basis. Since establishment in 1989, APEC further enhances economic growth and prosperity for the region and to strengthen the Asia-Pacific community. Since its inception, APEC has worked to reduce tariffs and other trade barriers across the Asia-Pacific region, creating efficient domestic economies and dramatically increasing exports. Key to achieving APEC's vision are what are referred to as the 'Bogor Goals' *of free and open trade and investment in the Asia-Pacific by 2010 for industrialized economies and 2020 for developing economies*. These goals were adopted by Leaders at their 1994 meeting in Bogor, Indonesia. As of 20 Aug 2010, APEC has 21 Member Economies. They are Australia; Brunei Darussalam; Canada; Chile; People's Republic of China; Hong Kong, China; Indonesia; Japan; Republic of Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; The Republic of the Philippines; The Russian Federation; Singapore; Chinese Taipei; Thailand; United States of America; Viet Nam. However, to meet the Bogor Goals, APEC carries out work in three main areas: a) Trade and Investment Liberalization, b) Business Facilitation, c) Economic and Technical Cooperation

APEC is considering the prospects and options for a Free Trade Area of the Asia-Pacific (FTAAP) which would include all member economies of Asia-Pacific Economic Cooperation (APEC). Since 2006, the APEC Business Advisory Council, promoting the theory that a free trade area has the best chance of converging the member nations and ensuring stable economic growth under free trade, has lobbied for the creation of a high-level task force to study and develop a plan for a free trade area. The proposal for a FTAAP arose due to the lack of progress in the Doha round[36] of World Trade Organization negotiations, and as a way to overcome the 'spaghetti bowl' effect created by overlapping and conflicting elements of free trade agreements between members – there are as many as 60 free trade agreements and 117 being negotiated in Southeast Asia and the Asia-Pacific region. The FTAAP is more ambitious in scope than the Doha round, which limits itself to reducing trade restrictions. The FTAAP would create a free trade zone that would considerably expand commerce and economic growth in the region. The economic expansion and growth in trade could exceed the expectations of other regional free trade areas such as the ASEAN Plus Three (ASEAN + China, Japan, and South Korea).

The average economic growths of ASEAN's member nations during 1989–2009 was Singapore with 6.73 percent, Malaysia with 6.15 percent, Indonesia with 5.16 percent, Thailand with 5.02 percent, and the Philippines with 3.79 percent. This economic growth was greater than the average APEC economic growth, which was 2.83 percent[37]. Some criticisms include that the diversion of trade within APEC members would create trade imbalances, market conflicts and complications with nations of other regions. The development of the FTAAP is expected to take many years, involving essential studies, evaluations and negotiations between member economies. It is also affected by the absence of political will and popular agitations and lobbying against free trade in domestic politics.

Meanwhile, the meeting in Jakarta, 28 June 2011 of delegations from the Asia Pacific Economic Cooperation (APEC) Secretariat, led by its Executive Director, Ambassador Muhamad Noor with Dr Surin Pitsuwan, the Secretary-General of ASEAN at ASEAN Secretariat . The two leaders agreed to strengthen Secretariat-to-Secretariat cooperation in mutually beneficial areas that will add value to their respective cooperation agendas.

In a discussion, both sides expressed interest to cooperate in several key areas such as regulatory reform, connectivity, competition policy, small and medium enterprises development, disaster management and food security. Delegations also updated each other on the on-going work and priorities of their respective institution and agreed that there are many common areas

[36] The Doha Round is the latest round of trade negotiations among the WTO membership. Its aim is to achieve major reform of the international trading system through the introduction of lower trade barriers and revised trade rules. The work programme covers about 20 areas of trade. The Round was officially launched at the WTO's Fourth Ministerial Conference in Doha, Qatar, in November 2001.

[37] "ASEAN economies past and future". *The Jakarta Post*. 29 July 2011. Retrieved 8 August 2011.

of interest for collaboration and to learn from one another[38]. As most of AEC and APEC's goal are quite similar in facilitating to free flow of market through trade liberalization, reduce tax and tariff among members. Therefore, even the ASEAN Economic Community, will represent the possibility of each members to cooperate and work together through their unequal capacities and level of economics, AEC is going to be a model and also the kick off for APEC.

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[38] ASEAN and APEC Secretariats strengthen cooperation, http://www.aseansec.org/26440.htm, Retrieved 18 May 2012.

Labor Migration & Regional Integration in Asia Pacific beyond the Borders

Eppur si muove
Galileo Galilei

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Francisco Mares[40]

Abstract

Labor flows are a not enough explored aspect in the regional integration analysis for the economic cooperation. Authors consider that these flows are a real opportunity to promote the integration processes rather than threaten it. They show international labor migration as one of the aspects to be taken into account in the current integration processes. The importance of considering these flows lies in the fact that these flows actually represent the use of skilled (or no skilled) labor force by various concentrations of capital around the Pacific Rim. These concentrations are located at different centers of research and technology development around the Pacific, conducive to attracting labor force from developing economies demanding regional cooperation. So that flows actually confirm the connection between different countries and regional integration initiatives in the Asia Pacific region as the Trans-Pacific Strategic Economic Partnership Agreement (TPP) initiative, or NAFTA. APEC should do any kind of studies about labor migration in order to develop a better understanding of the regional dynamic integration processes. Human Resources Development Group could help through the Labor Protection and Social Network.

Introduction

Migration over the existence of the human race has been a daily practice in search of better living conditions. However, since its inception nation states have sought to protect their interests, often impeding the free movement of labor between regions, as a kind of protectionism in their domestic labor markets.

Generating jobs for the citizens of each economy in order to reproduce labor and appropriate conditions to benefit the family income, as a whole, has been one of several key objectives that states have tried to fulfill its role in bringing welfare to society. But for this purpose has also restricted the space for foreign labor, which somewhat controversially led to the design of national policies for the incorporation of temporary foreign labor and/or qualified.

One of the central aspects that contributed to the promotion of labor migration in the Asia Pacific, has been the formation of nodes of concentration of knowledge, science and technological development, which attracts labor force with different skill levels from different latitudes, thus generating the creation of areas of labor ejector facing various national policies aimed at protecting their own domestic labor markets.

Under the approach of the knowledge society, we aim to identify the poles of attraction of skilled or not work force, and the areas of expulsion, which allow highlighting the fact of labor migration in the region from an economic and social development perspective, thus showing that exceeds the neoclassical theoretical restriction of mobility of labor. Such mobility on several occasions however, is recognized as illegal; however that kind of mobility is coming from the patterns of attraction beyond the

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territorial boundaries of each of the economies. Strictly speaking, we talk about a problem that needs addressing in order to seek better integration under the aegis of economic cooperation.

Under these considerations, this paper seeks to detect the flows of labor in the Asia Pacific, particularly in agreements as TPP, NAFTA, which can be extended to other initiatives of regional organization such as ASEAN + associated with enterprise networks, based on the fact that they are possessing unique technology and knowledge generation, thus constituting very attractive poles for migration. It is assumed that the generators of knowledge, lead to an appropriate space for the mobility of labor (brain drain, the marketing of educational services, the agricultural labor market and migration "illegal" for example, have been considerate as forms of labor mobility), even beyond public policy designed to address this issue.

The relevance of studying a subject of this nature focuses on the placing on a map to the international labor migration connected with science and technology (developed and developing economies), thus generating economic and social impacts, ranging from building their own forms of space vital to generating wealth for both individuals and businesses.

This interest is focused on the fact that there are insufficient studies in APEC, particularly in the Human Resources Development WG and Labor & Social Protection Network, appearing the reality that labor migration is much more representative of what neoclassical theory assumes with severe restrictions to the economic labor factor compared to the mobility of capital generating social problems which paradoxically solve others. In this sense, authors argue that state intervention to prevent the free movement of labor is opposed to the creation of integrated regional markets and ignores the reality facing the labor in the international arena.

That is why the generation of enlightened companies that could make appropriate decisions for the creation of jobs is appropriate in a relevant context of globalization associated with the potential to generate employment and adequate incomes for the population to revitalize the market for goods and services. In this design a public policy commitment to social welfare, it will always of greatest impact, promoting in addition a real regional integration.

Framework

Approaching from the theoretical perspective to a debatable subject is at least desirable to consider the theory of economic integration proposed by Bela Balassa (1964). This theory sees firstly economic integration as a process involving several stages, which explains without major problems many FTAs in the region, which at the moment leading to the spaghetti bowl. Particularly in the context of this theory the neoclassical version of factor mobility detect various economies restricting labor mobility as economic factor against the free capital flows in the Asia Pacific Regions. The proposed open regionalism and economic cooperation in Asia Pacific is also a framework to consider the labor migration issue.

From his side, Paul Krugman (1995; 1999), presents the challenges facing labor when required to travel to other countries, these restrictions are given much by the limitations imposed by economies of labor attractive. However this does not seem enough or from the theoretical perspective or from the perspective of the signing of FTAs or next generation agreements, if they continue to ignore labor mobility as an integrating factor beyond the limitations imposed on the borders of various economies in the Asia Pacific region. This approach involves the association of a regional geographic management across affected by transnational corporations and their production networks in the world. So that by detecting geo-economic spaces that promote regional labor mobility flows of value, it is possible to identify different matching phenomena between migration flows detected, all of them regardless of the established barriers to labor in the different economies.

So that in this paper the authors present information that requires political sensitivity of the various economies belonging to APEC, to recognize this and to allow decision making on economic and social, within the framework of cooperation economic and regional integration for the generation of employment, inclusively seeking to reduce the negative impacts that fosters unemployment in different areas of the Asia Pacific.

We would say this in the basis of studies undertaken by PECC, ABAC and the International Organization for Migrations, which recognize the benefits that promote labor migration beyond that permitted, managed and accepted by the WTO and incorporated in FTAs such as NAFTA and even the very current TPP. In this sense Hugo (2008: vii), mentions that "demographic and economic projections show that labor migration in the region will, if anything, have to accelerate over time. It seems that, after trade and investment, labor mobility constitutes the final frontier for regional integration among the Asia Pacific economies. Economic Analyses show that the international movement of labor benefits both the net labor origin economies and the net labor destination economies, not to mention the migrant workers themselves. In reality however, such flows are associated with political and social problems in both types of economies. Individual governments react and respond, often in ways that increase business costs, forego overall net benefit from labor movements, fail to protect migrants from exploitation, and fail to support the kind of educational and socialization efforts that would smooth the integration of migrants into new home communities".

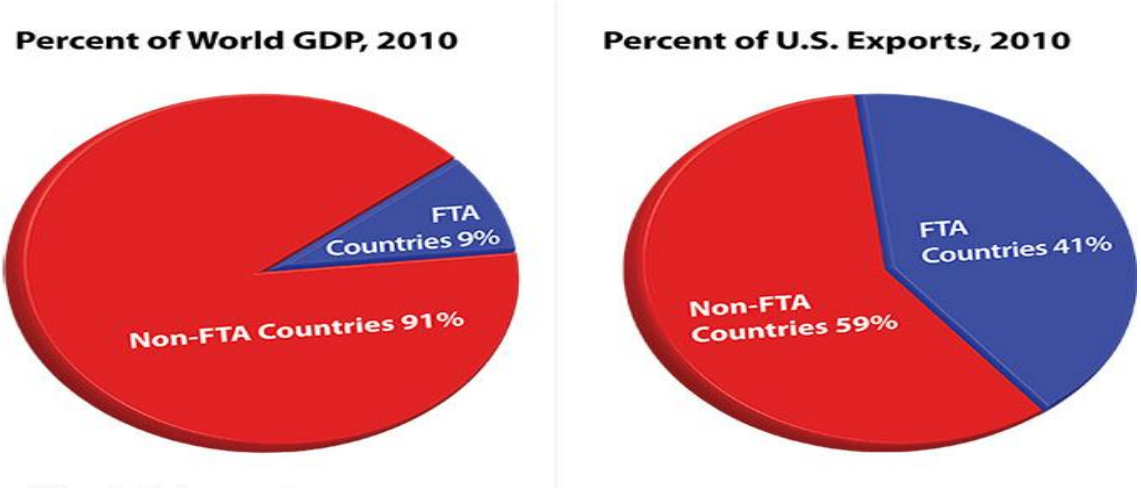
Regional Integration Initiatives

As part of the efforts of States in the Asia Pacific region to promote economic integration and cooperation, we can identify initiatives that bring together countries with dissimilar economic growth rates, size of their economies, status or stages of economic development, forms of political organization and production, natural resource endowments and different cultures that lead to very specific worldviews.

Despite all this, and shock of reality which represent phenomena such as globalization, impose a sense of common good and progress through joint cooperation, at least in the liberalization of trade and investment, recently identified and unquestioned until today (, as real levers for economic growth and development (see chart 1).

On that sense we can see on the basis of the chart, 1, that the impact of the recently FTAs negotiated, on the behavior of US exportations by 2010, it shows the dramatic change that this kind of treaties could bring to other TPP members. As it are shown, forty-one percent of U.S. goods exports went to FTA partner countries in 2010, with exports to those countries growing at a faster rate than exports to the rest of the world from 2009 to 2010, 23% vs. 20%.

Chart 1. Benefits from FTAs to U.S. Exports, 2010



FTA = free trade agreement
GDP = gross domestic product

Note: World GDP excludes the United States. GDP percentage shares are based on GDP figures on a purchasing power parity basis. Export figures are for total U.S. Goods Exports.

Free trade agreement countries include all countries with free trade agreements with the United States (Australia, Bahrain, Canada, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Jordan, Mexico, Morocco, Nicaragua, Oman, Peru and Singapore).

Sources: International Monetary Fund, World Economic Outlook Database (April 2011); U.S. Department of Commerce, International Trade Administrations, and Bureau of the Census

Source: International Trade Administration, http://trade.gov/fta/ May 13th, 2012.

As this Bureau assess: "Free Trade Agreements (FTAs) have proved to be one of the best ways to open up foreign markets to U.S. exporters. Trade Agreements reduce barriers to U.S. exports, and protect U.S. interests and enhance the rule of law in the FTA partner country. The reduction of trade barriers and the creation of a more stable and transparent trading and investment environment make it easier and cheaper for U.S. companies to export their products and services to trading partner markets." We hope will say the same for labor migration in the Asia Pacific region as well.

In this sense, the existence of designed regional free trade agreements such as NAFTA in North America, ASEAN and ASEAN +3 (later ASEAN+6) in Southeast Asia and most recently, the Trans-Pacific Strategic Economic Partnership Agreement, arising as a response to the alleged failure of the agreements that promotes APEC Bogor and postulates of trade and investment liberalization in developed countries by 2010 and developing countries in 2020 in the Asia Pacific.

It is precisely the TPP initiative in the frame what we want to try to understand the labor migration as economic factor for the regional integration. Due the interest aroused in the Asia Pacific region and the potential of seeing into the TPP the world's largest economies measured in terms of gross domestic product and its ability export. It is also or interest to detect how much the TPP is considering in its official document labor migration as a factor of de facto integration. As usually migrant labor flows in the region do not follow government agendas, but rather seem labor flows have its own dynamics but in the sense of the laws of supply and demand of the international labor market, and very specifically as a mechanism of annealing of disparities of income and ownership in situ of the benefits of international trade, which are denied in their original country.

In the initial document signed by four countries (Brunei, Chile, Singapore and New Zealand) in Wellington, New Zealand and gives rise to the TPP on June 3, 2005, the issue of labor migration is only mentioned in Chapter 12 and 13 devoted to trade in Services and Professional Services: the first explicitly excludes labor migration negotiating issues and comply with international law that already exists in international bodies like the WTO, GATT, among others, while in the second, people traffic is accepted as a temporary stay of professionals (in third grade rating), under to the guidelines of the host country. Similar treatment is given in the case of NAFTA, Chapter XVI of the document which is entitled

"temporary entry of business persons" which sets out guidelines for the temporary entry of business persons, professionals and employees of national companies established abroad, to carry out any work activity, which shows the partial attention to the issue of an expanded problem that impacts on regional integration processes, beyond the requirements established by the free trade agreements of this nature.

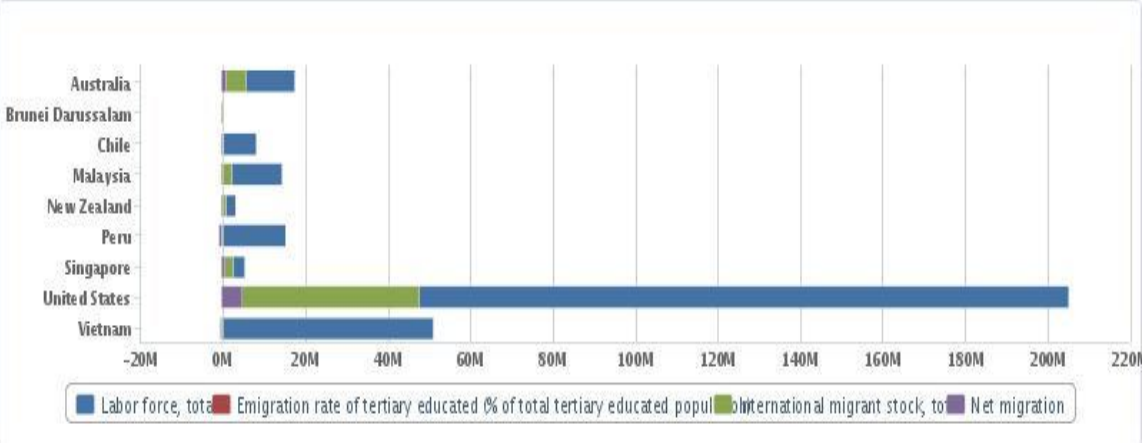
That is, being the free trade agreements (FTAs) role model, it is expected that the issue of labor migration of labor, skilled or not, will remain postponed and avoid carrying the negotiating table for reasons national sensitivity, or explicitly reads in section 1601 of Chapter XVI on general principles: "This chapter ... reflects the need to ensure border security and to protect the domestic labor force and permanent employment in their respective territories."

In contrast, studies sponsored by PECC and entrepreneurs themselves (ABAC), as mentioned above, showing that the benefits from international labor migration have reached levels above those generated by free trade in goods and investment and that the international movement of people for work has grown in recent years, despite disincentives taken in recipient countries to curb these flows.

Following this approach we found some figures that in fact show this argue, actually in this figures it is possible to find also the connection among the developed and developing economies attracting and pushing the labor migration around the Asia Pacific, assuming that developed economies have a very important capital concentration and developing economies human capital trying attracted by that capital, moving the work force beyond the borders, more rapidly that considered by the regional cooperation patterns.

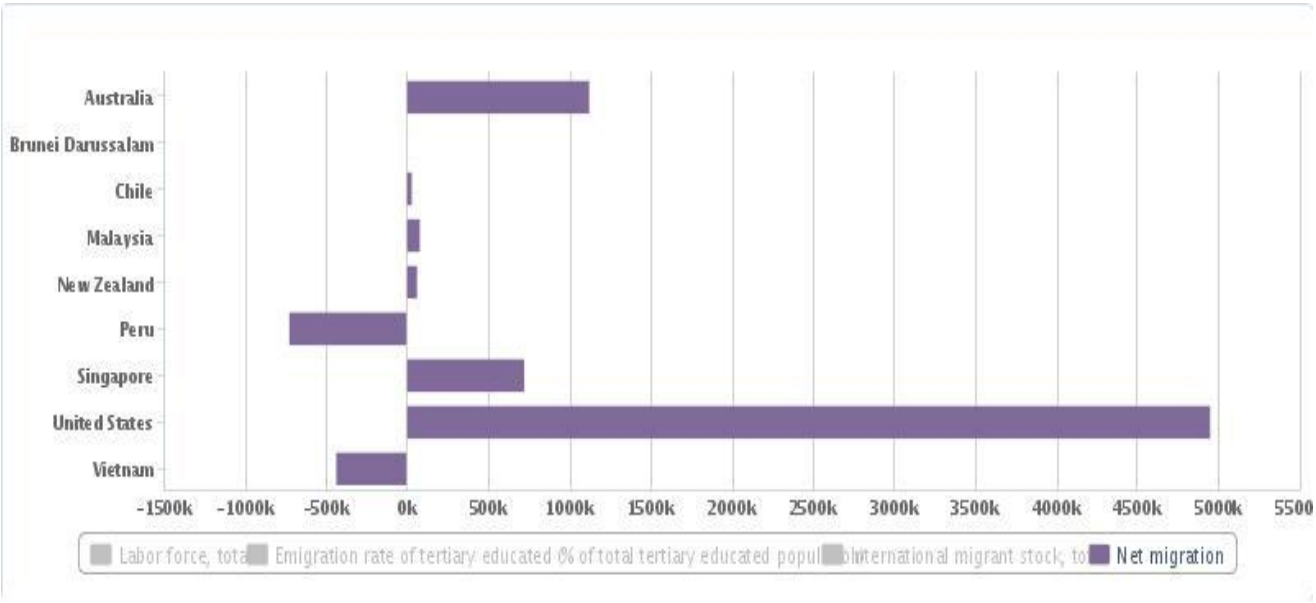
In the chart 2, we can find four World Bank indicators on labor force and migration in TPP economies. There we can find the USA as the most attractive country for the immigration followed by Australia. Cases of Peru and Vietnam are in the contrary situation as we can see in chart 3, showing a negative net migration. So the situation has a very important impact for countries like USA and Australia, but also for other TPP members due the labor mobility, to be taken for the negotiation in the agreement, beyond the economic borders leading to a more real and formal regional integration.

Chart 2. Four indicators on Labour force and migration in TPP economies, 2010.



Source: World Bank, www.databank.worldbank.org, May 10th, 2012

Chart 3. Net Migration in TPP economies, 2010.



Source: World Bank, www.databank.worldbank.org May 10th, 2012.

Final Reflection

We conclude that APEC has to rethink the labor migration as regional integration factor without ignorance of reality, as there are movements of population with great benefits and social possible solutions for the economic cooperation and development of the economies members.

In the authors´ opinion APEC could develop some studies as PECC and ABAC did, in order to put behind the closed border and liberalize labor as economic factor.

APEC has special interest in Human Resource Development in order to facilitate the work force qualification; it has very specific networks, so it is possible to contribute for a better connection among the economies. Initiatives as TPP could be considered a next generation agreements, including the labor factor that anyway is moving across the borders.

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Annex

Table 1. Labor Bilateral Migration on NAFTA members

Work Force Flows in North America						
	1960	1970	1980	1990	2000	2010*
Total						
Mexico	Origin	Origin	Origin	Origin	Origin	Origin
Canada	6,068	64,961	126,413	15,966	42,939	58,119
EE.UU	610,787	936,424	2,408,502	4,662,233	9,367,910	11,635,996
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Mexico; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in North America						
	1960	1970	1980	1990	2000	2010*
Total						
Mexico	5,669	3,734	3,353	3,230	5,990	8,401
Canada	Origin	Origin	Origin	Origin	Origin	Origin
EE.UU	995,660	964,010	1,001,367	914,902	950,549	834,945
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Canada; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in North America						
	1960	1970	1980	1990	2000	2010*
Total						
Mexico	99,121	98,764	160,890	201,431	350,626	509,251
Canada	276,126	291,996	313,920	325,306	270,708	291,652
EE.UU	Origin	Origin	Origin	Origin	Origin	Origin
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: EE.UU; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Table 2. Labor Bilateral Migration on TPP members

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	Origin	Origin	Origin	Origin	Origin	Origin
Brunei Darussalam						
Total	4	5	32	262	373	530
Chile						
Total	738	195	454	673	976	1,607
Malaysia						
Total	5	191	574	1,842	4,372	6,903
New Zealand						
Total	34,932	43,826	45,707	51,217	56,375	68,629
Peru						
Total	183	168	146	206	169	86
Singapore						
Total	913	107	354	927	3,371	ne
United States						
Total	23,305	31,783	46,076	54,050	74,459	77,619
Vietnam						
Total	2	2	6	13	135	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Australia **Row**: Country Dest, **Column**: Year, **2010:** estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	12	19	206	1,567	2,036	3,153
Brunei Darussalam						
Total	Origin	Origin	Origin	Origin	Origin	Origin
Chile						
Total	0	0	0	0	0	0
Malaysia						
Total	12	384	1,149	5,211	5,007	7,905
New Zealand						
Total	10	55	69	68	243	312
Peru						
Total	0	0	0	7	6	5
Singapore						
Total	81	214	222	322	474	ne
United States						
Total	46	38	881	555	65	853

Vietnam						
Total	0	0	8	20	87	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Brunei; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	313	992	15,555	24,575	23,390	28,906
Brunei Darussalam						
Total	0	0	0	0	0	0
Chile						
Total	Origin	Origin	Origin	Origin	Origin	Origin
Malaysia						
Total	0	2	6	18	59	0
New Zealand						
Total	47	105	458	485	749	1,506
Peru						
Total	7,597	6,861	5,844	4,933	4,033	3,348
Singapore						
Total	3	1	3	9	33	0
United States						
Total	6,695	19,695	42,572	66,317	85,597	93,382
Vietnam						
Total	0	0	0	0	3	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Chile; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	5,532	10,584	30,470	69,734	77,737	119,197
Brunei Darussalam						
Total	13,440	21,231	35,713	40,846	58,104	81,576
Chile						
Total	0	0	0	21	25	46
Malaysia						
Total	Origin	Origin	Origin	Origin	Origin	Origin
New Zealand						
Total	464	2,866	3,443	3,776	11,320	15,912
Peru						

Total	0	1	1	4	3	3
Singapore						
Total	129,858	187,189	213,364	343,171	725,607	1,060,628
United States						
Total	662	507	11,824	34,825	52,623	55,007
Vietnam						
Total	262	299	270	821	4,813	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Malaysia; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	45,855	60,518	174,094	256,718	350,498	486,982
Brunei Darussalam						
Total	1	2	11	119	170	241
Chile						
Total	10	3	1	104	140	216
Malaysia						
Total	2	63	190	609	1,763	2,783
New Zealand						
Total	Origin	Origin	Origin	Origin	Origin	Origin
Peru						
Total	26	58	86	44	36	23
Singapore						
Total	156	35	117	307	1,115	ne
United States						
Total	6,127	10,650	15,132	18,826	26,771	19,402
Vietnam						
Total	0	0	2	4	68	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: New Zealand; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	74	222	489	3,667	5,503	8,199
Brunei Darussalam						
Total	0	0	0	0	0	0

Chile						
Total	3,583	3,666	4,086	7,020	35,416	64,870
Malaysia						
Total	0	1	4	13	41	0
New Zealand						
Total	0	16	70	74	401	545
Peru						
Total	Origin	Origin	Origin	Origin	Origin	Origin
Singapore						
Total	2	0	2	6	23	0
United States						
Total	7,756	29,305	67,507	162,190	285,925	392,455
Vietnam						
Total	0	0	0	0	11	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Peru; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	2,634	4,198	11,562	23,418	33,007	52,871
Brunei Darussalam						
Total	207	1,091	1,705	1,522	2,165	3,033
Chile						
Total	0	0	0	23	58	70
Malaysia						
Total	2,568	52,926	52,348	50,381	65,444	103,318
New Zealand						
Total	322	969	1,963	2,548	3,879	5,313
Peru						
Total	0	1	1	6	5	4
Singapore						
Total	Origin	Origin	Origin	Origin	Origin	Origin
United States						
Total	370	287	6,709	15,341	24,386	40,380
Vietnam						
Total	82	71	326	186	751	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Singapore; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	11,031	20,504	36,153	42,482	53,104	81,672
Brunei Darussalam						
Total	7	9	53	113	161	228
Chile						
Total	2,987	3,567	4,660	5,625	7,874	13,285
Malaysia						
Total	8	318	954	3,063	5,433	ne
New Zealand						
Total	2,670	5,837	6,418	8,070	13,258	19,965
Peru						
Total	5,445	6,396	6,995	5,906	4,829	4,026
Singapore						
Total	575	178	588	1,541	6,893	10,731
United States						
Total	Origin	Origin	Origin	Origin	Origin	Origin
Vietnam						
Total	8	41	79	93	710	ne
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: EE.UU; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Work Force Flows in TPP						
	1960	1970	1980	1990	2000	2010*
Australia						
Total	947	1,579	39,630	118,469	152,582	197,610
Brunei Darussalam						
Total	81	108	650	6	9	ne
Chile						
Total	0	0	0	10	10	19
Malaysia						
Total	19	3,887	446	6,313	13,551	ne
New Zealand						
Total	247	133	2,507	2,750	3,913	5,332
Peru						
Total	2	2	3	4	3	3
Singapore						
Total	173	2,172	2,144	2,936	4,319	ne
United States						

Total	14,419	11,234	262,190	583,889	1,028,454	1,160,309
Vietnam						
Total	Origin	Origin	Origin	Origin	Origin	Origin
Source: http://databank.worldbank.org, May 10th, 2012						
*Bilateral Estimates of Migrant Stocks in 2010 http://econ.worldbank.org/WBSITE, May 13th, 2012						
Page: Country Origin: Vietnam; **Row**: Country Dest.; **Column**: Year; **2010**: estimated.						

Table 3. Labor Bilateral Migration on TPP members

Bilateral Estimates of Migrant Stocks in 2010										
Destination country (across) Source country (down)	Australia	Brunei Darussalam	Chile	Malaysia	New Zealand	Peru	Singapore	United States	Vietnam	TOTAL
Australia	0	530	1,607	6,903	68,629	86	0	77,619		442,632
Brunei Darussalam	3,153	0	0	7,905	312	5	0	853		24,343
Chile	28,906	0	0	0	1,506	3,348	0	93,382		634,001
Malaysia	119,197	81,576	46	0	15,912	3	1,060,628	55,007		1,481,202
New Zealand	486,982	241	216	2,783	0	23	0	19,402		624,623
Peru	8,199	0	64,870	0	545	0	0	392,455		1,091,079
Singapore	52,871	3,033	70	103,318	5,313	4	0	40,380		297,234
United States	81,672	228	13,285	0	19,965	4,026	10,731	0		2,423,175
Vietnam	197,610	0	19	0	5,332	3	0	1,160,309		2,226,401
TOTAL	5,522,408	148,123	320,397	2,357,603	962,072	37,625	1,966,865	42,813,281	69,307	215,763,573

Sources: Ratha and Shaw (2007) updated with additional data for 71 destination countries as described in the Migration and Remittances Factbook 2011. Notes:

(1) Bilateral migration data were created by applying weights based on bilateral migrant stocks (from population censuses of individual countries) to the UN Population Division's estimates of total migrant stocks in 2005. See Ratha, Dilip K., and William Shaw (2007). "South-South Migration and Remittances," Development Prospects Group, World Bank.

(2) Assumptions for allocating unidentified migrants are described in Ratha and Shaw (2007)

Table 4. Bilateral Remittances on TPP members

Bilateral Remittance Estimates for 2010 using Migrant Stocks (millions of US$)									
Remittance-receiving country (across) Remittance-sending country (down)	Australia	Brunei Darussalam	Chile	Malaysia	New Zealand	Peru	Singapore	United States	Vietnam
Australia	0		0	127	534	19		105	640
Brunei Darussalam	5		0	87	0	0		0	0
Chile	16		0	0	0	148		17	0
Malaysia	68		0	0	3	0		0	0
New Zealand	672		0	17	0	1		26	17
Peru	1		0	0	0	0		5	0
Singapore	0		0	1,129	0	0		14	0
United States	760		1	59	21	897		0	3,760
Vietnam	0		0	0	0	0		0	0
ESTIMATED REMITTANCES IN 2010	4,335		5	1,576	685	2,494		3,122	7,215

Notes:

These data are estimated using assumptions and arguments as explained in Ratha and Shaw (2007).

APEC Needs to Improve Its Financial Market Integration and Collaboration

Sri Adiningsih Ph.D.

High financial integration in APEC region has promoted the economic liberalization in APEC but also potentially creates financial instability that will be costly. The experiences of the last global financial crisis and current European economic crisis are reminders to APEC economies that they should have strong, healthy and efficient regional financial market and strong collaboration. Beside the need for each APEC member economy to strengthen their financial market, APEC also needs to have regional financial cooperation such as regional early warning system and a mechanism to support each other when there is APEC member economy hit by financial market crisis or even potentially entering the crisis. In addition, the region also needs to further promote financial integration in order to reduce their vulnerability to financial contagion which comes externally or internally. A greater financial integration within APEC economies is more likely to help create more stable financial market in each economy and in the region, also create global financial market stability.

1. Background

In the last two decade we see that the financial market in the Asia Pacific region was hit by many financial or economic crises, which showed that the region financial market was vulnerable. Meanwhile, high financial market instability that can trigger financial crises often culminates in economic crises. When a financial or economic crisis occurs, the impact of the crisis often damages the economy and sometime the recovering cost is high.

Latin America "tequila" crisis, Asia economic crisis, the last global financial crisis which spread from the US to all over the world showed us how costly was the crisis. When the global financial markets have not recovered totally from the crises, they are now threatened by the European financial crisis which is still uncertain when it will be resolved. Consequently, many APEC economies are waiting in uncertainty what will be the solution to the Euro crisis. For sure, the impact of the Euro crisis to global financial market has been experienced by the economies, substantial pressure on their financial markets. When financial market are disrupted, cross border economic activities such as trade or investment activities are also disrupted.

The last two decades show that the region financial market is vulnerable and financial or economic crisis comes and goes quite often. So, a regional economic cooperation such as APEC needs to have a regional collaboration in financial system in order to strengthen its financial systems. Such strong, stable, and efficient financial system will support the road to Bogor Goals. A study conducted by APEC Policy Support Units (2010) shows that the APEC economies have reduced barriers to trade and investment since 1994. Moreover, the study also shows that APEC economies were outperformed the rest of the world in many aspects. However, more efforts need to be done, since the progress was uneven across sectors, tariff and non-tariff barrier were still remained. The gap of development among economies was big even narrowing.

Table 1. Total Population, GDP, and GDP per Capita of APEC Members in 2011

MEMBER ECONOMY	Population (Million) 2010	GDP at current prices (US$ Billions)	GDP per capita at current prices (US$)	GDP at current prices (US$ Billions)	GDP per capita at current prices (US$)
		2010 (a)	2010 (a)	2011 (b)	2011 (b)
Australia	22.4	1,238.0	55,150	1,507.4	66,984
Brunei Darussalam	0.4	12.4	29,675	15.6	36,521
Canada	34.1	1,577.0	46,303	1,758.7	51,147
Chile	17.2	203.3	11,827	243	13,970

People's Republic of China	1,341.4	5,878.30	4,382	6,988.5	5,184
Hong Kong, China	7.1	224.5	31,514	246.9	34,393
Indonesia	237.6	706.8	2,974	834.3	3,469
Japan	127.6	5,458.8	42,783	5,855.4	45,774
Republic of Korea	48.9	1,014.5	20,756	1,163.8	23,749
Malaysia	28.3	238.0	8,423	247.6	8,617
Mexico	108.6	1,034.30	9,522	1,185.2	10,803
New Zealand	4.4	140.5	32,163	168.8	38,227
Papua New Guinea	6.5	9.5	1,465	11.4	1,712
Peru	30.0	153.8	5,205	168.5	5,614
Philippines	94.0	199.6	2,123	216.1	2,255
Russian Federation	142.9	1,479.8	10,356	1,884.9	13,236
Singapore	5.2	222.7	43,117	266.5	50,714
Chinese Taipei	23.2	429.8	18,558	504.6	21,592
Thailand	63.9	318.9	4,992	339.4	5,281
The United States	310	14,526.6	46,860	15,064.8	48,147
Vietnam	88.3	103.6	1,174	121.6	1,362

(a). All recent data subject to revision (b). Forecast IMF/EIU

Source: Australian Government Department of Foreign Affairs and Trade 2011

The Bogor Goals with the objective to reduce barriers to trade and investment to promote the free flow of goods, services and capital among APEC economies in 2010 for industrial economies and 2020 for developing economies are closer. So, financial volatility which is able to disrupt the economic integration or development needs to be managed to maintain financial stability. Promoting financial market stability and integration within the region help the region economy developed, share prosperity.

2. Economic and Financial Market Stability in APEC Economies

Economic Cooperation among APEC Member Economies

APEC which was established in 1989 becomes the premier forum for promoting trade and investment liberalization in the Asia Pacific region. Economic cooperation among APEC members is becoming more important, the intra trade, investment and capital flows in APEC region are increasing. The intra trade in APEC increases significantly, shown from merchandise exports of APEC members that reached US$ 4.8 trillion in 2010, and only US$ 2.3 trillion for extra export in the same period. is economic integration.

In brief, APEC members trade more with each other than with other non-APEC trading partners. APEC members export to another member economy more than to a non-member economy. In the same time, APEC import more from other members than from non-member economies. This large intra-regional share of export and import within APEC demonstrates the high level of dependency among APEC economies.

Table 2. Intra APEC Exports, 2006 – 2010

MEMBER ECONOMY	MILLION US$		SHARE (%)		GROWTH (%)	
	2006	2010	2006	2010	2006-2010	AVERAGE
Australia	89,060.30	161,016.60	2.35	3.31	80.80	16.16
Brunei Darussalam	7,237.90	7,683.56	0.19	0.16	6.16	1.23
Canada	347,548.40	330,811.30	9.19	6.81	(4.82)	-0.96
Chile	32,048.90	45,752.40	0.85	0.94	42.76	8.55
People's Republic of China	648,936.10	972,303.30	17.15	20.01	49.83	9.97

Hong Kong, China	250,677.50	316,023.70	7.83	6.51	26.07	5.21
Indonesia	78,659.70	116,897.80	2.08	2.41	48.61	9.72
Japan	491,462.60	587,469.30	12.01	12.09	19.53	3.91
Republic of Korea	227,395.60	322,368.00	6.01	6.64	41.77	8.35
Malaysia	125,356.10	152,076.60	3.31	3.13	21.32	4.26
Mexico	224,310.90	262,557.50	5.93	5.40	17.05	3.41
New Zealand	15,543.10	22,004.20	0.41	0.45	41.57	8.31
Peru	13,901.10	19,791.10	0.37	0.41	42.37	8.47
Philippines	38,351.00	42,636.20	1.01	0.88	11.17	2.23
Russian Federation	37,044.10	67,661.70	0.98	1.39	82.65	16.53
Singapore	207,113.30	260,162.10	5.27	5.36	25.61	5.12
Chinese Taipei	182,669.90	225,110.40	4.83	4.63	23.23	4.65
Thailand	92,901.20	134,772.30	2.46	2.77	45.07	9.01
The United States	644,554.20	773,377.70	17.03	15.92	19.99	4.00
Vietnam	28,945.60	37,619.1	0.77	0.77	29.96	5.99
T O T A L	3,783,717.50	4,858,094.86	100.00	100	28.39	5.68
Source : Asia Pacific Economic Cooperation (APEC) 2011						

Intra exports in APEC member economies between 2006 and 2010 are shown in Table 2 and intra imports in APEC are shown in Table 4. From the tables, it is evident that intra exports and intra imports in APEC are more important than extra exports and extra imports. The tables also show that intra exports and import in APEC economies grew during the period.

Table 3. Extra APEC Exports, 2006-2010

MEMBER ECONOMY	MILLION US$		SHARE (%)		GROWTH (%)	
	2006	2010	2006	2010	2006-2010	Average
Australia	34,262.50	45,668.50	2.06	1.94	33.29	6.66
Brunei Darussalam	398.20	1,223.40	0.02	0.05	207.23	41.45
Canada	40,630.30	55,004.80	2.44	2.33	35.38	7.08
Chile	26,630.20	24,879.10	1.60	1.06	-6.58	-1.32
People's Republic of China	319,999.50	605,460.50	19.19	25.69	89.21	17.84
Hong Kong, China	71,991.30	84,668.30	4.32	3.59	17.61	3.52
Indonesia	22,138.92	40,881.3	1.33	1.73	84.66	16.93
Japan	155,262.46	182,370.09	9.31	7.74	17.46	3.49
Republic of Korea	98,061.65	145,362.21	5.88	6.17	48.24	9.65
Malaysia	35,313.13	46,714.09	2.12	1.98	32.29	6.46
Mexico	25,649.65	35,747.58	1.54	1.52	39.37	7.87
New Zealand	6,866.08	8,927.68	0.41	0.38	30.03	6.01
Peru	9,863.80	15,282.10	0.59	0.65	54.93	10.99
Philippines	9,059.10	8,861.30	0.54	0.38	-2.18	-0.44
Russian Federation	264,199.90	332,438.30	15.85	14.10	25.83	5.17
Singapore	64,695.87	91,705.07	3.88	3.89	41.75	8.35
Chinese Taipei	41,343.04	49,485.98	2.48	2.10	19.70	3.94
Thailand	37,678.85	60,539.22	2.26	2.57	60.67	12.13
The United States	392,475.05	503,731.46	23.54	21.37	28.35	5.67
Vietnam	10,880.62	18,230.3	0.65	0.77	67.55	13.51

T O T A L	1,667,400.12	2,357,181.28	100	100	41.37	8.27
Source : APEC 2011						

Table 4. Intra APEC Imports, 2006 – 2010

MEMBER ECONOMY	MILLION US$		SHARE (%)		GROWTH (%)	
	2006	2010	2006	2010	2006-2010	AVERAGE
Australia	95,566.27	133,926.61	2.431	2.682	40.14	8.03
Brunei Darussalam	1,450.18	2,200.00	0.037	0.044	51.71	10.34
Canada	275,198.80	304,675.04	7.001	6.102	10.71	2.14
Chile	15,878.50	32,787.81	0.404	0.657	106.49	21.30
People's Republic of China	547,317.78	904,548.97	13.923	18.115	65.27	13.05
Hong Kong, China	306,122.39	387,001.75	7.787	7.750	26.42	5.28
Indonesia	46,174.61	107,468.79	1.175	2.152	132.74	26.55
Japan	371,428.00	458,885.91	9.449	9.190	23.55	4.71
Republic of Korea	198,480.16	275,708.99	5.049	5.522	38.91	7.78
Malaysia	101,009.56	127,891.13	2.570	2.561	26.61	5.32
Mexico	205,576.05	246,597.83	5.230	4.939	19.95	3.99
New Zealand	19,542.99	22,480.12	0.497	0.450	15.03	3.01
Peru	7,358.85	17,397.46	0.187	0.348	136.42	27.28
Philippines	42,676.38	49,461.57	1.086	0.991	15.90	3.18
Russian Federation	39,190.85	77,775.77	0.997	1.558	98.45	19.69
Singapore	169,927.27	211,081.80	4.323	4.227	24.22	4.84
Chinese Taipei	145,528.73	176,137.28	3.702	3.527	21.03	4.21
Thailand	87,764.47	128,249.07	2.233	2.568	46.13	9.23
The United States	1,217,249.09	1,265,186.00	30.966	25.338	3.94	0.79
Vietnam	37,512.77	63,837.50	0.954	1.278	70.18	14.04
T O T A L	3,930,953.70	4,993,299.40	100	100	27.03	5.41

Source : APEC 2011

Tables 2 - 5 show that there was growing interdependency in trade between APEC member economies. However, the growth of intra export was lower than extra export eventhough the growth of intra import was higher than extra import. The interdependency is expected to increase since APEC is processing to achieve Bogor Goal and there is high complementary among the economies because APEC consists of developed and developing economies. Developing economies (such as Indonesia, Mexico, Vietnam, and Chile) are usually rich in natural resources and also produce labor intensive products while industrial economies produce high tech industrial goods.

Table 5. Extra APEC Imports, 2006 – 2010

MEMBER ECONOMY	MILLION US$		SHARE (%)		GROWTH (%)	
	2006	2010	2006	2010	2006-2010	AVERAGE
Australia	37,084.48	54,814.05	1.11	1.45	47.81	9.56
Brunei Darussalam	226.01	259.00	0.01	0.01	14.60	2.92
Canada	75,058.35	86,581.59	2.25	2.30	15.35	3.07
Chile	22,527.53	23,432.99	0.68	0.62	4.02	0.80
People's Republic of	244,143.10	491,452.60	7.33	13.04	101.30	20.26

China						
Hong Kong, China	29,631.41	54,367.45	0.89	1.44	83.48	16.70
Indonesia	14,890.86	28,194.49	0.45	0.75	89.34	17.87
Japan	207,635.90	233,734.70	6.24	6.20	12.57	2.51
Republic of Korea	110,899.30	149,385.20	3.33	3.96	34.70	6.94
Malaysia	30,177.48	36,695.14	0.91	0.97	21.60	4.32
Mexico	50,509.87	54,883.90	1.52	1.46	8.66	1.73
New Zealand	6,881.37	7,677.73	0.21	0.20	11.57	2.31
Peru	7,952.71	12,482.04	0.24	0.33	56.95	11.39
Philippines	11,401.61	9,006.23	0.34	0.24	-21.01	-4.20
Russian Federation	98,615.96	17,0924.20	2.96	4.54	73.32	14.66
Singapore	68,783.97	99,709.33	2.07	2.65	44.96	8.99
Chinese Taipei	57,166.13	75,095.72	1.72	1.99	31.36	6.27
Thailand	40,282.10	54,144.31	1.21	1.44	34.41	6.88
The United States	701,748	701,310.80	21.08	18.61	-0.06	-0.01
Vietnam	7,378.35	21,001.50	0.22	0.56	184.64	36.93
T O T A L	3,329,442.90	3,768,032.20	100.00	100.00	13.17	2.63
Source : APEC 2011						

The Level of Financial Openness and Integration among APEC Economies

The financial markets in APEC region in general have high degree of openness. Hong Kong China and Singapore were economies which received a lot of FDI in the region and had the highest FDI index (FDI/GDP) among APEC member economies (exceeds 100 percent) in 2010. Singapore and Hong Kong also had highest external debt per GDP.

Some economies in the region also had high FDI index, such as Brunei Darussalam, Chile, and Vietnam. Some developed economies had high external debt index, such as Australia, New Zealand, and US because usually they have more advanced financial market which attracts foreign investors. The two indexes which show the level of openness in the economies in APEC indicates that in general the economies financial market are open to the rest of the world.

Table 6. GDP, FDI Stock, and External Debt of APEC Economies

Economy	GDP		FDI Inward Stock		External Debt Stock		FDI Stock/GDP		External Debt/GDP	
	million (US dollar)		million (US dollar)		million (US dollar)					
Australia	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010
Brunei Darussalam	696,033.68	1,238,000	242,167.36	508,122.78	547,365	1,265,000	34.79	41.04	78.64	102.18
Canada	9,531.40	12,400.00	9,426.69	11,224.96	n.a	n.a	98.90	90.52	n.a	n.a
People's Republic of China	1,133,759.99	1,574,052.21	341,629.88	561,111.00	439,80	1,009,000	30.13	35.65	38.79	64.10
Chile	2,256,902.97	5,878,629.25	272,094	578,818	282,954.91	548,551.04	12.06	9.85	12.54	9.33
Hong Kong, China	118,249.63	203,442.59	74,196.40	139,538.19	45,434.48	86,349.17	62.75	68.59	38.42	42.44
Indonesia	177,771.73	224,457.86	523,219.48	1,097,619.65	454,623	750,800	294.32	489.01	255.73	334.49
Japan	285,868.61	706,558.24	41,187	121,526.65	134,346.92	179,063.62	14.41	17.20	47.00	25.34
Republic of Korea	4,552,200.19	5,497,812.57	100,898.53	214,880.29	1,521,065	2,441,000	2.22	3.91	33.41	44.40
Malaysia	844,863.00	1,014,483.16	104,879.10	127,046.60	187,882	n.a	12.41	12.52	22.24	n.a
Mexico	137,848.29	237,803.85	44,459.52	101,339.06	51,855.16	81,496.70	32.25	42.61	37.62	34.27
New Zealand	848,947.46	1,039,661.52	226,740.40	327,248.91	165,840.62	200,080.54	26.71	31.48	19.53	19.24
Peru	110,977.59	140,500	51,537.58	70,129.23	113,071	n.a	46.44	49.91	101.89	n.a
Philippines	79,385.07	153,844.94	15,889.17	41,849.47	29,352.32	36,270.99	20.02	27.20	36.97	23.58
Papua New Guinea	103,065.97	199,589.45	14,978	24,893	61,657.75	72,337.28	14.53	12.47	59.82	36.24
Russia	4,901.58	9,480.05	1,068.81	1,745.45	1,880.15	5,822.18	21.81	18.41	38.36	61.42
Singapore	764,000.90	1,479,819.31	180,228	423,150	239,910.91	384,739.67	23.59	28.59	31.40	26.00
Chinese Taipei	125,417.50	222,699.19	194,580.67	469,871.30	229,911	n.a	155.15	210.99	183.32	n.a
Thailand	364,832	430,096	43,175	64,288	233,435	n.a	11.83	14.95	63.98	n.a
United States	176,351.82	318,846.99	60,408	127,257.19	46,361.88	71,262.74	34.25	39.91	26.29	22.35
Vietnam	12,579,700	14,582,400	2,817,970	3,451,405	8,837,000	13,980,000	22.40	23.67	70.25	9.59
	52,931.10	103,571.79	31,136.32	65,627.66	18,992.36	35,139.36	58.82	63.36	35.88	33.93

The development of financial markets among APEC member economies varies; some economies have developed financial markets, some have simple financial markets. But the banking industry plays important role in the financial systems and the economies, provides important services in international trade and investment activities, which are important in the region to promote international trade and investment among its members.

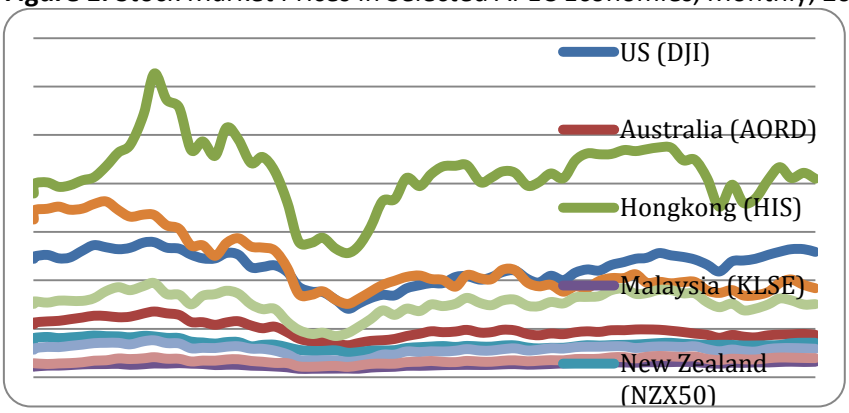
Table 7. Bank Assets of APEC Economies (million US$)

	2007	2008	2009
Australia	2,451,565	3,857,679	2,880,143
Canada	2,414,569	2,985,204	2,502,802
Chinese Taipei	860,145	937,418	948,150
Hong Kong, China	1,326,588	1,387,442	1,371,244
Indonesia	210,904	211,010	243,697
Japan	6,742,123	8,961,855	8,693,182
Malaysia	346,534	369,317	388,935
New Zealand	428,069	717,786	526,026
Papua New Guinea	30,485	34,176	41,982
Philippines	124,009	119,524	133,580
Russian Federation	819,888	953,776	973,080
Singapore	404,426	464,354	502,893
Thailand	267,072	287,910	302,399
The United States	10,817,640	12,197,357	11,598,845

Source: Central Bank of Each Economy 2007-2010

The capital market which develops fast in the region is becoming more integrated. Study conducted by Adiningsih et.al. (2011) shows that the APEC financial markets are more integrated and interdependent. The capital markets in the region are becoming more interdependent and integrated. This interdependence in the markets causes shocks in one market will spread easily to other markets. It can be seen from the impact of the 2008 financial crisis. The crisis which had its origins in U.S. had spread to the region. The interdependence in the financial markets has been made possible and intensified by rising economic cooperation in trade and investment which induces financial transactions and capital flows in the region. The capital flows in the forms of direct and portfolio investment increased in the same time. So, any shocks in one APEC economy, through contagion or spillover effect can quickly and easily spread to other economies in the region.

Figure 1. Stock Market Prices in Selected APEC Economies, Monthly, 2006-2011



Source: Central Bank and Related Stock Market Websites

Intra APEC portfolio investment assets grew fast from 2001 to 2010, the average growth was 22.40% annually. In 2001 the value was only US$1.5 trillion, it increased to US$5.1 trillion in 2010. In the same time the extra portfolio investment assets grew 20.08% annually. So, the intra portfolio investment assets grew faster than extra portfolio investment assets. It means that the financial market integration in portfolio asset in the region increased. Extra APEC portfolio investment asset was higher (US$ 12.8trillion) than intra portfolio investment asset (US$ 5.1 trillion), but it grew slower.

Table 8. Intra APEC Portfolio Investment Assets, 2001, 2010

MEMBER ECONOMY	MILLION US		SHARE (%)		GROWTH (%)	AVERAGE (%)
	2001	2010	2001	2010	2001-2010	2001-2010
Australia	54,113	266,037	3.43	5.21	391.63	39.16
Canada	178,846	445,285	11.35	8.72	148.98	14.90
Chile	3,012	49,819	0.19	0.98	1553.91	155.39
Hong Kong	89,814	380,938	5.70	7.46	324.14	32.41
Indonesia	457	2,297	0.03	0.04	402.13	40.21
Japan	552,348	1,428,504	35.05	27.98	158.62	15.86
Malaysia	1,182	24,802	0.07	0.49	1999.09	199.91
Mexico	n.a	3,669	n.a	0.07	n.a	n.a
New Zealand	7,848	31,982	0.50	0.63	307.50	30.75
Philippines	1,994	2,954	0.13	0.058	48.15	4.82
Russian Federation	218	3,020	0.01	0.059	1285.32	128.53
Singapore	59,623	216,048	3.78	4.23	262.36	26.24
Thailand	557	6,367	0.04	0.12	1043.11	104.31
The United States	626,046	2,244,490	39.72	43.96	258.52	25.85
T O T A L	1,576,058	5,106,212	100	100	223.99	22.40

Source: International Monetary Fund 2011

Table 8 shows the portfolio assets that belong to the 14 APEC member economies. The U.S. dominated intra APEC investments, which was reflected by its share of 43.96 percent in 2010. Japan was in the second position with its share of 27.98 percent in 2010. In terms of growth, Malaysia experienced the highest growth in portfolio investment assets during 2001 – 2010 periods, followed by Chile and the Russian Federation. Portfolio investments assets in the APEC region grew by 22.40 percent annually during 2001-2010 periods.

Table 9 shows securities from non APEC members which are owned by 14 APEC members. Among APEC members, the United States had the largest number of non-APEC securities, followed by Japan. The contribution of the other 12 member economies to non APEC portfolio investments was not significant with only less than 10 percent in 2001 and 2009. In terms of growth, annual growth of portfolio investments assets among APEC during 2001-2010 periods was larger than the figure for extra APEC member economies. However, total portfolio investments assets of intra APEC was US$ 5.1 trillion in 2010, while total portfolio investments assets for non APEC economies was US$. 12.8 trillion. The figures underline the fact that although interdependency among financial markets among APEC members had been increasing, APEC members still invested more in securities issued by non APEC member economies than those of other APEC members.

Table 9. Extra APEC Portfolio Investments Assets, 2001, 2010

MEMBER ECONOMY	MILLION US		SHARE (%)		GROWTH (%)	AVERAGE (%)
	2001	2010	2001	2010	2001-2010	2001-2010
Australia	79,352	468,042	1.86	3.64	489.83	48.98
Canada	261,240	680,277	6.12	5.30	160.40	16.04
Chile	6,757	119,101	0.16	0.93	1662.56	166.26
Hong Kong	205,600	928,942	4.81	7.23	351.82	35.18
Indonesia	717	6,496	0.02	0.05	805.93	80.59
Japan	1,289,749	3,345,830	30.20	26.05	159.42	15.94
Malaysia	2,279	35,893	0.05	0.28	1474.65	147.46
Mexico	n.a	10,825	n.a	0.08	n.a	n.a
New Zealand	12,422	47,797	0.29	0.37	284.79	28.48
Philippines	2,135	5,862	0.05	0.05	174.57	17.46
Russian Federation	1,315	37,296	0.03	0.29	2736.20	273.62
Singapore	105,241	398,757	2.46	3.10	278.90	27.89
Thailand	825	22,978	0.02	0.18	2685.17	268.52
The United States	2,303,603	6,738,006	53.93	52.45	192.50	19.25
T O T A L	4,271,237	12,846,103	100	100	200.76	20.08

Source: International Monetary Fund 2011

3. APEC Initiative in Financial Systems

APEC has commitment to foster regional economic integration, free and open markets, and security' to put a lot of emphasis on efforts toward strengthening the efficiency of markets, which among others is achieved through liberalization, regulatory reforms, and harmonization of trade and investment regimes. To achieve its goal the region reduces barriers to trade and investment through free trade agreements and regional trading arrangements, and facilitates integration of transportation, telecommunications, mining and energy, increases economic efficiency and regional business environment, capital markets inclusive to reduce business risks and costs, thereby enhances competitiveness (APEC 2007). In line with the goals, the financial system development initiatives under APEC regional framework fall under the Finance Ministers' process (APEC 2010), which is an annual forum for Finance Ministers in which exchange of views and information on 'macroeconomic and financial developments and on national and regional policy priorities, the strategic goals, among which include ensuring stable and efficient capital markets, macroeconomic stability in the APEC region, prudent finance management, good corporate governance, sustainable and broad based development with equity, and facilitation of economic and technical cooperation among APEC member economies are made.'

In line with its goal, APEC members also emphasize the importance of a good business environment in serving as drivers of economic growth, take measures to improve efficiency of domestic markets and undertake structural reforms, which are tailored toward increasing economic growth, resiliency and sustainability of APEC member economies. So, they adopt APEC Trade Facilitation Action Plan which is aimed at reducing transaction costs by an additional 5 percent by 2010, increasing the liberalization of investment regimes, fostering and supporting investment and domestic reforms tailored toward financial institutions and markets.

In line to the financial system development, the members have over time increased and deepened their financial markets development and liquidity by developing new financial instruments

and broadening institutional capacity, which are considered vital for high and stable economic growth, better risk management, and higher economic integration. In order to fostering the cooperation, exchange of technical expertise, as part of institutional development, is also considered an important to improve financial markets performance, soundness, and integration. Among policy initiatives in the area of financial development and integration, include (Adiningsih et.al. 2011):

- The policy dialogue on savings and capital market development, which is a voluntary action program tailored towards promoting free and more stable capital flows which was sponsored in 1997 by New Zealand, Chile, and Vietnam and endorsed by APEC ministers in 2000;
- APEC finance development program, which involves efforts by Asia Pacific and Finance Development Center (AFDC) to build capacity in finance and development with the support of APEC member economies and international development institutions through workshops, some of which covered themes such as bank risk management, corporate bond markets, innovation for development;
- Program on deepening prudential regulatory in non-life insurance endorsed in 2005, which is public-private partnership arrangement to provide training for non-life insurance regulators;
- APEC Economic leaders' future think tank, launched in 2000 which has so far covered such themes as "Securing International Capital Flows", and "Financial Sector Reform to Attract Capital Flows";
- APEC Financial Regulators training initiative (FRTI), which has the objectives of 'strengthening content and management of the national training programs and developing regional programs for junior and mid-level banking supervisors and securities regulators;
- APEC financial institutions dealing with SMEs, launched in 2005 with the objective of strengthening cooperation in SME financing and increasing access to APEC SMEs.

There are some other initiatives in finance and development which include (Adiningsih et.al. 2011):

- The Insolvency Reform Initiative. It was endorsed in 2004 and implemented in Forum in Asia Insolvency Imitative in 2006. The initiative covers such wide-ranging areas concerning general assessment of Asian reforms in the last decade and specific topic discussions on re-organization, informal workouts, courts and regulatory institutions, priority claims, creditor participation, corporate groups, and cross-border insolvency. The phase two of the initiative has the objective of establishing a regional network to monitor and ultimately provides a source of information on and advice about, improvements to insolvency systems in Asia on an on-going basis;
- Reform of financial sector initiative, which was sponsored by Australia, Indonesia, PRC, Japan and Vietnam, was endorsed in 2005. The initiative has the objective of discussing the development and implementation of financial sector reforms and strategies, developments in financial frameworks, with the date for final report of the initiative set for 2007.
- The APEC Response policy to the aging issue, sponsored by Korea and motivated by concerns that an aging population will have on fiscal management, economic development and capital markets, has several objectives which among others include: (i) finding a commonality amongst the domestic reforms conducted by each APEC economy and derive an effective policy guideline on a voluntary basis and (ii) calling for a comprehensive group, including experts from member economies as well as from IFIs.

APEC also develops some activities to support capacity building by organizing workshops on institutional investor development, regulatory reforms for banking and securities supervisors and regulators, and on promoting SMEs. Other measures include (Adiningsih et.al. 2011):

- Efforts to identify priority areas for structural reforms, as well as developing modalities to share best practices and expertise and linking need for reform and APEC member economy resources, under the APEC study group on structural reforms;

- Developing common approaches to improving private investment among APEC economies, under APEC Infrastructure pathfinder initiative;
- Investigating how best financial institutions such as banks, capital markets and other market based instruments, and subsidies and tax policies can contribute to green growth; and
- Assisting targeted economies in improving strategies to maintain long term fiscal sustainability policies without forsaking measures to restore economic growth and confidence during economic recovery under the improving strategies for fiscal sustainability and economic recovery arrangement. It is interesting to note that despite being driven by short term objective of mitigating the impact on 2008 financial crisis on APEC economies, the packages had a long term objective of strengthening long term financial stability, economic development and prosperity in region. This is why, fiscal and monetary stimulus packages and financial market reforms, were implemented covering supervision, regulations, information disclosure arrangements, risk management, scope of business operations, among others.

In the 17th APEC Finance Ministers' meeting 2010 in Kyoto Japan, the Joint Ministerial Statement launched an "APEC Financial Inclusion Initiative" to identify concrete actions that financial policy makers can take to expand the reach of financial services to the underserved. A number of workshop and seminar took place in 2010, such as:

- Training of "Implementing of Financial System Regulatory Reforms in the Region Following the Global Financial Crisis" for senior until mid-level official from the region's banking regulatory, in Shanghai, China, June 2010.
- "APEC Financial Regulators Training" series for strengthening the training for staff of supervisory and regulatory agencies and improve coordination of regional and international training programs.
- Seminars that were delivered in 2010 for banking and securities supervisory and regulatory authorities in topic such as risk management and regulation on new products.
- Seventh Annual Meeting of APEC Financial Institutions Dealing with SME that was conveyed in June 2010 in Kuala Lumpur.

In 2011 a series of activities have been launched by Finance Ministers' Process such as:

- APEC Financial Inclusion Initiative (PAEC FII) which its objective was to deliver guidance for the economies to expand the financial services to all, including the bottom of the economic pyramid. Workshop in San Francisco on February 2011 and Bangkok on June 2011.
- Project on "Accelerating Financial Inclusion in Asia and the Pacific: An Operational Dialog on Innovative Financial Inclusion Policies" which aimed to build capacity and map strategies to implement financial inclusion.
- Project on "Green Finance for Green Growth" that investigated how financial sector can facilitate green growth.
- Project on "Contributing to Efforts for Greater Financial Markets Stability in APEC Economies" which aimed to promote financial stability and integration in APEC.
- Project on "Developing Capacity for Cross Border Recognition of Equivalent Regulatory Regimes for Issuing and Trading Financial Products and Services" which aimed to enhance developing economies capacities in APEC to participate in cross border recognition arrangements, in respect of regulatory regimes for marketing and trading of funds.
- The Eight Annual Meeting of APEC Financial Institutions Dealing with SME that was conveyed in Mexico June 2011.

There are many activities such as policies dialogues, trainings, workshops or seminars that have been launched by APEC through Finances Ministers' Process to strengthening financial system. But there are more efforts need to be done since the region financial markets have been integrated while there are some sources which can potentially create vulnerabilities.

4. Conclusion

Economic cooperation and financial markets in the Asia Pacific region have developed rapidly and become more integrated. Despite the financial systems or financial markets among APEC member economies vary, in general, the financial systems or markets develop fast. The financial market is becoming broader and deeper, and more integrated. Nonetheless, the rapid development of financial markets which are more integrated in the region over the last two decades has becoming more volatile, which can be seen from banking, financial or economic crisis which come more often in developing and developed economies in APEC. Remember the Tequila crisis in Mexico in early 1990s, followed by the Asian economic crisis of 1997-1998, and the Sub Prime Mortgage crisis in the U.S.in 2008. The last financial crisis spread all over the APEC region, an example of increasing level of financial markets integration in the region. The cost to resolve the crisis was very expensive. Even recently, when the impact of global financial crisis have not totally resolved, the Euro Crisis has already spread all over APEC region. We have not yet known when the Euro Crisis will be over. Therefore, maintaining financial stability is crucial for APEC so that it can reach its goals.

Moreover, research findings by Adiningsih et.al. (2011) show that the U.S. which has an advanced financial market can get embroiled in a deep financial crisis which caused by rapid development of derivative markets without adequate supervision and regulation. The study also shows that each economy in APEC in the study still faces potential sources of financial market vulnerability, which differs among the economies. The U.S. indebted household sector, large budget deficit and high government debt, and large current account deficit, were the source of its financial vulnerability. Australia's source of financial vulnerability came from the fact that source of funds for banks were highly dominated by offshore funds, high household debt, and high housing prices. Emerging economies such as Indonesia and Mexico faced larger sources of vulnerability. Indonesia faced financial market vulnerability since received large short term capital inflows. Because its financial market was narrow and shallow, it was susceptible to shocks. On the other hand Mexico financial market was also vulnerable because its capital market was highly concentrated for some emitents, where three listed companies contributed to 30 percent of market capitalization. Other sources of vulnerabilities for Mexico were counterparty risks, and hidden derivative transactions in financial institutions. The study also show that the impact of financial crisis was huge even varied among APEC economies. In general, the impact of the financial crisis was huge and costly because it caused slower economic growth, an upsurge in unemployment, depreciation of the local currency, a decrease in capital market composite index, decline in exports and imports, an increase in interest spread and volatility in the financial market and a decrease in bank asset quality. Some economies even have not recovered from the crisis.

Financial or economic crisis can hinder the achievement of Bogor Goal. The objective of APEC to share prosperity will also be more difficult to achieve. In the light of situation, APEC needs to take some action to maintain financial stability and the integrated financial market; such financial market will support the Bogor Goal and the prosperity share in the region. So far APEC under Finance Ministers' Process has launched many programs, projects, training or seminars which aims are to enhance the financial market support to reach the Bogor Goal. But the activities in general have not focused on enhancing financial stability and integration. So, APEC needs to do more than what has been done so far.

APEC economies need to have strong, healthy and efficient regional financial systems. Therefore, the economies need to have a strong collaboration in the financial system, more than what has been done. Beside the need for each APEC member economy to strengthen their financial market, APEC also needs to have regional financial cooperation such as regional early warning system and a mechanism to support each other when there is APEC member economy hit by financial market crisis or even potentially entering the crisis. In addition, the region also needs to further promote financial integration in order to reduce their vulnerability to financial contagion which comes externally or internally. A greater financial integration within APEC economies is more likely to help create more stable financial market in each economy and in the region, also help create global financial market stability. Integrated and stable financial systems reduce business risks and costs, thereby enhancing competitiveness.

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Analyzing the APEC Process and Future APEC Goals

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1. Introduction

The purpose of the paper is to analyze the APEC process and its influence on the formation of APEC goals in the past, the present Bogor Goals, and the future APEC goals. Essentially, the APEC process is made up of three elements consisting of APEC goals, decision-making principles, and the organizational structure. This means that the development of APEC goals is affected by the APEC decision-making principles, such as the non-binding principle. The APEC organizational structure, represented by the APEC fora, exists for the purpose of achieving the APEC goals.

In addition, the paper will show that the APEC process has operated in a cautious manner, so that APEC goals are flexible. For example, the Bogor Goals do not specify the meaning of free trade. It can mean zero tariff or freer trade. Thus the APEC process can be characterized as being cautious which result in APEC goals that are evolutionary in nature rather than revolutionary. In the future, after the Bogor Goals, APEC would most likely develop goals that evolve from the Bogor Goals, if the current APEC process continues to operate. Finally, the paper will assess a few potential APEC goals and also make recommendations on the possible APEC goals in the future after the Bogor Goals.

2. APEC Process and the Bogor Goals

In order to comprehend APEC's work towards achieving the Bogor Goals, it is necessary to understand the APEC process. The Bogor Goals are a part of the APEC process. From analyzing and being involved with the APEC process, it becomes increasing evident that the APEC process is composed of three important elements. The three elements are APEC goals, decision-making principles, and organizational structure. Thus the APEC process could be elaborated as the implementation of APEC operations that lead to the achievement of its goals.

The interactions of the three elements of the APEC process result in the APEC goals. In 1994, the APEC process led to the creation of the Bogor Goals. In the future, the APEC process will also result in the development of new APEC goals. The APEC process is constantly evolving and adjusting to the changes in the international economic environment. At the same time, the APEC process indirectly affects the international economic environment as APEC develops new ideas for trade and investment liberalization and facilitation. APEC's work on economic and technical cooperation also influences international stakeholders. APEC is influential because major economies are APEC members. Furthermore, the rising economic significance of the Asia-Pacific region ensures that APEC has a major role to play in the international economic system. The importance of APEC to the world means that APEC members will be careful in developing new ideas and goals. Thus the APEC process will evolve in a steady and cautious manner.

2.1 First Element of APEC Process: Goals

The analysis of APEC goals in the period from 1989 to 1993 indicated that APEC was extremely energetic and eager to declare goals. The two major goals that APEC had focused on were the call to support the multilateral trading system and the need to enhance regional economic cooperation. Another observation was that since APEC was in its infancy, the goals were conceived to reflect the immediate challenges facing APEC. Thus in the first period (1989-1993), APEC had not yet designed goals in a systematic manner.

The second period (1994-2010) begins with the existence of the Bogor Goals in 1994 and ends with the deadline for the achievement of the Bogor Goals by developed economies. During the period of

APEC's existence from 1994 to 2010, APEC has developed longer term goals. The output from APEC was the famous Bogor Goals that was announced in 1994. Leaders proclaimed that APEC developed economies will achieve free and open trade and investment by 2010 whereas developing economies will do so by 2020 (APEC 1994).

Since 1994, APEC has been seeking to reach the Bogor Goals. In 2010, there was widespread excitement as to what the developed economies will say regarding the attainment of Bogor Goals. For many years, researchers have pointed out that the Bogor Goals have not specified quantitative measurements. Therefore, free trade as stated in the Bogor Goals does not automatically mean zero tariffs. At the moment, the reality is that every APEC member is free to provide its own interpretation of the meaning of free trade.

2.2 Second Element of APEC Process: Decision-Making Principles

For the APEC process to function properly, it is also necessary to include the APEC decision-making principles. Essentially, the principles consist of consensus building, voluntary participation, and non-binding decisions. These three principles make up the second element of the APEC process. They serve as guidelines for the conduct of discussions and the making of decisions among APEC member economies. APEC has followed the three principles since the beginning of its creation in 1989. Unless APEC adopts new principles, the three principles will continue to be observed into the future.

The presence of the three decision-making principles in APEC has led to a unique APEC way of cooperation in developing and implementing actions. For example, an APEC project might be approved by all APEC members through the building of consensus. However, an APEC economy is not required to participate in the project because participation is voluntary. Furthermore, any APEC member that joins the project could suspend its participation anytime or does not contribute wholeheartedly, because decisions are non-binding. There is no concrete penalty for unfulfilled commitment. The APEC decision-making principles have been criticized as causing APEC to minimize gains, in order to achieve cooperation among members. At the moment, there is no indication that APEC is going to change its decision-making principles.

2.3 Third Element of APEC Process: Organizational Structure

The third important element of the APEC process is the APEC fora that make up the APEC organizational structure. Since 1989, APEC has established APEC Fora that primarily develop policies (policy level) and those that implement policies (working level). Specifically, the organizational structure can be viewed as consisting of three tiers. The top tier of the organizational structure is APEC Fora that develop policies consisting of Leaders' Meeting, Ministerial Meeting, Sectoral Ministerial Meeting, and APEC Business Advisory Council (ABAC). These Fora seek to provide the roadmap for APEC. The Leaders' Meeting is the most significant APEC forum because it is the annual meeting of APEC Leaders (APEC 2012).

At the middle tier of the APEC organizational structure rests APEC Fora that coordinate the work of APEC, such as the Senior Officials' Meeting (SOM), APEC Secretariat, Committee on Trade & Investment (CTI), Budget & Management Committee (BMC), Economic Committee (EC) and SOM Steering Committee on ECOTECH (SCE). The SOM is in charge of directing the aforementioned APEC Fora at the middle tier. The bottom tier of the APEC organizational structure is made up of APEC Fora that serve to implement policies and actions to achieve APEC's goals (APEC 2012).

3. Assessing the 1st Period of APEC (1989-1993)

In the first period of APEC from 1989 to 1993, the APEC process was in its infancy but it had started to operate. The first element, goals, was already in existence. APEC had developed goals, such as seeking closer regional economic cooperation and supporting the multilateral trading system. At the same time,

the APEC decision-making principles of consensus building, voluntary participation, and non-binding decisions were presented.

The principles indicated high degree of flexibility and allowed APEC to set realistic goals and developed Fora. Furthermore, APEC had also created several APEC Fora to advance its work and the realization of its goals. In 1989, there were 2 APEC Fora. By 1993, the number was 11. The APEC organizational structure was beginning to evolve systematically for the purpose of advancing the achievement of APEC goals.

4. Assessing the 2nd Period of APEC (1994-2010)

The second period of APEC which began in 1994 and ended in 2010 is an extremely important period for APEC. The announcement of the Bogor Goals in 1994 caused APEC to strengthen its development in a positive way. The year 2010 was important because it was the deadline for developed economies to achieve the Bogor Goals. The initiation of the Bogor Goals has resulted in discussions about whether or not APEC should transform the decision-making principles.

Some scholars have called for APEC to establish binding decisions, so that APEC members would be compelled to become more serious in achieving the Bogor Goals. However, the Bogor Goals do not have a quantitative target, such as 0 tariffs, so that free trade could be loosely interpreted. Thus the present APEC decision-making principles could still be considered useful, because they are flexible and enable APEC members to achieve the Bogor Goals. The flexibility of the decision-making principles also enhances APEC members' desire to seek new actions, such as the development of more projects and Fora.

As for the organizational structure, APEC has increased the number of Fora to strengthen the work of APEC. In 1994, there were 20 APEC Fora. By 2008, APEC had created 45 Fora. The rise in the number of Fora is an indication of the high degree of activities in APEC which contribute to the achievement of the Bogor Goals. Thus in the second period, it could be inferred that the APEC process has been relatively efficient. The three elements are interacting in a well-organized manner and slowly pushing APEC toward greater economic development.

In 2010, the APEC Policy Support Unit (PSU) published an important report, "Progressing towards the APEC Bogor Goals." According to the report, the economies being assessed in 2010 have reduced barriers to trade and investment since 1994. In addition, the data indicate that developing economies have also made progress. Furthermore, APEC has advanced sustainable growth (APEC PSU 2010).

Most importantly, the report states that the Bogor Declaration provides guidance but no prescription for achieving free and open trade and investment. Furthermore, the report relates that the Bogor Declaration calls for further reduction of barriers to trade and investment but does not mention the specific level of reduction. In addition, the Bogor Declaration states that WTO rules should be followed. It is also stated in the Report that developed and developing economies have different timeline because of uneven economic development. Thus the Bogor Declaration relates that developed economies will achieve the goal of free and open trade and investment by 2010 while developing economies will do so by 2020 (APEC PSU 2010).

The Report's most significant point is that APEC's goal of free and open trade and investment refers to a deep reduction of barriers with a WTO-consistent approach, not to a full elimination of barriers. In this regard, the concept of reduction of barriers entails the application of the principle of nondiscrimination which underlies APEC's open regionalism approach (APEC PSU 2010).

Since the PSU Report describes the achievement of Bogor Goals as the existence of major reduction of trade and investment barriers, it can be said that APEC members have certainly reduced

trade and investment barriers. The PSU Report's interpretation of the meaning of the Bogor Goals shows that APEC tends to be cautious in addressing issues. Therefore, the APEC process in the future would most likely proceed in a careful manner, so that the new goals after the Bogor Goals would be developed in such a way that would satisfy all APEC members. The new goals in the future could also be characterized in more than one way.

5. Assessing the 3rd Period of APEC (Beyond 2010)

Since the arrival of the 2010 deadline for developed economies to achieve the Bogor Goals, the discussion on the future of APEC after the Bogor Goals has intensified. The analysis of the APEC process indicates that APEC is moving forward in a cautious manner. With regard to the three elements of the APEC process, they have continued to interact with each. The Bogor Goals remain the APEC goals until 2020. The decision-making principles have not changed.

In addition, the organizational structure has only changed slightly with the creation of new working groups, such as the Ocean and Fisheries Working Group (OFWG), the Policy Partnership on Women and the Economy (PPWE), and the Policy Partnership on Food Security (PPFS). Most importantly, APEC's work on reforming itself has enhanced the efficiency and effectiveness of the organizational structure. APEC is now seeking to add value and not duplicate the work of other international organizations. The APEC process is evolving cautiously but with meaningful outputs. This development is the desired path that APEC members want to proceed.

6. Analyzing Scenarios of Future APEC Goals

In this section, scenarios of APEC goals in the future are analyzed for their ability to fit with the APEC process. It has been presented in the paper that the three elements of the APEC process have interacted smoothly. Specifically, the APEC organizational structure has been operating efficiently and carefully. The decision-making principles have not changed. The result is that the APEC goals in the future will most likely be an evolution of the Bogor Goals. The APEC goals will probably not be of a revolutionary kind.

6.1 Scenario 1: Continuing with the Bogor Goals until 2020

In the 2010 APEC Leaders' Declaration, Leaders call for promoting regional economic integration through "working toward the target year of 2020 envisaged by the Bogor Goals for all APEC economies to achieve free and open trade and investment" (APEC 2010). This announcement is significant because Leaders are stating that developed economies and developing economies will now have similar target date of 2020. The most likely rationale for extending the deadline for developed economies is that all APEC economies have made progress but there is still room for improvement. The PSU Report mentioned previously relates that APEC has moved forward across a wide array of economic, trade, investment and social measures. However, APEC economies must exert more efforts (APEC PSU 2010).

According to the 2011 APEC Leaders' Declaration, Leaders state that the APEC region is now taking the leadership role for global growth. This position has been realized because APEC has strongly supported regional economic integration and the Bogor Goals (APEC 2011).

In conclusion, it can be said that APEC economies will continue to seek the achievement of the Bogor Goals for both developed and developing economies by 2020. APEC members are satisfied with the current APEC process characterized by cautious evolution. This scenario is certain to occur and will not change as long as the APEC process does not change.

6.2 Scenario 2: Expanding the Bogor Goals after 2020

This scenario means maintaining the spirit of the Bogor Goals and expanding the coverage. The revised Bogor Goals will focus on advancing regional economic integration (REI) in the APEC region. APEC will

continue to seek free and open trade and investment. In addition, APEC will also work on supply chain issues and will also seek greater role for economic and technical cooperation (ECOTECH). In recent years, APEC has paid greater attention to REI issues.

According to the 2011 APEC Leaders' Declaration, the core mission of APEC is to further integrate APEC economies and to expand their trade with each other. Leaders also recognize that enhancing REI will promote regional peace and stability (APEC 2011). Furthermore, the PSU Report states that the Bogor Goals are not the ultimate goals. The Bogor Goals are being followed to reach APEC's final objectives of equitable development and enhancing the sense of community in the Asia-Pacific region (APEC PSU 2010).

If the current APEC process continues to operate in 2020, there is great likelihood that APEC will expand the Bogor Goals because this path is the easiest to pursue. APEC has already worked on REI issues as well as the achievement of Bogor Goals. The APEC process has been shown to operate in a cautious manner. The expansion of the Bogor Goals after 2020 to REI Goals will be a natural development for APEC.

6.3 Scenario 3: Realizing an FTAAP

In addition to the Bogor Goals, APEC is also seeking to advance a Free Trade Area of the Asia-Pacific (FTAAP). According to the 2010 APEC Leaders' Declaration, Leaders state that they will take concrete steps toward achieving an FTAAP. They mention that an FTAAP will be a comprehensive free trade agreement that builds on regional undertakings, such as ASEAN+3, ASEAN+6, and the Trans-Pacific Partnership (APEC 2010). APEC Leaders mention in the 2011 APEC Leaders' Declaration that APEC has continued to work on realizing an FTAAP, as it is an important mechanism for advancing APEC's regional economic integration agenda (APEC 2011).

With regard to the possibility of creating an FTAAP through an APEC free trade agreement, the present likelihood is small. Supporters of FTAAP will need to work harder in the immediate future. The current APEC process will need to change, in order to realize an FTAAP. The reason is that the APEC decision-making principle of non-binding commitment is not applicable for negotiating a free trade agreement.

However, if an FTAAP is developed informally without the signing of a free trade agreement, then it will be possible to create an FTAAP with the current APEC process. Specifically, an informal FTAAP will satisfy the non-binding principle. An informal FTAAP means that the APEC region will become a free trade area. Essentially, the achievement of the Bogor Goals in 2020 can evolve into an informal FTAAP. The Bogor Goals are about the realization of free and open trade and investment for the APEC region, which is equivalent to an informal FTAAP.

7. Recommendations for APEC on Future APEC Goals

7.1 Recommendation 1: Support Scenarios 1 and 2

The first recommendation is that APEC support Scenarios 1 and 2. This recommendation is valid because the assessment shows that the present APEC process can easily accommodate Scenarios 1 and 2. This means that APEC will officially continue to reach the Bogor Goals by 2020 and then expand the Bogor Goals after 2020 to focus on REI Goals. If APEC members decide to accelerate the realization of Scenarios 1 and 2, it can be accomplished without too much effort because the Bogor Goals and REI Goals are related. Furthermore, APEC has already worked on achieving the Bogor Goals as well as promoting REI.

7.2 Recommendation 2: Support Scenario 3 in Two Stages

The second recommendation is that APEC could support Scenario 3, if it seeks substantial benefits through the creation of a free trade area. APEC could create an FTAAP in two stages. The first

stage is for APEC to build an informal FTAAP through the achievement of the Bogor Goals by 2020. The Bogor Goals are about the realization of free and open trade and investment in the APEC region. An informal FTAAP is about the creation of a free trade area in the Asia-Pacific region. This means that the achievement of the Bogor Goals is equivalent to the creation of an informal FTAAP. APEC can officially declare in 2020 or earlier that the achievement of the Bogor Goals is the beginning of an informal FTAAP.

Once an informal FTAAP is developed, APEC could begin to consider the possibility of moving towards the second stage, which is the creation of a formal FTAAP. This move will entail the changing of the APEC process. It means that APEC will accept the binding principle as part of the decision-making principles. APEC members can then develop a formal FTAAP through the signing of a free trade agreement.

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Establishing reliable supply chains

Establishing Reliable Supply Chains through Liberalization of Trade in Services

By Hikari Ishido[41]

1. Introduction: Supply chains and trade in services

"Establishing Reliable Supply Chains and Service Trade Liberalization" is among the four main pillars of policy/research agenda at the APEC2012 in Russia. This is a sound and indispensable research issue, considering the fact that APEC had launched the "Supply Chain Connectivity Initiatives" (in 2010). As is well known at a conceptual level, reliable supply chains add to the decentralized production activities (trade as well as investment) by business firms. While securing physical connectivity—be it in the form of developing train systems, loading (shipping) docks or airport facilities—reduces business transaction costs, institutional efforts in the form of liberalizing trade in services contributes significantly to an even more enhanced connectivity across the pacific-rim region. ASEAN economies as well as Northeast Asian economies (such as China, Japan and Korea) and all the other Pacific-rim economies (including the US in its efforts under forging a new Trans-Pacific Partnership) are in the process of establishing this institutional aspect of supply chain connectivity.

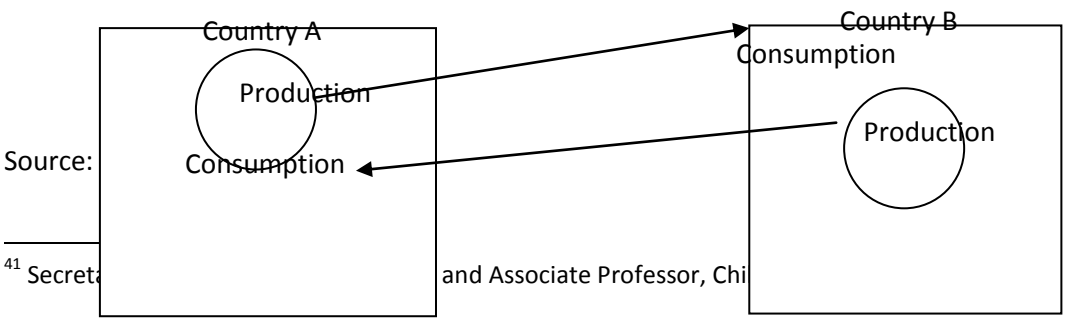
APEC can be an even more comprehensive institutional platform on which to address this institutional aspect, especially through the liberalization of regulations on trade in services. So far, each of the APEC economies has tended to focus upon facilitating the flow of bilateral commodity trade. However, in the 21st century modality of multiple-location and segmented production activities, securing across-the-border policy framework is much needed for a seamless APEC community in which a common set of rules of origin and service-related supporting industries enhances decentralized manufacturing activities. Thus, this research attempts to concretize the APEC's above-mentioned Initiatives in connection to liberalizing trade in services. More specifically, the study addresses the importance of enhancing such supply chain connectivity through liberalizing regulations on trade in services. It also highlights some important service sectors (including logistics, maritime services) and thereby substantiate APEC's future policy directions toward establishing reliable supply chains.

This paper is structured as follows. The next section addresses the conceptual framework for discussing reliable supply chains. Section 3 discusses the status quo of service trade liberalization by some of the APEC member economies both under the GATS (General Agreement on Trade in Services).administered by the WTO, and ASEAN+n type FTAs. The fourth section discusses an expert's view on supply chains and APEC's policy in this regard. The final section suggests some concrete policy options toward establishing APEC-wide reliable supply chains.

2. Conceptual framework for establishing reliable supply chains

The underlying economic background for the need to establish an APEC-wide reliable supply chains is the growing significance of multiple-location, and multiple-stage value adding activities undertaken by business firms. Whereas Figure 1 depicts conventional "supply chain" in the form of international trade in goods (with the services being treated as "non-tradables"), Figure 8 describes the "21st century" type supply chain which is characterized by simultaneity of value production and its consumption across national borders with multiple business locations and multiple-stage production of goods and services.

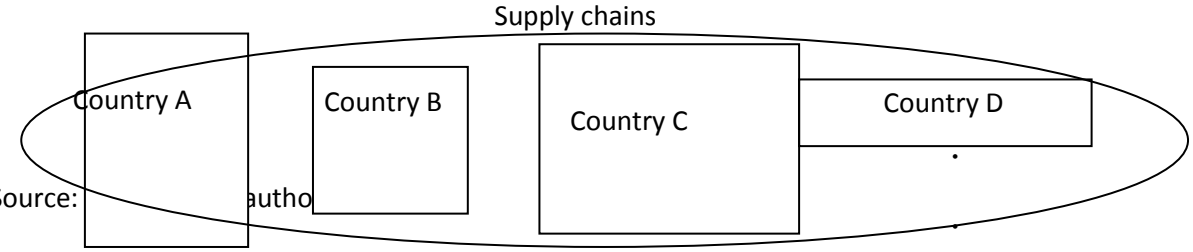
Figure 1. Conventional "supply chain" (international trade in goods)



Source:

[41] Secreta and Associate Professor, Chi

Figure 2. Multiple-location and multiple-stage production



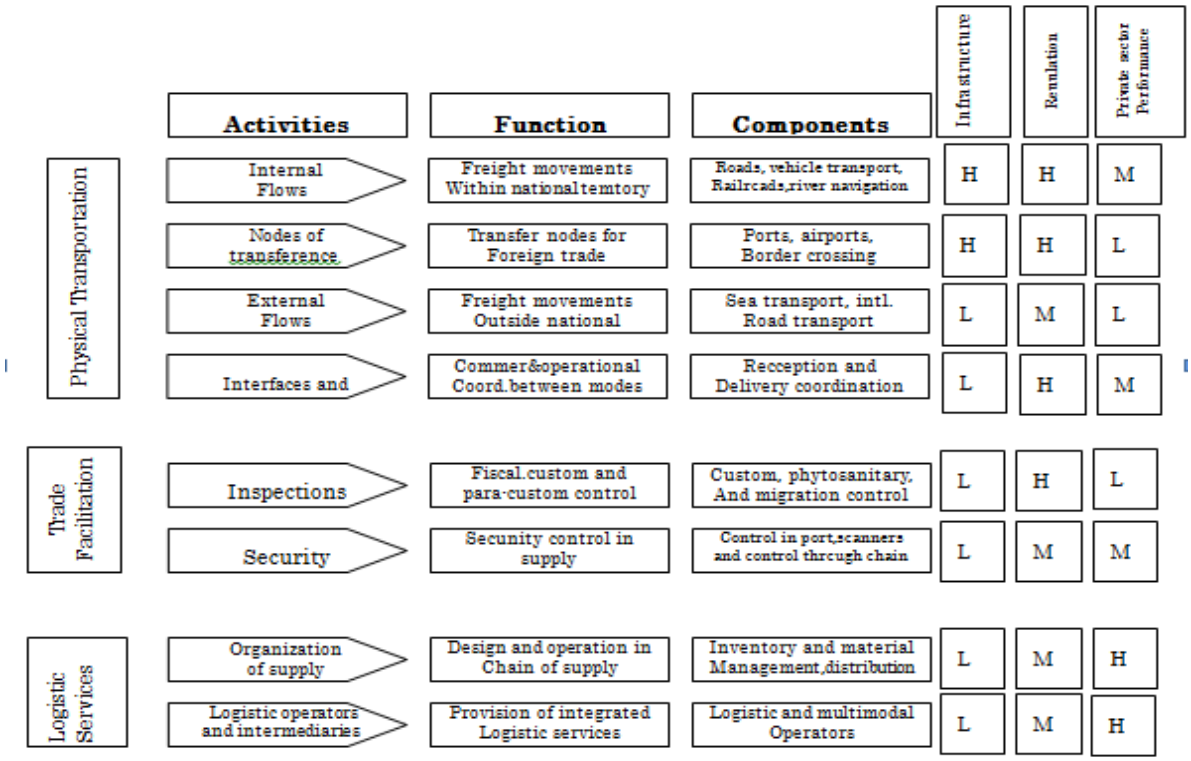
Source: Made by the author.

In view of the above dynamic shift in the business modality in favor of trading services, establishing reliable supply chains (which itself is a "service sector" on the whole) in the APEC region requires cross-border policy coordination. APEC as a premier organization in the Asia Pacific region has a significant role to play in this regard.

According to Gonzalez, Guasch and Serebrisky (2007), a complex logistics system, composed of transport infrastructure and services, business logistics practices and trade facilitation procedures, is key to facilitating the physical flows of goods and services. They also stress that three following major areas have to be dealt with in order to optimize the flow of goods throughout the logistics chains: (1) transportation, (2) business logistics, and (3) trade facilitation. They point out that "[t]his conceptualization of the factors involved in the flow of goods makes clear that the analysis and policy options should not be limited exclusively to infrastructure bottlenecks (infrastructure being considered the hard component of logistics) but should also consider the rules and procedures regulating the services (soft component)". In brief, the performance of an APEC-wide supply chain rests with the cross-border streamlining of both the public and the private sectors involved.

Figure 3 shows conceptualization of supply chains with the movement of international freight transportation as the focus. As featured in the Figure, various activities are involved under the broad categories of "Physical transportation", "Trade Facilitation" and "Logistic Services". Liberalization and harmonization of trade in services especially in the field of international transportation sector is an important policy agenda in realizing reliable supply chains.

Figure 3. Conceptualization of supply chains: the case of movement of international freight transportation



Note: H means “high relevance”; M means “medium relevance”; L means “low relevance”
Source: Adapted from Gonzalez, Guasch and Serebrisky (2007), Figure 18.

3. Supply chain and service trade liberalization: GATS and ASEAN+n FTAs compared

Trade in services is an important and growing mode of international economic transaction. This section maps out the degree of liberalization of trade in services by the APEC members under the GATS (General Agreement on Trade in Services) and under four ASEAN+n type (where “n” can be zero, one or two countries) free trade agreements (FTAs). While there has been a delay in the WTO-based liberalization of trade in services, Asia Pacific economies are in the process of establishing preferential pluri-lateral FTAs with a wide coverage fit for regional community building. They have the potential of merging into a consolidated region-wide free trade framework. This study undertakes a mapping exercise of APEC members’ commitment to the GATS as a basis for a future FTAAP (Free Trade Area of the Asia-Pacific), and also the ASEAN+n type FTAs in terms of trade in services.

After constructing a database showing the existence of limitations on market access and/or national treatment by each service sector, the study finds that the commitment level differs greatly among the APEC members, and that the commitment levels under the ASEAN+n FTAs are higher than APEC members’ commitment to the GATS. It also finds that there are cross-economy and cross-sectoral similarities in the pattern of service sector commitment under the GATS by the APEC members; this implies that the shared domestic sensitivities can be overcome by a shared economic cooperation scheme for enhancing competitiveness in the APEC region. These observations suggest that for a wider FTAAP to be a reality in the foreseeable future, an ambitious liberalization commitment is needed by

each of the APEC members under a suitable integrating framework, including most notably the Trans Pacific Strategic Economic Partnership (TPP).

Whereas WTO's General Agreement on Trade in Services (GATS) is still ongoing under the current Doha Development Agenda for further multilateral liberalization, its basic framework of negotiation is fully taken into consideration and implemented under the four FTAs in the Asia Pacific region. It is therefore necessary first to give an overview of the framework of GATS. The most recent updated version of the GATS Commitment Tables available on-line is dated January 2003. In the case of "Revised Offer 2006", only a limited number of countries have submitted their revised offers.[42] Therefore the former tables are used in this study.

In a commitment table under GATS, four Modes[43] i.e., Mode 1 up to Mode 4, and two aspects of liberalization, i.e., market access (MA) and national treatment (NT), are listed in tabular formats. In each service sector (see APPENDIX for the full list of GATS-based service classification), the four modes and two aspects of liberalization make eight "cells", for each of which the existence of limitations is indicated in text. Such indication is created by filling in one of the following three indications: (1) "none" (in the case of no limitation), or (2) "unbound" (in the case where there is no legally binding commitment made), or (3) description of the limitation.

This study considers specific-commitments only. "Horizontal commitments", or commitments applied to all the GATS service sectors are not considered in this study. This is because the way horizontal commitments are described is oftentimes rather complicated, making a clear-cut and consistent database construction extremely difficult.

The following three-fold symbolic classification is used for constructing a database for the commitment by each sub-sector, by mode and by aspect of liberalization, in each GATS table:

N: No limitation (and bound);

L: Limited (or restricted) but bound;

U: Unbound.

Since there are sub-categories with slightly different patterns of commitments in each of the most disaggregated 155 service categories, one "conservative" (i.e., most restrictive) pattern is listed in the database[44] constructed. In the case where the word "Unbound", or "None" is followed by such phrases as "except...", the label "U" or "N", respectively, is simply applied. The situation of no description exists is considered as "U". This simplified categorization allows for a "bird's-eye view" analysis of an otherwise analytically intractable style of reporting observed in the original GATS commitment tables. The database has been constructed for the APEC member economies. For the sake of comparison, database is also constructed for ASEAN+n type FTAs

As for the contents of L (limitation), further categorization has been made, as follows:

A: limitations on the number of service suppliers whether in the form of numerical quotas, monopolies, exclusive service suppliers or the requirements of an economic needs test;

B: limitations on the total value of service transactions or assets in the form of numerical quotas or the requirement of an economic needs test;

C: limitations on the total number of service operations or on the total quantity of service output expressed in terms of designated numerical units in the form of quotas or the requirement of an economic needs test;

D: limitations on the total number of natural persons that may be employed in a particular service sector or that a service supplier may employ and who are necessary for, and directly related to, the supply of a specific service in the form of numerical quotas or the requirement of an economic needs test;

E: measures which restrict or require specific types of legal entity or joint venture through which a service supplier may supply a service;

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[42] GATS Commitment Tables submitted in 2003 are downloadable at: http://tsdb.wto.org/default.aspx (accessed on 1 March 2011).

[43] Mode 1 refers to cross-border service provision; Mode 2, consumption abroad; Mode 3, service provision through establishing commercial presence; and Mode 4, service provision through movement of people (as suppliers).

[44] The data will be published as part of ERIA FTA database at ERIA's website (www.eria.org).

F: limitations on the participation of foreign capital in terms of maximum percentage limit on foreign shareholding or the total value of individual or aggregate foreign investment (the figure following this symbol indicates the upper bound for foreign equity participation);

G: limitations related to government approval (indicated explicitly);

T: Restrictions related to paying taxes or fees.

Since this paper focuses on supply chains, Tables 1-6 show the database for APEC members' commitments under transportation-related service activities, namely, the "Transport Services", with the contents of L being specified according to the above further categorization A through T. As shown, there is *no seamless connectivity* between and within these Tables' economies. In other words, there is much need for APEC-wide policy coordination in harmonizing maritime-based, air-based as well as inland-mediated logistic services. What is also notable is that the contents of limitations differ across APEC economies. Under this policy circumstance, the APEC-wide supply chain would be unreliable due to differing business climates depending on each economy's service trade limitations. Considering the fact that trade in services on the whole has a "supporting industry" role for manufacturing activities, further service liberalization not just in the logistics (transportation) sector but the service sectors on the whole (see APPENDIX), would significantly increase business transaction costs.

Table 1. Commitment of "11Ab Freight transportation" (CPC code: 7212) within "11A Maritime Transport Services" under the GATS

Economy	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	N	N	E	E
	NT	E	N	T	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	N	N	N	U
	NT	N	N	N	U
Thailand	MA	N	N	U	U
	NT	N	N	U	U
Vietnam	MA	N	N	N	U
	NT	N	N	N	U
Papua New Guinea	MA	N	N	N	U
	NT	N	N	N	U
China	MA	E	N	DEF49	U
	NT	N	N	U	U
Hong Kong China	MA	N	N	N	U
	NT	U	U	N	U
Chinese Taipei	MA	U	U	U	U
	NT	U	U	U	U
Japan	MA	U	U	U	U
	NT	U	U	U	U
Korea	MA	U	U	U	U
	NT	U	U	U	U
Australia	MA	DEG	N	E	U

	NT	AG	N	U	U
New Zealand	MA	N	N	U	U
	NT	N	N	U	U
Canada	MA	U	U	U	U
	NT	U	U	U	U
USA	MA	U	U	U	U
	NT	U	U	U	U
Mexico	MA	U	U	U	U
	NT	U	U	U	U
Chile	MA	U	U	U	U
	NT	U	U	U	U
Peru	MA	U	U	U	U
	NT	U	U	U	U

Source: GATS commitment tables (offered in 2003).

Table 2. Commitment of "11Bb Freight transportation" (CPC code: 7222) within "11B Internal Waterways Transport" under the GATS

Economy	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	U	U	U
	NT	U	U	U	U
Vietnam	MA	U	N	U	U
	NT	U	N	N	U
Papua New Guinea	MA	U	U	U	U
	NT	U	U	U	U
China	MA	E	N	U	U
	NT	E	N	U	U
Hong Kong China	MA	U	U	U	U
	NT	U	U	U	U
Chinese Taipei	MA	U	U	U	U
	NT	U	U	U	U
Japan	MA	U	U	U	U
	NT	U	U	U	U
Korea	MA	U	U	U	U

	NT	U	U	U	U
Australia	MA	U	U	U	U
	NT	U	U	U	U
New Zealand	MA	U	U	U	U
	NT	U	U	U	U
Canada	MA	U	U	U	U
	NT	U	U	U	U
USA	MA	U	U	U	U
	NT	U	U	U	U
Mexico	MA	U	U	U	U
	NT	U	U	U	U
Chile	MA	U	U	U	U
	NT	U	U	U	U
Peru	MA	U	U	U	U
	NT	U	U	U	U

Source: GATS commitment tables (offered in 2003).

Table 3. Commitment of "11Cb Freight transportation" (CPC code: 732) within "11C Air Transport Services" under the GATS

Economy	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	U	U	U
	NT	U	U	U	U
Vietnam	MA	U	U	U	U
	NT	U	U	U	U
Papua New Guinea	MA	U	U	U	U
	NT	U	U	U	U
China	MA	U	U	U	U
	NT	U	U	U	U
Hong Kong China	MA	U	U	U	U
	NT	U	U	U	U
Chinese Taipei	MA	N	N	N	U
	NT	N	N	N	U
Japan	MA	U	U	U	U
	NT	U	U	U	U

Korea	MA	U	U	U	U
	NT	U	U	U	U
Australia	MA	U	U	U	U
	NT	U	U	U	U
New Zealand	MA	U	U	U	U
	NT	U	U	U	U
Canada	MA	U	U	N	U
	NT	U	U	N	U
USA	MA	U	U	U	U
	NT	U	U	U	U
Mexico	MA	U	U	U	U
	NT	U	U	U	U
Chile	MA	U	U	U	U
	NT	U	U	U	U
Peru	MA	U	U	U	U
	NT	U	U	U	U

Source: GATS commitment tables (offered in 2003).

Table 4. Commitment of "11Eb Freight transportation" (CPC code: 7112) within "11E Rail Transport Services" under the GATS

Economy	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	U	U	U
	NT	U	U	U	U
Vietnam	MA	U	N	U	U
	NT	U	N	U	U
Papua New Guinea	MA	U	U	U	U
	NT	U	U	U	U
China	MA	N	N	U	U
	NT	N	N	U	U
Hong Kong China	MA	U	U	U	U
	NT	U	U	U	U
Chinese Taipei	MA	U	N	N	U
	NT	U	N	N	U
Japan	MA	U	U	U	U

	NT	U	U	U	U
Korea	MA	U	U	U	U
	NT	U	U	U	U
Australia	MA	U	U	U	U
	NT	U	U	U	U
New Zealand	MA	N	N	N	U
	NT	N	N	N	U
Canada	MA	N	N	N	U
	NT	N	N	N	U
USA	MA	N	N	L	U
	NT	N	N	N	N
Mexico	MA	U	U	U	U
	NT	U	U	U	U
Chile	MA	U	U	U	U
	NT	U	U	U	U
Peru	MA	U	U	U	U
	NT	U	U	U	U

Source: GATS commitment tables (offered in 2003).

Table 5. Commitment of "11Fb Freight transportation" (CPC code: 7123) within "11F Rail Transport Services" under the GATS

Economy	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	N	N	DE
	NT	U	N	N	N
Vietnam	MA	U	U	U	U
	NT	U	U	U	U
Papua New Guinea	MA	U	U	U	U
	NT	U	U	U	U
China	MA	N	N	U	U
	NT	N	N	U	U
Hong Kong China	MA	U	U	U	U
	NT	U	U	U	U
Chinese Taipei	MA	U	N	N	U
	NT	U	N	N	U
Japan	MA	U	N	AC	U

	NT	U	N	N	U
Korea	MA	U	N	G	U
	NT	U	N	E	U
Australia	MA	U	N	N	U
	NT	U	N	N	U
New Zealand	MA	N	N	N	U
	NT	N	N	N	U
Canada	MA	N	N	N	U
	NT	N	N	N	U
USA	MA	U	N	U	U
	NT	N	N	N	N
Mexico	MA	U	U	U	U
	NT	U	U	U	U
Chile	MA	U	U	U	U
	NT	U	U	U	U
Peru	MA	U	U	U	U
	NT	U	U	U	U

Source: GATS commitment tables (offered in 2003).

Table 6. Commitment of "11Hc Freight transport agency services" (CPC code: 748) within "11H Services Auxiliary to All Modes of Transport" under the GATS

Economy	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	N	N	N	N
	NT	N	N	N	N
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	U	U	U
	NT	U	U	U	U
Vietnam	MA	U	U	U	U
	NT	U	U	U	U
Papua New Guinea	MA	U	U	U	U
	NT	U	U	U	U
China	MA	U	N	EF50	U
	NT	U	N	N	U
Hong Kong China	MA	U	U	U	U
	NT	U	U	U	U
Chinese Taipei	MA	N	N	N	U
	NT	N	N	N	U
Japan	MA	U	U	U	U

	NT	U	U	U	U
Korea	MA	N	N	E	U
	NT	N	N	N	U
Australia	MA	N	N	N	U
	NT	N	N	N	U
New Zealand	MA	U	N	N	U
	NT	U	N	N	U
Canada	MA	N	N	N	U
	NT	N	N	N	U
USA	MA	U	U	U	U
	NT	U	U	U	U
Mexico	MA	U	U	U	U
	NT	U	U	U	U
Chile	MA	U	U	U	U
	NT	U	U	U	U
Peru	MA	U	U	U	U
	NT	U	U	U	U

Source: GATS commitment tables (offered in 2003).

Tables 7 through 12 show the commitment of "Maritime Transport Services" under the ASEAN Framework Agreement on Services (or AFAS, package 7)[45]. In the case of this pluri-lateral free trade agreement on service trade among the ten ASEAN members, the number of "N" (i.e., no limitation) is much bigger, meaning that the ASEAN region is much more seamless and connected than in the case of APEC members' commitments under the GATS. This will give ASEAN a competitive edge in the realization of a reliable supply chain. With the WTO Doha Development Agenda being stagnant, the service trade liberalization under the GATS is also stagnant. What this implies is that the APEC's vision of establishing a Free Trade Area of the Asia Pacific (FTAAP) can be seen as a "de-facto WTO". In this wide-region agreement, supply chain could indeed be a key advantage, since, as shown above in Tables 1-6, an FTAAP would provide participating economies with significant "WTO-plus" elements in terms both of depth of liberalization and service sector coverage. This point is further discussed in section 4.

Table 7. Commitment of "11Ab Freight transportation" (CPC code: 7212) within "11A Maritime Transport Services" under AFAS package 7

ASEAN member	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	N	N	U	N
	NT	N	N	U	N
Cambodia	MA	U	N	N	U
	NT	U	N	G	U
Indonesia	MA	N	N	EF60	D
	NT	N	N	DT	DT
Laos	MA	N	N	EF49G	U
	NT	N	N	ET	U
Malaysia	MA	N	N	EF49G	U

[45] AFAS (ASEAN Framework Agreement on Services), as a living agreement, moves toward deeper commitments by releasing new "packages" almost every year. AFAS package 7 is the latest one for which commitment data is publicly available.

	NT	N	N	N	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	N	N	N	U
	NT	N	N	N	U
Thailand	MA	N	N	U	U
	NT	N	N	U	U
Vietnam	MA	N	N	EF49	U
	NT	N	N	N	U

Source: ASEAN Framework Agreement on Services (AFAS) commitment tables (package 7).

Table 8. Commitment of "11Bb Freight transportation" (CPC code: 7222) within "11B Internal Waterways Transport" under AFAS package 7

ASEAN member	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Cambodia	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	N	N	EF49	D
	NT	N	N	DT	DT
Laos	MA	N	N	EF49G	U
	NT	N	N	ET	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	U	U	U
	NT	U	U	U	U
Vietnam	MA	U	N	EF49	U
	NT	U	N	N	U

Source: ASEAN Framework Agreement on Services (AFAS) commitment tables (package 7).

Table 9. Commitment of "11Cb Freight transportation" (CPC code: 732) within "11C Air Transport Services" under AFAS package 7

ASEAN member	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Cambodia	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	U	U	U	U
	NT	U	U	U	U
Laos	MA	U	U	U	U
	NT	U	U	U	U

Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	U	U	U
	NT	U	U	U	U
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	U	U	U
	NT	U	U	U	U
Vietnam	MA	U	U	U	U
	NT	U	U	U	U

Source: ASEAN Framework Agreement on Services (AFAS) commitment tables (package 7).

Table 10. Commitment of "11Eb Freight transportation" (CPC code: 7112) within "11E Rail Transport Services" under AFAS package 7

ASEAN member	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	N	N	F49	U
	NT	N	N	U	U
Cambodia	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	N	N	EF49	D
	NT	N	N	DT	DT
Laos	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	U	U	U	U
	NT	U	U	U	U
Philippines	MA	U	N	F40	N
	NT	U	N	N	N
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	U	U	U
	NT	U	U	U	U
Vietnam	MA	N	N	U	U
	NT	N	N	U	U

Source: ASEAN Framework Agreement on Services (AFAS) commitment tables (package 7).

Table 11. Commitment of "11Fb Freight transportation" (CPC code: 7123) within "11F Road Transport Services" under AFAS package 7

ASEAN member	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	U	U	U	U
	NT	U	U	U	U
Cambodia	MA	N	N	N	U
	NT	N	N	N	U
Indonesia	MA	N	N	EF49	D
	NT	N	N	DT	DT

Laos	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	N	N	F49	U
	NT	N	N	N	U
Philippines	MA	U	N	F40	N
	NT	U	N	N	N
Singapore	MA	U	N	N	U
	NT	N	N	N	U
Thailand	MA	U	N	DE	U
	NT	U	N	N	U
Vietnam	MA	U	N	N	U
	NT	U	N	N	U

Source: ASEAN Framework Agreement on Services (AFAS) commitment tables (package 7).

Table 12. Commitment of “11Hc Freight transport agency services” (CPC code: 748) within “11H Services Auxiliary to All Modes of Transport” under AFAS package 7

ASEAN member	Aspect	Mode1	Mode2	Mode3	Mode4
Brunei	MA	N	N	F49	U
	NT	N	N	U	U
Cambodia	MA	U	U	U	U
	NT	U	U	U	U
Indonesia	MA	U	U	U	U
	NT	U	U	U	U
Laos	MA	U	U	U	U
	NT	U	U	U	U
Malaysia	MA	N	N	EF49	U
	NT	N	N	N	U
Philippines	MA	N	N	EF**	N
	NT	N	N	N	N
Singapore	MA	U	U	U	U
	NT	U	U	U	U
Thailand	MA	U	N	N	U
	NT	U	N	N	U
Vietnam	MA	U	N	N	U
	NT	U	N	N	U

Source: ASEAN Framework Agreement on Services (AFAS) commitment tables (package 7).

4. An expert’s view on supply chains and APEC’s action on supply chains

Parts suppliers and buyers in Japan are can be characterized as forming a "diamond" shape, rather than a "pyramid" shape, meaning that one supplier (indicated as * at the bottom and in the middle) is tasked with supplying for more than one "parent" company (also indicated as * at the top):

* *

* * * *

* and not * *.

Once the bottom * (third-tier supplier) is hit by a tsunami or else, the 1st and 2nd tiers have much trouble, unable to find out an alternative supply source. There is a trade-off between resilience and low cost.

In response to the author's above email description of a diamond-shaped supply chain concept, an auto expert Michael Smitka (professor at Washington and Lee University in the US) gave the following reply comments[46] on global supply chain.

Diamond -- it used to be the "Alps" model with a broad base with lots of firms supporting the OEM peaks. More and more, it's suppliers who have the technology -- any firm that doesn't purchase from the top global suppliers restricts its technology base. Car companies don't have great strengths in electronics, they're not good at basic materials, and so on -- they're integrators. And while the IT revolution is well known, the materials revolution is at least as important -- wiring is very different than 10 years ago, because of copper alloys and insulators and now aluminum wire (cheaper and lighter but new and because copper is still everywhere in the car, issues of joining dissimilar metals).

Now new materials and IT mean patents, so finding multiple suppliers is hard. Supposedly OEMs were tracking that, in part because of NAFTA tariff requirements. Obviously they either weren't, or that information never made its way to purchasing departments. But that's another reason to mandate "global" supply capability on a local basis, so that you're not dependent on a single factory.

What the above email communication means is that the concept of supply chains is not just about physical connectivity, but also institutional and business-oriented connectivity. As for institutional connectivity, APEC has "Supply-Chain Connectivity Initiative": APEC's Committee on Trade and Investment (CTI) agreed to adopt 10 percent as the overarching target for improving supply-chain performance in terms of time, cost and uncertainty by 2015.[47]

This target relates comprehensively to regulatory impediments, customs inefficiencies and inadequate transport networks and infrastructure. A simulation[48] under this Initiative reveals that the reduction of lead time by 1.1 days on average, reduction of "safety stock" of parts and components by 1.6 day-worth amount on average, 9%-30% reduction of export-related workload, 10%-25% reduction of import-related workload (at the governments) and 30%-60% reduction of business workload (on the business side). Indeed, these reduction possibility is significantly larger in magnitude than tariff reduction.

In connection to institutional and business aspects of enhanced supply-chain connectivity, what follows is the continuation of the email response from Michael Smitka as an auto expert.

In terms of the auto industry, China is now showing up as a substantive supplier horizons: 2 of the 3 finalists I'm visiting this year as a judge of the Automotive News PACE innovation competition flew presenters over from Shanghai, because a substantial part of the work was done there. When I visit European and American suppliers, there are always engineers from multiple countries in the room, often management as well. That's true for German suppliers, French suppliers, Italian suppliers, and US and Canadian suppliers. I don't sense that's the case for Japanese suppliers, and yet the number of

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[46] The email communication was made on 27-28 December, 2011.

[47] Following are the eight "chokepoints" against reliable supply chains pointed out by the APEC Supply-Chain Initiative:

Chokepoint 1: Lack of transparency/awareness of full scope of regulatory issues affecting logistics; Lack of awareness and coordination among government agencies on policies affecting logistics sector; Absence of single contact point or champion agency on logistics matters.

Chokepoint 2: Inefficient or inadequate transport infrastructure; Lack of cross border physical linkages (e.g. roads, bridges).

Chokepoint 3: Lack of capacity of local/regional logistics sub-providers.

Chokepoint 4: Inefficient clearance of goods at the border; Lack of coordination among border agencies, especially relating to clearance of regulated goods 'at the border.

Chokepoint 5: Burdensome procedures for customs documentation and other procedures (including for preferential trade).

Chokepoint 6: Underdeveloped multi-modal transport capabilities; inefficient air, land, and multimodal connectivity.

Chokepoint 7: Variations in cross-border standards and regulations for movements of goods, services and business travelers.

Chokepoint 8: Lack of regional cross-border customs-transit arrangements.

[48] Based on a report made under the "APEC Supply Chain Visibility Initiative" which is administered by Japan.

newly minted Japanese college grads is declining. If the number of engineers hasn't fallen off in absolute terms (the MEXT data I looked at was ambiguous), then surely the average quality must have fallen.

Lots of things regarding supply chains, especially the automotive sector. The base requirement for must non-Japanese OEMs is full support in all major markets, which can mean EU / NAFTA / East Asia but in many cases includes Latin America (Brazil). That means both manufacturing and full engineering support, because at Ford and GM, for example, vehicles are developed in multiple places. So if you're a small supplier, they're less and less willing to deal with you, unless you're a small supplier with a truly global footprint. In addition, Cummins and John Deere and Caterpillar and others on the truck and heavy equipment end are likewise global. If you're not, you're stuck with but one slice of the pie, your primary auto OEM.

Now Honda develops vehicles in the US, Toyota is well along in that process but their US operation is fighting for autonomy (e.g., being asked to use parts developed in Japan without much input from the US end). No particular knowledge of Nissan but it is very international in management and has a much broader supplier base than in the past. Toyota also has a big engineering center outside Paris but I've been able to find very, very little information on it.

From a supply chain perspective this of course increases risks (a point that doesn't need much elaboration, Honda in particular was hit by both the Thai floods and the Tohoku earthquake[49]). But it also results in an insularity that means they aren't always on top of technology. Again, both companies purchase from a much wider array of suppliers than in the past, so it's much less of an issue than 5 years ago. Of course you can also emphasize the cost risk from not having suppliers located where vehicles are sold, a blip in exchange rates can render a company out-of-line with competitors with a stronger local supply base, for better (when the yen was weak) and for worse (now -- and with the capital account surplus much larger than the trade surplus, I don't see that changing anytime soon).

What the above comment on supply chains signifies is the inseparability of consideration to innovative business strategies and dynamic supply chains. Given that APEC 2012 Russia has both supply chains and innovation as the main agenda, a large-scale APEC initiative linking these two issues (innovation and supply chains) could be formulated this year.

Table 13 shows macro-level total logistic cost (as a proportion to GDP) for the four APEC members, i.e., USA, China, Japan and Korea. As shown, the level of logistic cost still remain high, standing at around or over 10 percent of total GDP. And at this macro level also, enhancing both *physical* and *institutional/business*-related connectivity is important, especially in terms of transport cost, inventory cost and management cost. In other words, comprehensive actions are therefore needed to assure reliable supply chains. Since the logistics sector as one of service sectors contributes to all the rest of cross-border economic activities, service trade liberalization should be undertaken as among the core components of the Supply-Chain Connectivity Initiative.

Table 13. Macro-level total logistic cost (as a proportion to GDP) for selected APEC economies (percent)

	1991	2000	2008
China Total logistic cost	-	-	17.4
-Transport cost	-	-	9.1
-Inventory cost	-	-	6.0
-Management cost	-	-	2.2
Japan Total logistic cost	10.5	8.7	8.9
-Transport cost	6.5	5.8	5.4
-Inventory cost	3.5	2.5	3.1
-Management cost	0.5	0.4	0.4
Korea Total logistic cost	-	-	12.5
-Transport cost	-	-	-

[49] The Great East Japan Earthquake which hit Japan's Tohoku area (northern part) on 11 March, 2011.

-Inventory cost	-	-	-
-Management cost	-	-	-
USA Total logistic cost	10.6	10.2	9.4
-Transport cost	5.9	6.0	6.1
-Inventory cost	4.3	3.8	2.9
-Management cost	0.4	0.4	0.4

Note：- n.a.

Source: *Teikoku Data Bank TDB Gyokai Doko* (business trend) *2012-I*", 2011.8 VOL.111.

5. Policy suggestion for realizing more reliable supply chains

APEC Policy Support Unit (2009) indicates the following four strategies for APEC economies to further reduce the time, cost, and uncertainty in moving goods and services along the entire supply chain.

STRATEGIC OBJECTIVE 1: Provide the necessary infrastructures to remove the physical chokepoints along the entire supply chain;

STRATEGIC OBJECTIVE 2: Improve policy and regulatory frameworks that will enhance the performance of the logistics sector and/or logistics service providers;

STRATEGIC OBJECTIVE 3: Streamline trade procedures so that transactions between business and government agencies are easier, quicker, and more economical than before; and

STRATEGIC OBJECTIVE 4: Establish effective institutions and/or institutional arrangements to support efficient market exchanges.

Table 14 is a list of policy options toward more reliable supply chains in a report funded by the World Bank. Here also, both physical (infrastructural) as well as institutional/business aspects of policy options are highlighted. What is notable is the highest potential (viewed from the highest internal rate of return[50]) of the latter, i.e., the institutional/business aspect of policy coordination. Indeed, the internal rate of return of over 50 percent is projected to be achieved when policies aimed at improving the efficiency of logistics service providers and policies aimed at trade facilitation are implemented. This directly translates into the high potential arising from further service trade liberalization especially in the transportation sectors.

Table 14. Summary of policy options toward more reliable supply chains

Solutions/Recommendation	Internal rate of return	Potential if implemented	APEC policy
More and better investment in infrastructure	Between 25-50% (World Bank investment projects)	Medium/high	
Policies aimed at improving the efficiency of logistics service providers	Higher than 50% (due to very low monetary cost of implementation and enforcement) Costs significantly lower than investment in infrastructure)	High	
Policies to improve trade facilitation	Higher than 50% (due to very	Very High	

[50] Internal rate of return (IRR) can be defined as "".

	low monetary cost of implementation and enforcement) Costs significantly lower than investment in infrastructure)		

Source: Adapted from Gonzalez, Guasch and Serebrisky (2007), Table 15.

As the current Doha Development Agenda of the WTO is stagnant, APEC as a premier institutionally motivated forum could implement its own service trade liberalization, most possibly in the form of APEC's new Individual Action Plan (IAP) which includes the issue of service sector liberalization. As mentioned in Section 3, the current liberalization status under the GATS is far from satisfactory. The "WTO-plus" status quo of the ASEAN Framework Agreement on Services (AFAS) has as its goal the establishment of the ASEAN Economic Community in 2015. APEC could do the same. That is, APEC could formulate its own version of service trade liberalization target, under the vision to establish the Free Trade Area of the Asia Pacific (FTAAP). More concretely, Ishido and Fukunaga (2012) propose the harmonization of service trade restrictions with capital participation (the category "F" in the analysis in Section 3) at the center, since allowing for a certain level of foreign equity participation would reduce uncertainty and provide transparency to policy restrictions. Once a harmonized restriction (with "F" at its center) in transportation sector is secured under Mode 3 (commercial presence), an integrated (seamless) and IT-based supply chain would be established across the APEC region. And this is precisely the sort of "APEC-style innovation" which stresses the business-model aspect of innovation activities. An "APEC Model Measure for Service Trade Liberalization" could be proposed in connection to the new IAP process with a view to enabling an APEC-wide reliable supply chains. Since APEC has a rare strength in possessing the business-oriented ABAC (APEC Business Advisory Council), APEC's policy making in the field of supply chains could directly be utilized by the innovative business sector in the region. What we need is a de-facto seamless supply chains underpinned by APEC-wide service trade liberalization which secures high-level and harmonized foreign equity participation.

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Gonzalez, Julio A., Jose Luis Guasch and Tomas Serebrisky (2007), "Latin America: Addressing High Logistics Costs and Poor Infrastructure for Merchandise Transportation and Trade Facilitation", the World Bank (downloadable at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1186233).

Ishido, Hikari and Yoshifumi Fukunaga (2012), "Liberalization of Trade in Services: Toward a Harmonized ASEAN++ FTA", *Policy Brief*, No.2012-02 (http://www.eria.org/publications/policy.html).

APPENDIX: List of 11 sectors and 55 sub-sectors of service trade administered by GATS

01. Business Services
01.A. Professional Services
01.B. Computer and Related Services
01.C. Research and Development Services
01.D. Real Estate Services
01.E. Rental/Leasing Services without Operators
01.F. Other Business Services

02. Communication Services
02.A. Postal Services
02.B. Courier Services
02.C. Telecommunication Services
02.D. Audiovisual Services
02.E. Other

03. Construction and Related Engineering Services
03.A. General Construction Work for Building
03.B. General Construction work for Civil Engineering
03.C. Installation and Assembly Work
03.D. Building Completion and Finishing Work
03.E. Other

04. Distribution Services
04.A. Commission Agents' Services
04.B. Wholesale Trade Services
04.C. Retailing Services
04.D. Franchising
04.E. Other

05. Educational Services
05.A. Primary Education Services
05.B. Secondary Education Services
05.C. Higher Education Services
05.D. Adult Education
05.E. Other Education Services

06. Environmental Services
06.A. Sewage Services
06.B. Refuse Disposal Services
06.C. Sanitation and Similar Services
06.D. Other

07. Financial Services
07.A. All Insurance and Insurance-related Services
07.B. Banking and Other Financial Services
07.C. Other

08. Health Related and Social Services
08.A. Hospital Services
08.B. Other Human Health Services

08.C. Social Services
08.D. Other

09. Tourism and Travel Related Services
09.A. Hotels and Restaurants
09.B. Travel Agencies and Tour Operators Services
09.C. Tourist Guides Services
09.D. Other

10. Recreational, Cultural and Sporting Services
10.A. Entertainment Services
10.B. News Agency Services
10.C. Libraries, archives, museums and other cultural services
10.D. Sporting and Other Recreational Services
10.E. Other

11. Transport Services
11.A. Maritime Transport Services
11.B. Internal Waterways Transport
11.C. Air Transport Services
11.D. Space Transport
11.E. Rail Transport Services
11.F. Road Transport Services
11.G. Pipeline Transport
11.H. Services Auxiliary to All Modes of Transport
11.I. Other Transport Services

Establishing Reliable Supply Chains. "Developing a Framework for Supply Chain Risk Assurance for APEC Economies"

By Kenneth Waller, Australian APEC Study Center at RMIT University, Australia

Abstract

"Reducing risk in supply chains from origin to destination and in particular those related to food safety and global cargo is a key challenge in ensuring reliable supply chains. Major factors contributing to risk include globalization, off-shoring, supply chain connectivity and reliance on third-party firms and regulations and standards. An important contribution to handling risks is through risk mapping and the identification and weighting of risks at control points along the supply chain. Techniques are being developed to map risks in selected APEC economies and ways to handle risks in work being undertaken by the Institute of Supply Chain and Logistics at Victoria University in Melbourne, Australia in cooperation with AASC. . This paper explains the importance of reliable supply chains, and ways being developed for high level food supply chain risk identification and management frameworks applicable to APEC economies with the aim of producing a foundation guide for consistent, reliable and resilient supply chain risk management for use across supply chains in APEC economies".

Introduction

APEC Leaders at their meeting in Yokohama, Japan, in November 2010 endorsed the concept of an APEC Supply Chain Connectivity Framework to promote efficiencies and economic benefits that would arise from improved connectivity in the delivery of trade and services in economies of the region and across the region (and globally). The concept clearly recognizes the rapid changes that are occurring as a consequence of globalizing net works of functions that characterize modern economic and commercial relationships. The aim of the Framework is to facilitate the smooth working and increased efficiencies of the many components and functions that form supply chains so as to increase economic and social gains, improved productivity and living standards.

Earlier work by APEC identified "chokepoints" that needed to be addressed to improve supply chain efficiencies. In effect, addressing the chokepoints means the identification of barriers and impediments to trade and services that make the economic functions more expensive than they need be, and promoting policies and actions to reduce or eliminate them. Work is ongoing in the Committee of Trade and Investment on the various chokepoints.

In work currently being undertaken by Victoria University and AASC (1), three chokepoints are being addressed:

Chokepoint 1: identifies the lack of transparency and awareness of the full scope of regulatory issues affecting logistics, the lack of awareness and coordination among government agencies on policies affecting the logistics sector and the absence of a single contact point or champion agency on logistics matters

Chokepoint 2: refers to variations in cross-border standards and regulations for the movement of goods and services

Chokepoint 3: highlights the lack of regional cross-border customs-transit arrangements

The Importance of Reliable Supply Chains

The work being undertaken by Victoria University and AASC is aimed at developing a framework for supply chain risk assurance and at providing responses to the chokepoints noted above.

The objective is to reduce risks in supply chains in the region – from origin of inputs to the destination of the end product. The present focus is on risks to the supply chain of foodstuffs and those related to food safety and global cargo. The risks are complex and varied, ranging from those arising as a consequence of globalization, off-shoring, reliance on third-party firms and, importantly, those arising from regulations and standards.

Trade in food in APEC economies is estimated at around $US 759 bn in 2010 with just over 80% within the region, intra APEC food trade. The APEC region has a mix of importers and exporters with Japan, Russia and China as significant importers and Thailand, Australia, Indonesia, New Zealand and

Canada as significant intra regional exporters. The United States accounts for nearly 10% of world trade in food, China nearly 5% and Russia and Japan each accounting for around 3 ½ % (2)

By volume terms, maize wheat, oilseed, animal feed stuff and vegetables are the most significant commodities traded within the region and in value terms, fish, and fruit.

Mapping the Supply Chain and Identifying Risk

The capacity building program involves mapping the supply chain, the identification of risk at relevant control points along selected supply chains. The objective is to provide economies with an understanding of the processes and benefits of cohesive risk management frameworks in food supply chains across economies and across borders between economies as food is exported or imported.

The work will lay the foundation for supply chain risk management techniques that may be used for other commodities, manufactures and services that enter into supply chains.

The program is aimed at developing a foundation guide for consistent and resilient food supply chain risk management across APEC member economies. It will help identify and facilitate future work in harmonizing the management and regulation of food supply chains, supporting trade through the region.

Economies presently involved in the first phase of the work are China, Indonesia, Mexico, Philippines, Thailand, Vietnam, PNG and non-APEC country, India. The ASEAN Secretariat is also participating. At a training program in Melbourne in March, participants were introduced to supply chain risk assurance methodologies, mitigation technology and supply chain risk IT tools. “Live” case studies were analyzed, mapping techniques explained against a generic template and key risk nodes identified.

The outputs from this work will be analyzed and discussed at a second phase of the program in Vietnam in September. Between the two workshops, participants are undertaking a detailed analysis of selected nodes in the food supply chain in their respective economies, with a view to identifying risks, control points and notification mechanisms. Participants will also identify specific regulatory impediments that may be adding to risk or impeding efficiencies in supply chains. The second workshop will prepare the foundation to develop the harmonization of standards and integration risk responses and mitigation strategies for food handling across APEC economies.

Methodology of Supply Chain Risk Assurance

The program Victoria University and AASC are conducting is based on work done over a number of years on an International Food Chain Integrity and Traceability Project (IFCITP) (3). Key components of IFCITP include:

- the visibility of all processes and associated risks in a common framework;
- linkages of critical control points to lot tracking throughout supply chains;
- real time monitoring and reporting of risk throughout the supply chain;

As a consequence of experience in developing integrated supply chain risk systems in food safety and logistics together with concerns about bioterrorism and bio-security in the US, Icon Global Link Pty Ltd was selected as the technology subject matter expert to develop methodology on risks and solutions in the global supply chain supported by their suite of risk management software tools

Four elements of supply chain assurance have been identified through a project, starting in 2007 and running to 2010 involving tracking the food supply chain from a farm in the state of Victoria, Australia’s second largest state by population, to a retail store in the US. Sea transhipment occurred through the port of Melbourne in Victoria to the Port of Philadelphia in the US. The tracking/mapping project is neatly described as the “paddock-to-plate” project.

16 stages of the supply chain were identified in the “paddock-to-plate” chain.

Participants in the project included, in Australia, 9 department of government at state and federal level and 9 industry groups and industry associations. In the US, 6 government departments, 9 industry groups and 3 industry associations were involved. ***The project clearly necessitated close coordination across governments and across industry in both economies***.

Research undertaken based on a “Hazard Analysis and Critical Control Points” (HACCP) approach by IGL found that most food companies have HACCP plans in place; that the data set to manage a HACCP

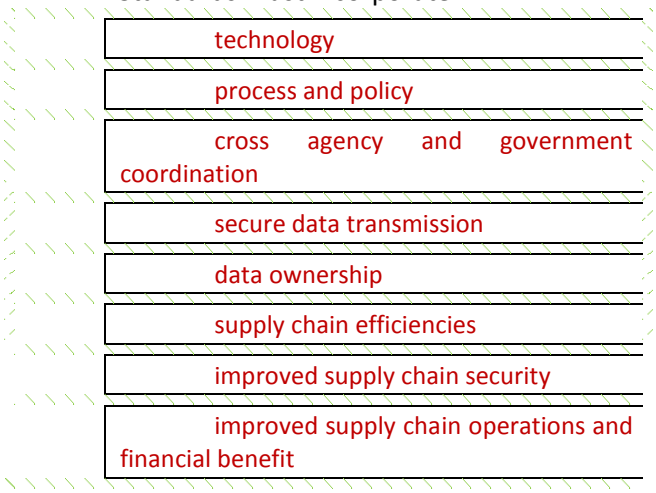
plan is greater than what is required to drive transport and logistics operations; most plans were maintained manually and that operating a good HACCP plan translates into more business efficiency.

Research by IGL found that companies ***did not integrate*** their plans with trading partners, that a common data warehouse for risk plans, monitoring, reporting and incident management could drive the transport and logistics operations, that applications and technologies were available to capture data electronically and that incorporating supply chain partner on a holistic HACCP- based risk approach would enable safer and more efficient food supply chains.

The "paddock-to-plate" project led to a "traceability" project, now translated into a risk assurance methodology. Lessons learned from the project are that four conditions must be satisfied if supply chain security and integrity is to be assured from farm to manufacturer and final destination:

- an integrated set of processes, policies and technologies
- industry standards (technology, data security, policy and notifications) collaboratively developed by the public and private sectors
- leveraging existing infrastructure from ports, carriers, 3PLs, and government agencies;
- continuous improvement measures between commercial entities, local and foreign governments

Standards must incorporate:



IGL provide the "Operational Risk Management Module", a component of a software tool called the "Integrated Standards Enforcement System" (ISES®) which is used to define the various risk systems and matrixes combined with a flowchart development tool which enables all users to have visibility of all supply chain nodes and associated processes within each node. The team then performed a detailed on the ground risk assessment and inserted these results into the comprehensive ISES® module.

Nodes are basically locations defined within the supply chain. They may vary in number as a consequence of the characteristics of a particular supply chain. In a supply chain for dairy products, they would include: the stock feed producer, the farm, transportation from farm to factory, primary processor, transportation from the factory to the primary distribution centre (DC), from the DC to port, international ocean transport, destination port, transport from the destination port to a local DC, transport from DC to secondary processor, secondary processor to retail.

Four key aspects of supply chain assurance involve accurate, reliable and timely recording of:

- product over time - location traceability;
- transformation and ingredients and /or the aggregation/disaggregation of product into larger or smaller lots - ***material pedigree;***
- product characteristics as defined by specifications, HCAAP data, standards of stakeholder in the supply chain - ***product integrity;***
- product ownership and/or physical possession over time - ***chain of custody.***

Implementing supply chain assurance involves eight steps that are all integrated into the ISES® system. These steps are as follows:

- define the supply chain by node;
- define the supply chain risk assurances required;
- form a qualified supply chain analysis teaml;
- define risk ratings for the supply chain through a matrix of consequences of an event occurring and the likelihood of an event occurring that would affect the timeliness of data;
- map the supply chain including process steps, input and outputs;
- identify data points that form the basis of control and value (control points and critical control points) for the four dimensions noted (A – D above);
- review existing methods of data capture, analysis and reporting for the critical control points;
- perform a gap analysis between existing data capture methods and required electronic data capture method for the critical control points.

A risk matrix is applied over nodal control points. Risks are rated for each control point under five categories of degree of importance of the consequences of the risk occurring: catastrophic; major; moderate; minor and insignificant. And over five categories of likelihood: rare; unlikely; possible; likely and almost certain.

Catastrophic occurrence is determined to result in system failure, inability to show integrity, custody, traceability or pedigree information stopping the supply chain or resulting in dumping the product.

Major consequences would mean the slowing of the system, loss of integrity, custody, traceability or pedigree until information is retrieved and reduced production capability.

A moderate consequence means that resources are required to track data for integrity, custody, traceability or pedigree.

A minor consequence means that information has to be retrieved for integrity, custody, traceability or pedigree. An insignificant consequence results in no impact on integrity, custody, traceability or pedigree.

A risk flow chart is mapped defining the level risk at control points and this forms the basic tool in determining risk mitigation responses.

In research undertaken in “paddock-to-plate” project in the dairy sector, the proportionate risk dimensions over the four key components of the supply chain described earlier were:

A.	traceability	26%
B.	product	9%
C.	integrity	50%
D.	custody	15%

The research found that the majority of legislated international trade based security initiatives occurred between loading and unloading shipping containers and that the greatest ***security*** vulnerability of cargo occurred between the port of Melbourne, during the ocean transhipment and cargo leaving the port of Philadelphia. The greatest ***nodal*** risk occurred between product leaving the farm in Australia to the Australian exporter and between leaving the port of Philadelphia to the US processor. It was determined that the highest degree of vulnerability in the supply chain equated with electronic security gaps between the farm and the Australian exporter and between the distribution centre in the US, through the US processor and to the point of retail in the US.

Some key findings of research undertaken in the Project were that:

- large amounts of data were already being collected in respect of the various nodes of the supply chain;
- and the scope of data covers all four dimensions of the supply chain;
- the nearer the nodes to the port of export, the attributes of the four dimensions are captured and stored by electronic data;
- tracking data becomes more complex when closer to the port;
- in the transport node between (between the factory and distribution centre), there are minimal records of traceability with most of the transactions captured by the factory or by the distribution centre;
- electronic data is typically captured within a node or a group of vertically integrated nodes but not shared electronically between nodes within the supply chain;
- HACCP systems are in place to monitor product integrity in most nodes throughout the supply chain. These systems collect a large amount of product integrity information from critical control points and are stored on paper or electronic formats;
- the most complicated nodes in terms of material pedigree tracking are the primary and secondary manufacturers situated in Australia and the US respectively. At various stages of manufacture raw materials are stored and then mixed together.

Research showed that there was poor connectivity of data between nodes within a supply chain and considerable duplication of data throughout the supply chain.

High Level Solutions to Tracking the Four Dimensions

Solutions are importantly related to information technology infrastructure across the supply chain.

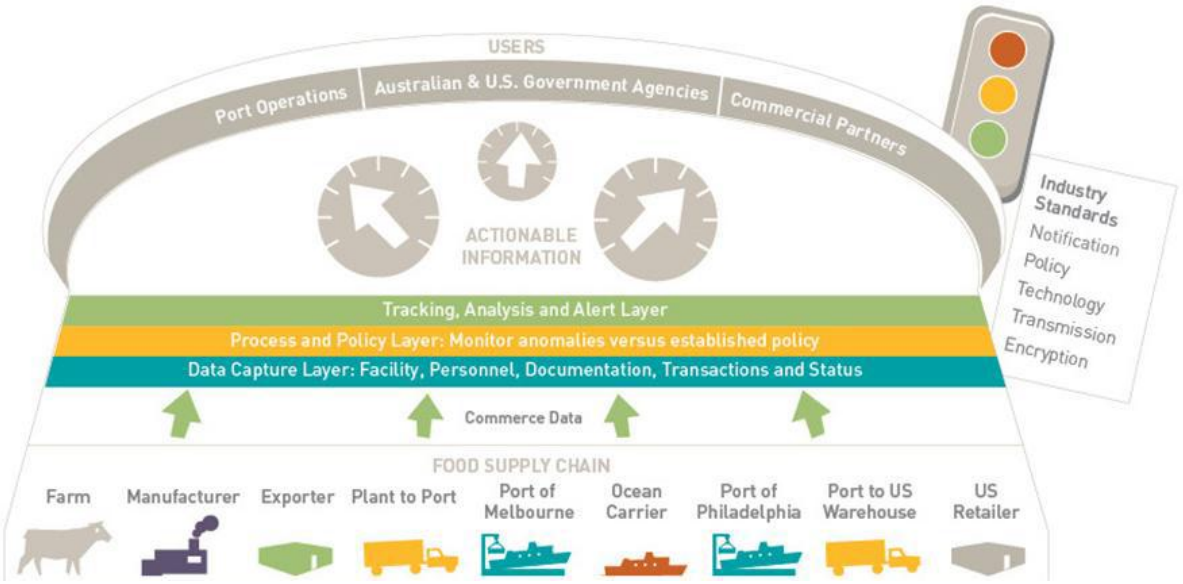
Not all IT systems in individual supply chains nodes are connected, yet an extraordinary amount of operational data is collected by a number of processing facilities “Supervisory Control and Data Acquisition Systems (SCADA). The sum of the systems is storing a vast amount of data, however, individual systems are working in silos and this precludes a holistic supply chain database capture.

In some supply chains, the systems are not sufficient to support the level of traceability that is targeted. Hardware systems need to be added or upgraded in order to facilitate electronic data collection and data storage. The solutions needed to enhance traceability can be varied, including integrated data systems, the alignment of terminology as well as systems tracking based on determinations of what information needs to be tracked, for integrity purposes, over several nodes and the information relevant to one node. A layer of software may be needed to reformat some data to facilitate its integration.

The solution components are dependent upon funding availability. The potential solution may be viewed through three options; Level l - a supply chain backbone with manual web based data entry; Level 2 – level 1 plus selected data interface and demonstration of RFID and Level 3: Levels 1 and 2 and new software systems or technology.

The next phase of the project is to track and capture data to determine levels of risk and actions needed to mitigate risk in the Australia/US study mentioned earlier. This involves the use of additional modules of the Integrated Standards Enforcement System (ISES®) Backbone. ISES® is designed to provide the unifying framework for data capture across the risk management functions of and between the key nodes. A data warehouse system function of the ISES builds a complete end-to-end profile and audit trail of all transactions along the supply chain from the “paddock-to- plate”.

ISES® is in effect an integrated, multi-party platform that creates structural competitive advantage by reducing risk and creating efficiency in the supply chain. It provides the foundation for a “Dashboard” that provides actionable information to port authorities, government departments, and commercial parties. A pictorial description of the dashboard is show below:



Benefits of Risk Assurance Approaches to Security in Supply Chains

A critical objective of the work described in this paper is the elimination of the need for massive inspection by building quality into the food product chain. This does away with the dependency on inspection of a 100% of US bound containers at more than 600 foreign ports.

Designing world's best practice in integrated risk management across international supply chains, provides for:

- visibility of all processes and associated risks in a common framework;
- linkage of critical control points to lot tracking throughout the supply chain;
- real time monitoring and reporting of risk throughout the supply chain.

The capacity building training program (1) being organized by Victoria University and AASC and utilizing the expertise of Icon Global Link is aimed at providing policy makers representing APEC and ASEAN member economies with capacities to undertake practical, on the ground supply chain risk assessments. Following the workshop mentioned above and convened in Melbourne in March 2012, participants from APEC and ASEAN economies are working on developing a pilot phase supply chain risk assessments for their respective economies to be analyzed and further developed at the second phase of this work in Ho Chi Minh in September.

The pilot phase will assist in answering real questions associated with:

- How to balance levels of transparency with company confidentiality;
- Generating a common framework to assess and manage risk;
- Sensitivity measures;
- Foundations for cost-benefit analysis for government and industry;
- Dealing with an incident;
- Dashboard monitoring for incident awareness and warnings.

The second phase will also identify incidence of where regulations may impede efficiencies and add to risk in the supply chain. The outcome of this latter piece of work will complement other work in APEC in tackling regulatory impediments impacting on economic efficiency and productivity.

SUMMARY OF THE OUTCOMES OF THE CAPACITY BUILDING TRAINING PROGRAM (1)
INITIAL PROJECT
Key Outcomes
Agreed methodology of assessing risk through the supply chains

3 dest-top risk assessment case studies for three food supply chains

NEXT STEPS/PROJECTS
Confirm the 3 risk assessments with on the ground verification of those assessments
Key outcomes
Validation of methodology
Gap identification
Benchmarking framework for all supply chains
Templated content for similar supply chains
Learning materials for supply chain participants

Electronic enablement of generic supply chains
Key outcomes
Validation of solutions
Testing of various technologies to streamline supply chain
Dashboard creation
Define rules around information sharing and reporting
Cost/benefit analysis for supply chain improvements
Live "case studies"
Suite of training courses for specific supply chain
Participants
Scenario planning (incidents)
Training modules

Benefits to the region arising from improved risk assurance in supply chains include lower transactions costs in general, lower cost of capital, less risk and therefore lower insurance expenses. Adoption of supply risk mitigation measures should contribute to savings in the physical destruction of food products, spoilage and wastage, food scarcity and concomitant contraction of demand, health expenses related to unsafe foods and pestilence and associated threat and destruction of plant and animal life (2).

Reference sources:

(1) Capacity Building Training Program "Developing a Framework for Supply Chain Risk Assurance for APEC economies" 26 – 28th March 2012, organised by the Australian APEC Study Centre at RMIT University and the Institute for Supply Chain and Logistics, Victoria University and sponsored by the Australian Government's aid agency, AusAID. (www.apec.org.au)

(2) ADB staff calculations based on COMTRADE, 2011 (presentation to the Training Program for Developing a Framework for Supply Chain Risk Assurance for APEC economies – Melbourne, March 26/28th 2011 – by Dr. Douglas H Brooks, Asian Development Bank)

(3) "International Food Chain Integrity & Traceabiliy Project" (IFCITP) - Inception Phase Summary – report available: www.vflc.com.au

Managing Global Supply Chain Disruptions: Experience from Thailand's 2011 Flooding

Aekapol Chongvilaivan[51]

Abstract

While developing Asia has leveraged on fragmentation and industrial agglomeration as the impetus for sustaining its competitiveness, the downside risks of just-in-time procurement and production have not been sufficiently emphasized. Based on the experience of Thailand's 2011 flooding, this study examines the extent to which the supply chain disruptions are translated into plunges in production and export performance and explores how companies can effectively manage the risks and cope with the breakdowns. The analysis yields implications that corporate culture and management mindsets need to take in the potential sources and impacts of risks and assess them systematically. Redundancy in principle offers a shock absorber but investment in untapped inventory and suppliers can be prohibitively costly. Lastly, enhancing flexibility of supply chains through information exchange and coordination in the vertical relationships is crucial to resilience against the high-impact, low-probability shocks.

Key words: Production Networks; Just-in-time Procurement; Supply Chain Disruptions; Thailand's 2011 Floods

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1. Introduction

Fragmentation and agglomeration forces and the concept of just-in-time production have made it possible for many countries to get into manufacturing production through vertical specialization and economies of scale even though they do not have a comparative advantage at the level of all manufacturing production. This is true for Thailand today, much like it was for Chinese Taipei and some decades before it, the Republic of Korea. As Thailand becomes a part of this production sharing and the global production networks, it also becomes increasingly evident that supply chain disruptions could be a serious threat. Various disruptions, both natural disasters and some man-made catastrophes, would endanger the just-in-time approach to procurement and production because any disruptions to a single node of production may lead to a breakdown of the entire production chain.

Thailand's worst flooding in 70 years excruciatingly hitting several key industrial estates in the last quarter of 2011 is not the first disruption of the global supply chain. A series of natural disasters in East Asia brought the global supply chain to a halt, such as the drastic earthquake in Chinese Taipei in March 2000, the outbreak of the SARS epidemic in southern China in 2002-2003, the Great Hanshin-Awaji Earthquake of 1995, the Chuetsu Offshore earthquake of 2007 in Japan and, more recently, Japan's 9.0-magnitude earthquakes in March 2011 (Fujita and Hamaguchi, 2011). Despite a wealth of past incidents, the floods heavily afflicted Thailand's industrial manufacturers, and the remarkable vulnerabilities of production and direct exports advocate the fact that the prevailing just-in-time procurement and management have not fully envisaged the potential damages of supply chain disruptions and the pivotal roles of building up resilience in supply chains. As the forces of production block dispersion have emerged, strategic assessment and management of the disruptions have to constitute the root elements of supply chain management; otherwise, Thailand will lose its competitive advantage as a hub of global production networks.

Given the rising concern, the present study aims to examine the impacts of supply chain disruptions on direct exports and vertical intra-industry specialization, identify the sources of vulnerabilities associated with the proliferating production networks, and explore the options and strategies for businesses and the government to thrive on the burgeoning production networks that are resilient to future disruptions, based on the existing studies on supply chain management and operations and the experience of Thailand's worst floods in the last quarter of 2011. The analysis in this

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paper indicates that among the hardest hit by Thailand's flooding are key industrial sectors, e.g. automotive, electronics and electrical appliances manufacturing sectors, where production as well as direct exports experienced sharp plunges in the last quarter of 2011.

Although the adverse impacts on production and exports appear to be rather short-lived as normal operations of most firms quickly resumed and global demand remains robust, the floods painted a bleak picture of long-term performance in terms of declines in stock prices, deteriorating competitiveness, and trimmed market shares, among others. The drastic consequences of the supply chain disruptions felt by companies in Thailand offers a key lesson that building up the resilience of supply chains not only offers immunity against disruptions, but also serves as a strategic tool that differentiates a company from and positions it ahead of its competitors.

This paper elucidates several options and strategies for companies to push forward resilience of just-in-time production chains against high-impact, low-probability events. Most fundamentally, assessment and identification of risk sources need to be carried out systematically. The key problem is that corporate culture and mindsets weigh in largely on improvements of production efficiency but downplay the downside risks of lean operations.

Redundancy in terms of extra inventory stockpiles and multiple-sourcing schemes essentially serves as a shock absorber in case that delivery of parts from any production node goes wrong. However, this paper highlights that redundancy incurs exponential costs in terms of arising inefficiencies and management outlays and is thus confined by the cost-benefit trade-offs. Finally, as industries continue to flourish using just-in-time procurement and a shift towards just in case procurement can only be done with limitations, information exchange and coordination between companies and their suppliers need to be enhanced by building up flexibility of the three supply chain building blocks – procurement, conversion and distribution.

The rest of this paper is structured as follows. Section 2 explores two strands of literature that are relevant to this study, namely East Asia's proliferation of production networks and management of supply chain disruptions. Section 3 provides a primer of production networks in Thailand, while Section 4 examines the impacts of Thailand's floods on production and direct exports. Section 5 proposes options and strategies for enhancing just-in-time production such that the risks of the disruptions can be effectively managed, and the damages of the disruptions, if present, can be mitigated. Finally, Section 6 concludes with implications on building up resilient production networks.

2. Literature Review

The proliferation of production networks is central to the debate on globalization and the rapidly changing international trade patterns in East Asia, whereby firms across regions and countries are linked through vertical intra-industry specialization – most typically, capital-intensive intermediate parts and components are produced in advanced economies like Japan and Korea, while labor-intensive assembly and provision are carried out in developing countries such as China, Malaysia, Thailand, and Viet Nam (Chongvilaivan and Thangavelu, 2012). Several recent studies highlight the growing significance of production networks as a driving factor of closer trade ties among the East Asian countries. Athukorala and Yamashita (2006), for instance, estimate that the share of East Asia in total world exports of parts and components increased from 29.3 percent in 1992 to 39.2 percent in 2003. Ando and Kimura (2005) and Ando (2006) further reveal that intra-industry trade in East Asia has been dominated by trade in machinery parts and components, suggesting the prevalence of production fragmentation and vertical specialization in the region.

Given the increasingly important roles of production networks, the existing literature has been devoted largely to the deliberations of cost-saving, efficiency-enhancing incentives through location advantages and economies of scale which in turn essentially catalyze the rapidly growing production networks in East Asia. Jones and Kierzkowski (1990) introduce a conceptual framework of production fragmentation, where the physical dispersion of production nodes necessitates costly service links such as transportation, telecommunication and other coordination tasks. Jones and Kierzkowski argue that technological advancement and lowering trade barriers lead to a significant decline in service link costs and allow the production process to be fragmented across different locations to leverage on economies

of scale. Deardorff (2001) incorporates production fragmentation into the standard models of international trade and shows that fragmentation can be a driving force of factor price equalization. Several subsequent studies substantiate these theoretical expositions by examining the interacting combination of intrafirm/arm's length fragmentation and agglomeration of multi-firms in East Asia. Fujita, et al.

(1999) and Fujita and Thisse (2002) underline the trade-off between economies of scale at a firm-level and transportation costs as a driver of industrial agglomeration. Kimura and Ando (2005) posit that location advantages, such as low wage levels, factor/resource availability, and well-developed infrastructure reduce costs of service links, in terms of both distance and uncontrollability, and enable industrial clustering to keep efficient procurement and networks of parts and components in a just-in-time manner.

Apart from the spatial economics and agglomeration theory, global production networks can also be explained by the perspectives of supply chains and operations management, from which manufacturers are induced to ally with a reduced supplier base, as opposed to the conventional approach to an abundant collection of suppliers. The key idea is that the buyer supplier relationships allow firms to bring out similar potentials and performances without the necessity of ownership and strenuous barriers to exit. By reducing their supplier bases, firms bank on a wide array of benefits including trimmed switching costs, limited shipping errors, higher quality, and quantity- and relationship-based discounts, through sharing information, technology, and planning efforts (see, for instance, Wilson et al, 1990; Treleven, 1987; and Bartholomew, 1984). Scott and Westbrook (1991) underline several other gains from a small supplier base, such as improved communication, more efficient conflict resolution, less probability of opportunism and declined risks from externalities. Brown and Inman (1993) depict that downsizing supplier bases and single sourcing are the primary business strategies pursued by the Asian manufacturers and the primary catalysts of the Pacific Rim supply chain processes.

While the past studies pivot around the business and production models of fragmentation and agglomeration, an aspect of the production networks, which captures increasing attention from business buffs and academics yet remains largely unexplored in the economics literature, is the downside risks of the just-in-time supply chain. The concentration of suppliers and/or providers advocated by the just-in-time procurement policy essentially spawns the risks that disruptions to any single node, in the case of high-impact, low-probability events, result in a breakdown of the entire supply chain (MacBeth and Ferguson, 1994). Among very few studies on the impacts of supply chain disruptions on production and trade, Fujita and Hamaguchi (2011) examine the impacts of the 9.0-magnitude earthquake and the tsunami in Japan in March 2011 on the production networks of automotive manufacturing in East Asia. They estimate that the disaster slashed car assembly, as well as export capacity, by 39 percent for Guangdong-China in April and 48.5 percent for Thailand in May, mainly because the lean inventory of automotive parts allows normal operations to last for only three days. Additionally, Ando and Kimura (2012) employ the decomposition of export changes to study stability and robustness of Japan's production networks in machinery, with respect to two massive shocks, the 2008-09 Global Financial Crisis and earthquakes in 2011. Although the industries were substantially affected by the two upheavals, they show that Japan's production networks exhibited exceptional resilience as machinery exports appeared to bounce back quickly from both plunges. Interestingly, firms tend to rope in structural reforms in the case of the global economic slump as its impacts prone to be massive and prolonged, while the structural adjustments are insignificant for the effects of the earthquakes which are relatively transitory.

Much research on operations management demonstrates that supply chain disruptions critically exacerbate firm performance in both the short- and long-run. For instance, Kalwani and Narayandas (1995) argue that the risks of disruptions exacerbate firm competitiveness due to losses of partnership control, complacency, and specialization with long-term suppliers. More recently, Hendricks and Singhal (2003) show that supply chain disruptions facing firms significantly cut back the growth rate of revenues and result in higher equity risk. In their subsequent study, Hendricks and Singhal (2005) employ a sample of 827 disruption announcements and provide further evidence that firms experiencing the disruptions tend to exhibit negative abnormal stock price performance and higher equity risks, and the

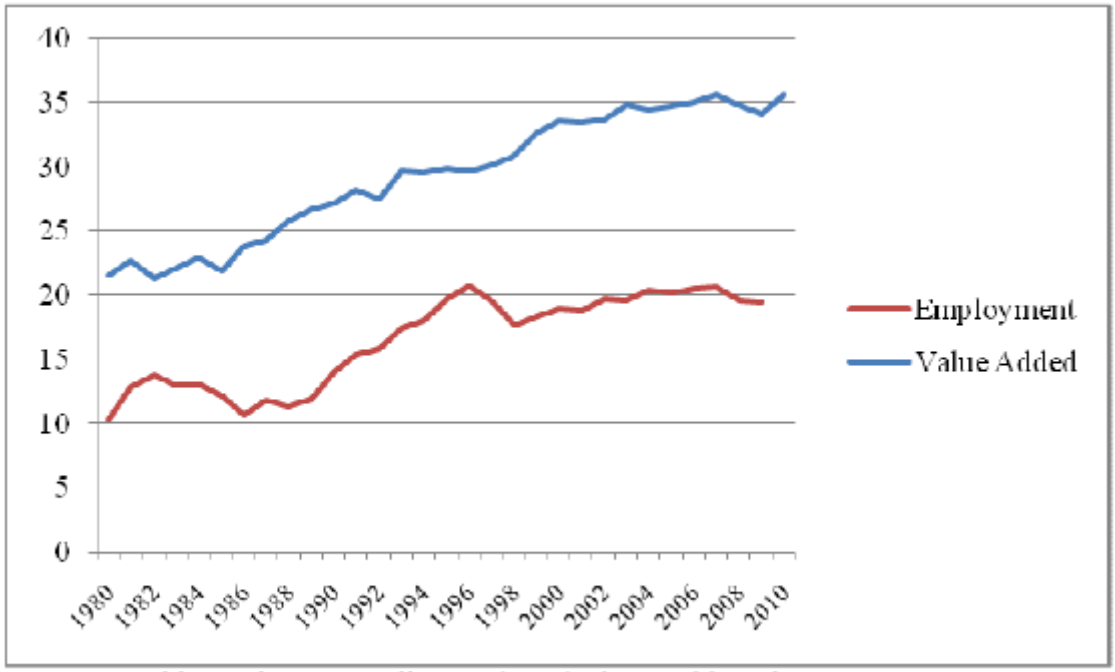
adverse effects typically deteriorate more than expected, depending on firms' ability to effectively cope with suppliers and customers in the aftermath of the disruptions. Given past experiences as well as studies unanimously pointing to the growing concerns that the ripple effects of the disruptions are significant and persistently set back firm performance, managing risks of and bolstering resilience against supply chain disruptions are imperative to competitive advantage and survival of a firm.

3. Roles of Thailand in the Global Supply Chains

3.1 Proliferation of Production Networks

The proliferation of production networks in East Asia has often been cited as the source of Thailand's sustained growth of output and employment in the last two decades (see, for instance, Punyasavatsut, 2007; and Poapongsakorn and Techakanont, 2008). Globalization and advancement of information and communication technology (ICT) have made production fragmentation and sharing possible, thereby shaping a new global competitive environment and pattern of trade. Although Thailand's international competitiveness has been hard pressed since the 1990s by, among other factors, the flourishing low-cost production bases like China, India and, to a lesser extent, Vietnam, the manufacturing sector continues to expand strongly.

Figure 1. Contributions of Manufacturing Industries to Total Employment and Value Added (per cent).



Source: World Development Indicators (WDI), the World Bank.

Shown in Figure 1, the manufacturing sector – where firms and operators by and large rope in supply chain production and just-in-time procurement (Kimura and Obayashi 2011) – has contributed increasingly to the Thai economy in terms of both output and employment since the 1980s. In particular, the share of manufacture value added in GDP increased from merely 20 percent in the 1980s to approximately 35 percent in 2010. Likewise, its share of total employment doubled from 10 percent in the 1980s to 20 percent in 2009, notwithstanding some plunges observed during the global economic slowdown in the early 1980s and the 1997 Asian financial crisis.

The striking performance can be explained by the fact that businesses, both local and foreign, as well as multinational enterprises (MNEs), have progressively resorted to the global production networks by contracting out what they once did for themselves at arm's length and engaging in trade in parts and components, in order to achieve more efficient operations and production. Amiti and Wei (2009) assert that there are at least four channels through which production fragmentation pushes forward efficiency of firm operations. First, the use of supply chain production allows a firm to trim down the less efficient stages of production and specialize on the more efficient ones, thereby enhancing the average efficiency of the production activities undertaken in-house. Second, sourcing parts and components, especially

relatively technology intensive activities like computing and ICT, helps a firm restructure its operations and push forward the technology frontier. Third, production fragmentation leads to the learning effects whereby a firm acquires specific knowledge and skills from the contractual partners, such as new product design, managerial techniques, quality control, and standardization. Last, production networks essentially augment varieties of parts and components, and the wider range of available materials and services is ultimately translated into superior productivity and performance.

Table 1. The number and percentage of establishments with foreign ownership and engaged in export activities and global production networks.

Industry	Foreign Ownership	Exports	Production Networks
Food and beverages	118 (5.24)	309 (13.73)	211(9.37)
Tobacco	2 (4.26)	3 (6.38)	n.a.
Textiles	62 (7.95)	121 (15.51)	101 (12.95)
Wearing apparel; dressing and dyeing of fur	19 (5.64)	64 (18.99)	46 (13.65)
Leather footwear products	29 (10.43)	64 (23.02)	72 (25.90)
Wood and cork, except furniture	12 (3.60)	67 (20.12)	63 (18.92)
Paper and paper products	27 (14.44)	46 (24.60)	50 (26.74)
Publishing, printing and reproduction of recorded media	10 (4.31)	8 (3.45)	27 (11.64)
Refined petroleum products	8 (22.22)	9 (25.00)	16 (44.44)
Chemicals and chemical products	70 (18.72)	80 (21.39)	127 (33.96)
Rubber and plastics products	82 (18.64)	147 (33.41)	122 (27.73)
Other non-metallic mineral products	45 (6.22)	99 (13.69)	84 (11.62)
Basic metals	19 (13.29)	28 (19.58)	34 (23.78)
Fabricated metal products	78 (9.99)	100 (12.80)	163 (20.87)
Machinery and equipment	55 (17.57)	72 (23.00)	105 (33.55)
Office, accounting and computing machinery	6 (42.86)	5 (35.71)	6 (42.86)
Electrical machinery and apparatus	41(29.08)	47 (33.33)	61 (43.26)
Communication equipment and apparatus	59 (41.84)	63 (44.68)	75 (53.19)
Medical, precision and optical instruments	21 (21.88)	24 (25.00)	37 (38.54)
Motor vehicles, trailers and semi-trailers	48 (27.27)	48 (27.27)	65 (36.93)
Other transport equipment	26 (15.03)	25 (14.45)	40 (23.12)
Furniture manufacturing	97 (11.64)	219 (26.29)	172 (20.65)
Recycling	n.a.	n.a.	n.a.
Total manufacturing	**934 (10.54)**	**1648 (18.60)**	**1677 (18.92)**

Note: Percent in parentheses.
Source: Chongvilaivan (2011).

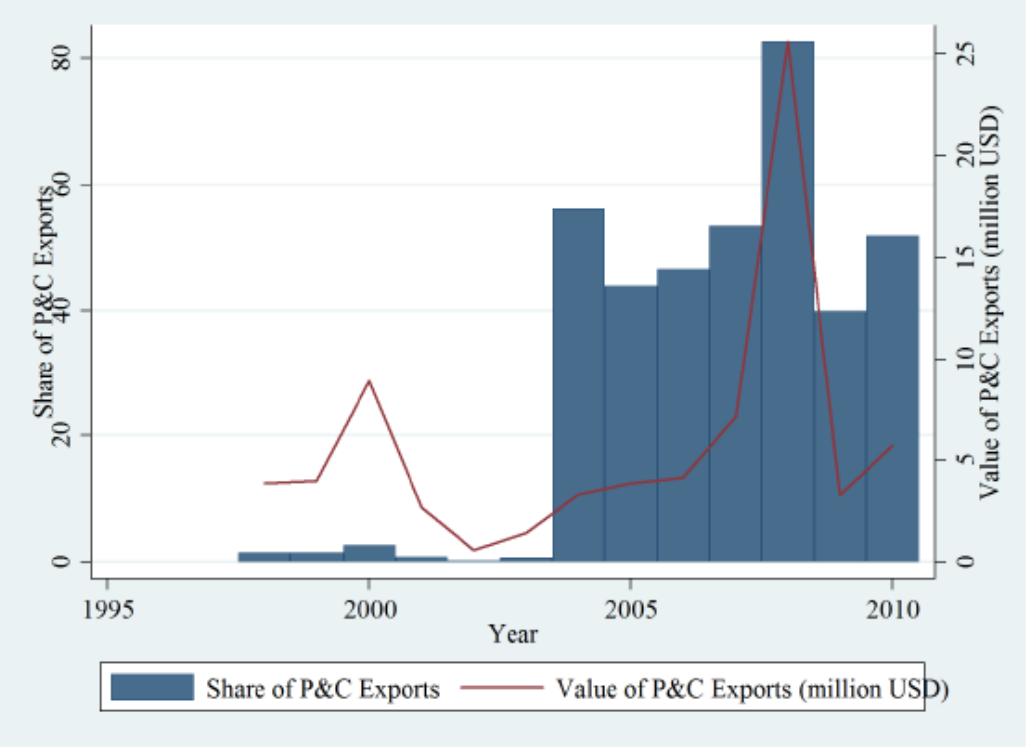
Table 1 reports the number and share of manufacturing firms involved in global production networks, in conjunction with their ownership structure and export activities, based on the 2003 Manufacturing Industry Survey provided by National Statistical Office (NSO), Thailand. On average, approximately 19 percent of manufacturing firms in Thailand take part in global production networks through the use of imported parts and components. Interestingly, the proportion of firms involved in global production networks appears to be particularly pronounced in high-tech manufacturing sectors such as communication equipment and apparatus (53.19 percent), electrical machinery and apparatus (43.26 percent), office, accounting and computing machinery (42.86 percent), medical, precision and optical instruments (38.54 percent), motor vehicles, trailers and semi-trailers (36.93 percent), and machinery and equipment (33.55 percent). These figures are considerably higher than those of relatively labor-intensive sectors like food and beverages (9.37 percent), non-metallic mineral products (11.62 percent), publishing, printing and reproduction of recorded media (11.64 percent), textiles (12.95

percent), and wearing apparel (13.65 percent). Moreover, it can be observed that the sectors with a high proportion of firms involving the global production networks tend to exhibit a relatively high intensity of export activities and MNEs. For instance, more than 40 percent of firms operating in the communication equipment and apparatus are MNEs and pertain to exporting activities. The same pattern seems to characterize various industries such as electrical machinery and apparatus; and office, accounting and computing machinery. The observation that firms with global production networks tend to be associated with foreign investment and exporting activities suggests that production networks go hand in hand with the process of globalization.

3.2 Trends and Drivers of Trade in Parts and Components

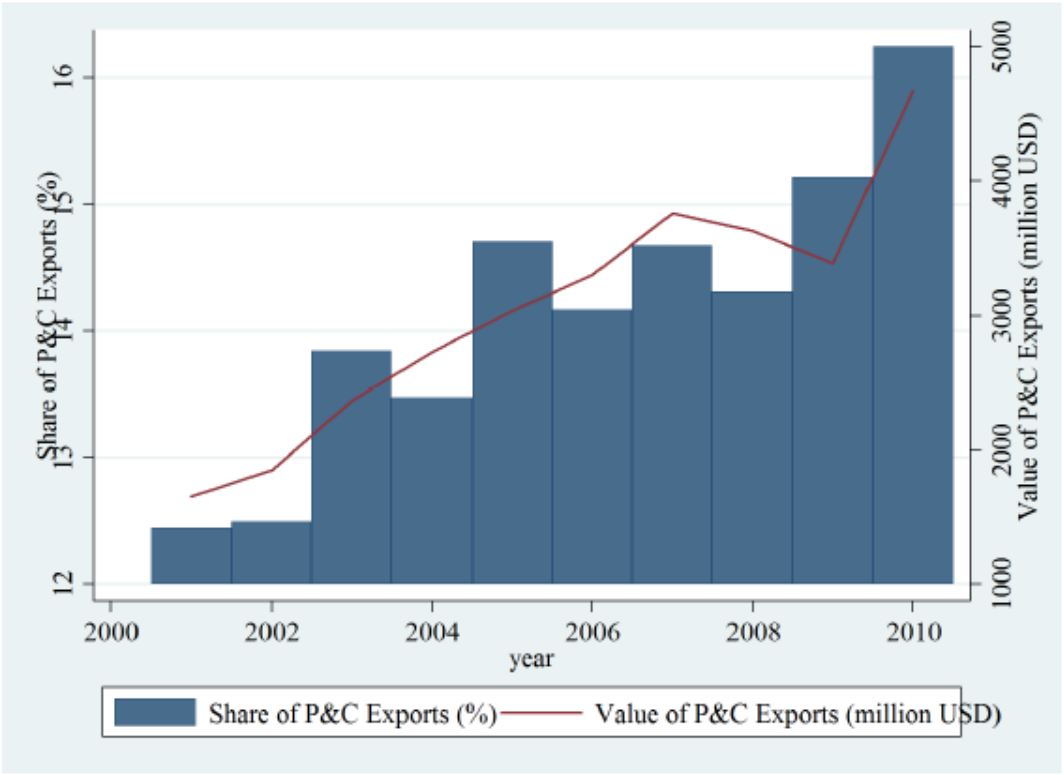
As production sharing and vertical specialization prevail, an industry becomes more reliant on trade in parts and components as the in-house production rests on the use of intermediate inputs provided by foreign suppliers and the outputs are exported for downstream production. It is therefore expected that the proliferation of production networks is characterized by an increase in the share of parts and components in commodity trade (Kuroiwa, 2008). This section will focus on the trends and drivers of trade in parts and components in the major manufacturing sectors that are affected by Thailand's floods in 2011, namely semiconductors, electrical products and automotive manufactures.

Figure 2. Share of Parts and Components (P&C) Exports in Total Semiconductors Exports.



Source: Author's calculation based on the United Nations' Commodity Trade (UN COMTRADE) Database.

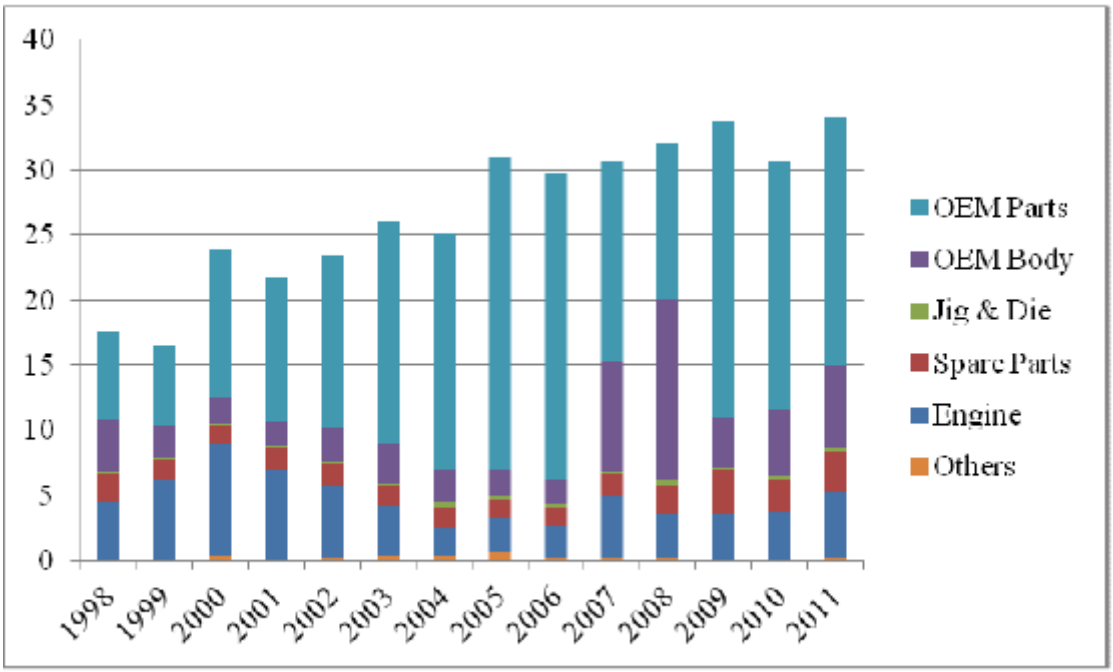
Figure 3. Share of Parts and Components (P&C) Exports in Total Electronics Exports.



Source: Author's calculation based on the United Nations' Commodity Trade (UN COMTRADE) Database.

The semiconductors sector experienced the most drastic shift in the trade pattern. Table 29 portrays the share of parts and components exports in total exports of semiconductors, based on the United Nations' Commodity Trade (UN COMTRADE) database. Prior to 2004, the share of parts and components exports in total exports of semiconductors was somewhat negligible; however, the shift in the trade pattern away from trade in final products toward trade in parts and components is observed in the year 2004 onwards when the share of parts and components exports exhibited a sharp spike, reaching the peak of more than 80 percent in 2008. Notwithstanding the decline in the global demand for semiconductors in the aftermath of the global financial crisis in 2008, trade in parts and components, to date, accounts for more than 50 percent of total semiconductor exports. In the electronics sector, the share of parts and components exports in total electronics exports likewise increased exponentially from nearly 12.5 percent in 2001 to more than 16 percent in 2010 even though a slight slowdown is observed during the global financial crisis in 2008.

Figure 4. Share of Parts and Components Exports in Total Automotive Exports (percent).



Source: Author's calculation based on the dataset provided by Thailand Automotive Institute.

The escalating trend of trade in parts and components is also discerned in the automotive industry. As revealed in Figure 7, the share of parts and components in total exports of automotive products was approximately doubled, from 17 percent in 1998 to almost 35 percent in 2011. A breakdown of parts and components exports in various categories shows a clearer picture that the proportion of original equipment manufacturer (OEM) parts considerably rose from one-third of parts and components exports in 1998 to more than two-thirds in 2011, signifying that producers of automotive parts and components in Thailand have become part of the global supply chain of car production.

Several structural and policy drivers fueled the expansion of production networks and, thus, trade in parts and components in Thailand. First, the deteriorating competitiveness in relatively advanced economies – particularly, Japan after the Plaza Accord in 1986 and, more recently, the Republic of Korea, Chinese Taipei, and Singapore due to rising labor costs and excessive concentration of manufacturing – triggered dispersion forces whereby firms gradually shifted their low-end functions to the low-cost production bases in Thailand as well as other developing economies like China, Indonesia, Malaysia and Vietnam. Additionally, several policy pushes introduced by the Thai government resulted in internationalization of parts and components production, on top of industrial clustering and agglomeration, thereby inducing foreign affiliates to set up production plants in Thailand. These include establishments of industrial parks, tax exemption schemes, infrastructure investment, development of supporting industries, and foreign capital liberalization, among others.

3.3 Industrial Agglomeration and Spatial Linkages

A crux attribute of the growing production networks in Thailand, which serve as the fundamental causes of risks that the supply chain disruptions set back domestic and global production, is the emergence of industrial clustering and agglomeration, whereby firms and suppliers tend to concentrate in a few locations, especially industrial estates, to tap benefits from lower transportation costs, well developed infrastructure, and more efficient coordination. The concentration of production plants puts the production networks at risk of a breakdown caused by operations disruptions.

Table 2. Number of Production Plants by Industrial Estates.

Area	Industrial Estates	Non-industrial Estates
Bangkok	**248**	**10,168**
Bangchan	89	
Latkrabang	102	
Gemopolis	57	
Ayutthaya	**282**	**1,302**
Ban-wa	135	
Bangpa-in	98	
Saharattananakorn	49	
Samutprakarn	**568**	**6,013**
Bangpoo	409	
Bangplee	159	
Samutsakorn	**188**	**3,915**
Samutsakorn	113	
Sinsakorn	73	
Maharatnakorn	2	
Chachoengsao	**230**	**1,234**
Wellgrow	165	
Gateway city	59	
TFD	6	
Chonburi	**1,099**	**2,562**
Laem Chabang	93	
Hemaraj Chonburi	52	
Amata nakorn	811	
Pin Thong	143	
Rayong	**733**	**1,614**
Map Ta Put	75	
Eastern Seaboard	314	
AmataCity	213	
Eastern Hemaraj	53	
Padaeng	4	
Hemaraj Eastern Seaboard	59	
Asia	15	
Whole Country	**3,747**	**135,269**

Source: Industrial Estate Authority, Department of Industrial Works, Thailand (as of 30 November 2011).

Table 2 reports the number of production plants in Thailand's major industrial estates and provinces. It is rather evident that production plants are heavily concentrated in a few provinces, namely Bangkok, the central provinces like Ayutthaya, Samutprakarn and Samutsakorn, and the eastern provinces including Chachoengsao, Chonburi and Rayong. Samutprakarn and Chonburi host the largest number of production plants, mostly in the automotive and electronics sectors, and many operate in the major industrial estates such as Bangpoo, Bangplee, Amatanakorn, and Lam Chabang. Poapongsakorn and Techakanont (2008) document that approximately 97 percent of all automotive factories is located in only three locations – Bangkok, the eastern and the central provinces, with more than 90 percent of which appears in seven provinces – Bangkok, Samut Prakarn, the three eastern provinces (Chachoengsao, Chonburi and Rayong) and the two central provinces (Pathumthani and Ayutthaya). Similarly, Hiratsuka (2011) elaborates that a wealth of electronics manufacturers from the United States

and Japan located their plants and production facilities mainly in Bangkok, the eastern and central provinces, thereby making Thailand the world's largest final assembly of hard disks. For instance, Seagate established its head-stack assemblies (HAS) in Samutprakarn; Fujitsu started its hard disk business and final assembly of personal computers in Bangkok; IBM and Hitachi built their own production facilities in Chonburi; and Western Digital Technologies founded its manufactures of hard disks in Navanakorn Industrial Estate in Pathumthani. The considerable concentration of plants in the central locations – the river valley that is geographically susceptible to flooding – can be partly explained by two factors. On the one hand, proximity to Thailand's capital city, Bangkok, implies that firms can tap on well-established infrastructures and easy access to consumers and suppliers. Thailand's Board of Investment (BOI), on the other hand, has long encouraged local businesses and MNEs to set up plants in the industrial estates by offering various incentives. For instance, foreign capital participation for export purposes was allowed in 1983. Areas for investment promotion were listed in 1983. In 1987, several regulations on foreign capital participation were further trimmed down so that 100 percent foreign capital was viable in a wide range of products. Foreign firms have also been entitled to a full tax exemption for a certain period, depending on the industries and locations in which they are operating.

Figure 5. The Typical Pattern of Thailand's Production Networks.

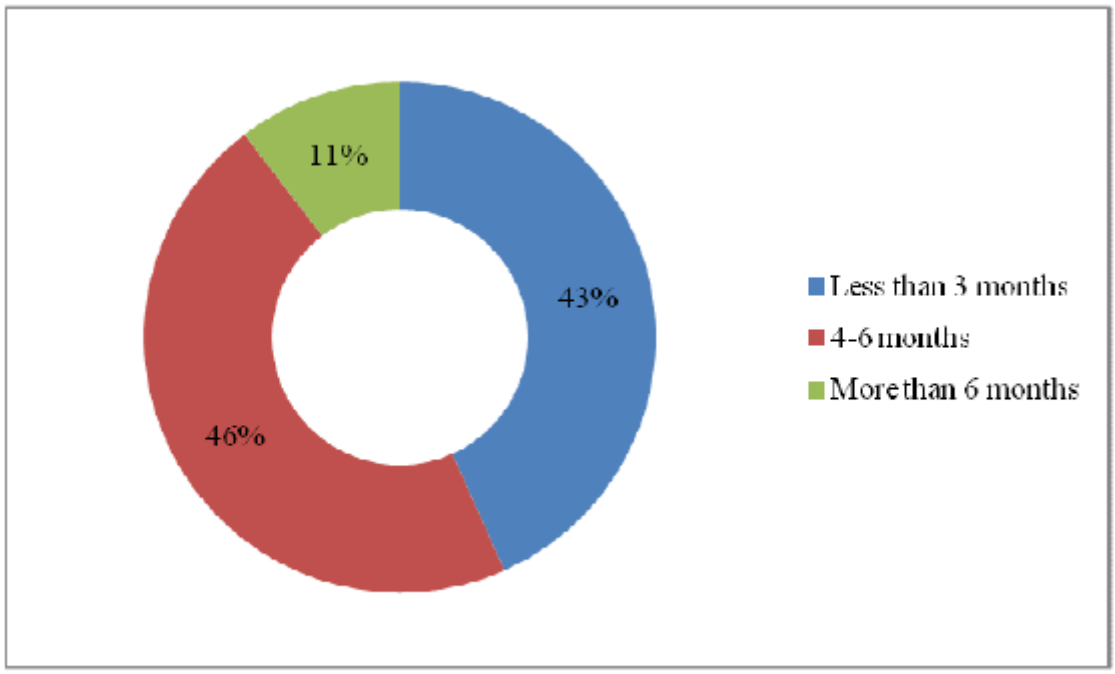
Note: Arrows represent directions of exports.
Source: Adapted from Fujita and Hamaguchi (2011).

Additionally, the production of parts and components in Thailand is tied to the global production of final outputs as the forces of vertical specialization spread out production nodes in various countries where comparative advantage in certain stages of production lies. This spatial linkage implies that a breakdown in any stage of production could result in the disruptions of the entire production chain. The roles of Thailand in the global production networks are typically pertinent to assemblies of final products with the use of capital-intensive intermediate inputs from developed economies, especially Japan and the United States. As illustrated in Figure 8, Thailand's production chains, the most typical, pertain to the relatively downstream activities like assemblies and labor-intensive inputs done by foreign-owned firms and MNEs through FDI from developed countries, while the upstream, capital-intensive activities are procured as the imports of parts and components from developed economies. The final outputs are then exported to outer markets around the world. This pattern of fragmentation is observed in various major industries in Thailand, especially the automotive and electronics industries.

Figure 6. Areas Affected by Thailand's 2011 Floods.

Source: *Financial Times*, 3 November 2011.

Figure 7. Production Recovery to Normal Level (percent of respondents).

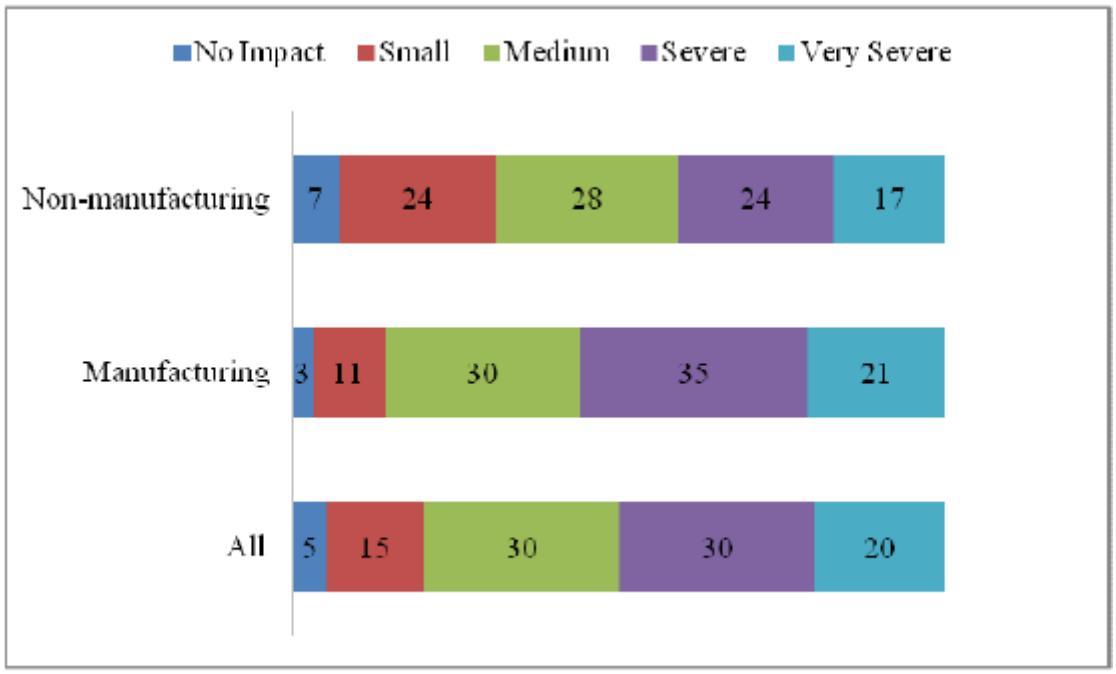


Source: Business Survey (October-November 2011), Bank of Thailand (BOT).

In the last quarter of 2011, Thailand experienced the worst flooding crisis in 70 years. The unexpectedly drastic and widespread rainfalls caused by monsoon storms inundated the central part of Thailand including Bangkok and peripheral provinces, where production factories and businesses are intensively populated. The immediate impact of the floods on the Thai economy is a contraction of output in the last quarter of 2011, forcing the GDP growth forecast to be revised downward from 2.6 to 1.0 percent even though the flooded areas were limited to some provinces in the central and northeast locations (Bank of Thailand, 2012). As illustrated in Figure 6, the floods hit several key central provinces, especially Ayutthaya, Pathum Thani, Nonthaburi, Samutsakorn and, not least, parts of Bangkok. Although the overall impacts on the economy appear to be transitory as the industries are expected to return to normal capacity in the first quarter of 2012, manufacturing sectors were the hardest hit by the

disaster in terms of the plunges in production and sluggish recovery. Based on a business survey conducted by Bank of Thailand (2012), around 43 percent of businesses report that the impacts of the inundation on their businesses tend to be short-lived, and usual operations can be restored within 3 months, while 46 percent are able to restore operations within 4-6 months. Merely about 11 percent of respondents say that the adverse effects of the floods will last more than 6 months.

Figure 8. Floods Impacts to Business (percent of respondents)



Source: Business Survey (October-November 2011), Bank of Thailand (BOT).

Figure 8 provides some preliminary evidence that the impacts of floods are more pronounced in the manufacturing sector than in the non-manufacturing sector, based on the same survey by Bank of Thailand. Now that just-in-time procurement, as discussed in the previous section, has been part and parcel of manufactures in Thailand, this signifies that supply chain disruptions have translated the breakdown of parts and components delivery into considerable slashes in the whole supply chain of manufacturing production. As shown in Figure 11, approximately 56 percent of firms in manufacturing sectors reported that the flood impacts on their businesses were “severe” or “very severe”, while the figure is merely 41 percent for firms in non-manufacturing sectors. In contrast, 14 percent of manufacturing firms revealed that the floods had “no impact” or “small impact” on their businesses, whereas the proportion of nonmanufacturing firms reporting limited impacts is as high as 31 percent.

Table 3. Damages to Industrial Estates in Ayutthaya (as of February 10, 2012).

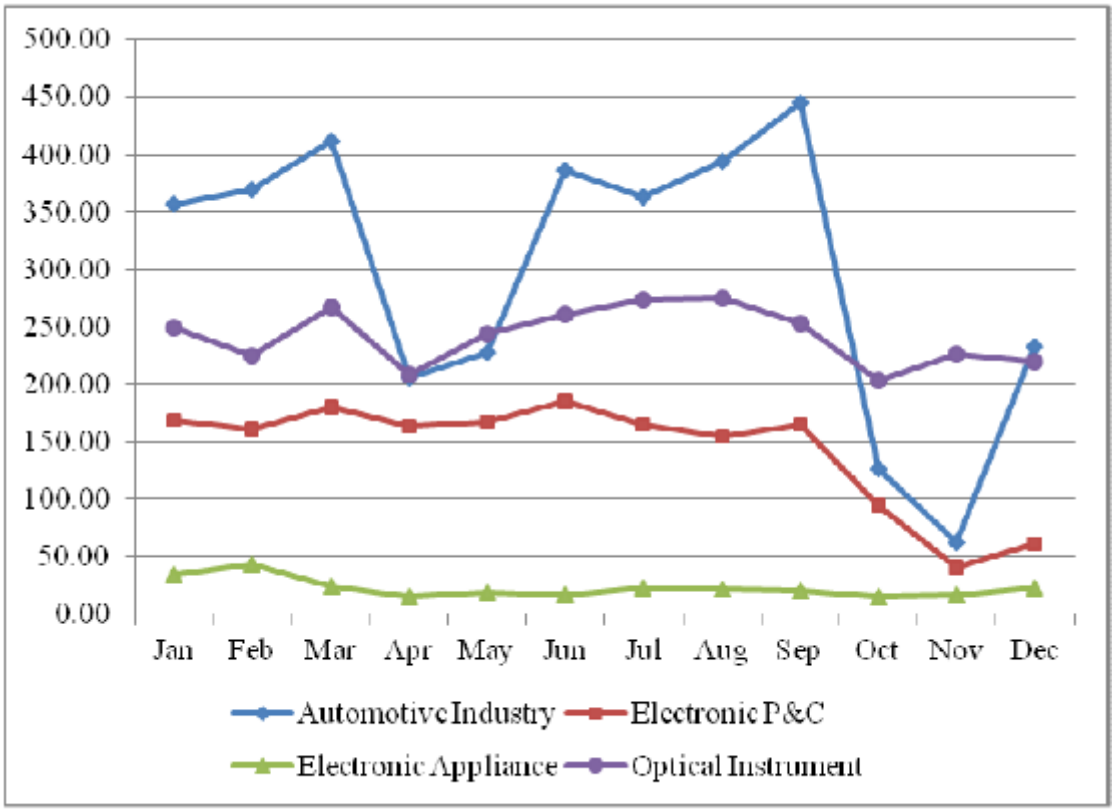
Industrial Estates	No. of Plants	Investment (billion baht)	No. of Affected Plants	Damages (million baht)			
				Building	Machine	Others	Total
Banwa	143	57.03	67	1,648.2	4,036.6	1,587.9	7,272.7
Bangpa-in	90	67.20	71	534.5	3,089.1	1,660.7	5,284.3
Saharattananakorn	46	10.26	25	26.0	836.6	3,838.2	4,700.8
Total	**279**	**134.49**	**163**	**2,208.7**	**7,962.3**	**7,086.8**	**17,257.8**

Source: Industrial Estate Authority of Thailand, Ministry of Industry, Thailand.

The colossal impacts of the floods on Thailand’s manufactures can be partly explained by supply chain disruptions. Table 3 reports damages to the industrial estates in Ayutthaya – the inundated

location with intensive concentration of production blocks in the global supply chains. More than half of plants located in the industrial estates in Ayutthaya were affected by the floods, and the damages to production machines and equipment took up the largest proportion of total losses. Among the most affected in this province is the Bangpa-in industrial estate, where nearly 80 percent of plants were under water, while the proportion of affected plants is approximately 50 percent in the other two industrial estates, Banwa and Saharattananakorn. Although the factories clustered in the affected industrial estates (e.g. Bangkok, Ayutthaya, and Samutsakorn) amount only to 29.3 percent of all production plants in industrial estates and less than 0.5 percent of all production plants in Thailand (see Table 29), the slump in production of key manufactures that pertain to production networks in the flooded areas appeared to be strikingly remarkable. The reason is that the industrial estates in these areas have been a major source of intermediate input procurement through which parts and components are delivered just-in-time to final assemblies. Therefore, the disruptions of parts and components delivery taking place in these areas have inevitably compelled other stages of production in the non-flooded areas, in both Thailand and foreign countries, to cease their operations. For instance, due to the shutdown of its plant in Ayutthaya, Honda, the Japanese car manufacturer, has encountered immediate shortages of auto parts which "have forced Honda to cut production around the world from the Philippines to Swindon in the UK".[52] The failures of intermediate material delivery from the flood-affected areas have by and large prevailed in various manufacturing sectors including cars, computers, electronics, electrical appliances, and optical instruments.

Figure 9. The 2011 Monthly Production Index in Selected Industries (percent).



Source: Office of Industrial Economics, Ministry of Industry, Thailand.

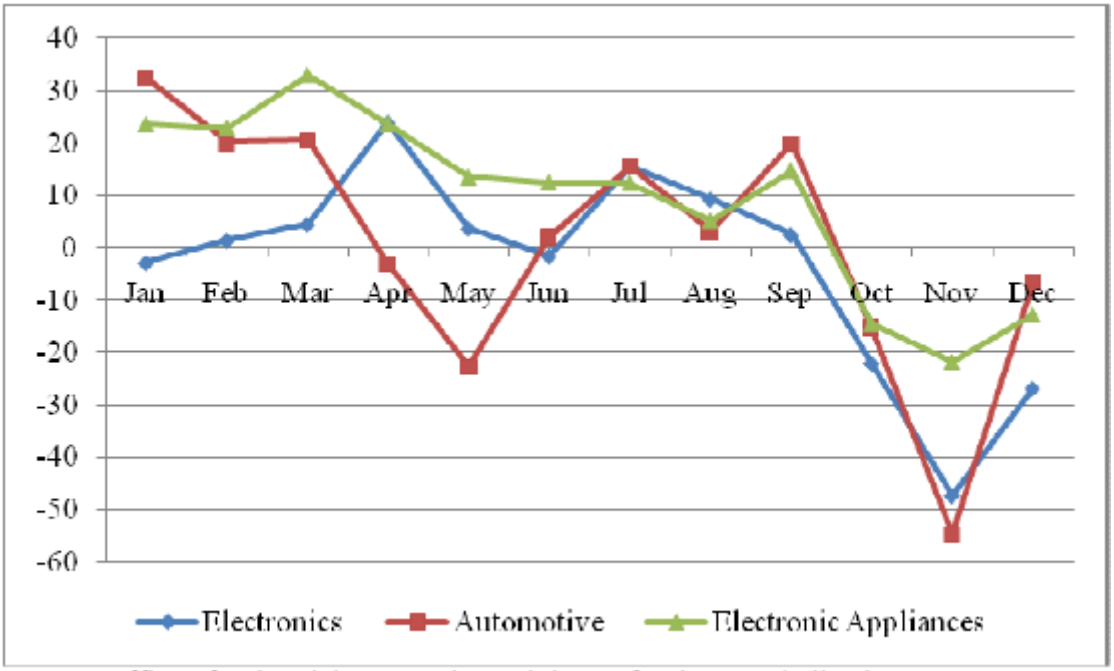
Figure 9 portrays the monthly production indices of key manufactures with the production bases in the flood-affected areas, including automotive, electronic parts and components, electrical appliances, and optical instrument industries. This figure depicts a clearer view of the floods on production networks in Thailand, showing that production of each industry responded to the disaster during October-November 2011 quite differently. The automotive industry seemed to experience the

[52] See "Supply Chain Disruption: Sunken Ambitions", Financial Times, 3 November 2011.

most noticeable contraction in the production index by approximately 87.5 percent from nearly 444.5 in September to a low of 62.5 in November.

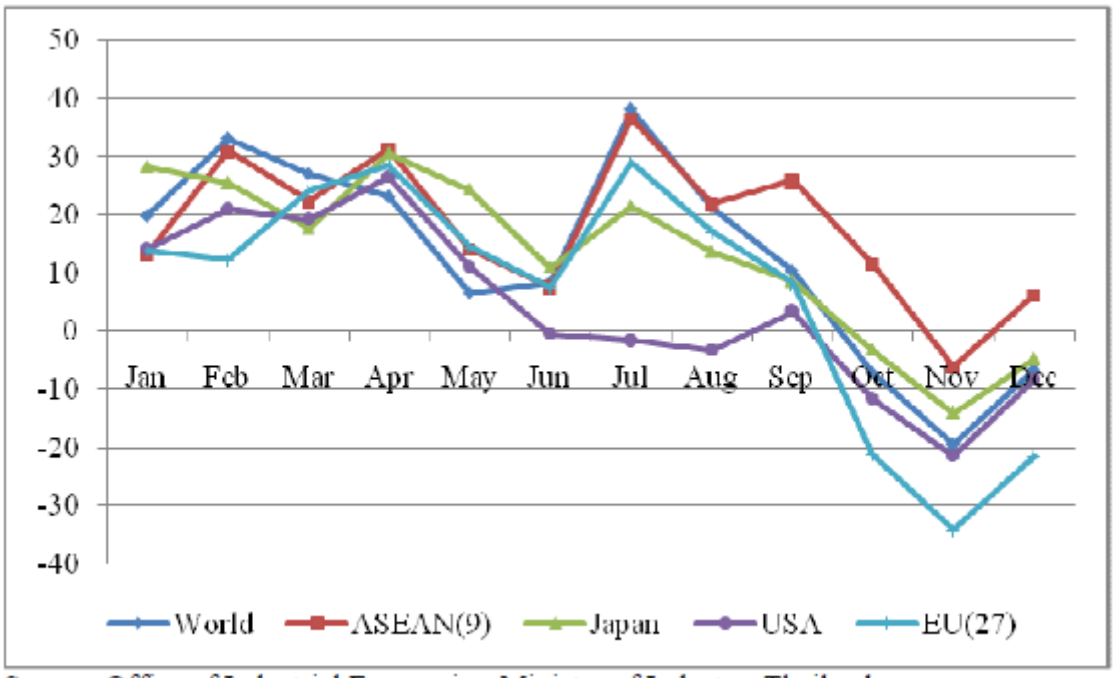
However, car production bounced back quickly and strongly as the index started to pick up in December 2011, and the upward trend is expected to continue in the first quarter of 2012. As with the automotive industry, the production of electronic parts and components exhibited a sharp drop by more than 65 percent, from 165.1 in September to 40.2 in November, but the recovery appears to be relatively patchy as production nodes of key electronic parts and components like hard disk drives and semiconductors by major companies such as Seagate Technology, Toshiba, Western Digital, and Hutchinson Technology, among many others, are highly clustered in the affected areas, and the supplies cannot be easily superseded, at least in short run, by production from other parts of the world. The production of electronic appliances and optical instruments was less affected with an approximately 12.5 percent decline in production. The production index of electronic appliances, albeit slightly declining in August-October, remained quite robust at the levels of 200-250. Likewise, the decline in production of optical instruments is virtually negligible. The resilience against the production shocks in these sectors is attributable largely to sufficient inventory stockpiles of parts and components that allowed other non-affected plants to carry on their operations despite the suspended production and shipment of parts and components.

Figure 10. The 2011 Monthly Growth Rates of Thailand's Key Industrial Exports (percent year-on-year).



Source: Office of Industrial Economics, Ministry of Industry, Thailand.

Figure 11. The 2011 Monthly Export Growth by Key Markets (percent year-on-year).

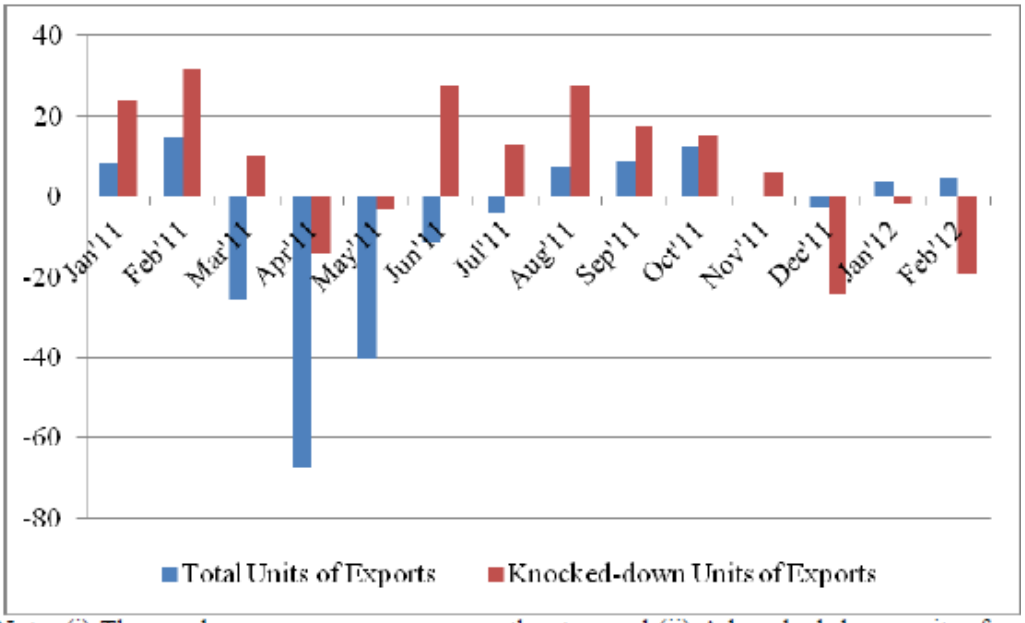


Source: Office of Industrial Economics, Ministry of Industry, Thailand.

Likewise, Thailand's floods propelled its key industrial exports, which typically blossom on global production networks involving industrialized economies, into a sharp contraction. The exports of electronics, automotive, and electrical appliances industries started to exhibit a downward trend in April-May 2011 after Japan's earthquakes and experienced the other dip after July 2011 when heavy rainfalls inundated several provinces in Thailand. As revealed in Figure 11, the most affected sector in terms of exports is the automotive industry in which the year-onyear export contraction reached more than 50 percent in November 2011. The drastic plunges in key industrial exports also prevail in the electronics and electrical appliances industries where the declines hit 47.4 and 21.9 percent, respectively. The considerable impacts of Thailand's floods that translated the disrupted production into a severe contraction of direct exports can be explained by the linkages with the global production networks. Manufacturers in Thailand, both local and MNEs, serve as the low-cost assembly lines, and the finished products are exported to foreign markets, especially in the European Union, Japan, and the United States.

Therefore, the disruptions to Thailand's manufactures would perturb the delivery of these products to the outer markets. Figure 11 substantiates this point by underlining that the contraction of industrial exports to advanced economies, particularly the European Union, Japan and the United States, are more pronounced than that to other ASEAN countries which by and large emerge as low-cost production bases just like Thailand. The sharpest contraction of Thailand's industrial export markets is discerned in the European Union where the industrial export growth dropped by 34.2 percent in November 2011, followed by 21.4 percent for the United States, and 14.1 percent in Japan, while industrial exports to other ASEAN countries remained relatively robust with a slight dip by 6.1 percent only in November 2011.

Figure 12. Growth Rates of Automobile Exports from Japan, January 2011-February 2012.



Note: (i) The numbers are year-on-year growth rates; and (ii) A knocked-down unit refers to the unfinished set of vehicles with the value less than 60 percent per vehicle.
Source: Japan Automobile Manufacturers Association (JAMA).

A contraction of manufacture exports as a result of the major flooding is not limited only to Thailand. The fact that manufactures in Thailand pertain to the global production networks implies that the ripple effects of the floods can be transmitted to its trading partners. In the automotive industries, for instance the shutdowns of the Japanese car assembly lines in Thailand could obstruct the exports of knocked-down units – vehicle parts and components that are produced in one country and then exported to another country for final assembly – from Japan.

Figure 15 illustrates the impacts of Thailand's floods on Japan's automotive exports through the global production networks by providing a comparison between the year-on-year growth rates of total exports and those of knocked-down unit exports. It can be discerned that although the growth of total automotive exports remained rather robust and stable with slightly positive growth in the last quarter of 2011, the exports of knocked-down vehicles experienced noticeable plunges of 24.1 percent in December 2011, and the declining trend persisted during January-February 2012. This demonstrates the significance of the global production chains in automotive productions and cautions that the supply chain disruptions in a country can bring about the knock-on effects on exports of the other countries.

5. Managing Supply Chain Disruptions

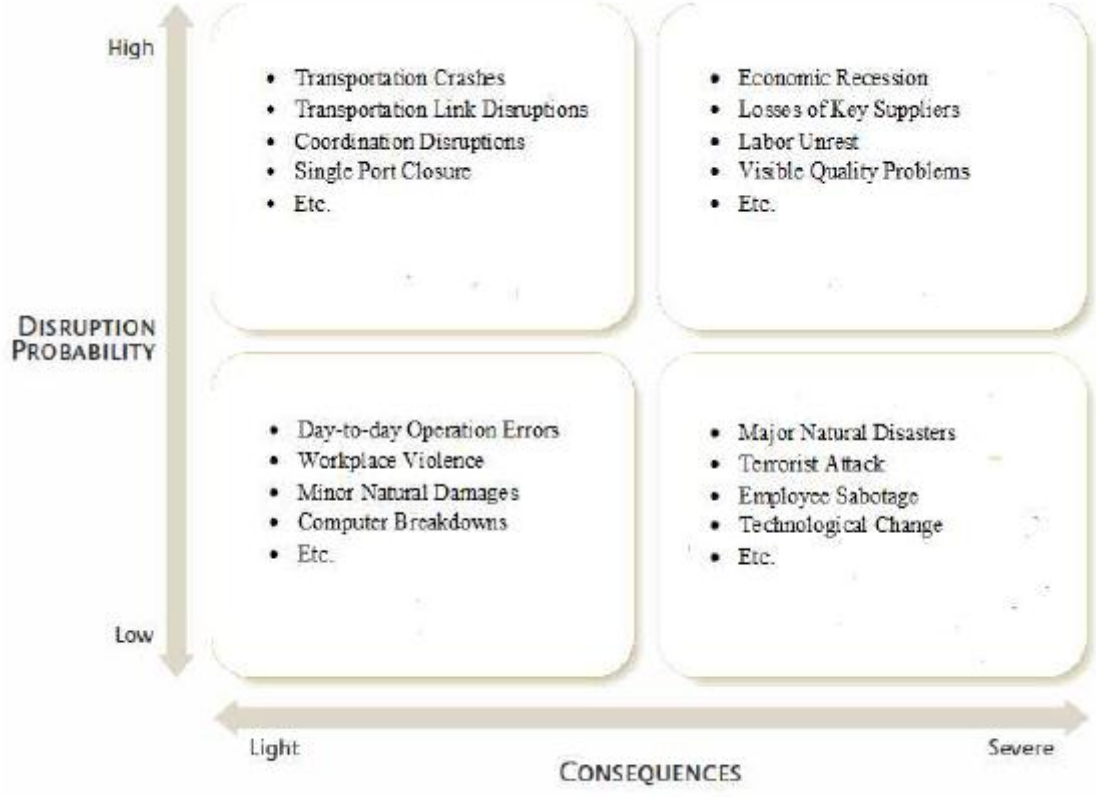
Given the growing concerns that the global production networks have become increasingly vulnerable to the disruptions triggered by natural disasters, this section attempts to explore the available options and strategies for businesses to manage and mitigate the risks through building up the supply chains that are resilient to such uncertainties. The ensuing discussions draw largely upon the findings, insights and recommendations from a wide array of the existing studies on supply chains, operations management, and Business Continuity Planning (BCP), with emphasis on the disruptions associated with high-impact, low-probability events.

5.1 Vulnerability Assessment and Awareness

In order to manage supply chain disruptions, one has to specify risk sources and vulnerabilities. However, the existing literature defines supply chain risks in many different ways from many different dimensions. For instance, Mason-Jones and Towill (1998) broadly classified supply chain risks into three categories: (i) internal to the firm; (ii) external to the firm but internal to the supply chain network; and (iii) external to the network. In contrast, Kleindorfer and Saad (2005) and Wagner and Bode (2008) posited that there are two broad sources of supply chain risks. One arises from the problems of supply and demand coordination, and the other is pertinent to disruptions affecting normal activities such as

regulatory, legal and bureaucratic risks, infrastructure risks, and catastrophic risks. The simplest way to distinguish the supply chain risks associated with natural disasters from other sorts of risks perhaps rests with that of Sheffi and Rice (2005), in which supply chain vulnerabilities can be categorized by their probability and consequences.

Figure 13. A Vulnerability Map for a Single Company.



Source: Adapted from Sheffi and Rice (2005).

Figure 13 presents a vulnerability map of a single company, where its potential threats to normal operations are categorized by disruption probability and severity of consequences. This vulnerability map essentially helps management identify the sources of vulnerabilities and prioritize measures that need to be done to restore normal operations and minimize losses. As shown in this figure, natural disasters fall into the bottom-right area of the map as the event perturbed normal operations with high impacts and low probability. It should be mentioned that there is no one-size-fits-all approach to mitigating supply chain risks as different sources of risks and vulnerabilities necessitate different strategies. More importantly, an attempt in abating one source of risks tends to exacerbate the other as individual risks are often interconnected (Chopra and Sodhi, 2004). For example, a firm can reduce risks of production delays by running at higher capacity; however, this in turn aggravates the risks of production breakdowns. While most companies develop contingencies to shield against high-probability, lowimpact risks which are typically recurrent and transitory, such as machine disruptions and failed coordination, the high-impact, low-probability risks like natural disasters are often left out. Abundant evidence also shows that many organizations have not been fully aware of their heavy costs imposed by such unpredicted events, in terms of their deteriorated long-term performance, competitiveness and, ultimately, survival ability (Christopher and Peck, 2004). The supply chain management, in practice, continues to focus on efficiency improvements through a “lean” operating platform while downplaying, if not neglecting, the strategies that usher in resilience of operations to such potential threats (see, for instance, Milner and Kouvelis, 2002; Corbett and DeCroix, 2001). Radjou (2002) articulates this point, stating that an individual firm is barely capable of taking any actions to manage the risks and mitigate losses of supply chain disruptions, for two main reasons. On the one hand, investment in improvements of supply chain efficiency, naturally, is easier to be vindicated as it is

part and parcel of day-to-day production and requires efforts and resources for developing specific skills and techniques. Most supply chain disruptions like earthquakes and floods, on the other hand, barely happen, thereby making preemptive measures difficult to be justified and implemented, at least from the perspectives of firms.

The tremendous damages to the global production networks caused by Thailand's floods reiterate this shortcoming in the existing supply chain management that manufacturers who count on just-in-time procurement and vertical intra-industry specialization, have by far put undue emphasis on cost-saving, efficiency-enhancing motives through industrial clustering that yields low transportation and labor costs, economies of scale, and availability of necessary infrastructure. The fact that businesses have not sufficiently envisaged the rising supply chain disruption risks associated with natural disasters essentially complicates the situations, especially when the parts are highly customized and cannot be duplicated easily elsewhere.[53]

5.2 Building up Redundancy

The most fundamental principle of managing supply chain disruptions hints on building up redundancy in the just-in-time procurement, whereby slack resources are set aside to serve as a "buffer" against the undesirable effects of disturbances inter-firm relationships in the supply chains may confer (Bode et al., 2011). Several strategies bolster up redundancy of supply chains, thereby helping firms weather the ripple consequences of the disruptions, such as larger inventory stockpiles, multiple-sourcing strategies, backup production sites, and product designs that advocate compatibility with supplies from various sources, among many others (see, for instance, Tang, 2006). Now that the procurement decisions, with redundancy, are made on a justin-case basis, a firm is prone to be less reliant on timely delivery and well-functioning activities of its contractual partners and suppliers, ultimately reducing the need for effective communication and coordination in a particular exchange relationship. Thailand's flooding crisis witnessed redundancy at work. Several companies leveraged on their inventory stockpiles and backup production sites to ease their production losses as their plants in the flooded areas shut down. For instance, Hutchinson Technology, one of the major suppliers of hard disk drive suspensions for Western Digital, suspended its operations in the Rojana Industrial Park in Ayutthaya as power supplies were cut and the government ordered an evacuation. In responses to the disruptions, Hutchinson Technology managed to meet its delivery demands by running higher capacity at its United States assembly plants and tapping on its inventory stockpiles.[54] Emcore Corporation, a provider of compound semi-conductor-based components and fiber optics, attempted to make up the shortfall of production from its bases in Thailand by moving some manufactures to its own facilities in China and the United States.[55]

In contrast, some other firms bore the brunt of lean supply chains, with little room for delivery errors. Toyota, Japan's biggest car manufacturer, estimated losses of 37,500 units in October 2011 due to the closures of its three assembly plants in Thailand. Honda Motor Corporation ceased production at its Thai and Malaysian bases due to shortages of auto parts delivered from its plants in the Rojana Industrial Park. Mazda Motor Corporation and Mitsubishi Motors Corporation were also significantly affected as vehicle production sites in Thailand halted. The production losses and damages among Japanese automakers prompted them to depart from the single-sourcing strategy and consider the multiple-sourcing approach to parts procurement as a leeway for just-in-time operations.[56] The need for greater redundancy gives rise to the fear that the use of multiple suppliers and diversification of production blocks across the region will undermine Thailand's attractiveness as a regional host of FDI as foreign investment is diverted toward its neighboring countries like Indonesia and Vietnam.[57]

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[53] See "The Downside of Just-in-Time Inventory", Bloomberg Businessweek, 24 March 2011.
[54] See "Thai Floods Will Impact Hard Disk Drive Components", Forbes, 17 October 2011.
[55] Available at: http://emcore.com/news_events/release?y=2011&news=305.
[56] See "Thai Flooding Disrupts Japanese Auto Production, Prompts Scrutiny of Supply Networks", The Associated Press, 26 October 2011.
[57] See "Thai Floods May Shift Japan Investment to Indonesia, Vietnam", Bloomberg, 15 November 2011.

It should be highlighted that relatively large redundancy that helped the electronics companies weather the production disruptions can be partly explained by the sourcing strategies from overseas suppliers among manufacturers in Thailand's electronics industries (Hiratsuka, 2011). First, in contrast to automotive and other manufactures, electronics producers in Thailand intensively procured parts and components from overseas suppliers, rather than domestic partners, and these foreign suppliers spread out in a number of countries in various regions, including Indonesia, Hong Kong SAR, China, Japan, Malaysia, Mexico, the Philippines, Singapore, Taipei, China, and the United States. Having suppliers located in various locations essentially offers the impetus for risk diversification. Second, most arm's length procurement pertains to suppliers in neighboring countries such as Indonesia, Malaysia, the Philippines, and Singapore. The proximity of arm's length suppliers enhances inter-firm communication, control and the companies' ability to quickly respond to the problems in supply chains. Last, most electronics firms in Thailand employ the multiple-sourcing strategy – sourcing the same parts and components from multiple suppliers located in different countries. As opposed to the singlesourcing strategy, the multiple-sourcing strategy not only encourages competition among suppliers, but also mitigates the risks of parts and components shortages.

However, deviating from just-in-time to just-in-case operations through larger inventory stockpiles and redundant suppliers is confined by cost-benefit tradeoffs in two respects (Shavell, 1984; Hendricks and Singhal, 2003; Chopra and Sodhi, 2004). First, stockpiling extra inventory incurs holding costs and danger of product obsolescence, and the use of multiple-sourcing strategies hampers efficiencies from economies of scale and forces a firm to divest in redundant arrangements and transactions. If the management costs associated with additional redundancy is prohibitively high, utilizing redundancy as a hedge against supply chain disruptions is not an option. Furthermore, redundancy has been proven to be unfavorable to a firm's response capacity, product quality and, ultimately, entire supply chain. If the gains from buffering production chains do not commensurate with aggravated firm performance and effectiveness, building up redundancy in an inter-firm relationship is not feasible.

5.3 Building up Flexibility

The other avenue for managing supply chain disruptions is pertinent to boosting flexibility – the capabilities to forestall uncertainties and respond to them quickly through reliable and timely information about the potential disruptions and their consequences in an exchange relationship (Johnson et al., 2004). In principle, flexibility enriches a company's dependence and influence on its exchange partners and production networks as a result of better information exchange and is hence in contrast to creating redundancy which, as discussed previously, essentially reduces the inter-firm linkage in the supply chains. It should be highlighted that whether one is better than the other is inconclusive, depending on various factors such as inter- and intra-firm dependence, nature of products, and corporate culture (Bode et al., 2011). More importantly, flexibility and redundancy are not mutually exclusive in that a company can materialize greater resilience to supply chain disruptions by leveraging on redundancy and, at the same time, building up cohesion and communication with its partners. Sheffi and Rice (2005) posit that the flexibility of supply chains comprises three main elements: supply procurement, conversion, and distribution. The first element, flexibility of supply procurement, hints on developing and aligning the corporate-supplier relationship, in both single- and multiple-sourcing policies. Deepening the vertical specialization relationship requires investment in monitoring suppliers, better exchange of information and, not least, the mutually agreed Business Continuity Planning (BCP) (Harrald, 2002). The second element is concerned with conversion flexibility – a company's ability to quickly respond to the disruptions. Several business strategies help boost conversion flexibility. For instance, the use of standardized processes and identical machines allows the operating teams to carry out activities in various locations so that a breakdown in one plant enables them to quickly resume their operations in the other plants. The last element, distribution flexibility, pertains to the extent to which a company can continue to service and maintain good relationships with its key customers in the aftermath of the supply chain disruption. A business model that advocates distribution flexibility is, for example, the build-to-order, as opposed to fixed configuration, operating strategy whereby a firm, in

face of parts shortages, banks on pricing strategies and services to sell what it can make, rather than disappointing and foregoing customers.

The detrimental impacts of Thailand's floods on the manufacturing production point to inadequate flexibility of supply chains as most companies failed to foresee potentially disastrous disruptions and cope quickly and positively with such a high-impact, low-probability event. For instance, Western Digital was unable to quickly determine the extent of impacts and time required to restore its full operations, reflecting inadequate exchange of information with its suppliers and partners.[58] The lack of procurement flexibility appeared to be highly costly asWestern Digital is on the verge of losing its position as the world's largest supplier of hard disk drives. Sony Corporation experienced the downside of distribution rigidity as the shortages of specific parts for its new high-end camera configuration, NEX-7, forced it to defer the launch, causing tremendous losses to its high-end camera market share. Likewise, Apple Inc. suffered from a decline in production and sales of its Mac computers as production was not feasible without specific parts from suppliers in Thailand, thereby putting downward pressure on its stock price.

In contrast, the flexibility of supply chains helped keep several companies unaffected by Thailand's floods. For instance, an American car manufacturer, General Motors, ceased its operations of passenger-car assemblies in Thailand but managed to promptly convert its operations to other sites, thereby keeping its production as well as sales unaffected, even though other car manufacturers, such as Toyota Corporation and Honda Motor Corporation, cut back their car production substantially.[59] The resilience of GEM Thailand, a provider of semiconductors and hard disk drives, offers another example of conversion flexibility as an insurance against the natural disaster. As its plant in Ayutthaya was inundated, the management and employees took progressive actions to quickly move critical inventory and support services to flood-free locations; some final assemblies were even finished at its customer sites.[60] The company's ability to speedily shift workforces and keep up operations in other sites helped ensure its impervious capacity.

6. Conclusions and Implications on Supply Chains

The substantial impacts of Thailand's floods on industrial production and direct exports not only demonstrate how the country and, to a larger extent, developing Asia have become central to global production networks, but also re-affirm that supply chain risk management serves as the other pivotal impetus for enhancing the competitive advantage. Amidst the increasingly drastic natural, as well as man-made, disasters that lie ahead, on top of the ever-expanding competitive pressure on industrial agglomeration and clustering, just-in-time production networks start to incur heavy costs emanating from supply chain disruptions. Therefore, resilience to the shocks and breakdowns and how well the risks and damages to supply chains are managed are key to setting a company apart from and ahead of its competitors. This paper illuminates some insights into shoring up the resilience of supply chain against the high-impact, low-probability events like terrorist attacks, outbreaks, earthquakes and floods, based on the supply chain management and operations literature, with some case studies arising from Thailand's worst inundation in 2011. In a nutshell, this paper brings out three implications on supply chain management, which instigate immunity against supply chain disruptions and help organizations in the production networks effectively cope with future catastrophes.

First and foremost, companies need to rope in awareness of supply chain disruptions associated with high-impact, low-probability events as the most fundamental aspect of corporateculture and management mindsets. Although much evidence points to deterioration of long-term performance in the aftermath of the disruptions in terms of diminishing stock prices, losses of market shares and lower likelihood to survive, realizing the risks of supply chain breakdowns is easier said than done. Most manufacturers and even the government have not been fully aware of the escalating disruption risks associated with just-in-time procurement policy and continued to put excessive emphasis on enhancing efficiency improvement through lean operations, industrial clustering, and economies of scale. Without

[58] 7 See "Thailand Floods Causing Tech Supply Chain Issues (Updated)", Forbes, 10 December 2011.
[59] See "Worst Thai Floods in 50 Years Hit Apple, Toyota Supply Chain", Bloomberg, 21 October 2011.
[60] Available at: http://www.gemcity.com/news-Thailand-Flood.aspx.

appropriate identification of risk sources and business continuity plans in hand, a company tends to fail to systematically and quickly respond to the disruptions and ultimately incur more damages than what would be inflicted otherwise.

Redundancy in just-in-time procurement policy is equally imperative. This paper sheds light on two aspects of redundancy in supply chains – redundant inventory and redundant suppliers. The former offers a shock absorber for companies while the latter helps diversify the risks that a breakdown in delivery by one supplier causes a halt of entire operations. Although the aftermath of Thailand's floods witnessed the quest for greater redundancy through reducing dependence on a single supplier and spreading out production sites throughout the region, thereby spawning the fear among local businesses as well as the government that Thailand will lose its long-standing position as a hub of global supply chains, this paper showcases that the dispersion forces fortified by the escalating trend of procurement redundancy are subject to the trade-offs between lower disruption risks and higher costs in terms of holding outlays, transaction-specific investment and operational inefficiencies, and therefore can be implemented limitedly. As industrial production bounces back to normal after the flooding turmoil, Thailand's industries will continue to flourish on industrial agglomeration and economies of scale, and a shift away from just-in-time to just-in-case operations is unlikely.

Last but not least, an area that allows vertical specialization and just-in-time procurement to proliferate but has yet been sufficiently emphasized is building up flexibility. Complementary to redundancy, flexibility in fundamental supply chain elements – procurement, conversion and distribution – boosts a company's vertical relationship with its partners and suppliers and thereby elps companies respond quickly and effectively to disruptions through information exchange and coordination with their counterparts. The case studies examined in this paper indicate that in the flood crisis, firms with more flexibility in their supply chain operations tend to be more resilient to the floods in terms of buoyant production and service continuity. As supply chain disruptions caused by the catastrophes accentuate the downside risks of just-in-time production networks, it is critically vital for organizations to invest in incorporating flexibility into supply chains.

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Implications for 21st Century Trade and Development of the Emergence of Services Value Chains

By Jane Drake-Brockman and Sherry Stephenson[61]

Services industry groups, for example the United States Coalition of Services Industries has identified services supply chains as a "21st century" issue demanding specific attention both in the WTO and in bilateral and regional trading arrangements.[62] This is an issue for which the trade policy community seems relatively ill-prepared at present, there being a dearth of knowledge and policy research on service value chain issues. Although there has been much attentiondevoted in trade discussions recently to the issue of global value chains for goods, the authors highlight the fact that the concept is as relevant to services activities as it is to merchandise production. In new business models, enterprises are outsourcing not only the assembly of goods, but also many increasingly fragmented servicesrelated tasks. Thus there is a strong need to understand better the role that services are playing in the new 21st century patterns of trade that are emerging. This paper aims to make a contribution to the discussion of services value chains. As background, the authors highlight the growing importance of services in world trade; discuss the limitations at present in being able to measure the contribution of services to trade in an adequate manner, and the growth of 'offshoring', intra-firm and intermediate trade in services. The authors consider how services are embodied in and indeed "enable" value chains in manufactures through providing the links that combine the production processes in diverse geographic locations. Going further, they provide examples of services value chains on their own. Lastly the authors draw out some of the implications of the phenomenon of services value chains for 21st century trade, industry and development policy. They also touch upon the question of how to make the world trading system under the WTO, conceived for the 20th century pattern of trade, more relevant to the new patterns of services trade and investment that have emerged in the 21st century, and how APEC could contribute to this rethink, stressing that this is an issue needing to be explored in further detail.

1. Background

As measured by the balance-of-payments, World Bank data shows cross-bordertrade in services now accounts for around 27 percent of global exports. Research results consistently suggest, however, that adding in mode 3 transactions could roughly double this figure. All economies in Asia-Pacific are successfully exporting services of one kind or another, although in the early part of the last decade, the rate of growth of the Asia Pacific region's exports of services lagged behind the global average. Figure 1 shows that Asia Pacific economies' share of global services exports dropped from 42 percent in 2000 to a low of 38% in 2007. Global and regional trade in services proved more crisis-resilient than trade in goods, however; indeed the Asia Pacific region experienced even less of a decline in services exports than the global average, the outcome being that the region gained in percentage share of global services exports in 2009, a trend that intensified into 2010. In 2010, the region accounted for 41 percent of global services exports, almost making up for the earlier decline.

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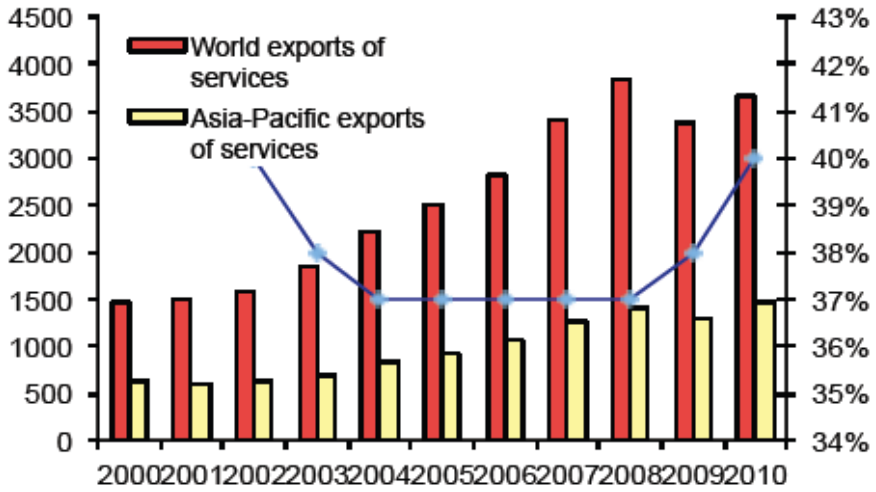
[62] 2 See for example PECC/ADBI (2012)

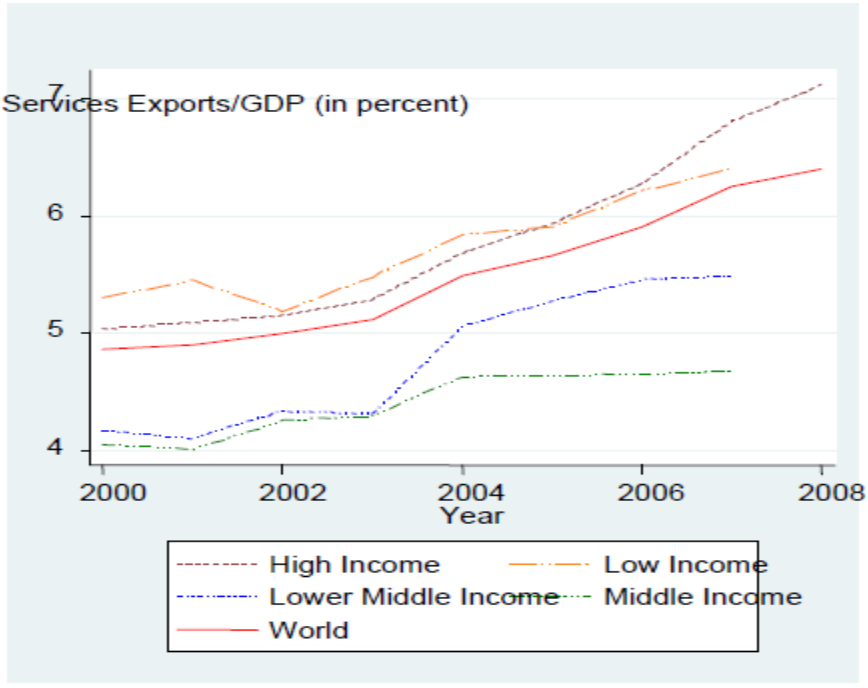
Figure 1. Decade of Growth in Services Exports Asia Pacific (US$b)



Source: PECC/ADBI (2012)

While the world average ratio of services exports to GDP has grown from less than 5 percent in 2000 to around 6.5 percent in 2008, that there are significant differences in the trend for economies in different income level groups. Services exports are already contributing over 7 percent of GDP for high income economies, but still well below 5 percent for middle income economies. Importantly, as shown in Figure 2, services exports are making higher contributions to GDP for poorer economies than for middle income economies; just under 6 percent for lower middle income economies and just over 6 percent for low income economies. This suggests that the services sector offers a viable alternative development route to manufacturing, enabling poorer economies to "leapfrog" over manufacturing. Finding a way to "fit" into an existing global value chain through taking on an outsourced services task is one of the ways that countries can target and achieve this objective.

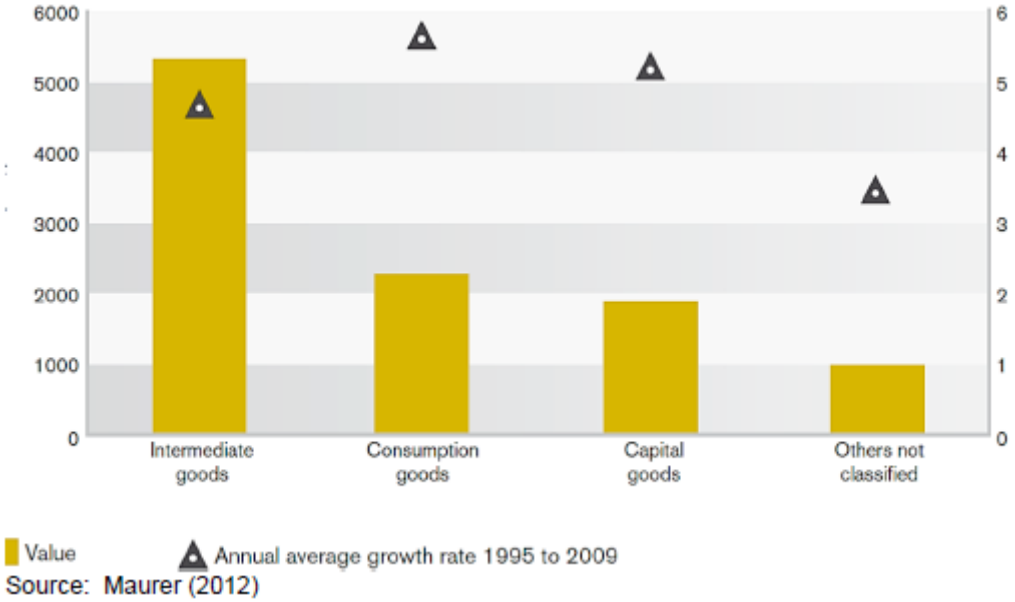
Figure 2. Services Exports as a Contributor to GDP at Different Levels of Development



Source: PECC/ADBI (2012)

The pattern of world trade has witnessed remarkable changes over the past 25 years (roughly since the late 1980s.) Rather than trade in goods produced at one location and exported to a final consumer in another location, globalization is taking place such that production of goods and increasingly of services involves a combination of intermediate inputs and services activities sourced globally to make up a finished product. Sturgeon and Gereffi show that increased trade in intermediate inputs is accounting for an expanded ratio of trade to world GDP (from 16 percent in 1990 to 27 percent in 2008).[63] Figure 3 sets out WTO data showing how significant intermediate trade in goods has become. This rising trade in intermediate inputs reflects the development of global production chains in the world economy. These now represent more than half of the goods imported by OECD economies and close to three-fourths of the imports of large developing economies, such as China and Brazil.[64]

Figure 3. Growing Role of Intermediate Goods Trade



Source: Maurer (2012)

Intermediate trade, or global value chain activity increasingly blurs the distinction between imports and exports and falsify the designation of a product (or service) as produced in one location only. Drivers of the development of global value chains (GVCs) are generally accepted to be lower transportation costs, improvements to information and communication technologies and technological innovations. An early contribution by Gereffi distinguished between GVCs as either producer-driven, where large integrated industrial enterprises control the backward and forward linkages in a global production system (typical of capital-intensive industries like automobiles, computer, aircraft and electrical machinery), or "buyer-driven", in which large retailers, brand-named merchandisers and trading companies set up decentralized production networks in a variety of exporting countries (typical of consumer-goods industries such as garments, footwear, toys, consumer electronics, household items, furniture, etc).[65]

The concept of "made in the world" was coined recently by the WTO and IDE/JETRO in their groundbreaking collaborative work on "Trade in Tasks"[66] which focuses on global supply or global value chains. This concept is slowly coming to be understood in policy circles with respect to merchandise production and trade. This cutting-edge study, in its bilateral breakdown of the production networks and intra-firm activity, radically challenges the concepts behind traditional measurements of bilateral trade flows in goods. Disappointingly, however, the study effectively ignores the contribution of the

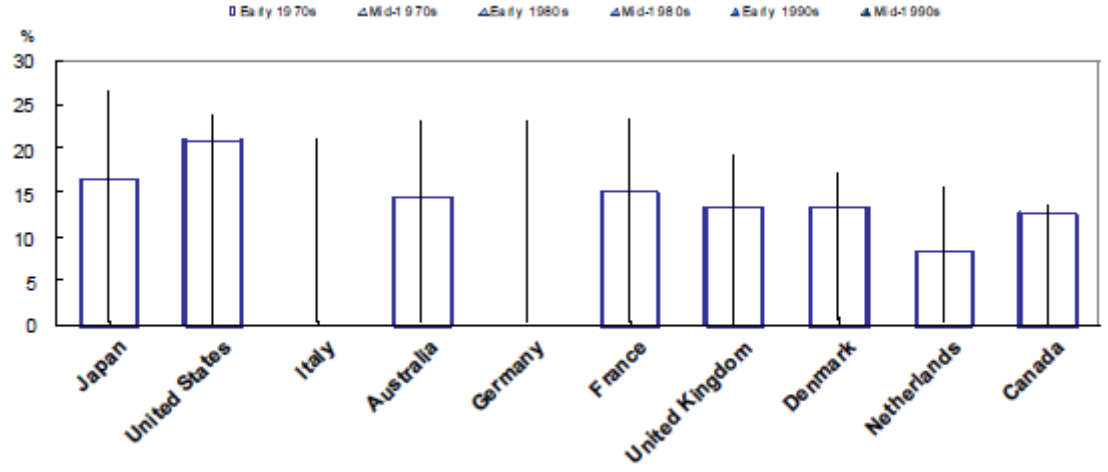
[63] Sydor (2011), chapter 1.
[64] Ali and Dadush (2011).
[65] Gereffi, G., "The Organization of Buyer-Drive Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks" in Gereffi and Korzeniewicz (1994) chapter 5.
[66] WTO (2011)

services sector, including its dominant role in FDI flows. Another missing component of this study is not only to examine how services contribute to the growth and operation of GVCs, but how services themselves are now being fragmented into value chains.

3. Embedded and embodied services

Services that are bundled with goods and that are therefore traded indirectly as intermediate inputs fall into two categories – "embodied", and "embedded" services. "Embodied" services are the services contained in products from the mining, agricultural and manufacturing sectors and inputted during the production process (e.g. energy, transport, communications, insurance, accountancy, design, software, and other technical expertise. Other Services are "embedded" at the point of merchandise sale, for example financing, training, maintenance, repair and other after-sales service. For many manufactured goods – especially expensive, high value ones – embodied services can account for a surprisingly large proportion of the value of the goods. For trade purposes, however, the full export value of embodied services is counted as manufactured exports, with no export value attributed to the services input. For many consumer goods, combinations of merchandise with embedded services are becoming key methods of merchandise differentiation in the market and key methods of achieving higher overall value-added. Traditional statistical measurement techniques completely overlook the value of these "embodied" and "embedded" services. Embodied services alone are thought to account for a rapidly growing proportion of global merchandise exports and are now estimated around an average of 25 percent (See Figure 4).

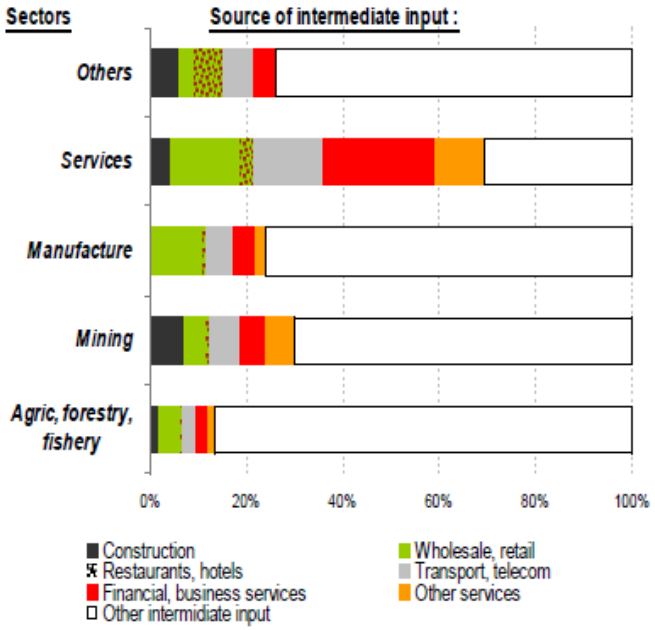
Figure 4. Embodied services as a percentage of OECD area manufactures



Source: OECD (2005)

Outside the OECD area, one recent estimate for Indonesia puts embodied services similarly at around 25 percent on average of Indonesia's manufactures (Figure 5).

Figure 5. Embodied Services; Estimates for Indonesia



Source; Atje, Rahardja and Maidir (2010)

A 2010 study undertaken to measure the extent of embodied services in Australia's exports, as distinct from production, shows that services are nearly twice as important to Australian export performance as exports of services recorded in the balance of payments suggests (See Box 1). Services are embodied in all merchandise exports, even the apparently least transformed, as the example in the box on Australian coal production demonstrates. ITS found that the output of the Australian manufacturing indsutry embodied on average 26.4 percent and the output of the mining industry embodied, on average, 31 percent services.

Box 1: Embodied Services in the Value of Australian Coal

To extract A$100 worth of coal in 2005-06, the Australian Bureau of Statistics Input-Output Tables show that the average mining company spent A$11.40 on wages and other labor oncosts, and A$30.50 on intermediate inputs. Intermediate inputs are the goods and services that mining companies buy to enable its miners to extract coal with the company's plant and equipment. The average company spent A$6.10 on goods — timber for construction, diesel fuel for its mobile plant, explosives, prefabricated buildings and new machinery. It also spent A$24.40 on services— specialist mining expertise such as geotechnical and mining engineering services, electricity to power the fixed plant and equipment, construction and maintenance of the plant, rail transport and property and business services such as legal services and accountancy. Over 80 percent of the intermediate inputs used to extract coal were services. Intermediate services accounted for nearly one-quarter or 24.4 per cent of the final value of the coal produced in 2005-06.

Source: ITS Global (2010)

Embodied services are an increasingly important component of value-added in regional and global value chains for many elaborately transformed manufactures. This section provides several examples of products that contain numerous embodied services and indicates the significant contribution of services to the final manufactured output, none of which is officially captured at present.

3.1 Services in the "American" car

A recent study suggested that for any global location, over 50 percent of the average cost of manufacturing an automobile is embodied R&D, engineering and quality assessment services.[67] For one particular "American" car, it was shown that quite apart from the 17.5 percent of value from high tech components from Japan, 4 percent for minor parts from Chinese Taipei and Singapore and 30 percent for assembly in Korea, 7.5 percent of value was added in Germany (design) and 2.5 percent in Ireland or Barbados (data processing). Similarly the Texas Instruments telecommunications chip was conceived in

[67] Pasadilla (2007)

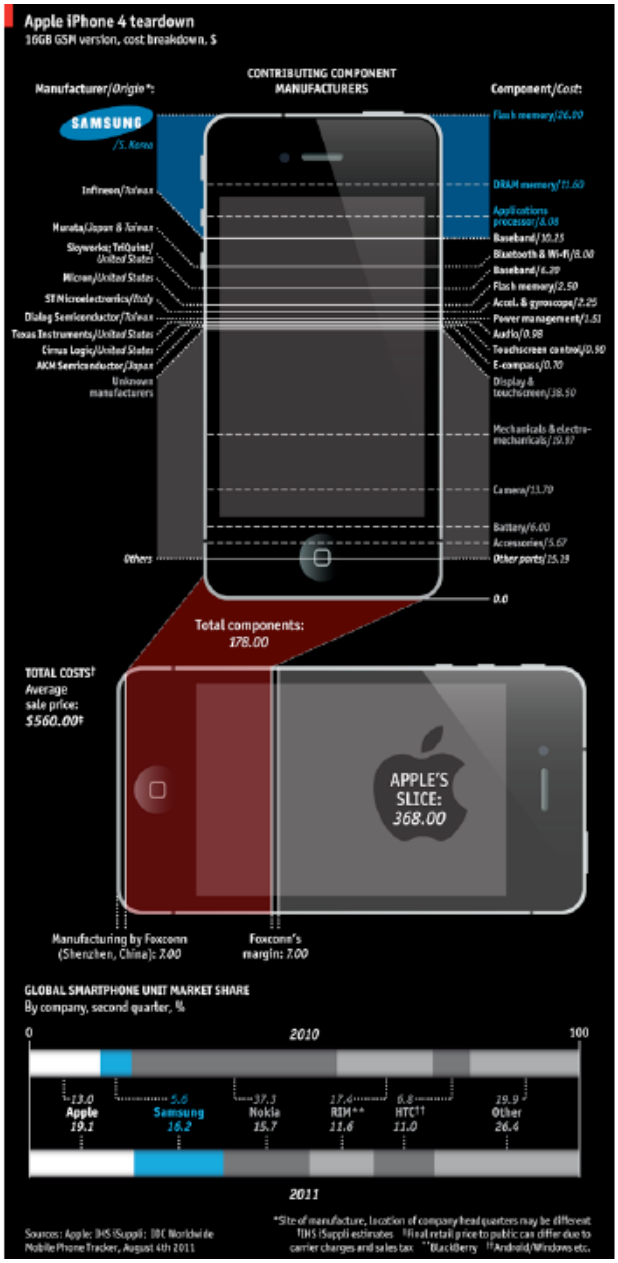
Sweden, designed in France with software instruments developed in the USA, produced in Japan and the USA and tested in Chinese Taipei.

3.2 Services in the ipad and the iphone

The business reality that high-value-adding services are pivotal to the elaborate transformation of manufactures needs to be much better understood in trade policy circles. More than 50% of the ipod's value has nothing to do with merchandise components and everything to do with the services activities involved in conception, design, retail and distribution.[68]

The iPhone is an even stronger example; in this example, as shown in Figure 6, merchandise components represent less than one third of the total value of the final product, suggesting that services account for two thirds; though exactly how much value is added by each of the individual services components such as R&D, software development, engineering, marketing, transport, packaging etc is not clear.

Figure 6. Value of Embedded Services in the Apple iPhone 4



Source: The Economist (2011).

[68] Varian, H.R., The New York Times, June 28, 2007. An Ipod has Global Value. Ask the Many Countries That Make It, in Gereffi (2011)

3.3 Services in the Nokia phone

A somewhat more detailed cost breakdown is available for the Nokia N95. In this case, as shown in Figure 7, merchandise components account for one third of the total cost, value added in Nokia's internal support functions represent another one third and distribution and retail together account for one sixth of total cost; the remaining one sixth is licenses, final assembly and operating profit.

Figure 7: Identifying Embedded Services in the Nokia N95 Value Chain

Integrated Circuits: 6%
Camera: 3%
Other parts: 11%
Licences: 4%
Value Added in Nokia's internal support functions: 31%
Nokia Operating Profit: 16%
Final Assembly: 2%
Distribution: 4%
Retailing: 11%

Source: Al-Yrkko, Rouvinen, Seppala and Yla-Antilla, "Who Captures Value in Global Supply Chains", ETLA, The Research Institute of the Finnish Economy (2011)

Such simple examples demonstrate vividly not only that current trade statistics massively overstate the value in trade attributable to goods, at the same time understating the size of trade in services; they also lead to massive distortions in overall trade balances.

3.4 Embodied services not captured in world trade

The official balance of payments data are completely unable to capture the business realities behind these various examples. One study[69] based on 2004 data concluded at a global level, that taking embodied services into account would reduce the manufacturing sector's share in world trade from 74 percent to 47 percent and increase the share of services from 17 percent to 39 percent. Another recent study measuring the linkages between services and manufacturing,[70] based on 2007 data, shows (see Figure later in this paper) that while cross-border services exports are variously estimated at around 20-27 percent of world trade, the share of services rises to almost 50 percent if merchandise trade flows are measured in terms of direct and indirect value added content rather than on the basis of the gross value of goods crossing the border.

The ITS Global study mentioned above suggested that, on the basis of IMF forecasts of global GDP and trade volumes, total embodied services exports could increase to US$47.2b by 2014-15. ITS Global points out that the outlook for embodied services exports will depend on any shifts in the intensity with which intermediate services are used to produce and deliver merchandise exports. Every percentage point increase in the intensity of intermediate services use in merchandise production is estimated to add over US$1b to embodied services exports each year. The study notes the evidence that a convergence in production systems in manufacturing and services is well underway, with embodied services intensity increasing. It observes that if the increase in the intensity of services use which occurred between 1998-99 and 2005-06 were to be repeated over the period to 2014-15, embodied services exports would be around US$53b a year in real terms by the end of the period.

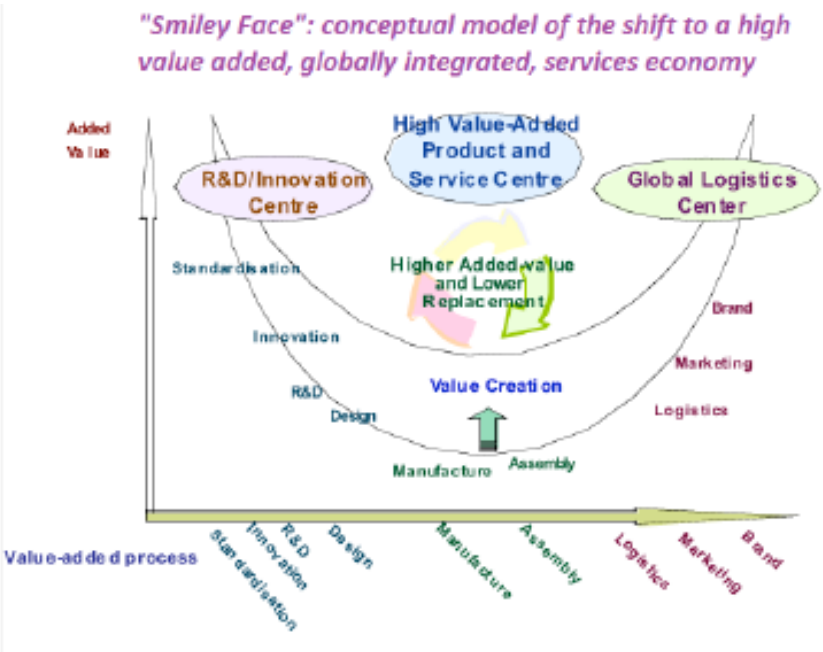
[69] Daudin et al (2011), based on GTAP data for 2004.
[70] PECC/ADBI (2012)

4. The Shift to Higher Value-Add

Services activities are clearly providing the linkages between the segments of production in GVC or the "glue" which holds the chains together and allows them to operate. Service activities in core "niches" serve to make cohesive both the producer-driven GVCs and the consumer-driven GVCs. Such activities that were once carried out solely within large corporations are being sub-contracted and sourced out to autonomous firms, increasingly breaking down the production process into goods and services "tasks".[71]

As Stanley Chih of ACER computers demonstrated in his famous "Smiley Face" shown in Figure 8, the highest value added services activities such as R&D/innovation or global logistics, increasingly dominate production value. While the original node of the production process is at the bottom of the "Smiley Face" in the form of manufacture/ assembly, the activities that add value to this core are located on either side of the value chain as they increasing contribute in value to the final product, moving up to the R&D/innovation centre and the logistics centre, with all of the value added in between coming from services activities. To improve competitiveness, services firms are seeking to move up the value chain on either side of the "Smiley Face", to focus on each firm's individual core competency and outsource all the rest, thus increasingly atomizing the process of international production and trade.

Figure 8. "Smiley Face" Model of the Shift to Services

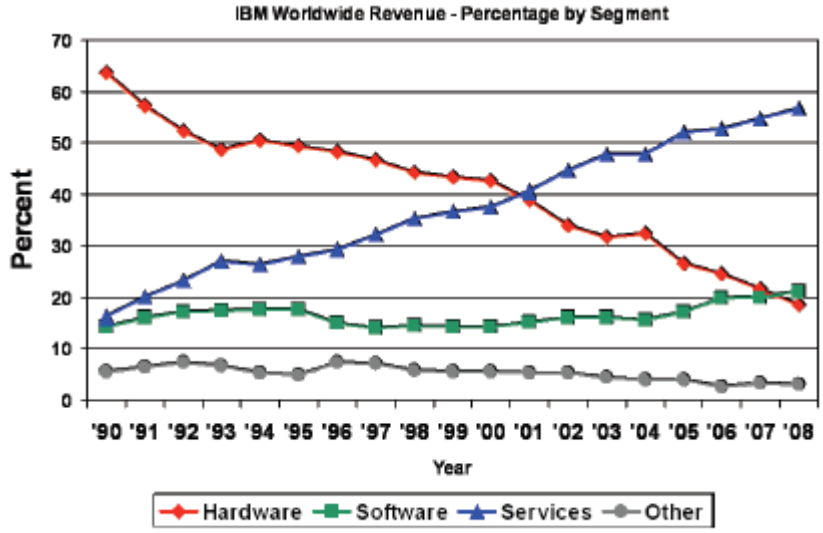


Source: Business Week Online Extra, May16, 2005. Stan Chih on Chinese Taipei and China from McCredie et al (2010)

IBM Corporation provides a dramatic example of corporate transformation from manufacturing to services, with the focus at the R&D/innovation end. As shown in Figure 9, for IBM the trend in profitability away from manufacturing and towards services was clear throughout the 1990s. By 2000, focus on hardware was no longer commercially appropriate, with software and services increasingly dominating the group's worldwide revenue. Corporate focus is now firmly at the "Ideation" end of the value-chain.

[71] Rabach, E., and Kim, E.M., "Where is the Chain in Commodity Chains? The Service Sector Nexus" in Gereffi and Korzeniewicz (1994)

Figure 9. IBM's Business Transformation to "Ideation"



Source: Koomen (2009)

The sourcing group Li and Fung illustrates the shift from manufacturing and services to more much complex global logistics (See Box 2). In the garment sector, for example, the group no longer merely brokers between a client and a producer, but orchestrates a sophisticated global network of suppliers of yarn, dyeing and weaving operations as well as cutting, making and trimming, for just in time supply at the retail end.

Box 2: Li and Fung; Business Transformation to "Orchestration"

Li & Fung produces more than two billion pieces of apparel, toys and other consumer items every year. Li & Fung now accounts for more than US$8 billion in garments and consumer goods for some of the best brands in the world. By the time of its one-hundredth anniversary in 2006, Li & Fung had become the world's largest sourcing company, growing at a compound annual rate of 23 percent for the last 14 years.

Yet Li & Fung does not own a single factory. It is a flat business for a flat world. The company started as a trading broker in Guangzhou (Canton) in 1906 during the Qing Dynasty and transformed itself into a Hong Kong–based exporter and then into a multinational corporation. Finally, the company reinvented itself for the flat world in a new role, as a "network orchestrator." It is now the orchestrator of a network of more than 8,300 suppliers served by more than 70 sourcing offices in more than 40 countries and territories. The company indirectly provides employment for more than two million people in its network of suppliers, but only less than half a percent of these are on Li & Fung's payroll. With this lean structure, each of the company's own employees generates about US$1 million in sales, earning a return on equity of more than 38 percent per year.

These examples illustrate what appears to be a steady ongoing process of corporate transformation towards services.

Studies of regional and global supply chains in goods have started to confirm the predictions of the "Smiley Face", drawing attention to the fact that for many elaborately transformed manufactures (such as the iPhone) the highest value added is contributed by services inputs, often at the R&D and design phase – or at the logistics/distribution phase. All kinds of tasks along the intermediate phase of the

"Smiley Face" between these two high value-added ends are increasingly being outsourced and offshored to wherever each individual task can be most efficiently performed. This "intermediate" or "intra-firm" trade is now being described as "trade in tasks".

The role of services in facilitating "trade in tasks" by connecting the points in the goods supply chain is increasingly recognized. So also is the fact that the "embodied" services component of production and trade, especially of elaborately transformed manufactures, can account for a very high percentage of the total value of the good.

What remains much less well understood is the fact that value chains exist not only in the goods sectors but also in the services sector itself. In new business models, services firms, like goods firms, are seeking to go up the value chain and to outsource non-core services functions. This leads to services becoming embodied not only in goods exports but also in final services exports. “Trade in tasks” describes these phenomena but as Figure 10 suggests, the trend is not yet as well developed in services as it is in manufacturing industries.

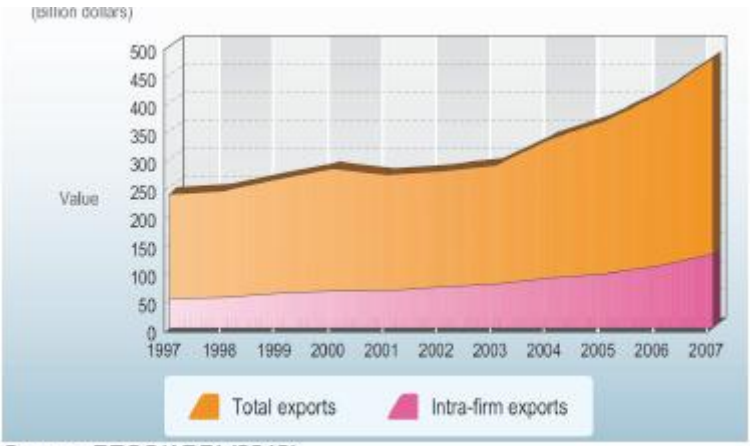
Figure 10. Share of Enterprises carrying out International Sourcing

	Manufacturing		Other sectors	
	Core Business functions	Support functions	Core Business functions	Support functions
Total*	17.4	12.8	5.2	7.6
CZ*	3.7	3.3	1.1	1.7
DK	23.9	23.3	4.1	15.8
DE	13.3	11.2	2.6	5.2
IE	49.2	41.9	20.8	22.6
IT	15.9	7.8	1.3	2.6
NL*	13.9	10.5	4.7	8.5
PT*	11.0	13.0	2.9	4.4
SI	17.4	20.1	3.6	7.9
FI	21.7	14.8	5.5	14.2
SE	9.3	4.7	1.0	2.1
UK	52.6	36.6	15.3	17.0
NO	13.5	17.7	2.4	11.2

*CZ, PT: provisional data Total, NL: unreliable data
Source: Eurostat (2011), Statistics explained online, International sourcing statistics, in Maurer and Tschang 2011

Evidence is emerging, though it is difficult to measure, that trade in services intermediates is increasing. Figure 11 documents, for the United States, the growth in intra-firm services trade.

Figure 11. Intra-firm Trade in US Services Exports (1997-2007)



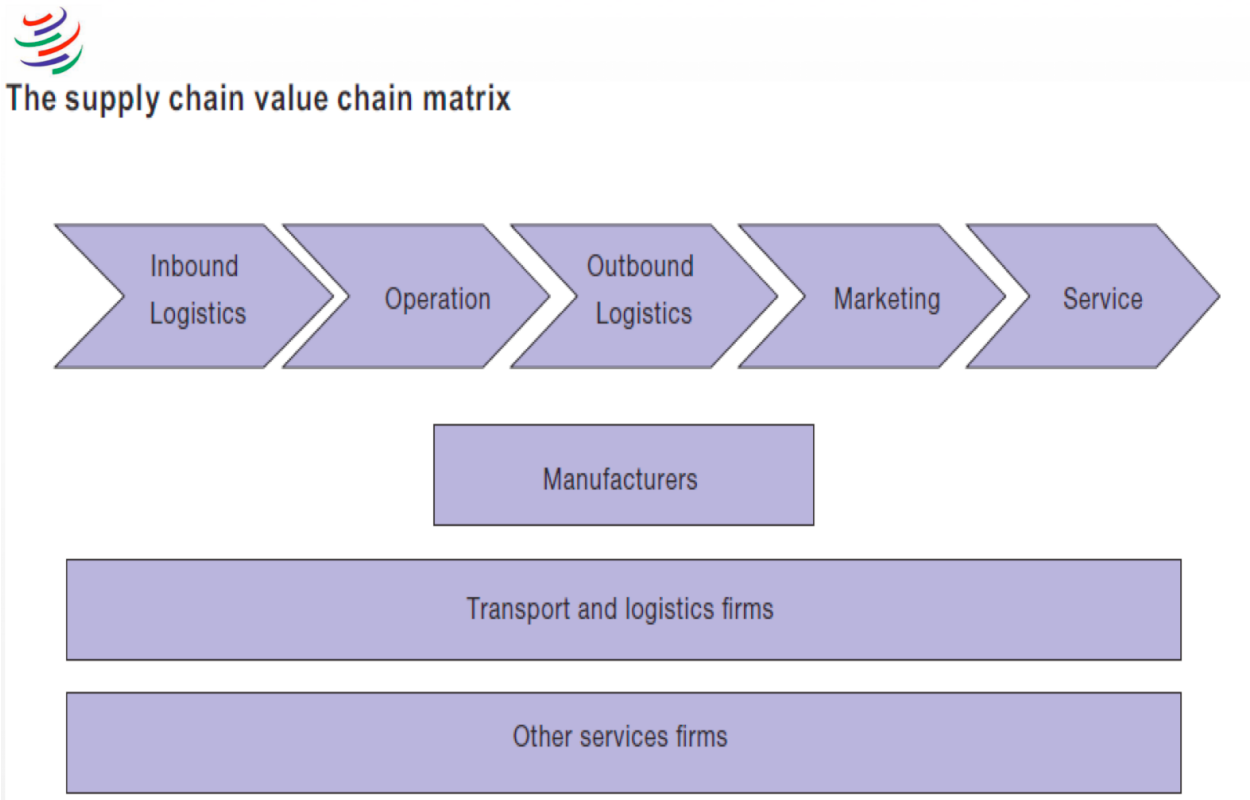
Source: PECC/ADBI (2012)

5. Mapping the Process Of Outsourcing and Offshoring in Services

As individual firms focus on core competence to shift up the value-added ladder, a number of services activities are now being “outsourced” and sometimes “offshored” by both multinational corporations and even middle-sized firms. A simplified conceptual framework, through which to understand this process from a services perspective, is presented in Figure 12. The horizontal line shows the “supply” chain, ie the simplified set of activities through which the services is delivered – or what we might call the “pathway to market”. The vertical line shows the component industries that make up the

total component value-add. (This matrix is especialy useful in identifying the relevant policy agenda, as we discuss later in this paper.)

Figure 12. Supply Chain/Value Chain Matrix



Source: Nordas, H.K. (2007), International Production Sharing, WTO Discussion Papers, No.11

Gereffi has broken the horizontal line down further into a more granular set of activites, identifying 8 separate business functions, generic across both goods and services sectors, all of which can be outsourced as set out in Box 3.

Box 3: Chain of Generic Business Functions

1. The primary activity of the organization, such as the production of final goods or services intended for the marketer for third parties for the purpose of generating income.

2. Research and development of products, services, or technology, including designing, redesigning, or improving products or services, equipment, or procedures, or basic research and experimentation with new technology, systems, and processes.

3. Sales and marketing, including pre-sale interactions with existing or potential buyers, advertising, market research, account management, managing brands or products.

4. Transportation, logistics, and distribution, including packing, storing, shipping or transporting in-process and finished products, or warehousing inventory.

5. Customer and after sales service, including call centre services, maintaining and repairing products, technical support, customer service, warranty support.

6. Management, administration, and back office functions including top managers, middle management, administrative support, procurement, human resources, accounting, billing, legal, and finance.

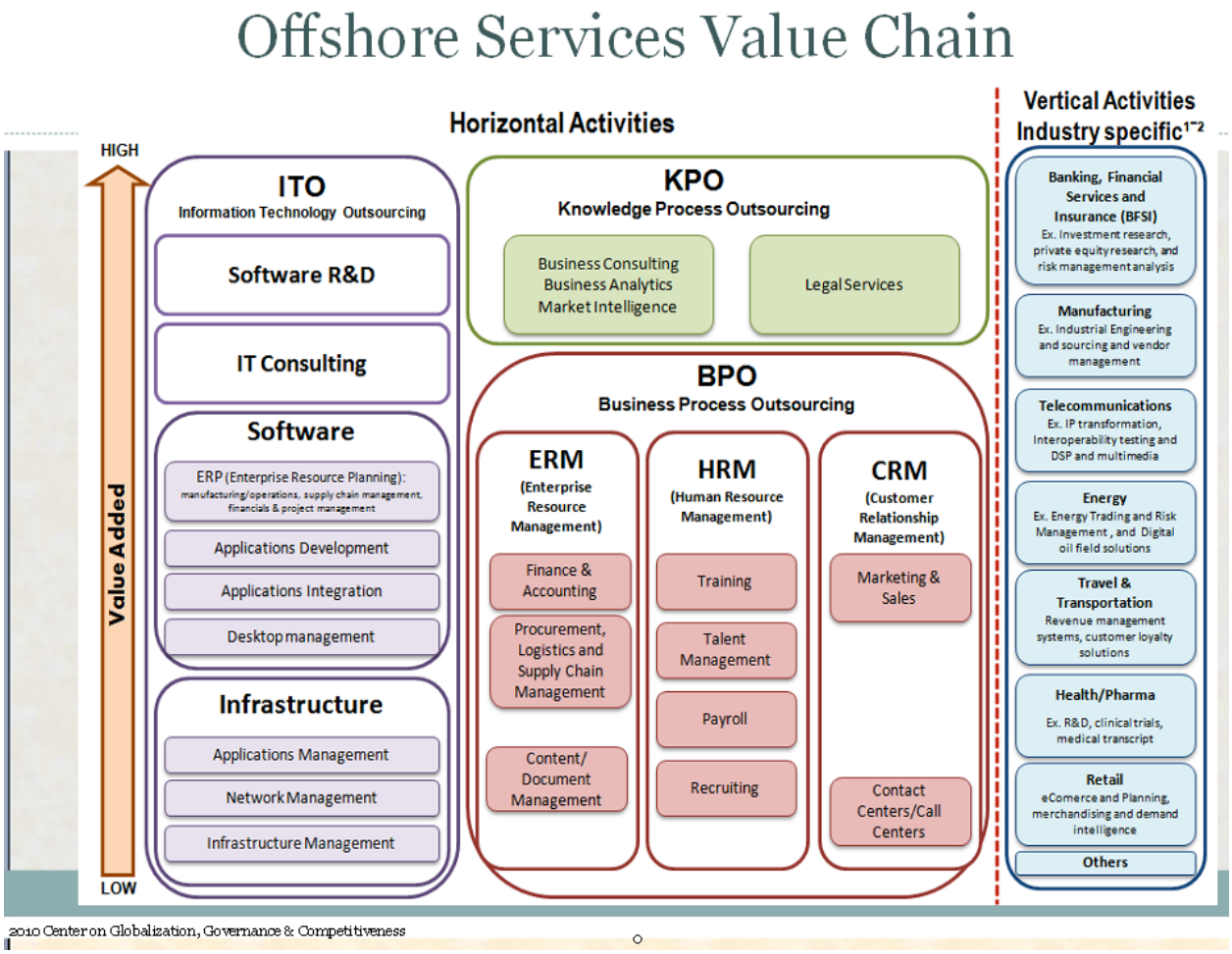
7. Information technology systems, including developing, maintaining, or repairing computer systems for internal use, writing software for internal use, processing or managing data for internal use.

8. Facilities maintenance and repair, including maintenance and repair of owned or leased space or buildings, or janitorial and cleaning services

Source: Gereffi (2011)

Using these essential tools, researchers have started to "map" a number of specific services industry supply/value chains. The offshore aspects of these chains encompasses services activities conducted in one country often as the result of foreign direct investment, often from a home-based multinational corporation, and consumed as business inputs in another. This can include a variety of business-to business activities. Gereffi has estalished a complex explanatory map encompassing all of these offshore activities, locating the separate generic business functions in terms of their value-add: the resulting offshore services value chain is set out in Figure 13.

Figure 13. The Offshore Services Value Chain



Source: Gereffi (2010).

The three main segments illustrated in Figure L are Information Technology Outsourcing (ITO), Business Process Outsourcing (BPO) and Knowledge Process Outsourcing (KPO). The offshore value chain is subdivided into services that can be provided across all industries (horizontal services) and services that are industry specific (verticals). Firms operating in the horizontal vector are process experts, while those operating in vertical chains have industry expertise and their services may have limited applicability in other industries.

Within the horizontal vector, activities are related to supporting generic business functions such as network management, application integration, payroll, call centers, accounting and human resources. In addition, they include higher value services such as, market intelligence, business analytics and legal services. Within the horizontal services vector, ITO make up the low, mid and high segments of the offshore services value chain, BPO activities are found in the low and mid segments while KPO are the highest segment of the chain. The value of each activity is correlated with its human capital content (education level), that is to say, lower value add services require fewer years of formal education.

The ITO segment has 4 categories; software, R&D, IT consulting, software, and infrastructure. The BPO segment contains 3 main categories including enterprise resource management (ERM), human

resource management (HRM), and customer relationship management (CRM). The KPO segment includes business consulting, business analytics, market intelligence and legal services. This categorization provides an initial blueprint for economic upgrading strategies within the industry, as firms attempt to "climb" the value chain for offshore services.

The substantial growth of the offshore services industry presents a challenge when it comes to collecting data for the relevant services. According to OECD estimates, the size of the offshore services market would have been about US$252b in 2010. The highest compound annual growth rate has been experienced in the KPO segment (58 percent), with ITO (26 percent) and BPO (25 percent) following.[72]

6. Statistical deficiencies in measuring services trade

The growing importance of services in world trade and the new global distribution of work through the offshoring of services tasks have implications for how trade flows take place and for their measurement. The current way in which services are measured, given the growth of global value chains, is clearly inadequate, with international trade statistics grossly understating the importance of services trade.

As international merchandise trade statistics are established from customs documents at the border, they assign the full gross value of an international transaction to the immediate economy of origin or the last producer in the value chain. This economy of origin is often only the last assembler in a long supply chain and will not have created nor benefited from the full value added included in the final good. The value added necessary to produce the product may be spread across several economies forming the value chain as illustrated, for the iPhone, in Figure 14.

Figure 14. US trade balance in iPhones (2009; US$m)

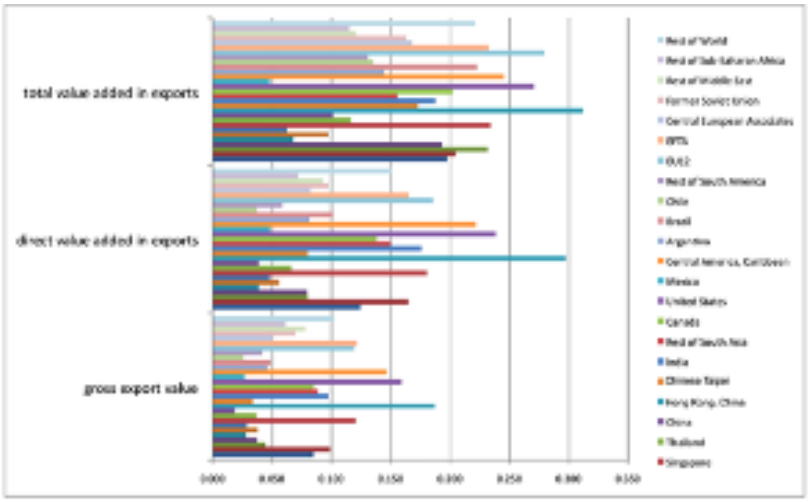
	China	Japan	Korea, Rep. of	Germany	Rest of world	World
Traditional measure	-1,901.2	0	0	0	0	-1,901.2
Value added measure	-73.5	-684.8	-259.4	-340.7	-542.8	-1,901.2

Source: PECC/ADBI (2012)

Some of these intermediate steps will be constituted by goods components, but many will have been constituted by services "tasks". The services sector makes a much larger contribution to exports than is recognized because services are often integrated or bundled with goods and trade indirectly as intermediate inputs into merchandise production. As discussed earlier, it is estimated that taking account of intermediate services inputs to goods trade would nearly double the services share of global trade. As shown in Figure 15, services would constitute close to 50 percent of world trade, and that is still without taking the dominant component of international services transactions, namely mode 3, into account.

[72] Miroudot (2012)

Figure 15. Adding Indirect Production and Trade in Services

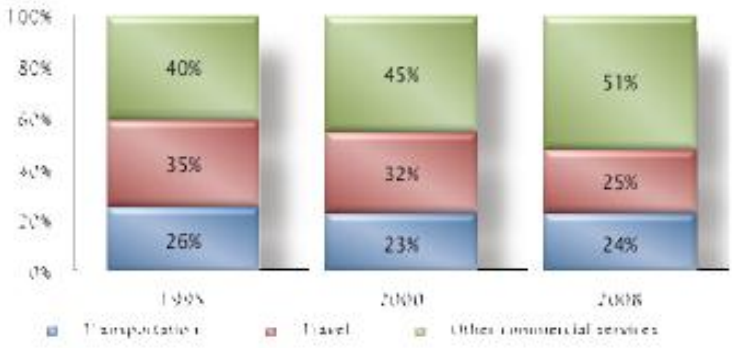


Source: PECC/ADBI (2012)

Given the current deficiencies in measuring international trade in final outcomes only, the WTO and the OECD have recently concluded an agreement to develop and disseminate goods trade statistics on a value-added basis, using the inter-country input-output tables of OECD members. These new statistics should be available as of end 2012. This is a welcome development and should help to highlight the importance of value chains in current trade patterns and thus assist governments and policy analysts make better informed policy decisions when viewing trade in a realistic manner.[73] A need is similarly emerging for a value-added approach to measuring developments in trade in services, although this will be a challenging objective to achieve, given the paucity of bilateral services trade data.

The development of services value chains and the growth of services trade have also resulted in the composition of services exports undergoing significant change. "Other commercial services" are becoming more important than the traditional "travel" and "transport" components of world services trade. The biggest contributors to the recent growth have been the knowledge-intensive business services such as telecommunications, computer and IT Services, R&D Services, financial services, legal, accountancy, management consultancy services, architecture, engineering and other technical and professional services, advertising, market research, media and energy and environmental services.

Figure 16. Changing Composition of World Services Trade



Source: PECC/ADBI (2012)

[73] Miroudot (2012). The OECD maintains a website devoted to studies on the subject of trade in value-added at www.oecd.org/trade/valueadded . The Press Communique of the WTO Director General Pascal Lamy on the WTOOECD agreement to develop trade statistics on a value-added basis can be found at www.wto.org

7. Examining Services Industry Value Chains

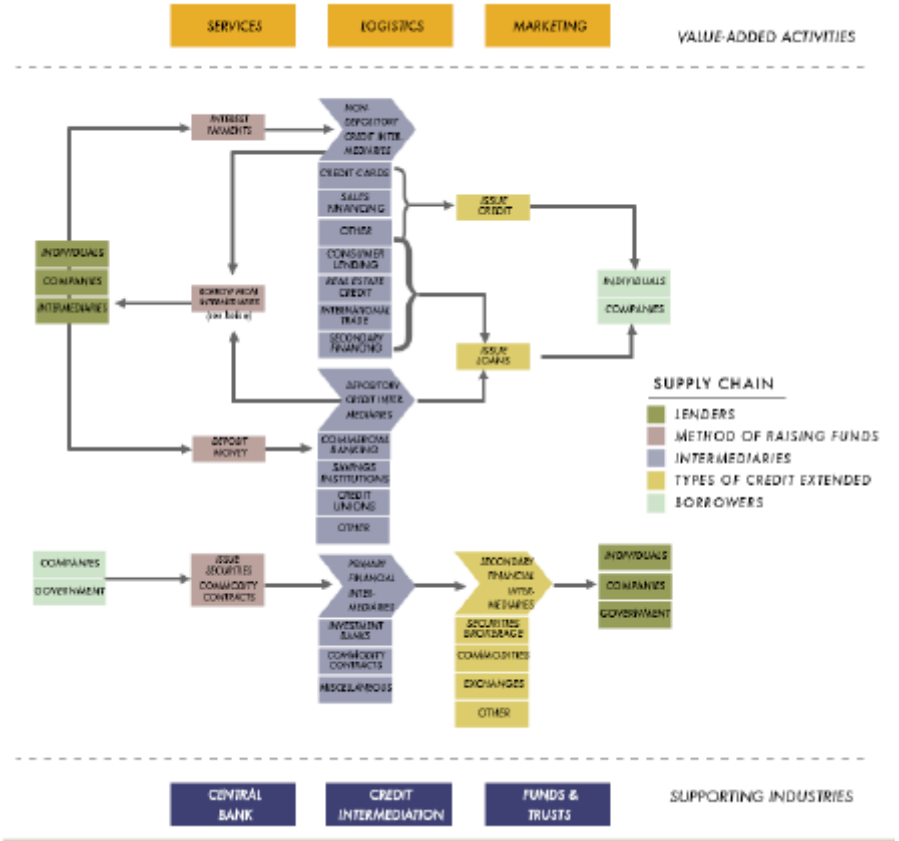
Research on services value chains is still in the very beginning stages. In this section the value chains for banking and financial services and tourism services are set out and discussed. However, such services value chains are also being created in many other sectors such as health services and environmental services. There is a need for further research in this area, supported by specific empirical case studies.

a. Banking and Financial Services Value Chain

While banking and financial services are key intermediary inputs or embedded services in nearly all manufactured outputs in some form or another, banking and financial services activities can be seen as composing a value chain on their own account. A banking and finance value chain is based entirely around the production of services. In this industry, the "raw materials" are lenders and borrowers (individuals and corporations) that appear at both the beginning and the end of the chain.

As shown in Figure 17, the financial “products” provided by this services value chain are divided between credit intermediaries (both depository and non-depository) and financial intermediaries. These institutions primarily collect funds through deposits and lend funds by issuing loans, but, the fine line between the functions of commercial banks and investment banks is continually becoming thinner, and in many cases, commercial banks also conduct investment banking. Moreover, the banking transaction does not represent the end of the relationship between the lender and the borrower. Banking services, like other services, generally entail the establishment of a relationship between the two and as a result, firms perform a variety of activities before and after the sale of a product.

Figure 17. Banking and Financial Services Value Chain



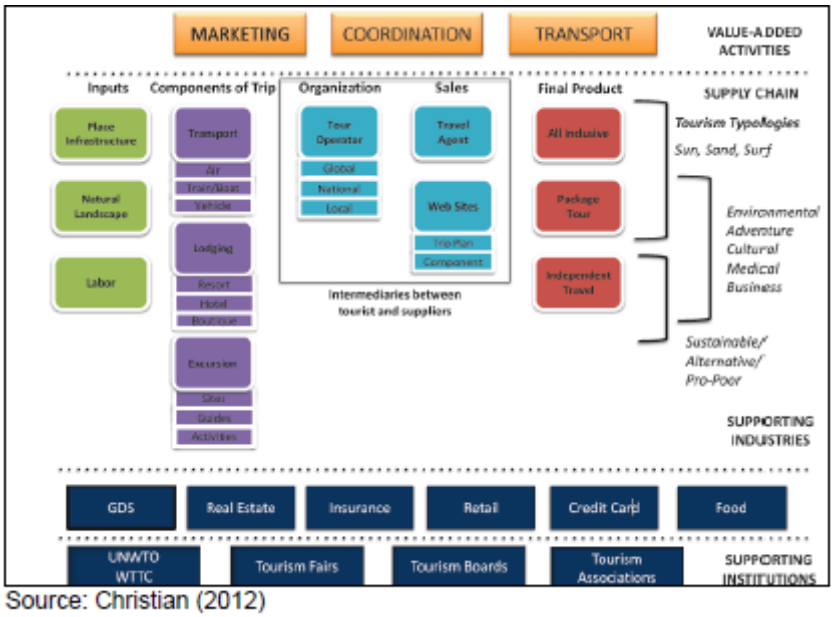
b. Tourism Services Value Chain

The tourism global production network has five segments: inputs, components of trip, organization, sales, and final tourism “product” (See Figure 18). The components of trip, organization, and sales segments are represented by tourism businesses in inbound and outbound tourism destinations. The trip segment components consist of: travel, lodging, and excursions. Every segment is

a mix of large and small firms and potential, if the investment regime allows it, for a degree of foreign direct investment.

The organization and sales segments act as intermediaries. Within the organization segment, tour operators knit together an array of tourism products to create the tourist experience. In the sales segment, travel agents are the strongest retail venue. They sell tourism products, online and in sales offices, and inform potential tourists about destinations and suppliers. These tourism intermediaries are often vertically integrated operations, including not only retail sales and tour operator coordination, but also hotel and air transport. All the tourist experiences can be bundled together and sold as a packaged tourism "product" by global tour operators.

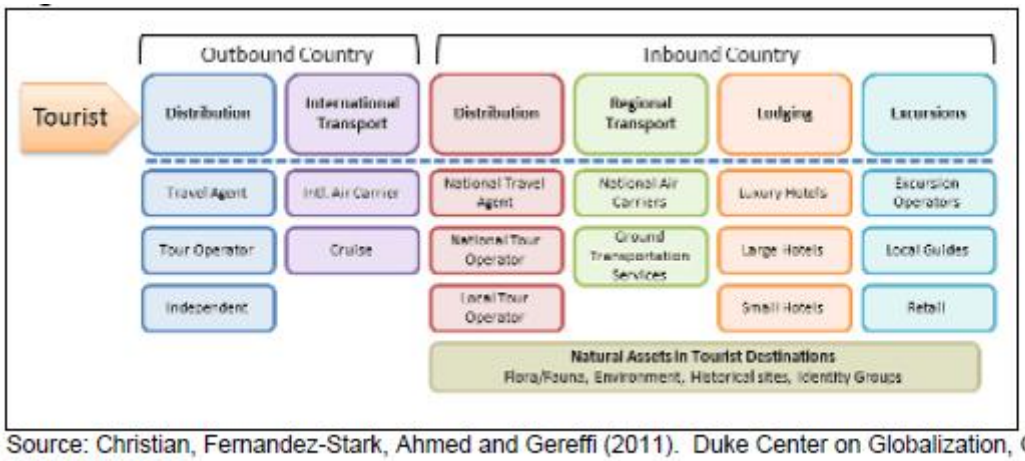
Figure 18. Tourism Global Production Network



Source: Christian (2012)

Incoming agents. These agents can operate as subcontractors to global tour operators, but can also sell their tours directly to tourists. The tourism global value chain (GVC) follows the tourist's "footprint"; or the series of their interactions with firms and includes the distribution, transport, lodging, and excursion segments (Figure 19).

Figure 19. The Tourism Global Value Chain



Source: Christian, Fernandez-Stark, Ahmed and Gereffi (2011). Duke Center on Globalization, Governance & Competitiveness.

One of the goals of countries or firms who are part of the tourism value chain is to upgrade their activities along the chain. Four upgrading trajectories are key drivers of the global tourism industry: pursuing pro-foreign direct investment policies to attract international hotels offering higher levels of

luxury; upgrading the coordination and destination trip planning by global tour operators; using IT upgraded services to establish more sophisticated web presence; and catering to the growing diversity of international tourists with varied tastes and preferences with ever greater specialized "products".[74]

8. Competitiveness in Services

The opportunities offered by the new pattern of world trade in the form of value chains make it imperative that economies give greater attention to their relative competitiveness in services – or to put this another way, to their ability to attract services tasks for the global market onshore. Below we present a framework of 8 factors initially proposed by Drake-Brockman[75] to the APEC Business Advisory Council (ABAC) as appearing to have a determining role in services competitiveness.[76] This framework draws on firm-level evidence emerging from business associations in the APEC region,[77] and on early empirical results from a variety of developing country case studies undertaken by the World Bank.[78]

Framework of 8 Factors relevant to international competitiveness on Services

1. Endowments, especially Human Capital (talent, education, skills, ideas, culture of customer focus)

• business stakeholder interviews refer to the importance of vocational training

• firms refer to the importance of multi- and cross-disciplinary education, including languages

• World Bank work shows tertiary enrolment is significant in affecting services exports.

2. Investment in Intangible Assets (corporate Intellectual Property e.g. copyright, business methodologies, brands)

• analysis in the UK provides evidence of intangible capital deepening contributing the bulk of growth in labour productivity

• firms refer to the importance of a supportive environment for innovation, including business process innovation

3. Enabling Digital Infrastructure

• World Bank confirms the importance of the quality of the telecommunications network and

• extent of internet penetration (though this is not always critical)

4. Quality of Institutions

• World Bank work identifies transparency/degree of corruption/rule of law as being relevant

• World Bank identifies the economic freedom index

• firms refer to the role played by institutions which undertake independent analysis of the costs and benefits of regulatory regimes

5. Efficiency of Domestic Regulation

• firms refer to constraints imposed by the complexity of the business environment

• rigidity or other inefficiencies in employment laws; for services companies, human capital costs are often 70-80 percent of total cost, everything to do with recruiting, training and deploying people is critical

• firms refer overwhelmingly to the burdensomeness of regulatory compliance costs

• firms refer to the need for an environment which gives them flexibility to adjust to rapid change

6. Connectedness with the International Market

• two-way trade and investment openness

• firms refer to the quality of export promotion efforts and tool kits and opportunities to connect with supply chains

• firms refer to the need for mutual recognition and interoperability of standards

• firms are increasingly concerned about seamlessness of regulation across markets

7. Services Business Stakeholder Consultation

[74] Christian et al (2011)
[75] Drake-Brockman (2011)
[76] ABAC (2011)
[77] Findlay and Drake-Brockman (2011)
[78] Goswami et al (2012)

• World Bank work suggests that services business groups (such as NASSCOM in India and BPAP in the Philippines) play a positive role

• firms stress the importance of stakeholder consultation mechanisms, for example the newly formed Indonesian Services Forum

8. Policy Focus

• firms refer to the need for better services statistics

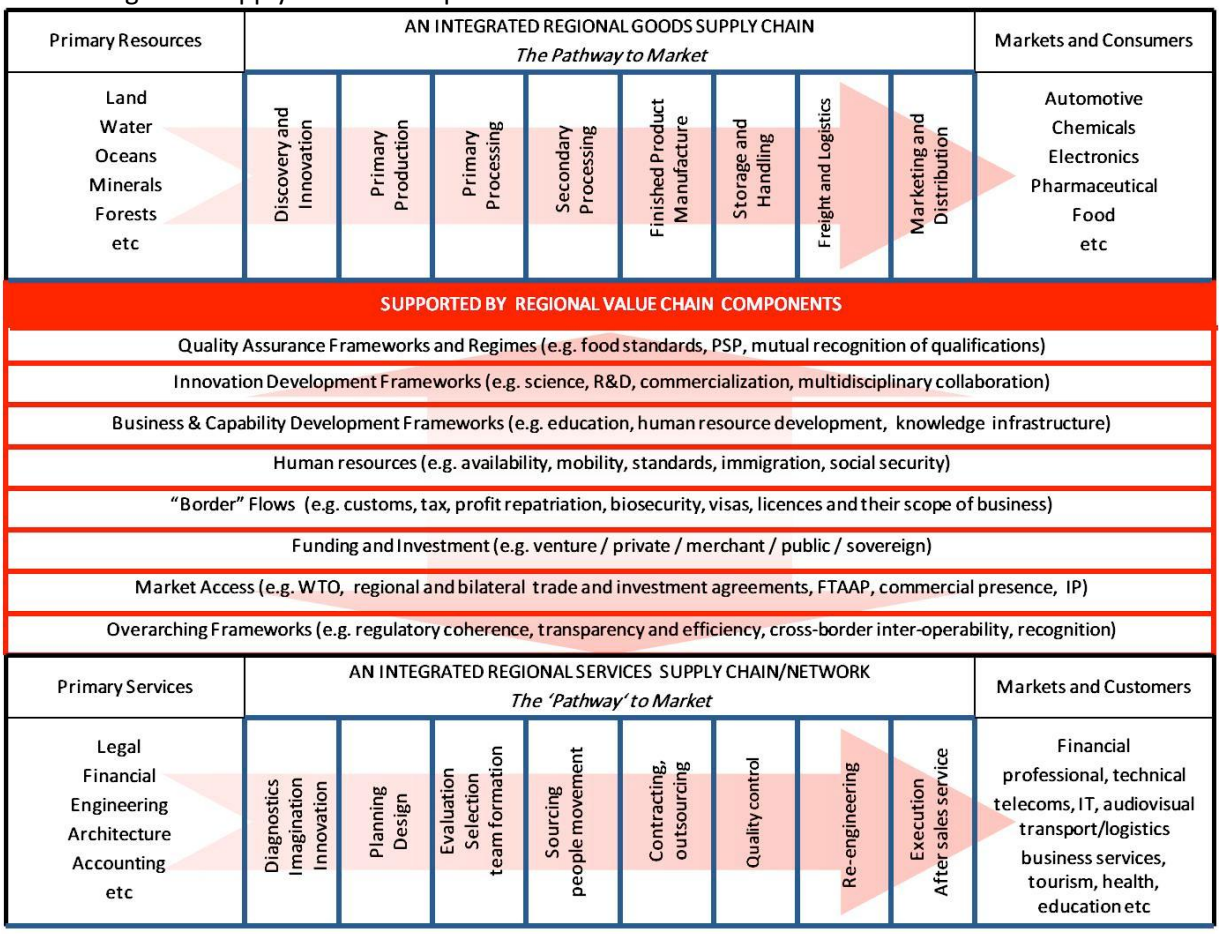
• firms refer to the need for inter-agency coordination

• existence of a vision and roadmap for services

• World Bank work is inconclusive about the role, if any, of specific sub-sectoral targeting

Very importantly this framework suggests that there are many policy variables relevant to services competitiveness, and much therefore that governments can do, both individually and in a concerted manner, to enhance the opportunities for broader participation in global and regional supply chain activity. ABAC has been a strong contributor to work in this area. ABAC has developed an integrated supply chain/value matrix not only for the goods sector but also for the services sector. The ABAC framework can be used to focus trade policy attention on key "choke points" along the services value chain which is illustrated in the bottom half of Figure 20 below. The framework shows a 'pathway to market' moving through primary services to the final market and consumers.

Figure 20. ABAC Integrated Supply Chain Conceptual Framework



Source: ABAC (2011)

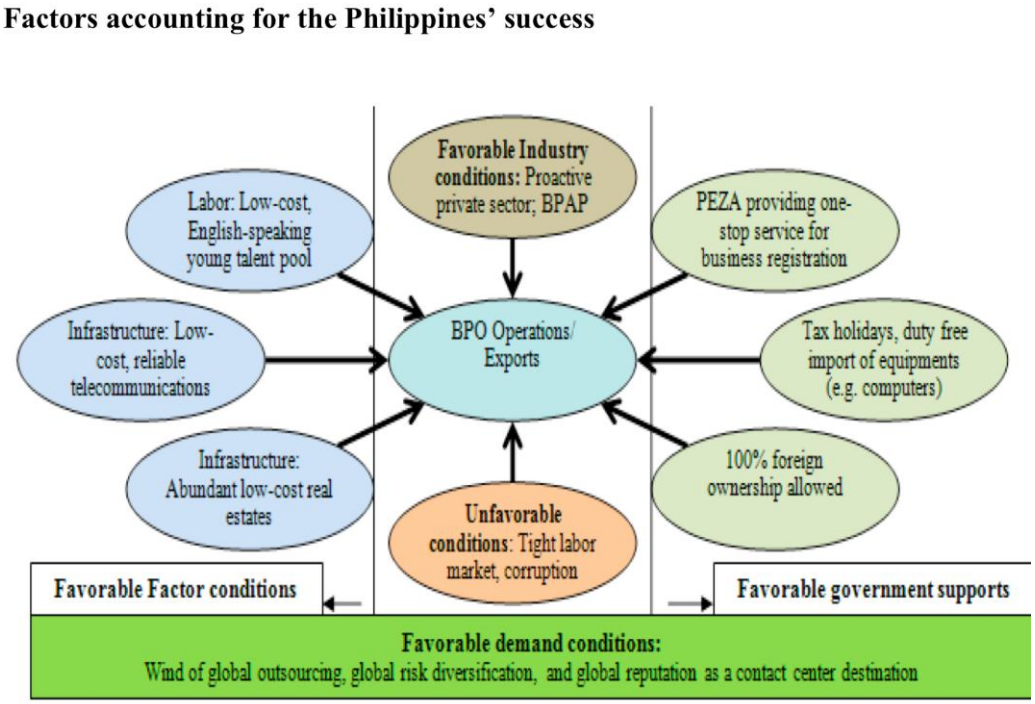
Importantly, by identifying the links in the chain, and hence the potential "choke points", and this integrated Framework begins to spell out the critical elements in the relevant policy agenda. The vertical axis focusses on the policy variables affecting competitiveness in both goods and services sectors. This axis cleverly provides an initial integrated guide to the components of a policy agenda focussed on facilitating firm entry into regional and global supply chains, for both goods and services sectors. While there is some commonality in the generic business functions involved in any supply chain, the factors affecting competitiveness in value chains for goods and for services are nevertheless

significantly different, as are relevant policies and measurement issues. We focus in this paper on providing a specifically services perspective on the factors affecting supply chain entry.

9. Factors affecting Entry into Services Value Chains

Because services are more skills-intensive than the other sectors, knowledge economy infrastructure and an environment that nurtures talent, skills and ideas are critical in attracting work onshore. Services export success is similarly highly dependent on innovation, so an industry/innovation policy which recognises services needs, is very important.[79] Services activities also tend to be project based. This means that firms need flexibility to be able to move people and ideas around quickly; virtual teamwork and cross-border collaboration is very important. This highlights the importance of connectivity across the border, requiring policy focus on telecommunications, aviation, global standards, openness at the border and technical inter-operability. The factors affecting the Philippines's success is a useful case study, described in Figure 21.

Figure 21. Facilitating the Philippines Participation in IT-BPO Supply Chains



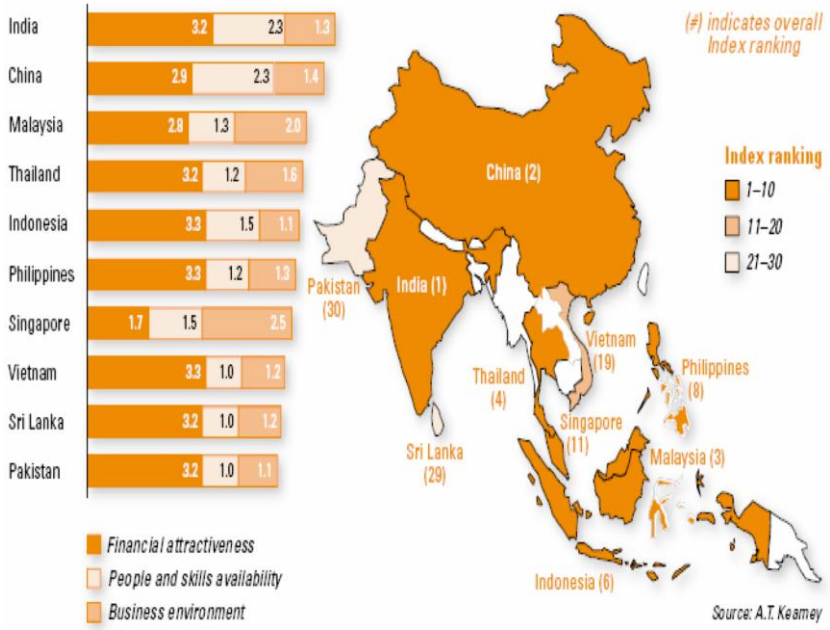
Source: Yi (2011)

Source: Yi, S., "Reaching the World through Private Sector Initiative: Services Exports for the Philippines" in Goswami et al, 2012.

An enabling business environment behind-the-border and an efficient, transparent, domestic regulatory framework are also essential basics. For services companies (where human capital costs are often 70-80 percent of total cost) everything to do especially with recruiting, training and deploying people can be critical. The A.T. Kearney Location Attractiveness Index, which specifically looks at human resource factors, is a useful device for starting to analyze competitiveness factors affecting services supply chain entry.

[79] McCredie et al (2010)

Figure 22. Attractiveness of Asian Locations for Services Offshoring



Source: Chanda and Pasadilla (2011)

9. Summary of Policy Implications and Conclusions

We have focussed in this paper on providing a specifically services perspective onthe phenomenom of GVCs, drawing out some of the potential policy implications for the 21st century trade and development agenda. In summarising the various policy points we have made we draw some specific policy conclusions and recommendation for APEC.

9.1 Trade Policy Implications

Trade policy of the 21st century has not yet caught up with the changes in the world market. Global value chains in goods and services and both intertwined have definitively altered the way in which firms do business and in which trade is conducted, as well as the patterns of trade. This has not yet been reflected in trade rules, trade negotiations or trade governance structures. All of these will need to be reviewed in the light of this new reality and adjusted accordingly.

The 2012 report of the World Economic Forum's Global Trade Agenda Council highlights a few key issues that the rise of global value chains has raised. First, bilateral trade balances are over-stated as they only relate the balance of trade in final products and not the actual contribution to trade of all of the intermediate suppliers. Second, the importance of exports as a driver of demand is overestimated, while the importance of trade as a source of efficiency is underestimated. Third, because of value chains, trade has become more volatile and a larger source of potential shocks to the world economy and individual countries. Fourth, trade in intermediates and services "tasks" means that the cost of protectionism is higher than is generally understood, and is rising.[80] It is therefore more important than ever to be vigilant that trade flows remain open and that the world economy moves toward lower barriers to trade in goods and especially services.

The key role that services play as "links" in global value chains and in creating services value chains of their own means that modal neutrality should be enshrined in the services chapters of regional trade agreements and at the WTO level in the GATS through an agreement to bind an open policy for cross-border trade flows (mode 1) as well as for foreign direct investment flows (mode 3). In addition, it is vital to include strong chapters on competition policy and regulatory coherence in 21st century trade agreements in order to ensure competitive neutrality. As argued in the WEF report[81], a violation of either of these conditions will mean that the operation of services value chains cannot function smoothly, thus entailing costs for the world economy and all trading partners.

[80] World Economic Forum Report (2012)

[81] Stephenson, S., " Services and Global Value Chains", in World Economic Forum Report (2012)

9.2 Development Policy Implications

The emergence of services value chains and the growing importance of services as embodied parts of global value chains in manufactures has numerous and significant implications for development policy.

First, the value chain story is not only about large global enterprises. SMEs are actively involved, and increasingly it is SMEs in the Services sector which are most engaged in global value chains. OECD work shows evidence that since 1997, more services SMEs have been involved in international alliances than manufacturing SMEs; by the year 2000, there were nearly 4 times as many services SMEs engaged in international alliances than manufacturing SMEs.[82] Services activities are usually less capital intensive than manufacturing ones and require less physical infrastructure, an advantage for countries with limited physical and financial capital. The separation of services activities into "tasks" allows developing countries to choose which of those services tasks they are best suited for and aim to facilitate firm entry into a given value chain without the necessity of "capturing" the entire value chain. Unlike the goods sectors, however, very limited literature is available to help understand the workings of supply chains in services and how SMEs can best access them.

Second, the division of world trade into components or "tasks", of which many are now services in nature, offers developing country firms a new avenue via which to integrate into world markets, given the right set of conditions. The mushrooming of services-led growth, independent of manufacturing, especially in South Asia, is being labelled a "Services revolution" i.e. a shift of activity directly from agriculture to services, by-passing traditional "industrialization". This increasingly implies that there is another sustainable growth model, allowing "leapfrogging" direct into high value tertiary tasks. Vast opportunities clearly still exist to offshore service activities across different industries, and new segments like retail banking and health care are emerging. Growth is being driven by increasing procurement services abroad to increase efficiency, enter new markets, and gain access to strategic assets in other countries (low human resource costs, technology and language skills, closer time zones, etc). Developing countries with a strong educational infrastructure have a competitive advantage compared with the developed world as many offer both a low cost and educated labor force. For developing countries, it may be easier and less costly to capture one or more of the "tasks" of a services value chain than to try and compete along the entire line of service activities. This may allow firms in developing economies to enter world markets more readily through creating an attractive environment as an offshoring location, as they are not required to have a cost advantage in an entire product and can choose to focus on only one "task" along the value chain. The offshore services industry still has significant growth potential and can provide opportunities for developing countries striving to diversify and upgrade their economic activities. Positive externalities from the industry growth include knowledge transfer, more and better jobs, access to new markets, and IT communication infrastructure improvements. McKinsey Global Institute estimated that in 2009 up to 161 million worker's jobs can be performed remotely.[83] Given the factors that are important in the creation of services value chains, an obvious conclusion is that if developing countries can create a strong human capital base (as many East Asian economies have done), it may be possible to leap-frog up the development ladder and bypass the traditional stages of manufacturing in order to integrate into world markets by capturing a services "task" in one of the global value chains.

9.3 Recommendations for APEC Work Program

The relevant question is what can APEC as an organization do to enhance the participation of APEC economies in regional and global Services Value Chains? In the view of the authors, APEC needs, above all, to give higher priority to all the work already underway under all of its pillars to improve regional services efficiency, productivity and competitiveness. In particular, more rapid progress must be made, as discussed above, with respect to Services trade and investment liberalization. At the same time, APEC needs to devote more dedicated energy to domestic institution building for structural and regulatory reform. APEC should undertake urgent work to develop a set of generic best practice principles for all-of-services regulation. And of course there should be more steady progress with the

[82] Pasadilla (2007)

[83] McKinsey Global Institute (2009)

roll-out of digital economy infrastructure and efforts to ensure inter-operability of digital economy standards.

The authors endorse the convergent recommendations set out by both the PECC and ABAC in their separate reports on services presented to APEC at the end of 2011.[84] APEC needs a visible new "Services Initiative", bringing work together from various APEC for a and demonstrating to the business community that APEC economies are open to greater Services connectedness. This initiative should include a new focus on Services Innovation policy, including to assist SMEs adopt innovative business processes and Services export promotion tools, including to assist SMEs enter services supply chains more readily.

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Improving Export Performance through Logistics Cost: Evidence from APEC Economies

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Abstract

It is probably that the exploration and exploitation of the tariff barrier in enhancing trade performance has been reached its limit. Doha Development Agenda (DDA) has shown no significant progress during the last decade. It is followed by the aggressive regional and bilateral free trade area which could increase world inefficiency due to trade diversion. One of the sources to increase export performance which is still under-exploration and under-exploitation is transportation cost or in the broader term is the logistics cost. Logistics cost and supply chains have overlapping meanings. This paper is aimed at developing the logistics cost index (Domestic Logistics Cost Index and International Logistics Cost Index) which is based on economic logic of gravity model and it is different from the World Bank Logistics Performance Index (LPI) and then showing the empirical evidence of the relation between the export performance and the new logistics cost index in APEC economies. Some interesting findings are shown in the following: First, the both of the new logistics index has a positive relation with the export performance in APEC economies; Second, by using the new logistic indices, it could be shown that the improvement of logistics condition of one country/economy in APEC will increase the export performance of the economy/country and in the same time it will increase the export of the other APEC economies to that country.

Key words: Logistics Cost, Export Performance, APEC Economies

JEL Classification: F1, F4

1. Introduction

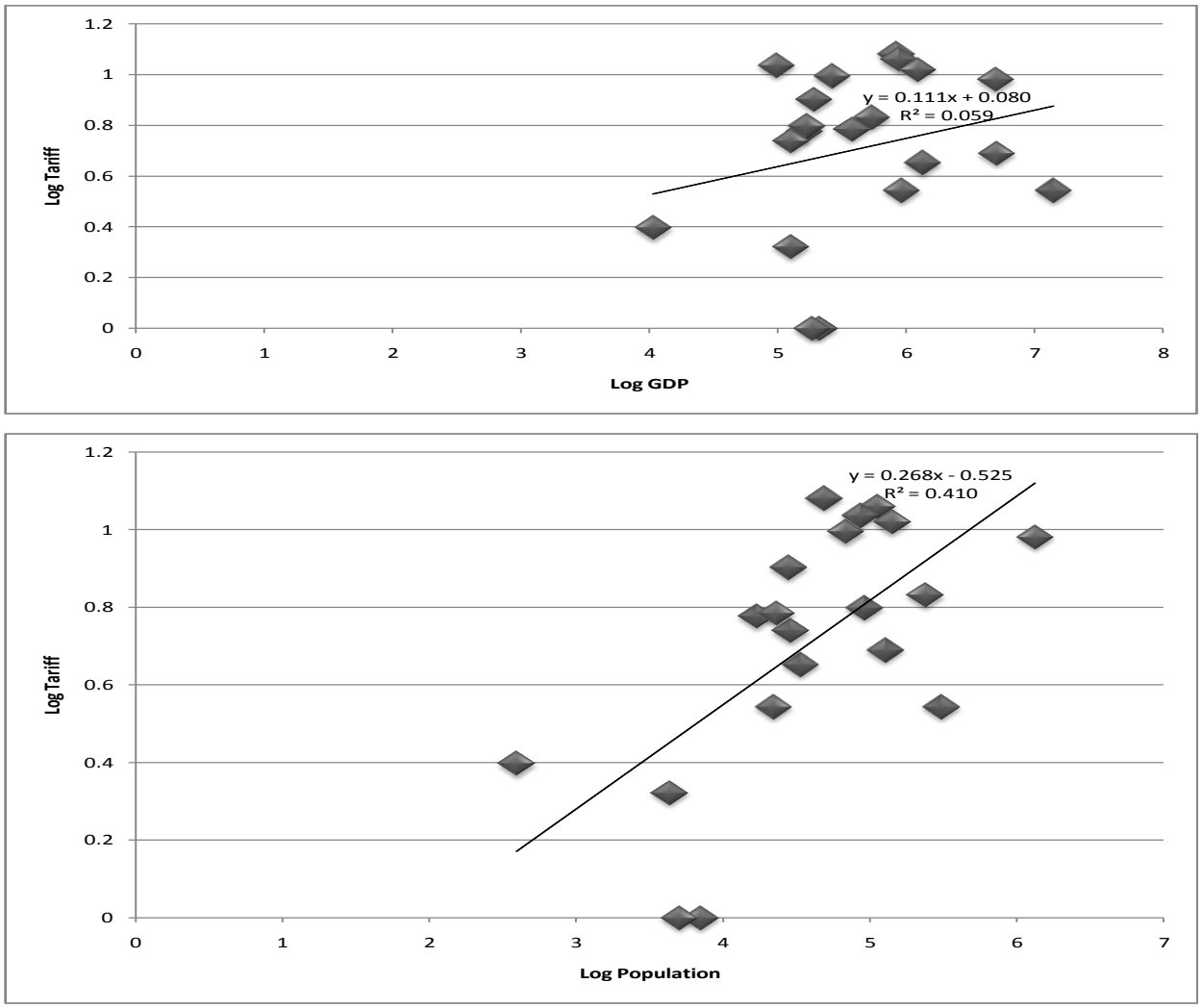
Since 2005 in Busan (South Korea), the APEC Economic Leaders Meeting (AELM) Statement has been separated into another page as the symbol of the urgency to conclude the DDA (Doha Development Agenda); however, those statements are not as powerful as the statement of AELM in 1993 which urge the completion of Uruguay Round (AELM 1, Washington, Seattle, USA) as stated below:

"The foundation of our economic growth has been the open multilateral trading system. Therefore, we pledge our utmost efforts to bring the Uruguay Round to a successful conclusion by December 15. We are determined the Asia Pacific region will lead the way in taking concrete steps to produce the strongest possible outcome in Geneva. Increased participation by APEC economies in a strengthened GATT system also will facilitate greater regional cooperation"(AELM Statement, Washington, Seattle, USA, page 1) .

In the next AELM, according to the AELM statement in 1994 (Bogor, Indonesia), APEC claimed that it has a vital role in the successful of Uruguay Round in 1994 as mentioned in the following statement:

"We are pleased to note the significant contribution APEC made in bringing about a successful conclusion of the Uruguay Round. We agree to carry out our Uruguay Round commitments fully and without delay and call on all participants in the Uruguay Round to do the same."(AELM, November 15, 1994, Bogor, Indonesia, page 1).

Figure 1. Size (GDP,Population) vs. Simple Average Tariff



Source: APEC Statistics, processed. Downloaded from http://www.apec.org, April 3, 2012

Since the Uruguay Round concluded, the development of the multilateral trading system, namely Doha Round, has no significant progress. One of the main explanations could be from political economy of protection which shows that the multi interest of the domestic market of each economy (at least some of the economies) which oppose the further multilateral liberalization[85]. If the political economy were the main reasons of the protectionism, there will be a positive relation between the higher the size of the economy (GDP) or the population with the level of the protection. The figure above is showing the relation between GDP and average tariff and also between Population and average tariff in APEC economies. In international trade theory, at least there are two barriers of the flow of goods and services: transportation (logistics in broader term) and tariff/non tariff barrier (policy). It seems that the further liberalization in term of tariff reduction is probably has achieved its limit. It is now the time to focus on increasing the flow of goods and services (also capital and people) through the increasing logistics performance. Logistics and supply-chain are sometimes used interchangeably even though they are different[86]; however, they have common interest, for example better transportation

[85] In the other front, the progress of regional and bilateral trading blocs have increased their role in further liberalization of some economies; however, these kind of liberalization has negative impacts of the non-member, especially on what so-called trade diversion which lead to the world inefficiency.

[86] This paper is not discussing the difference of the logistics and supply-chain.

and telecommunication. APEC has urged the important of the logistics through on what so-called trade facilitation since its establishment, especially since the Osaka Action Agenda stated in AELM 3, 1995, in Osaka, Japan.

2. APEC and Logistics: Some Important Notes

APEC has put a special concern on the logistics in improving the flow of goods, services, capital, and people through the trade and investment facilitation activities. The general statements that have relation with the logistics could be seen in the Appendix 1 based on AELM 1993-2011. Most of the statements are linked to statement about trade faclitiation, transportation, and communication.

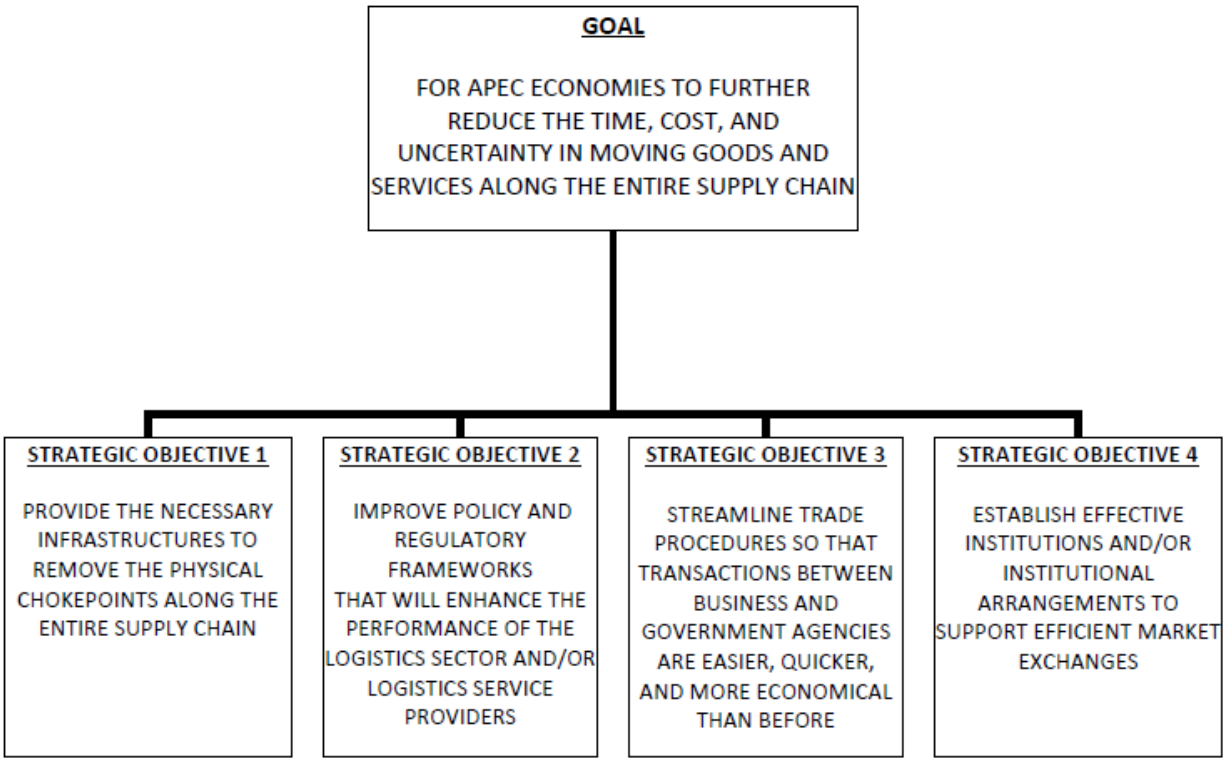
The statements of the AELM that have direct relations with the logistics are ranged from transportation, custom, telecommunication, supply-chain, to the security of maritime, aviation, and land transportation. The specific issues on the statement of the APEC ministrial meetings about transportation and telecommunication could be seen in the Appendix 2 and appendix 3.

APEC Secretariat through Policy Support Unit (PSU) has started to analyze the logistics cost in relation with supply chain since 2009. Several publications of the PSU to understand the current condition of the logistics in APEC economies could be summarized below:

First, the PSU (2009a) has tried to outline the evolution of logistics into its current comprehensive supply chain focus which is basically focusing in logistics;

Second, PSU (2009b) in A Results-oriented approach to APEC's Supply Chain Connectivity Initiative (SCI) highlight the following formula of goals and strategy of APEC economies:

Figure 2. Goals and Strategic Objectives of APEC in (Logistic Costs and) Supply Chain



Third, PSU (2010) in The Economic Impact of Enhanced Multimodal Connectivity in the APEC Region APEC Policy Support Unit has shown that "*Performance of individual transport modes and logistics, as well as overall multimodal transport performance, have a robust and significant association with stronger trade relations.*"

Fourth, PSU (2011) in APEC's Achievements in Trade Facilitation 2007-2010: Final Assessment of Second Trade Facilitation Action Plan (TFAP II) has shown that the Data from the World Bank's *Trading Across Borders* indicators reveal that there has been a 5% reduction in total trade transaction costs across the APEC region over the period of TFAP II, which resulted in total savings of USD 58.7 billion.

3. Conceptual Framework: Relation between Logistics and Export

The economic logic of gravity model and the logistics cost

One of the best models in predicting the trade volume is the gravity model which is based on the work of Newton in Physics. This model has been modified into economic logic. In the simple model, the "flow" of goods from one place to another place is depend positively on the "mass" of the two places/economy, but negatively relation with the "distance" of the those places. This simple model has been used in showing the flow of goods (export and import), the flow of factor of production (for example: FDI and labor migration), and the flow of people (Tourism). The interpretation of the mass is reflecting the capacity of those two economies, the greater of the capacity the higher of the flow of something between them while the distance is reflecting the cost/barrier that has the opposite direction.

In this paper, the focus of our analysis is from export side as shown in the equation below:

$X_{ij} = Y_i Y_j / D_{ij}$ .....(1)

X_{ij} = Export from economy i/region/country i to j[87];Y_i = Output of country i (push factor/supply side of export j to j); Y_j = Output of country j (pull factor/demand side of export i to j); and D_{ij}= Distance (economic cost) of exported goods from i to j;

$Y_i = f(K_i, N_i, A_i)$.....(2)

K_i = Capital Stock of country/economy i; N_i = Number of Labor of country i; A_i = Productivity/Technological Progress of country i;

$A_i = f(L_i, H_i)$; $(\delta Y_i / \delta A_i)(\delta A_i / \delta L_i) < 0$.....(3)

L_i = Domestic Logistics cost of country/economy i; H_i=Human capital of country i;

$Y_j = f(K_j, N_j, A_j)$.....(4)

K_j = Capital Stock of country j ; N_j = Number of Labor of country j; A_j = Productivity/Technological Progress of country j;

$A_j = f(L_j, H_j)$; $(\delta Y_j / \delta A_j)(\delta A_j / \delta L_j) < 0$.....(5)

L_j = Domestic Logistics cost of country/economy j; H_j=Human capital of country j;

$D_{ij} = f(P_i/P_j, T_{ij}, L_{ij})$; $\delta D_{ij} / \delta(P_i/P_j) < 0$; $\delta D_{ij} / \delta T_{ij} < 0$; $\delta D_{ij} / \delta L_{ij} < 0$ .....(6)

D_{ij}= Distance (economic cost) of exported goods from i to j; P_i/P_j = Relative price of the exported goods in i relatively in j; T_{ij} = Nominal import tariff of exported goods from i to j; L_{ij} = *Logistic cost of exported goods from i to j*;

Logistics cost and the flow of bilateral trade

The equation 3, 5, and 6 above are showing the relation of the tariffs and logistics with exporting goods from i to j. Some conclusions are: *first*, the import tariffs of j country have a negative and direct relation with the export from i to j; *second*, the domestic logistics cost in both country has a negative and indirect relation with the export from i to j. It means the lower domestic cost in both countries will make them more productive and increase their capacity as push and pull factor. *Third*, the international logistic cost between i and j has a direct negative relation of the flowing exporting goods from i to j. How the world deal with those three important factors?

The first factor is very famous in the international economics especially when we discuss with the trade policy: *tariff*. Sometimes the "non tariff barriers" are also included in this tariff as "tariff equivalent". Tariff barriers have been reduced significantly since the establishment of WTO (World Trade Organization)[88].

[87] In this paper, we treat economy, region, or country as the economic entity and they have the same meaning. This treatment is also applied to the whole part of this paper/study

[88] There are three steps that have been developed to attack this barrier: first, multilateral negotiation through GATT (later becomes WTO); second, since the multilateral negotiation has no much progress, some countries/economies developed regional negotiation. Most of the multilateral negotiation is based on the regional grouping and closer regionally; third, to compete further, some economies/countries develop bilateral negotiations. Some of those negotiations are more than only trade liberalization such is including factor of production or even as economic union. This factor which part of the "at the border" barriers has showing many progress. The reduction of tariff barriers has rapid progress since the establishment of the WTO and probably the limit has been met to explore the reduction of this barrier. One of the indicators is the Doha Development Agenda

The second factor is not as famous as the tariff and it does not directly affect the flow of goods and services. International trade theory does not discussed *domestic logistics cost*. Furthermore, negotiation among countries do not include this factor explicitly in the first time because this is the domestic problem or *"behind the border"*; however, this domestic logistics cost are now realized as the important factor to be explored to boost the trade, especially export.

The third factor is part of the international trade theory but sometimes ignored for the sake of the simplicity: *international logistic cost*. This is the part of the *"at the border"* barrier which is not easy to be reduced in the short run because the role of the economies of scale of the traded goods has become more influential factor in reducing this barrier. It is probably that the economies of scale of the trade will cause the demand for the improvement of the "at the border infrastructure" or at the point of exit and entry such as international seaport and airport.

Based on the framework above this paper is trying to seek answer as the following questions: "do the domestic and international logistics cost have correlation with the bilateral flow of goods and services between Indonesia and each APEC economies?"

4. Objectives and Methods

This paper will find the relation between the volume of the trade flow between Indonesia and each APEC economies with the logistic cost both the domestic (origin and destination) and international logistics cost. The more detail objectives are:

(i) Developing new logistics indices based on the simple logic of gravity model

(ii) Showing the relation between the new indices of logistics (domestic and international) and the international trade of APEC economies

This paper will analyze the relation between the cost of logistics and exported goods in the bilateral trade in APEC economies. Logistics cost will be divided into domestic logistic cost of origin country (L_i), the logistics cost of destination country (L_j) and international logistics cost (L_{ij}). The following figure could be used to see the role of logistics in exported goods from country i to j (X_{ij}). Even though this framework is set for exported goods and services, it could also be used for imported of goods and services analysis as the mirror or from the destination country perspectives. The construction of logistics index is based on the simple gravity model logic as explained above.

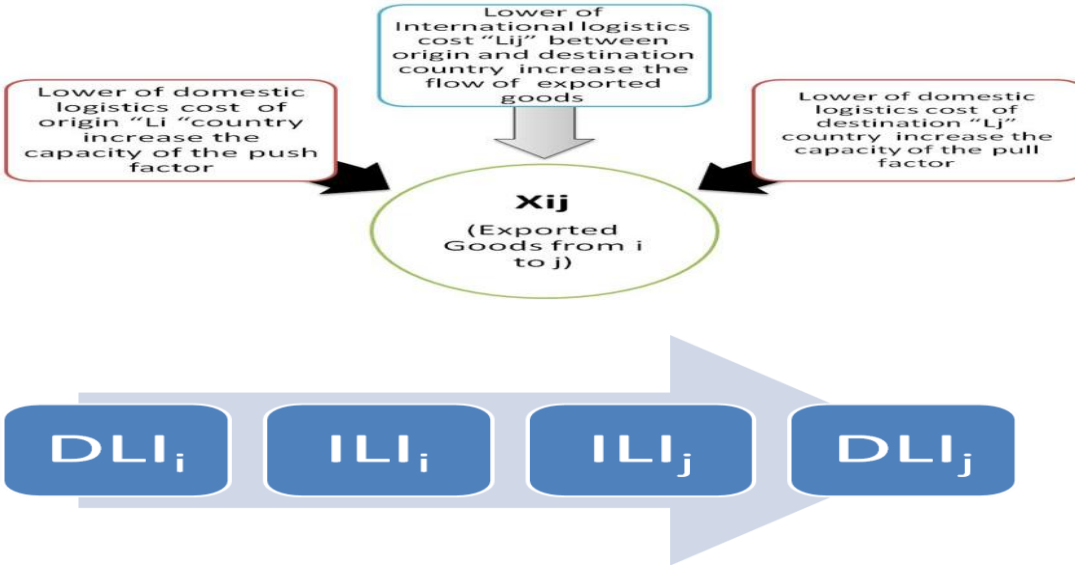
This paper will employ the data base of the World Bank about infrastructure indicators. The data are also taken from bilateral trade data between Indonesia and each APEC partner from UNCOMTRADE through APEC STATISTICS of APEC website. This is an alternative index to evaluate the logistics performance which is different from LPI (Logistics Performance Index)[89]. The steps are shown in the following:

First, this paper will select the "infrastructure" indicators from World Bank data base that could be included into two categories of logistics: logistics cost each domestic economy and international logistics cost of each economy.

Figure 3. The Role of Logistics in the Movement of Goods X from Origin (i) to the Destination (j)

(DDA) has no significant progress. As shown in the introduction above that political economy is one of the important reasons why most countries reluctant to conclude the Doha Round.

[89] World Bank (2011):"The Logistics Performance Index is based on a worldwide survey of operators on the ground (global freight forwarders and express carriers), providing feedback on the logistics "friendliness" of the countries in which they operate and those with which they trade. They combine in-depth knowledge of the countries in which they operate with informed qualitative assessments of other countries with which they trade, and experience of global logistics environment. The LPI consists therefore of both qualitative and quantitative measures and helps build profiles of logistics friendliness for these countries. It measures performance along the logistics supply chain within a country and offers two different perspectives: International and Domestic". LPI consist of Efficiency of the customs clearance process; Quality of trade and transport-related infrastructure; Ease of arranging competitively priced shipments; Competence and quality of logistics services; Ability to track and trace consignments; Frequency with which shipments reach the consignee within the scheduled or expected time."
http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTTRANSPORT/EXTTLF/0,,contentMDK:21514122~menuPK:3875957~pagePK:210058~piPK:210062~theSitePK:515434,00.html, downloaded December 22, 2011.



Notes: Xij = exported goods from origin(i) to destination (j); Li = Logistics Cost of Origin; Lj= Logistics Cost of Destination; Lij = Logistics Cost from i to j; DLIi = Domestic Logistic Index in country/economy I (origin); ILIi = International Logistics Index from country/economy I (origin);DLIj = Domestic Logistic Index to country/economy j (destination);ILIj = International Logistics Index in country/economy j (destination)

Second, the selected of logistic cost indicators will be composed into two new composite indicators of logistics: "domestic logistics cost index and international logistics cost index". The weighted of the indicators are based on common sense.

Third, finding the relation of the flow of export volume and the new indicators of logistics will be applied in APEC economies.

5. Construction of DLI and ILI : Process and Result

The selected indicators of DLI (Domestic Logistics Index) and ILI (International Logistics Index) are chosen based on two constraints: the availability of the data in the WDI (World Development Indicators) and the proper indicators that could reflect the performance of the logistics index[90]. The DLI is based on logistics infrastructure, especially the infrastructure that supports the domestic economy activity or "inside the border" (see Appendix 4), while the ILI is based on indicators that reflect the border infrastructure and international connection or based on "at the border and beyond" (see Appendix 5).

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[90] The division of domestic and international logistics could not be separated perfectly because there are so many overlapping between the domestic and international logistics; however, the separation as shown in the tabel could be one of the first steps to analyze from these perspectives. The reason is more pragmatic that the data constructions are based on the available data only. The sources of data are taken from the WDI (World Development Indicators).

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Table 1. Indicators of and Its Share in DLI and ILI

Indicators of DLI	Share
Roads, paved (% of total roads)	0.45
Road sector energy consumption (% of total energy consumption)	0.3
Quality of port infrastructure (underdeveloped=1, developed=7)	0.1
Railways, goods transported (million ton-km)	0.05
Telephone lines (per 100 people)	0.05
Internet users (per 100 people)	0.05
Total	1
Indicator of ILI	Share
Liner shipping connectivity index	0.3
Container port traffic (TEU: 20 foot equivalent units)	0.3
Quality of port infrastructure (underdeveloped=1, developed=7)	0.2
Burden of customs procedure, (1=extremely inefficient to 7=extremely efficient)	0.1
Telephone lines (per 100 people)	0.05
Internet users (per 100 people)	0.05
Total	1

The table above shows us that there are 9 indicators that will be used in the index construction. Some process that reduces the number economies/countries from 195 in the WDI into only 60 economies/countries that meet the criteria: *first*, some countries/economies that have the complete data (9 indicators) in 2010 are directly included; *second*, some countries/economies that have only 5 indicators in 2010 are used by adjustment: using the indicators which closest to the 2010 but not later than 10 years[92]. The result of the 60 economies/countries index is shown in the table below:

Table 2. DLI and ILI of Sixty Economies/Countries, 2010

No	Country/Economy	DLI	ILI	No	Country/Economy	DLI	ILI
1	Algeria	3.140	1.320	33	Morocco	3.705	2.150
2	Argentina	2.473	1.541	34	Netherlands	4.152	3.747
3	Bangladesh	1.129	1.049	35	New Zealand	4.086	2.503
4	Belgium	3.864	3.498	36	Nigeria	1.356	1.116
5	Brazil	2.162	1.522	37	Oman	2.576	2.562
6	Canada	3.078	2.798	38	Pakistan	2.848	1.589
7	Chile	2.483	2.310	39	Panama	2.852	2.516
8	China	2.559	5.000	40	Peru	2.592	1.496
9	Cote d'Ivoire	1.000	1.640	41	Philippines	1.704	1.029
10	Croatia	4.084	1.675	42	Poland	3.186	1.660
11	Denmark	4.794	2.763	43	Portugal	4.386	2.347
12	Dominican Rep.	2.903	1.807	44	Romania	2.036	1.325
13	Egypt, Arab Rep.	3.640	2.106	45	Russian Federation	3.147	1.512
14	Finland	3.294	2.497	46	Saudi Arabia	2.521	2.490
15	France	4.363	3.267	47	Singapore	4.224	4.280

[92] Some indicators such as paved roads tend to be stagnant from year to year data. For example, if the data in 2010 is not available, but the paved road in 2008 is 80%, it is assumed that in 2010, this data could be used in 2010. This treatment is based on the data in most countries that this kind of indicator tends to be stable around 5-10 years. As additional information, Hong Kong and Singapore do not have the railways data and it is assumed to be 0.

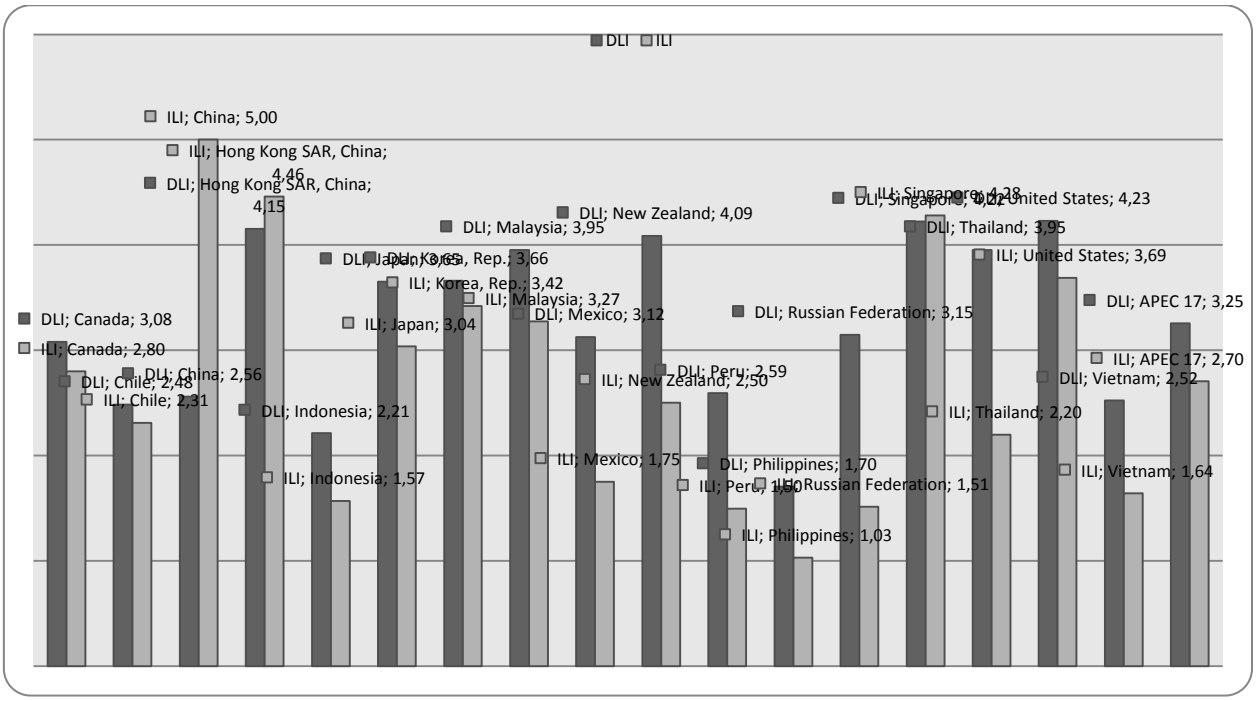
16	Germany	4.408	3.777	48	South Africa	1.762	1.945
17	Greece	4.191	1.979	49	Spain	4.671	3.152
18	Honduras	2.501	1.721	50	Sri Lanka	3.721	2.092
19	Hong Kong,Chn	4.152	4.462	51	Sweden	2.733	2.888
20	India	2.148	1.811	52	Syrian Arab Rep.	3.803	1.133
21	Indonesia	2.212	1.569	53	Thailand	3.953	2.197
22	Iran, Islamic Rep.	3.469	1.681	54	Turkey	2.353	1.907
23	Ireland	5.000	2.098	55	Ukraine	3.275	1.419
24	Israel	4.165	2.211	56	United Arab E.	4.191	3.312
25	Italy	4.334	2.392	57	United Kingdom	4.528	3.356
26	Jamaica	3.209	2.044	58	United States	4.229	3.686
27	Japan	3.650	3.038	59	Venezuela, RB	2.765	1.000
28	Korea, Rep.	3.660	3.421	60	Vietnam	2.524	1.642
29	Kuwait	3.525	1.602		Min (1.00)	Cote d'	Venezuela
30	Malaysia	3.953	3.273		Max (5.00)	Ireland	China
31	Malta	4.390	2.672		Average (All)	3.282	2.306
32	Mexico	3.125	1.751		Average (APEC 17)	3.255	2.704

Source: WDI, processed, downloaded from http://www.worldbank.org on December 22, 2011

The DLI and ILI index are ranged from 1 to 5 to make this index is used the same scale of LPI (Logistics Performance Index)[93]. Some interesting findings are: *first*, the lowest performance for DLI is Cote d'Ivoire and ILI is Venezuela; *second*, the highest performance of DLI is Ireland and ILI is China; *third*, the average of DLI of APEC is lower than the average of 60 economies, while the average of ILI of APEC is higher than the average of 60 economies.

[93] To composite into domestic and international logistics cost, some of the following steps are taken: First, all indicators are set to have a positive relation with the increasing of the logistics performance. The data setting will be based on data availability and the judgment of the authors. This index will be based on the following formula= $(((X_i-X_{min})/(X_{max}-X_{min})) \times 4 + 1)$. The range of the index is from 1 to 5. The reason of this range is this new index will be compared to the LPI which has the range from 1 to 5. Second, each the indicator will be given weight based on the prior information and common sense. Furthermore, the domestic and international logistics indicators will be re-indexing with the same formula above. The formula = $(((X_i-X_{min})/(X_{max}-X_{min})) \times 4 + 1)$. The range of the index is from 1 to 5. The reason of this range is this new index will be compared to the LPI which has the range from 1 to 5.

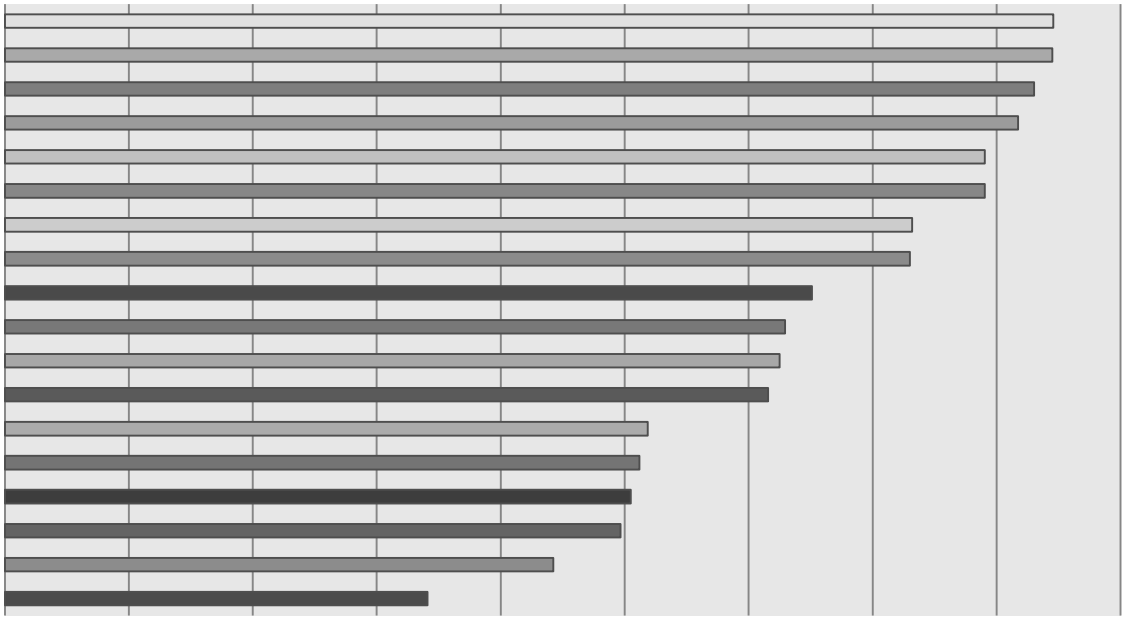
Figure 4. DLI and ILI of APEC Economies



Source: WDI, processed, downloaded from http://www.worldbank.org on December 22, 2011

In APEC economies, as figure above, there are some interesting findings: *first*, even China has the highest ILI, its DLI is very low; *second*, on the average level, both DLI and ILI of developing economies in APEC is lower than the developed economies.

Figure 5. Order of DLI of 17 APEC Economies



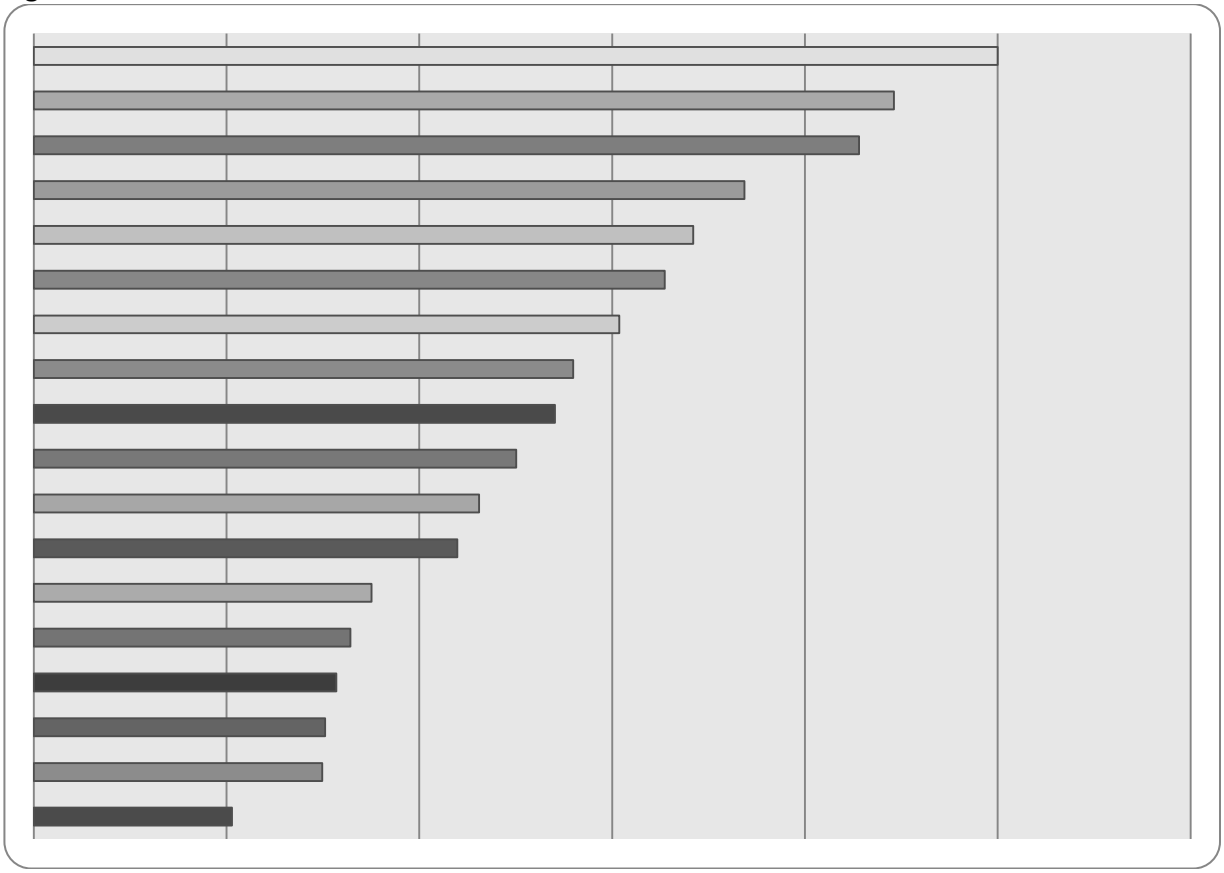
Source: WDI, processed, downloaded from http://www.worldbank.org on December 22, 2011

DLI of APEC economies as shown in the figures show that the highest DLI is the US and the lowest is Philippines. The APEC economies that show above "average of APEC DLI" are US, Singapore, Hong Kong, New Zealand, Thailand, Malaysia, South Korea, and Japan, while below average are Russian Federation, Mexico, Canada, Peru, China, Vietnam, Chile, Indonesia, and Philippines.

ILI of APEC economies tend to show the pattern as following: *first*, China has the highest index while Philippines is the lowest one; *second*, China, Hong Kong, Singapore, US, South Korea, Malaysia,

Japan, Canada are economies that higher than the "average of APEC ILI" while New Zealand, Chile, Thailand, Mexico, Vietnam, Indonesia, Russian Federation, Peru and Philippines are lower than average of ILI.

Figure 6. Order of ILI of 17 APEC Economies



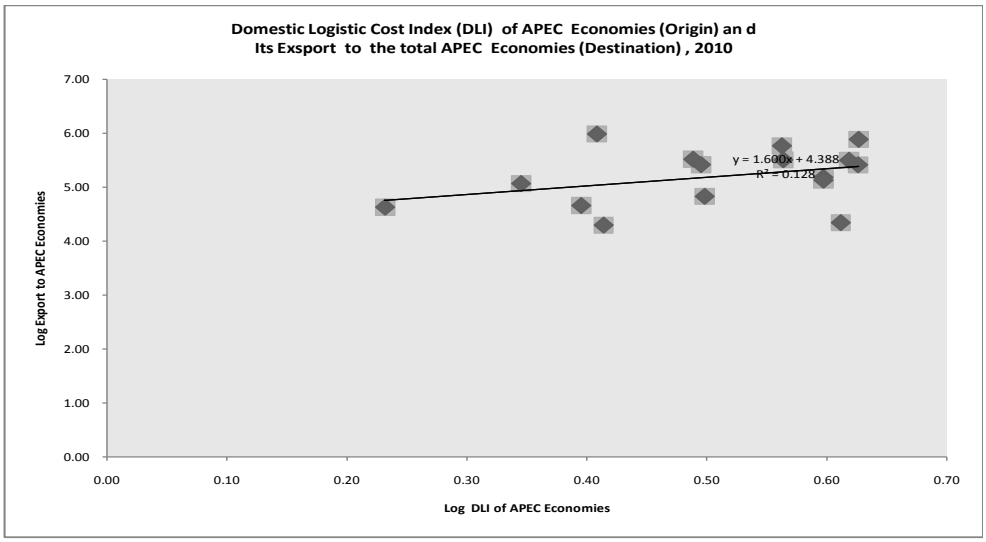
Source: WDI, processed, downloaded from http://www.worldbank.org on December 22, 2011

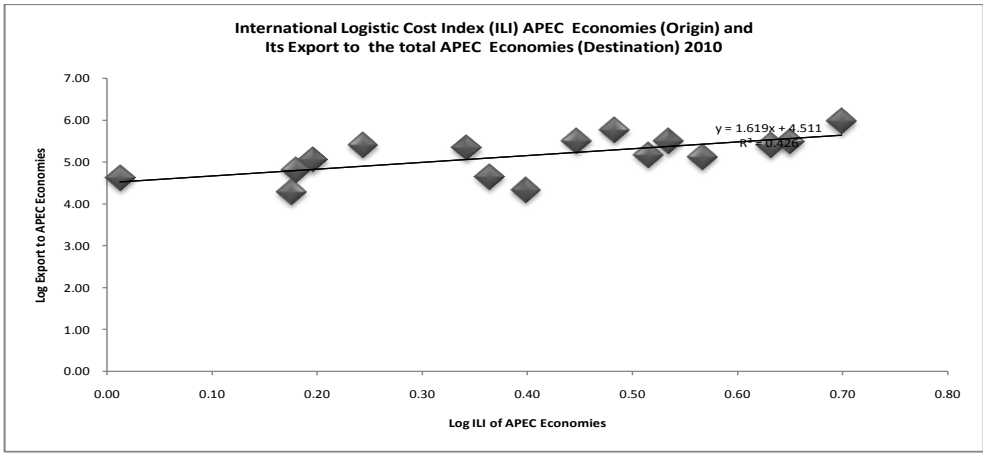
Both of the figures above have shown us that the order of the DLI and ILI are not the same or we can say that the logistics for domestics is sometimes do not in-line with the logistics for international trade. The domestic logistics support the capacity of production (both for domestic consumption and also to be exported) and demand of the foreign goods/services (imported), while the international logistics support the capacity of the movement of the goods/services between/among economies (exported and imported). To give an illustration of the domestics and international logistics role, we could see this index of China and US. Chinese economy has the highest ILI in APEC to support the capacity of the movement of goods/services, while only in 13th position in DLI to support the production (or export, indirectly) and demand of foreign good (import). In contrast, the US economy has the highest DLI to support the production (or export, indirectly) and demand of foreign goods/services (import) while only in 4th position to support the capacity of the movement of goods/services. This illustration is supported by the fact that the Chinese trade is higher than the US, but US domestic economy is higher than China.

6. Trade and Logistics Performance in APEC

As explained in the gravity model framework that the movement of the goods/services from the origin to destination should through for logistics components: domestics logistic of origin country (DLIi), international logistics of origin country (ILIi), domestic logistics of destination country (DLIj), and international logistics of destination countries (ILIj).

Figure 7. DLI and ILI of APEC Economies and Their Total Export to APEC, 2010



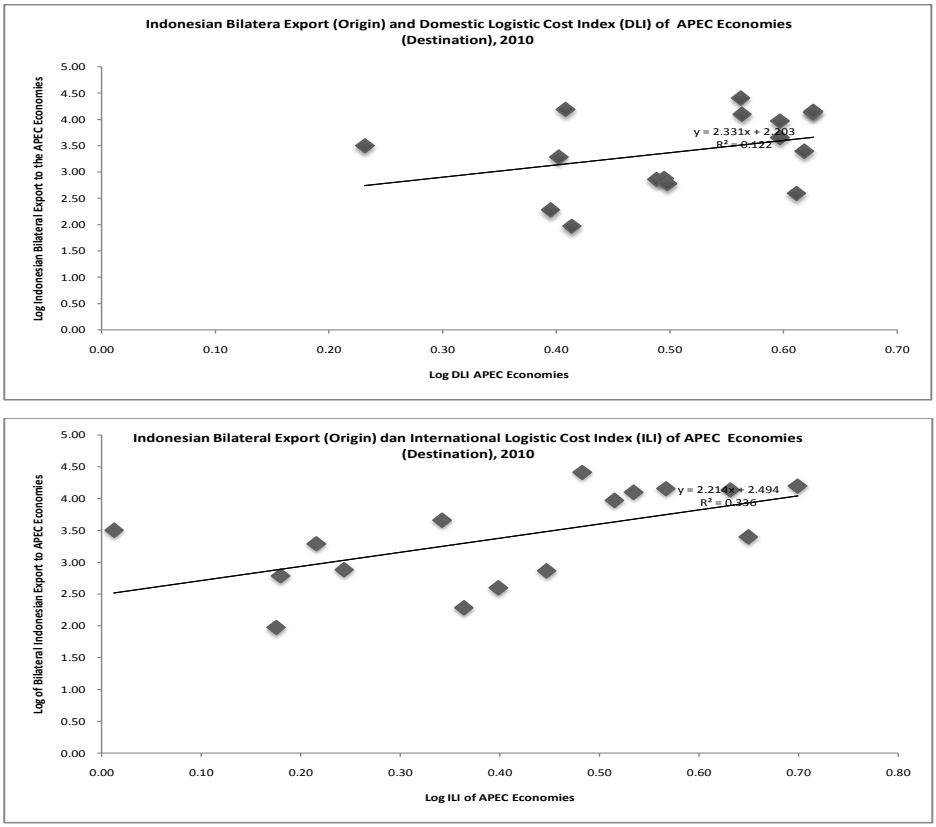


Source: WDI (World Development Indicators), processed, downloaded from http://www.worldbank.org on December 22, 2011; and APEC Statistics, processed, from Bilateral Trade Linkage, downloaded from http://www.apec.org on December 22, 2011.

To find out the relation between export and those components, this study divide the figure into four parts: *first*, the relation between the DLI of origin economies in APEC to the total export to APEC; *second*, the relation between the ILI of origin economies to the total export to APEC; *third*, the relation between the bilateral export of Indonesia into APEC and the DLI of the destination APEC economies; and *fourth*, the relation between the bilateral export of Indonesia and the ILI of the destination APEC economies.

All figures shows that the DLIi, ILIi, DLIj, and ILIj have a positive relation with the export both seen from origin and destination countries/economies.

Figure 8. Indonesian Export to APEC Economies and DLI and ILI of APEC Economies,2010



Source: WDI (World Development Indicators), processed, downloaded from http://www.worldbank.org on December 22, 2011; and APEC Statistics, processed, from Bilateral Trade Linkage, downloaded from http://www.apec.org on December 22, 2011.

From four relationships above, we could also show that the development of the logistics in APEC economies will not only improve the export performance of the country/economies but also provide opportunity for other economies to increase their export performance in APEC.

7. Conclusion and Policy Recommendation

There are several *conclusions* from this study:

First, this study shows that the gravity model could help us to understand the role of the logistics cost in the trade performance of each economies.

Second, from the domestic economy, the increasing logistics performance will improve the economic capacity and in the same time will increase the competitiveness of its export

Third, the construction of logistics index in this study is quite convincing because the result shows that in average, the developed economies tend to be have higher index than the developing economies

Fourth, based on simple statistics, it is shown that the logistic index (domestic logistics and international logistics of origin and destination economies) have a positive relation with the trade performance of the origin and destination economies.

Fifth, the development of logistics one economy in APEC, as focused in this study, will increase the trade performance of both that economy and all APEC economies.

Policy recommendation from this study are: *first*, APEC economies should focus on the developing both of their domestic and international logistics as the first priority policy to improve trade performance; *second*, APEC economies should develope domestic and international logistic index to be evaluated yearly which is based on the both objective and subjective data that available for all APEC economies.

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Appendix 1. AELM Statement and Relevant Statement for Logistics

No	AELM	Important General Statement	Relevant for Logistics
1	Seattle, Washington, US, Nov 20 1993	Vision Statement. "Recognizing our economic interdependence as well as economic diversity, we envision of community of Asia Pacific economies" (p.1)	"advances in telecommunication and transportation shrink time and distance barriers in our region and link our economies so that goods and people move quickly and efficiently" (p.1)
2	Bogor, Indonesia, Nov 15 1994	Declaration of Common Resolve. "industrialized economies achieving the goal of free and open trade and investment no later than the year 2010 and developing economies no later than the year 2020" (Bogor Goals). (p.2)	"we emphasize the important of trade facilitation because the trade liberalization effort alone are insufficient to generate trade expansion" (p.2)
3	Osaka, Japan, November 19,1995	Declaration for Action. "The Osaka Action Agenda (OAA) is the template for future APEC work toward our common goals. It represents three pillars of trade and	"….,in our collective actions including harmonizing and enhancing the efficiency of customs procedures and promoting mutual recognition and improving conformity assessment

		investment liberalization, their facilitation, and economic and technical cooperation. Achieving sustained economic development throughout the APEC region depends on pursuing action in each of these areas vigorously" (p.1)	capabilities will yield immediate and tangible benefits for business." (p.2)
4	Subic, Republic of the Philippines, 25 November 1996	From Vision to Action. "MAPA (Manila Action Plan for APEC) contains the first step of an evolutionary process of progressive and comprehensive trade and investment liberalization toward achieving our Bogor Goals by 2010/2020, in accordance with Osaka Agenda."(p.1)	"Lack of infrastructure severely constraints sustained growth. Since public finance cannot fully meet the enormous requirement of the region, private sector investment must be mobilized. Providing the appropriate financial, economic, commercial, and regulatory environment is the key to stimulating such investments" (p.3)
5	Vancouver, Canada, 25 November 1997	Connecting the APEC Community. "We endorse the agreement of our ministers that action should be taken with respect to early voluntarily liberalization in 15 sectors (EVSL), with nine to be advanced throughout 1998 with a view to implementation beginning in 1999" (p.2)	"The Blueprint for APEC Customs Modernization, which puts forward a comprehensive program to harmonize and simplify customs clearances by the year 2000, provide a model." (p.2) "We endorse the attached Vancouver Framework for Enhanced Public-Private Partnerships for Infrastructure Development." (p.4)
6	Kuala Lumpur, Malaysia, 18 November 1998	Strengthening the foundation for growth. "We are firmly resolve strengthen social safety nets, financial systems individually and globally, trade and investment flows, the scientific and technological base, human resource development, economic infrastructure, and business and commercial links so as to provide the base and set the pace for sustained growth into 21st century."(p.5)	"We commend Ministers for formulating the APEC Blueprint For Action On Electronic Commerce containing broad themes and cooperative activities for the promotion and development of electronic commerce in the region." (p.8)
7	Auckland, New Zealand, September 13, 1999	The Auckland Challenge. "In reconfirming our commitment to achieve the Bogor Goals of free and open trade and investment by 2010/2010, we endorse the attached APEC principles to Enhance Competition and Regulatory Reform.	"APEC's trade facilitation programmes are already delivering substantial benefit-in custom harmonization, standards and conformance, and increased mobility of business people. We welcome the agreed new initiatives, and instruct Ministers to

		These principles provide a core part of the framework for strengthening our markets which will better integrate individual and collective actions by APEC economies to achieve those goals"(p.1)	give priority to this work next year, in consultation with business, and to better communicate the value of APEC's trade facilitation role"(p.2)
8	Bandar Seri Begawan, Brunei Darussalam, Nov 16 2000	Delivering to the Community. "We understand that in all our economies there are people who have yet to gain the benefits of economic growth, especially in rural and provincial communities. We also appreciate that the many people who have been hard hit by the economic crisis have had their faith in openness severely tested." (p.1)	"We believe the APEC Ecotech Clearing House websites is an important addition to electronic interaction with the community by providing a transparent and ready mechanism to show the effectiveness of our extensive program of economic and technical cooperation" (p.5)
9	Shanghai, People's Republic of China, October 21 2001	Meeting New Challenges in the New Century. "….We wish to send a clear and strong message on the collective resolve of the Asia-Pacific Community to counter terrorism…" (p.1)	"…,we have made further progress by formulating and delivering a long term, forward-looking and more action-oriented e-APEC strategy for the development of the New Economy through the promotion of information and communication technology (ICT) and its application in our region." (p.3)
10	Los Cabos, Mexico, October 27 2002	Expanding the Benefits of Cooperation for Economic Growth and Development—Implementing the Vision. "…., it is crucial to strengthen the soundness and efficiency of financial systems, particularly through better credit culture and strengthening of banking supervision, and to continue with broader structural, regulatory and structural reform, which complement open market policies, promote sustained economic growth and good governance, withstand economic shock and create a better business environment for all."(P.2)	"Collectively, we are working in APEC to introduce more effective baggage screening in airports in the region, improve coordination between immigration officials, implement new cyber security standards, advance the energy security initiative to address disruption in energy markets, and enhance anti-piracy cooperation."(p.1,annex of AELM on fighting terrorism & promoting growth; trade facilitation and Secure Trade in APEC Region (STAR))
11	Bangkok,Thailand, October 20-21 2003	A World of Differences: Partnership for the Future. "Implement the APEC Action Plan on SARS and our Health Security Initiative to help APEC prevent and	"Each economy will ensure that its laws, regulations, and progressively, procedures and administrative rulings of general application respecting matters…are promptly published or

		respond to regional health threats, including naturally-occurring infectious disease and bio-terrorism." (p.2)	otherwise made available, for example through internet,…"
12	Santiago de Chile, November 20-21 2004	Santiago Declaration: "One Community, Our Future". "We agreed to launch the Santiago Initiative for Expanded Trade in APEC to complement the achievement of free and open trade in the region. An overarching dimension of the initiative is capacity building so that all economies can implement and benefit from their work on trade liberalization and facilitation." (p.1)	"Steps to advance compliance with the International maritime Organization's on Ship and Port Security Standards through cooperative efforts" (p.3)
13	Busan, South Korea, November 18-19 2005	Busan Declaration: "Toward One Community: Meet the Challenge, Make the Change." "We show our strong political will in a separate statement, in which we declared our firm support for the WTO Doha Development Agenda (DDA) negotiation to proceed expeditiously so as to achieve an ambitious and overall balanced outcome at the end of the round." (p.1)	"We welcomed new initiatives on the safe handling of and trade……, Total Supply Chain and the APEC framework for the security and Facilitation on Global Trade." (p.3)
14	Hanoi, Vietnam, November 18 2006	Towards a Dynamic Community for Sustainable Development and Prosperity. "We acknowledge the role of high-quality, consistent, transparent and comprehensive RTAs/FTAs in advancing trade liberalization and the need to ensure that RTAs/FTAs lead to greater trade liberalization and genuine reduction in trade transaction cost." (p.1)	"We also endorse the APEC Port Service Network Initiative to facilitate cooperation and communication among ports and related sectors in APEC member economies" (p.2) "We affirms the significance of Information and Communication Technology (ICT) for APEC's development" (p.2)
15	Sydney, Australia, September 9 2007	"Strengthening Our Community, Building A Sustainable Future". "We addressed the challenges of climate change, energy security and clean development" (p.1)	"We welcomed APEC's work to address and prevent threats to customs, maritime, aviation, and mass transit sectors…" (p.4)
16	Lima, Peru, November 22-23	"A New Commitment to Asia-Pacific Development".	"endorsed the continued process of implementation of APEC's second

	2008	"The current global financial crisis is one of the most serious economic challenges we have ever faced. We will act quickly and decisively to address the impending global economic slowdown. We welcomed the economic and financial measures to resolve this crisis…" (p.1)	Trade Facilitation Action Plan (TFAP II) to achieve our stated goal of reducing trade transaction costs by additional five percent between 2007-2010" (p.2)
17	Singapore, November 14-15 2009	"Sustaining Growth, Connecting the Region". "We will put in place next year a comprehensive long-term growth strategy that supports more balanced growth within and across economies, achieve greater inclusiveness in our societies, sustains our environment, and which seeks to raise our growth potential through innovation and a knowledge-based economy."(p.1)	"We welcome the Supply Chain Connectivity Framework, which has identified eight checkpoints in regional supply chains and suggested actions to address these checkpoints. We welcome the commitment from transport ministers to achieve greater seamlessness in our muti-modal transport networks and call for officials to continue cohesive efforts towards improving supply chain connectivity" (p.4)
18	Yokohama, Japan, November 13-14 2010	"The Yokohama Vision: Bogor and Beyond". " We seek to develop an APEC community in which trade and investment are freer and more open; supply-chain are better connected; doing business is cheaper, faster, and easier; growth is more balance, inclusive, sustainable, innovative, and secured; and we are better too be able to cope with threats to human security and economic activity" (p.2)	"We commit to address impediments to moving goods and services through Asia Pacific supply-chains by implementing the APEC Supply-Chain Connectivity Framework Action Plan with a view to achieving an APEC-wide target of ten percent improvement in supply-chain performance by 2015."(p.4)
19	Honolulu, Hawaii, United States, November 12 - 13 Nov 2011	"The Honolulu Declaration: Toward a Seamless Regional Economy". "We meet at a time of uncertainty for the global economy. Growth and job creation have weakened in many economies, and significant downside risks remain, including those arising from the financial challenges in Europe and a succession of natural disasters in our region." (p.1)	"Establish commercially useful de minimis values in our economies that will exempt low-value shipments from customs duties and streamline entry documentation requirements, as a key contribution to our goal of an APEC-wide 10 percent improvement in supply-chain performance by 2015"(p.2)

Source: APEC Economic Leaders Meeting (AELM) Statement from 1993-2011. Downloaded from http://www.apec.org, 2010-2012.

Appendix 2. APEC Ministers Responsible for Transportation dalam Joint Ministerial Statement 1995-2010

No	Year	City	Important Statement
1	13 June 1995	Washington, D.C, AS	The ministers agreed on 12 principles and 8 priorities and action for transportation developments in APEC. The principles are based on integrated, safe, efficient, sustainable transportation infrastructure to support the movement of goods, services and human.
2	22-24 June 1997	Victoria, Canada	Action for APEC transportation: safe and sustainable environment of transportation system, more competitive, infrastructure development, human resource development, and new transport technology.
3	6-9 May 2002	Lima, Peru	Increasing regional cooperation for security, reducing barrier for trade and investment through transportation services liberalization, ecotech, and human resource development.
4	27-29 July 2004	Bali, Indonesia	Trade in the APEC Region (STAR) initiative to build a safe and secure transportation for the movement of goods, services, and people.
5	28-30 March 2007	Adelaide, Australia	1. Transportation role in trade liberalization and facilitation; 2. Transport safety and security
6	2009	Manila, Filipina	1. Providing seamless and environmentally friendly transportation systems through innovation and the use of advanced technology, congestion reduction, enhanced transport safety, security and effective sustainability 2. Priorities for the next two years: Liberalization and Facilitation of Transport Services, Seamless Transportation Systems, Aviation Safety and Security, Land Transport and Mass Transit Safety and Security, Maritime Safety and Security, Sustainable Transport, Industry Involvement, and Information Sharing

Source: ASC UI, Issues Development in APEC 1989-2010, based on APEC Ministers Responsible for Transportation Joint Statements 1994-2010. Downloaded from http://www.apec.org 2010-2012.

Appendix 3. APEC Ministers Responsible for Telecommunication and Information dalam Joint Ministerial Statement 1995-2010

No	Year	City	Important Statement
1	29-30 Mei 1995	Seoul, Korea	1. TI development: technology, network, content, human resource, policy and regulation; 2. Asia Pacific Information Infrastructure (APII) initiative
2	5-6 Sept. 1996	Gold Coast, Australia	1.APII's purpose and principles; 2. Appendix 1: Gold Coast Decalaration (Action Program); 3. Appendix 2: Soul Declaration; 4. Appendix 3: List of Fully Liberalised Telecommunications Services Sector; 5. Appendix 4: Pilot project for APII
3	3-5 June 1998	Singapore	1. Development of Business Facilitation, Development Co-operation, Human Resource Development, Liberalisation, Ministers-Industry Leaders' Dialogue; 2. Appendix 1: Singapore Declaration; 3.Appendix 2: Electronic Commerce; 4. Appendix 3: Universal Access Principles; 5. Appendix 4: APEC Mutual Recognition Arrangement for Conformity Assessment of Telecommunications Equipment.

4	24-26 May 2000	Cancun, Mexico	1. Cancun Declaration; 2. Appendix 1: Action Program TELWG; 3. Appendix 2: APEC Principles on International Charging Arrangements for Internet Services; 4. Appendix 3. APEC Principles of Interconnection
5	29-30 May 2002	Shanghai, China	1. Shanghai Declaration; 2. Appendix 1: Action Program TEL WG; 3. Appendix 2: Statement for Security of Information and Communications Infrastructures
6	1-3 June 2005	Lima, Peru	1.Lima Declaration: Enabling Digital Opportunities: harnessing infrastructures to advance the Information Society; 2. Appendix 1: Program Aksi TEL WG; 3. Appendix 2: Key Principles for Broadband Development In the APEC Region; 4. Appendix 3: Compliance and Enforcement Principles ; 5. Appendix 4 : Guiding Principles for PKI-Based Approaches to Electronic Authentication; 5. Appendix 5: APEC Principles for Action against Spam
7	23-25 April 2008	Bangkok, Thailand	Bangkok Declaration Digital Prosperity: Turning Challenges into Achievement" (Challenges and Strategies to Promote Universal Services, Changing Market Profiles and Flexible Regulatory Frameworks, Promoting a Safe and Trusted ICT Environment for Digital Prosperity, Enhancing Outreach Activities on Cyber Security, ICT Capacity Building for a Prosperous Future)
8	30-31 Oct. 2010	Okinawa, Jepang	Okinawa Declaration: "ICT as an Engine for New Socio-economic Growth" (Develop ICT to Promote New Growth, Enhance Socio-Economic Activities through the Use of ICT, Promote a Safe and Trusted ICT Environment, Promote Regional Economic Integration, Strengthen Cooperation in the ICT Sector)

Source: ASC UI, Issues Development in APEC 1989-2010, based on APEC Ministers Responsible for Telecommunication and Information Joint Statements 1994-2010. Downloaded from http://www.apec.org 2010-2012.

Appendix 4. Indicators of Domestic Logistics Index (DLI)

DOMESTIC LOGISTICS INDICATORS	REASON	SOURCE
1. Railways, goods transported (million ton-km). Goods transported by railway are the volume of goods transported by railway, measured in metric tons times kilometers traveled	This indicator could reflect the connectivity within region/ecnomy or among the centers of economic activities in one domestic country/economy. The higher this indicator the higher the capacity of logistics that could affect the supply availability of exporting countries perspectives (push factor) and the absorption of importing country perspectives (pull factor).	World Development Indicators, World Bank, www.worldbank.org
2.Roads, paved (% of total roads) Paved roads are those surfaced with crushed stone (macadam) and	This indicator could show the land transportation physical infrastructure in one domestic country/economy. The higher this indicator the higher	World Development Indicators, World Bank, www.worldbank.org

hydrocarbon binder or bituminized agents, with concrete, or with cobblestones, as a percentage of all the country's roads, measured in length.	the capacity of logistics that could affect the supply availability of exporting countries perspectives (push factor) and the absorption of importing country perspectives (pull factor)	
3. Road sector energy consumption (% of total energy consumption). Road sector energy consumption is the total energy used in the road sector including petroleum products, natural gas, electricity, and combustible renewable and waste. Total energy consumption is the total country energy consumption.	This indicator could show the intensity of the usage road transportation in one domestic country/economy. The higher this indicator the higher the capacity of logistics that could affect the supply availability of exporting countries perspectives (push factor) and the absorption of importing country perspectives (pull factor)	
4. Quality of port infrastructure (underdeveloped=1, developed=7) The Quality of Port Infrastructure measures business executives' perception of their country's port facilities. Data are from the World Economic Forum's Executive Opinion Survey, conducted for 30 years in collaboration with 150 partner institutes. The 2009 round included more than 13,000 respondents from 133 countries. Sampling follows a dual stratification based on company size and the sector of activity. Data are collected online or through in-person interviews. Responses are aggregated using sector-weighted averaging. The data for the latest year are combined with the data for the previous year to create a two-year moving average. Scores range from 1 (port infrastructure considered extremely underdeveloped) to 7 (port infrastructure considered efficient by international standards). Respondents in landlocked countries were asked how accessible are port facilities (1 = extremely inaccessible; 7 = extremely accessible)	The Quality of port infrastructure reflects the higher capacity of the logistics both for domestic and international logistics. In the domestic logistics, the higher this indicator the higher the capacity of logistics that could affect the supply availability of exporting countries perspectives (push factor) and the absorption of importing country perspectives (pull factor)	World Development Indicators, World Bank, www.worldbank.org
5. Telephone lines (per 100 people);	This indicator show the capacity of	World Development

Telephone lines are fixed telephone lines that connect a subscriber's terminal equipment to the public switched telephone network and that have a port on a telephone exchange. Integrated services digital network channels ands fixed wireless subscribers are included.	medium for information both of the provider and user of the logistics and it has potential to improve the efficiency of their connection in domestic and international. From the perspectives of domestic logistics, the higher this indicator the higher the capacity of logistics that could affect the supply availability of exporting countries perspectives (push factor) and the absorption of importing country perspectives (pull factor)	Indicators, World Bank, www.worldbank.org
6.Internet users (per 100 people); Internet users are people with access to the worldwide network.	This indicator could reflect the connectivity among user and provider of logistics and it has potential to improve the efficiency of their connection in both domestic and international. From domestic logistics perspectives, the higher this indicator the higher the capacity of logistics that could affect the supply availability of exporting countries perspectives (push factor) and the absorption of importing country perspectives (pull factor)	World Development Indicators, World Bank, www.worldbank.org

Source: WDI, World Bank

Appendix 5. Indicators of International Logistics Index (ILI)

INTERNATIONAL LOGISTICS INDICATORS	REASON	SOURCE
1. Quality of port infrastructure (underdeveloped=1, developed=7); The Quality of Port Infrastructure measures business executives' perception of their country's port facilities. Data are from the World Economic Forum's Executive Opinion Survey, conducted for 30 years in collaboration with 150 partner institutes. The 2009 round included more than 13,000 respondents from 133 countries. Sampling follows a dual stratification based on company size and the sector of activity. Data are collected online or through in-person interviews. Responses are aggregated using sector-	The Quality of port infrastructure reflects the higher capacity of the logistics both for domestic and international logistics. In the international logistics, the higher this indicator the higher the capacity of logistics that could show the competitiveness of the logistics of each country	World Development Indicators, World Bank, www.worldbank.org

weighted averaging. The data for the latest year are combined with the data for the previous year to create a two-year moving average. Scores range from 1 (port infrastructure considered extremely underdeveloped) to 7 (port infrastructure considered efficient by international standards). Respondents in landlocked countries were asked how accessible are port facilities (1 = extremely inaccessible; 7 = extremely accessible)		
2.Liner shipping connectivity index (maximum value in 2004 = 100); Liner Shipping Connectivity Index captur connected to global shipping networks. United Nations Conference on Trade an based on five components of the mariti number of ships, their container-carryin maximum vessel size, number of service that deploy container ships in a country' a country's value is divided by the maxi component in 2004, the five component and the average is divided by the maxim multiplied by 100. The index generates with the highest average index in 2004. come from Containerization Internation	The higher this indicator the higher the capacity of logistics (to capture how well countries are connected to global shipping networks) that could show the competitiveness of the logistics of each country to the world	World Development Indicators, World Bank, www.worldbank.org
3. Burden of customs procedure, (1=extremely inefficient to 7=extremely efficient); Burden of Customs Procedure measures business executives' perceptions of their country's efficiency of customs procedures. The rating ranges from 1 to 7, with a higher score indicating greater efficiency.	This indicator show that the lower burden of custom procedure, the higher of the logistics efficiency or the higher the index the higher the efficiency of logistics of each country.	World Development Indicators, World Bank, www.worldbank.org
4.Container port traffic (TEU: 20 foot equivalent units); Port container traffic measures the flow of containers from land to sea transport modes., and vice versa, in twenty-foot equivalent units (TEUs), a standard-size container. Data refer to coastal shipping as well as international journeys.	This indicator could show the capacity of the international logistics. This could reflect the “economies of scale” of the trade in this economy. The higher the better logistics capacity of each country	World Development Indicators, World Bank, www.worldbank.org

Transshipment traffic is counted as two lifts at the intermediate port (once to off-load and again as an outbound lift) and includes empty units.		
5. Telephone lines (per 100 people); Telephone lines are fixed telephone lines that connect a subscriber's terminal equipment to the public switched telephone network and that have a port on a telephone exchange. Integrated services digital network channels ands fixed wireless subscribers are included.	This indicator show the capacity of medium for information both of the provider and user of the logistics and it has potential to improve the efficiency of their connection in domestic and international. From the perspectives of international logistics, the higher this indicator the higher the capacity of logistics that could connect each country with the world	World Development Indicators, World Bank, www.worldbank.org
6.Internet users (per 100 people); Internet users are people with access to the worldwide network.	This indicator could reflect the connectivity among user and provider of logistics and it has potential to improve the efficiency of their connection in both domestic and international. From international logistics perspectives, the higher this indicator the higher the capacity of logistics that could make this country connected with the other countries/economies	World Development Indicators, World Bank, www.worldbank.org

Source: WDI, World Bank

How to Optimize Transborder Logistics within APEC

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A set of principles to make transborder logistics within APEC more efficient should be approved and implemented as a part of joint actions towards freer trade. The objective of the principles in a broader sense is to improve the efficiency of the processes associated with trading in goods and cargo flows across national borders by simplifying and harmonizing trade and transportation procedures and practices and optimizing transborder logistics. In a narrow sense the principles aim to overcome Chokepoints 1, 4, and 6 pointed in APEC Supply Chain Framework Action Plan.

APEC economies will be guided by the principles of:

- Transparency,
- Consistency,
- Simplicity,
- Efficiency,
- Harmonization,
- Standardization,
- Interagency coordination,
- Cooperation.

The principles of transparency and consistency mean that APEC economies:

- will make available their relevant laws, rules and regulations relating to international trade and cross-border transportation of cargoes to any interested APEC Member economy and publish the outline of relevant domestic laws, rules and regulations in English;
- will notify other APEC member economies of the introduction of new trade laws and regulations or the amendment of existing trade laws and regulations that may have a significant impact on trade at the earliest possible stage;
- will establish non-discriminatory procedures at reasonable cost and time for administrative and legal appeal against the decisions by customs and other relevant agencies affecting international trade.

The principles of simplicity and efficiency mean that APEC economies:

- will consolidate, rationalize and minimize the number and diversity of fees and charges imposed and documents required in connection with importation and exportation of goods;
- will work towards establishment of a single window allowing the one-time submission of import or export data and documentation requirements (where relevant);
- will introduce procedures for filing and examining documents prior to the arrival of goods, in particular, goods of perishable nature, enabling importers to claim their goods immediately after importation unless the goods are subject to a physical examination or the submitted documents need to be reviewed;
- will establish, in a phased manner, risk assessment and risk management procedures, including Export and Import Clearance Process based on Authorized Economic Operator (AEO) Program and elimination of physical inspection and fast clearance in entry country for low risk cargo controlled within Authorized Supply Chains (ASC), based on mutual recognition of AEOs;
- will simplify and reduce the incidence and complexity of import and export formalities and data requirements in accordance with domestic laws, rules and regulations to the

necessary minimum for enforcing legitimate policy objectives, by applying international standards such as the Revised Kyoto Convention and relevant recommendations of the World Customs Organization, to the extent possible;

- will promote, to the extent feasible, the use of automation and information technology in customs procedures and establish an electronic communication system to facilitate the electronic submission of documents, payment of duties and communication with the customs authorities for their importers and exporters;
- will introduce RFID technology into cargo processing.

The principles of harmonization and standardization mean that APEC economies:

- will, to the extent possible, apply the standards and recommendations of the Revised Kyoto Convention for Simplification and Harmonization of Customs Procedures and other relevant international agreements.

The principle of interagency coordination means that APEC economies:

- will establish National Trade and Transport Facilitation Councils or any other suitable mechanism at the highest possible level, with participation of all stakeholders from different ministries, authorities or associations from both the public and private sectors.

The principle of cooperation between APEC Member economies mean that APEC economies:

- will endeavor to provide interested Member economies, including the private sector, with an opportunity to comment on prospective laws or amended trade-related laws and regulations prior to implementation or entry into force of the changes;
- will endeavor to cooperate on effective exchange of border agencies information and data to improve customs compliance and to facilitate legitimate trade;
- will adopt Individual Action Plans for Transborder Logistics Optimization, referring to World Bank's Logistics Performance Index and World Economic Forum Enabling Trade Index, and meaning, as a rule, it's phased implementation according to individual economy's circumstances.

In view of the numerous institutional and organizational difficulties in international transport within APEC, integrated measures are required to address facilitation issues in transborder logistics, including policy support, formulation and implementation of effective subregional and bilateral agreements, accession to and implementation of international facilitation conventions, application of new technologies, establishment / strengthening of coordination mechanisms and capacity-building.

1. The use of risk management system.

The risk management is a core principle of the WCO Revised Kyoto Convention (RKC) supplemented by recent work on the WCO Customs Risk Management Compendium. Risk Management Compendium provides a common reference document for the concepts associated with risk management in Customs. In addition, it enables the international Customs community to speak as one in relation to the methodology Customs uses when managing risk. It contains the terminology, approach, methodology, implementation techniques and tools needed to manage risk in practice.

Risk management presupposes that Customs services have a good knowledge of traders through daily interaction, investigation and dialogue, preferably supported by a risk management database. When Customs is confident about the compliance of traders, it more readily considers them as partners in discharging Customs responsibilities. This is the background behind the «Authorized Person» concept contained in the RKC which stipulates simplified procedures for compliant traders. The SAFE Framework of Standards develops this concept into an Authorized Economic Operator (AEO), to secure and facilitate global trade.

As part of the SAFE Framework of Standards, the AEO concept was developed, and subsequently complemented with additional templates and guidelines in order to assist WCO Members to introduce robust AEO programmes. The concept is based on the RKC's promotion of Customs-business partnerships and the need to provide for simplified procedures for authorized traders.

The establishment of partnerships with trade and the granting of benefits including access to simplified procedures to reliable traders is undeniably a major trade facilitation measure.

2. Carrying out a Time Release Study.

Time Release Study (TRS) is a fact-based performance indicator that will clearly show bottlenecks and possible solutions, not only limited to Customs but also to business and other agencies.

The WCO has promoted the use of the TRS as a tool to assist in the improvement of Customs procedures, with the strong belief that use of the TRS should be considered in conjunction with any review of procedures. By using the TRS, countries are able to identify problems and bottlenecks in the cross-border movement of goods, and subsequently develop solutions to address identified issues. The TRS can therefore be used to stimulate efforts to improve the efficiency and effectiveness of Customs clearance procedures.

3. Coordinated Border Management.

Better Coordinated Border Management (CBM) entails coordination and cooperation among all relevant authorities and agencies involved in border security and regulatory requirements that apply to passengers, goods and conveyances moving across borders.

Domestic interagency coordination refers to the horizontal interagency cooperation within an individual country. In these cases, the mission requirements of all border regulatory agencies are identified, and agreements are reached on systems, data elements, and processes to be implemented. In its most current, efficient form, domestic integration may lead to “single window” processing (depicted further), but effective CBM can also begin solely on the basis of improved procedures.

The alignment of border management responsibilities has evolved over the past few years. Two examples of that evolution are the Single Administrative Document (SAD) and the Single Window Concept. A SAD is currently used primarily in the European Union to collect the data needed by customs for determining the entry of goods. While it includes Certificates of Origin, ATA Carnets and other customs requirements, it does not yet include many of the noncustoms entry requirements.

4. Single Window environment.

CBM is best supported by a Single Window environment. The establishment of the Single Window environment for border procedures is considered by Customs administrations as the solution for the complex problems of border automation and information management involving multiple cross-border regulatory agencies. This led to the WCO developing a comprehensive Compendium on How to build a Single Window that brings together the governance, legal, technical and administrative aspects of this complex concept into a single document. The WCO has also developed Version 3 of the WCO Data Model that reflects the business and data needs of other government agencies thus making it a purpose-built Single Window tool. Key lessons learned from existing experiences include the absolute need for data harmonization and standardization in line with Data Model developments when implementing a Single Window. This in turn facilitates trade and leads to overall simplification for traders as well as increased predictability and transparency of processes. Also, in bringing together all border regulatory agencies as well as Customs, a common approach to border management has been generated.

The use of the Single Window concept is growing around the world. The Australian version, Tradegate, integrates domestic interests in an e-commerce system to expedite export documentation and clearance.

China’s e-port provides yet another example of domestic integration. It aims to implement remote filing and declaration for export tax rebates in order to make declaration and other trade facilitation procedures possible online.

Another approach to domestic border integration is the creation of one department or agency with all border responsibilities. The creation of DHS in the U.S. is an example of this concept. That reorganization combined 22 different agencies into one department that now provides a “single face” at the borders of the U.S. by performing the border responsibilities previously administered by numerous agencies.

5. Globally Networked Customs.

Globally Networked Customs (GNC) is important as it is a concept which provides a unifying means to bring the whole strategic concept of Customs for the 21st century to life since every other building block depends upon effective communication, coordination and collaboration between Customs administrations and partly with other government agencies and the trade.

GNC is seen as an inclusive, inter-connected Customs-to-Customs information sharing system to support and improve the functioning of the international trading system, to enhance national economic performance, to facilitate the protection of society, and to ensure better fiscal management.

While the integration is more likely to occur within contiguous neighboring countries, integration of common border formalities can occur with more distant bilateral trading countries. For this to take place, certain critical elements must be implemented from within the participating countries (domestic integration). Some of these elements include the adoption of common standards, testing methods, hours of operation, data element requirements, and operating procedures.

The following recommendations to APEC Member economies could be made:

- to promote better transborder logistics optimization legal environment in APEC Member economies, including of ratification of major international conventions, e.g. The Montreal Convention of 1999,
- to reap the full benefits of the new technologies usage in facilitation of international road transport necessary changes in the legislation, rules, instructions governing the procedures for international trade and transport needs to be undertaken by the APEC Member economies,
- to make use and integrate of new logistic technologies, such as Radio Frequency Identification (RFID), satellite positioning, etc.,
- to implement the Single Window in transborder transactions according to Rec. 33 of UNCEFACT,
- to enhance the involvement of private business in transborder logistics optimization
- to implement paperless transactions and work-flow for transborder cargo movement, incl. transactions with government bodies,
- to foster effective subregional and bilateral agreements and facilitate supply chain transborder connectivity,
- to enforce capacity-building activities in the APEC region,
- to promote risk management system which is a core principle of the WCO Revised Kyoto Convention (RKC) supplemented by recent work on the WCO Customs Risk Management Compendium.

The following recommendations to the APEC Transportation Working Group could be made:

- to continue the implementation of SCC Framework and Action Plan as project and non-project activities,
- to develop and enhance cooperation and information exchange with APEC Business Advisory Council, Sub-Committee on Customs Procedures and Electronic Commerce Steering Group on the issues of transborder logistics optimization and SCC Framework and Action Plan implementation on the whole,
- to carry out in cooperation with SCCP a Time Release Study which is a fact-based performance indicator that will clearly show bottlenecks and possible solutions, not only limited to Customs but also to business and other agencies,to actively participate in the implementation of “APEC’s Strategies and Actions toward a Cross-Border Paperless Trading Environment”, to actively involve the logistic business of APEC economies in TPTWG activities.

Intensive cooperation to foster innovative growth

APEC and Innovation: Lessons to Learn from Europe[94]

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1. Introduction

APEC leaders agreed in 2011 that the generation and commercialization of new ideas is vital to regional prosperity and have made the promotion of innovation as a driver of trade, economic integration, supply-chain performance and green growth a top priority for 2012. As part of the process, APEC leaders also agreed to encourage co-operation and interaction among researchers and laboratories, including through joint research and development, in order to accelerate innovations that can be applied to address the common challenges APEC economies face.[95] This makes sense because the degree to which Asia-Pacific researchers and firms are engaged in collaborative research and development seems to be still small (Okamoto 2011).

Co-operation in science and technology (S&T) among member states has been a major component of integration in the European Union. In mid 1980s, it launched the European Framework programmes, which has been renewed several times with increasing budgets, to support collaborative research projects involving three or more member and/or associated states. As a result, scientific collaboration grew rapidly in Europe. Since 2000 EU is integrating the FP and other collaborative instruments to create a "European Research Area" for the aim of overcoming fragmentation in research and enhancing innovative capacity. The purpose of this paper is, therefore, to learn lessons from Europe with respect to regional research co-operation and collaboration, and to consider the potential areas of collaborative research and development among Asia and Pacific economies.

The paper is structured as follows. Following introduction (Section I), Section II examines the extent to which Asia-Pacific researchers and firms have or have not been engaged in collaborative research and development by field. Section III summarizes the EU's effort to create a "European Research Area," and its impacts on enhancing innovation activities of the EU members' economies. Section IV discusses the potential areas of the collaborative research and technology development within the Asia Pacific region, and concludes the paper.

2. International Co-operation and Collaboration in the Asia- Pacific Region [96]

2.1 Rising S&T Capacity in the Asia-Pacific Region

While the US, Europe, and Japan still dominate the global innovation landscape, new Asian players such as China, India, Korea, Chinese Taipei, and Singapore are seen as increasingly important (Leadbeater and Wilsdon 2007). Although, as Okamoto (2011) points out, some countries or economies do better than others, what is true is that the S&T capacity seems to be rising in almost all of the countries in the Asia Pacific Region.

An important development has been the emergence of new indicators of innovation inputs and outputs, including economy-wide measures that have some degree of international comparability (Smith 2005: 148). By far the longest-standing measure of innovation input is expenditure on Research & Development (R&D). Table 49 shows expenditure on R&D as a percentage of Gross Domestic Product (GDP) together with research personnel per thousand workers, by country in the region in 1997/98 and

[94] This paper is presented at the 2012 APEC Study Centers Consortium Conference, to be held at Kazan, Russia on May 26-27, 2012.
[95] See Annex A "Promoting effective, non-discriminatory, and market-driven innovation policy", issued by APEC Leaders on November 12, 2011.
[96] See Okamoto (2011) for the details.

2007/08. The rising S&T capacity in almost all of the countries and economies in the Asia Pacific region during the past decade seems to be clear, as demonstrated in the steady increase in R&D activities from the perspective of both expenditure and personnel.

Innovation-output measures such as number of scientific publications also seems to support the argument for the rising S&T capacity in the Asia Pacific region. Table 50 shows the trends in the number of science and engineering articles on the per capita basis for Asia Pacific countries/economies during the 2000-2010 period. According to the table, the number went up in all of the Asia Pacific countries/economies except Papua New Guinea, although the rate of growth varies across the countries.

2.2 Slow Progress of Research Co-operation and Collaboration in the Asia-Pacific Region

Gibbons et al. (1994) discovered fundamental changes in the ways in which scientific, social, and cultural knowledge are produced. They found knowledge production increasingly to be a socially distributed process. Moreover, its locus is becoming global.[97]

In developing indicators of international collaboration between countries and across regions, researchers have developed statistical techniques that account for the unequal size of countries' S&E article output and coauthorship patterns (National Science Board 2010: 5-37). One of the simplest is the *index of international collaboration*, defined as the ratio of country A's rate of collaboration with country B divided by country B's rate of total international authorship. Indexes above 1 represent rates of coauthorship that are higher than expected, and indexes below 1 indicate rates of coauthorship that are lower than expected. This is similar to the concept of the index of trade intensity between countries and across regions.

Despite the rising S&T capacity in the Asia Pacific region, its regional S&T co-operation and collaboration does not seem to be progressing very much. Figures 46 and 47 show average percentage changes of the indexes of international S&T co-operation for selected pairs of countries in the Asia-Pacific Region and in EU respectively. The EU distinguishes itself from the Asia-Pacific region in that while between 1998 and 2008 indexes of international collaboration increased substantially within the EU except Portugal (Figure 47), indicating growing integration across the EU in terms of S&E article publication, the indexes of international collaboration for the selected pairs of Asia-Pacific countries and economies did not increase very much except Russia, Mexico and Singapore (Figure 46).

3. Co-operation and collaboration in research and innovation in the European Union – origins and Framework Programmes to the European Research Area

European integration process is often seen through its monetary union process, which is a bit unfortunate not only in view of the recent euro crisis, but also because the European integration involves co-operation and integration in many other aspects which are neither as visible as the euro nor so well recognized outside Europe. Indeed, co-operation and collaboration in research among member states and associated states has been a major component of integration within the European Union and the associated countries that have steadily developed over the last several decades.

3.1 Origins and early developments

It was recognized in Europe that no single country could offer sufficient resources for research and innovation to be competitive on the world scale. Therefore, the way to strengthen competitiveness of the European countries was through cross-border co-operation and collaboration in order to create critical mass in research efforts and avoid fragmentation. Diverse array of institutions and programmes were created, notably the Framework Programmes. Currently Europe is moving towards borderless European Research Area integrating the diverse instruments of co-operation and collaboration.

The original treaty establishing the European Economic Community in 1957 encouraged actions to realize the integrated community objective (article 235), and co-operation in research was considered

[97] Senker (2006) offers several theoretical explanations of why knowledge production is becoming global, especially in the fields of life sciences and biotechnology.

to constitute an area. Already European research organizations such as the CERN (European Nuclear Research Centre founded in 1954) and EMBO (European Molecular Biology Organisation founded in 1964) were established from the 1950s. In 1977, the European Patent Organisation was set up, which provides uniform application procedure for individual inventors and companies for thirty nine European countries.

During 1970s and 80s, some bottom-up approaches to research co-operation and collaboration were established, notably COST, the European Co-operation in Science and Technology in 1971 and EUREKA in 1985. COST created an inter-governmental platform for collaborative projects involving at least five European countries. Projects are proposed by researchers, and terms of collaboration are defined in MoU exchanged between the concerned parties with approval by COST. The projects are not funded by COST, as research activities are carried out by the researchers in their organizations, but financial support for joint activities such as conferences, short term exchanges and publications are provided. This aim is clearly to reduce fragmentation of research activities by encouraging cross border co-operation.

EUREKA focuses on creating intergovernmental network to support market oriented research and innovation projects by enterprises, research institutes and universities in 39 countries. By encouraging and facilitating co-operation between industry and research sectors across borders, the expectations are to elaborate joint industrial standards, eliminating technical obstacles to trade, e.g., through mutual recognition of inspection procedures and certificates, and ultimately to open up the system of public procurement. As with COST, the projects are prepared and carried out by enterprises and research institutes from at least two countries who also raise funds. Participation of SMEs is encouraged. EUREKA secretariat co-ordinates and facilitates networking. Through flexible, decentralized network, the partners can have rapid access to needed skills and expertise and funding across borders. In both COST and EUREKA, the project research areas are pre-defined

3.2 Framework Programmes

It was during 1980s that research became an explicit part of integration policy. The Single European Act of 1987 introduced into the EEC treaty the objective "to strengthen the scientific and technological basis of European industry and to encourage it to become more competitive at the international level (article 130F)." The Act provides for the implementation of framework multi-annual programmes adopted unanimously by the Council. Subsequently, the Amsterdam Treaty substituted the unanimous voting with qualified majority voting, thus facilitating the adoption process of the Framework Programmes.

Among a number of instruments of co-operation and collaboration in research in the European Union, these multi-annual Framework Programmes (hereafter abbreviated as FP)have played a central role[98]. In contrast to bottom-up programmes such as COST or EUREKA, FPs have well-defined objectives and programme themes and details, resulting from intensive interaction between the European Commission and stakeholder groups and negotiated with member states and the European Parliament. Also, this is a research funding scheme administered by the European Commission. FP funds cover most of the cost of the projects. The first FP was launched in 1984 which disbursed 3.27ECUs. So far, seven FPs have been launched; FP1 through FP6 ran for five years each, and the current FP7 runs for seven. Budget allocated to subsequent FPs continued to increase. The current FP7 spanning 2007-2013 has a budget of more than 55 billion euros (See Figure 48).

Promoting transnational mobility of researchers has been a major objective of the FPs, and the first FP already created Marie Curie Actions to give individual grants to researchers for conducting research in another European country. However, pre-competitive collaborative research constitutes the central instrument of FP. Periodic calls for tender on specific project themes are made, and the partners from at least three different member or associated states respond by forming consortia for proposing and undertaking a project. Strong participation of SMEs is encouraged, and support services are provided facilitating their participation. Some of these projects are for conducting research (collaborative projects), others are "networks of excellence" schemes which do not aim to conduct

[98] The research and innovation activities of the European Union are well documented in the European Commission website: http://ec.europa.eu/research/index.cfm .

collaborative research, but support joint research programmes implemented by a number of research organizations in a given field aiming for longer term co-operation. Collaborative research in FP7 fall under the nine thematic priorities of health; food, agriculture and biotechnology; ICT; nano-sciences, nano-technologies, materials and new production technologies; energy; environment (including climate change), transport (including aeronautics), socio-economic sciences and the humanities; and security and space. The thematic scope has widened through the FP cycles.

Although the collaborative research account for more than half of FP7 budget, other activities are also funded, notably basic frontier research disbursed through the European Research Council in the "Ideas" programme (about 15%), cross-border and cross-sector exchange and training including for non-member country partners in the "People" programme (10%), and the "Capacities" programme (10%) which includes support for research infrastructures, research for SMEs, development of regional clusters, science in society, and international co-operation activities with third countries.

Research co-operation and collaboration in the European Union, including FPs has consistently pursued the aim of promoting industrial competitiveness of European industries. While at the beginning FP efforts for this aim were limited to a few number of sectors, in time FPs evolved into large funding and co-ordinating instrument for promoting research and innovation. Cross-border collaboration, enabled pooling of resources to achieve critical mass in research whose cost and complexity is continually increasing. Private sector participation in European research has had a leverage effect on private investments in research. Collaboration certainly enhanced training and international mobility of researchers, boosting human capabilities in research. Research co-operation enabled overcoming of fragmentation in research; also, facilitated co-ordination of national research policies and activities. Moreover, having pre-defined thematic priorities means that co-operation took place in areas of strategic interest to Europe. Addressing major common socio-economic challenges for Europe is a long-range aim of the FPs. Ultimately, research co-operation and collaboration would contribute to implementing EU policies and international commitments effectively[99].

The evaluations of FPs conducted over the years[100] indicate that innovative and scientific performance is enhanced through participation in FP. Enterprises participating in FP tend to be more innovative, more likely to patent and engage in innovative co-operation with other firms and universities. International co-publication of peer-reviewed scientific publications coming out of FP projects increased. Thousands of researchers crossed borders to collaborate in research under Marie Curie actions. A large number of co-operation links between academia, industry and public research institutes were formed. Also, the average number of participating member states in a project increased, effectively counter-acting fragmentation of research. A recent report on the long-term impacts of FP assessed that in some research areas that have continued (perhaps under different headings), such as quantum information processing and computing, stratospheric ozone research and solar energy, the European research community has improved its relative position on a range of measures and is now operating in strength at the scientific frontier (EPEC 2011).

3.3 Towards European Research Area

The most recent and continuing move by the European Union is the creation of the European Research Area (hereafter abbreviated as ERA). Launched in 2000 according to a proposal by the European Commission, ERA brings together all the instruments of research and innovation co-operation and collaboration for the aim of creating European level open space for knowledge where researchers, businesses and research institutions are able to circulate, compete and co-operate across borders. In other words, ERA tries to break down barriers to create a single market for knowledge, research and innovation. ERA includes not only FPs and other organizations and instruments discussed above, but also others such as the European Research Council created to fund basic "frontier" research within FP7 and the European Institute of Innovation and Technology (EIT). Established in 2008, EIT has created integrated structures called Knowledge and Innovation Communities (KIC) which link higher education,

[99] Some of these points are presented in FP7 presentation slides by the European Commission: http://ec.europa.eu/research/fp7/pdf/fp7_press_launch.pdf

[100] There are numerous evaluation reports on FPs which are found in European Commission's research and innovation site: ec.europa.eu/research/evaluations

research and business sectors to boost innovation and entrepreneurship. Aim is to facilitate links from idea to product, from research to market, and from student to entrepreneur. So far three KICs have been created that focus on priority topics of high societal impact, climate change mitigation, ICTs and sustainable energies.

ERA also includes initiatives to improve co-ordination of research activities and programmes in different countries and sectors. European Technology Platforms (ETPs), launched since 2002 allow industry and other stakeholders develop shared long-term visions and strategic research agendas in key industry areas. Some ETPs are loose networks while others have formal legal structures. There are 36 ETPs in areas including bio-fuels, smart grids, wind energy, photovoltaics, ICT, nano-medicine, sustainable chemistry, and aeronautics. They work on developing and updating agendas of research priorities for their particular sector. They are developed through dialogue between industry, public researchers and government, thereby enhancing cross sector co-ordination, avoiding duplication of research efforts and promoting best practice. An evaluation of ETPs (IDEA Consult 2008) showed that ETPs have contributed to the design of some of the main priorities of FP7, and some have gone beyond research to contribute to the production of standards and reviews of regulatory frameworks. Also, in working towards realizing the ERA, the member states are launching partnership initiatives to promote co-operation in improving working conditions of researchers and enhancing their mobility, developing world-class European research infrastructures, promoting transfer of knowledge and co-operation between public research and industry and enhancing international co-operation in science and technology. These areas are recognized as in need of further co-operation and co-ordination.

4. Conclusion

APEC leaders agreed in 2011 that the generation and commercialization of new ideas is vital to regional prosperity and have made the promotion of innovation as a driver of trade, economic integration, supply-chain performance and green growth a top priority for 2012. As part of the process, APEC leaders also agreed to encourage co-operation and interaction among researchers and laboratories, including through joint research and development, in order to accelerate innovations that can be applied to address the common challenges APEC economies face in 2011.

Despite the rising S&T capacity of almost all of APEC members and economies, however, its regional S&T co-operation and collaboration is not progressing very much within APEC. The EU distinguishes itself from the Asia-Pacific region in that between 1998 and 2008 regional S&T co-operation and collaboration increased substantially within EU, indicating growing research integration across the EU.

The development and evolution of co-operation and collaboration in research and innovation within the European integration process show that for the aim of promoting competitiveness of European industries, a diverse range of instruments have been created; from research organizations such as CERN and EMBO; bottom-up, networking programmes such as COST and EUREKA, to a large “top down” collaborative research funding scheme, the FPs, whose details and budgets are discussed by member governments and stakeholders and adopted by the Council. Newer instruments such as ERC and EIT focus on supporting basic research and enhancing cross sector co-operation for innovation respectively. ETPs and partnership initiatives promote co-ordination of research and innovation efforts in Europe. In working towards the European Research Area, Europe is on its way to achieving critical mass in research and innovation efforts, addressing fragmentation of research through collaboration and co-ordination, enhancing mobility of researchers, creating networks of research and innovation between academia, business and the government sectors across borders. The diversity of instruments of co-operation and collaboration developed over decades presents patterns and models which APEC could modify and adapt to develop its instruments of co-operation and collaboration.

Table 1. R&D Intensity and Personnel

Country	Expenditure on R&D as Percentage of GDP		Researchers per Thousand Workers	
	1997/98	2007/08	1997/98	2007/08
Australia	1.51	2.35	6.7	8.2
Brunei Darussalam [1]	NA	0.02	NA	0.6
Canada	1.71	1.88	6.1	7.8
Chile	0.50	0.68	1.0	2.0
China	0.65	1.43	0.8	1.9
Hong Kong, China	0.43	0.75	2.1	5.1
Indonesia [2]	0.07	0.08	0.5	0.2
Japan	2.94	3.44	9.4	10.1
Malaysia	0.40	0.63	0.4	0.9
Mexico	0.36	0.37	0.5	0.8
New Zealand	1.08	1.17	4.4	8.1
Papua New Guinea	NA	NA	NA	NA
Peru	0.09	0.15	NA	NA
Philippines	0.15	0.11	0.2	0.2
Republic of Korea	2.41	3.29	4.5	9.5
Russian Federation	1.00	1.08	7.1	6.1
Singapore	1.64	2.49	5.5	11.3
Chinese Taipei	1.87	2.68	5.8	10.3
Thailand	0.10	0.21	0.1	0.6
United States	2.58	2.71	8.0	8.8
Vietnam [3]	0.19	NA	0.2	NA

[1] Average of the figures for 2002, 2003 and 2004

[2] Figures for 2000 and 2009, respectively

[3] Figure for 2002

Source: http://stats.ulis.unesco.org/, last accessed on August 11, 2011

Taiwan Statistical Data Book 2008, 2011 .

Table 2. Academic Output per Million Population

Country	2000	2010
Australia	1063	1886
Brunei Darussalam	119	198
Canada	1020	1615
Chile	118	314
China	32	161
Hong Kong, China	747	1219
Indonesia	2	6
Japan	622	634
Malaysia	46	317
Mexico	50	92
New Zealand	1080	1807
Papua New Guinea	14	13
Peru	8	25
Philippines	6	10
Republic of Korea	307	861
Russian Federation	190	215
Singapore	978	1772
Chinese Taipei	493	1114
Thailand	27	122
United States	858	1098
Vietnam	4	16

Source: Database of peer-reviewed literature called SCOPUS , World Bank Development Indicators Online , and Taiwan Statistical Databook 2012, last accessed on May 15, 2012.

Figure 1. Averege percentage changes in the international collaboration index in the Asia-Pacific region between 1998 and 2008 (%)

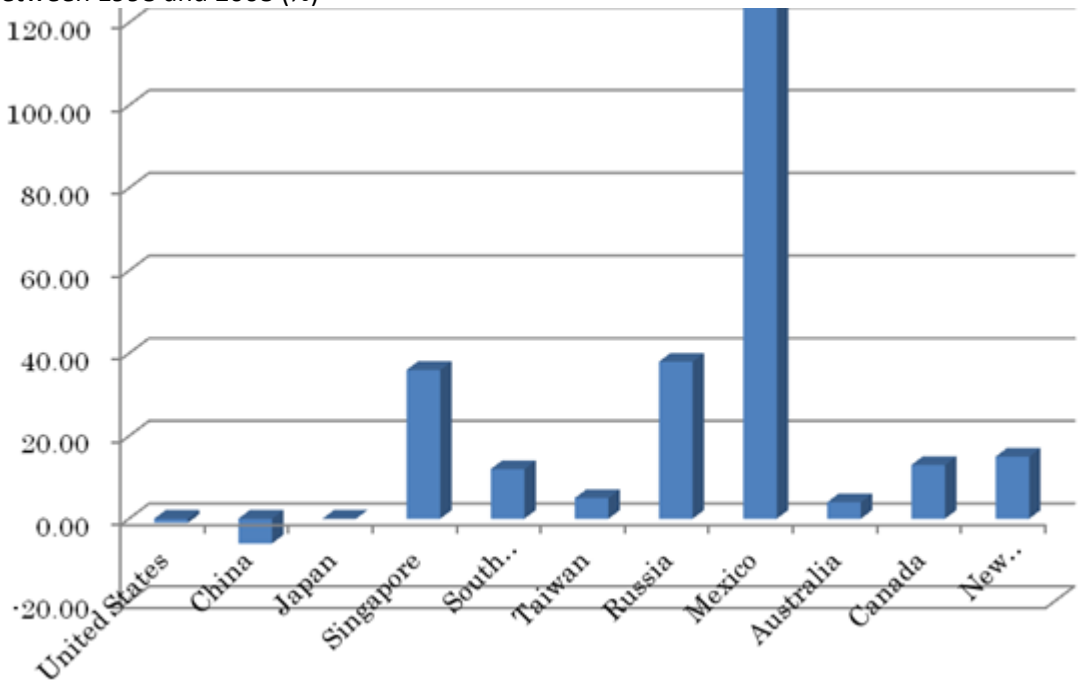


Figure 2. Averege percentage changes changes in the collaboration indexes in EU between 1998 and 2008 (%)

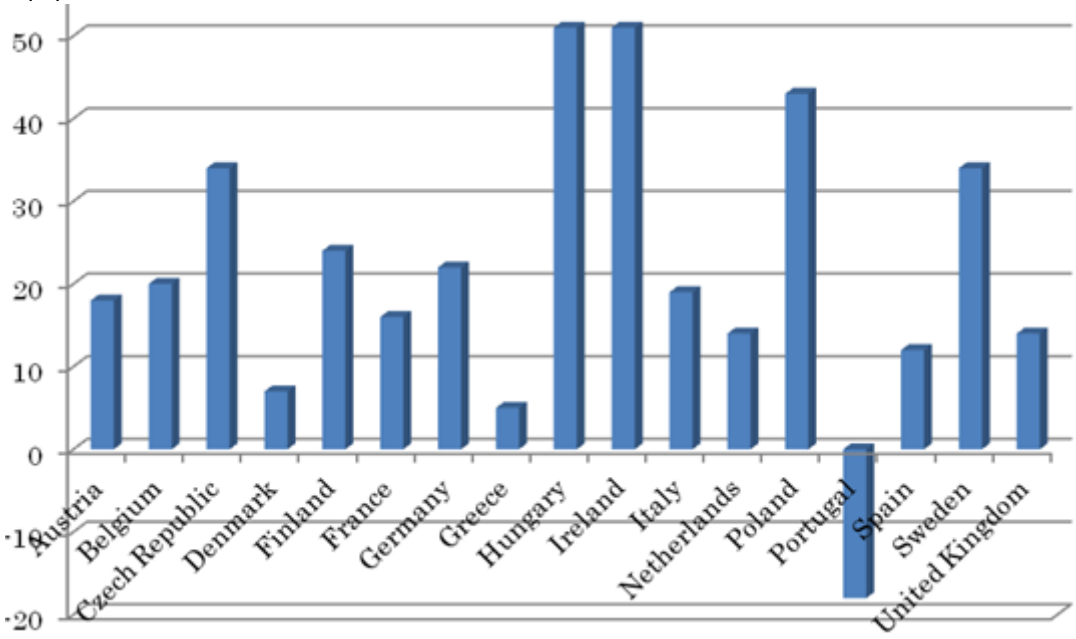
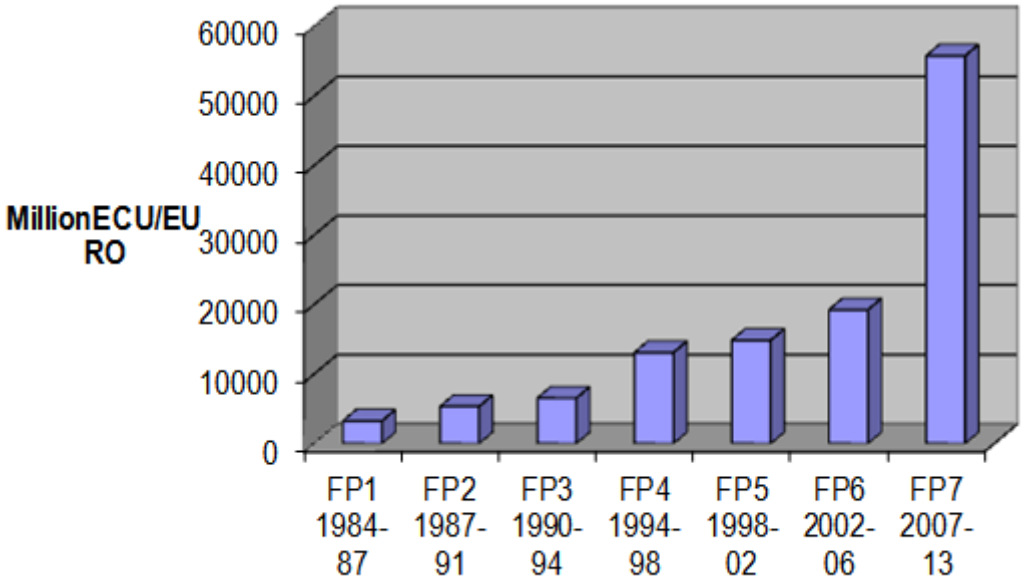


Figure 3. FP Budget growth.



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Findings and recommendations of the ASCC-2012 conference

May, 26-27 2012

The annual APEC Study Centers Consortium (ASCC) conference convened on May, 26-27, 2012, in Kazan, Russian Federation, within the framework of the Second Senior Officials Meeting and related events appreciated the participation of representatives from APEC-wide study centers network.

The conference participants shared their research outcomes on the topics set as APEC priorities for 2012, namely, trade and investment liberalization and regional economic integration; strengthening food security; establishing reliable supply chains; and intensive cooperation to foster innovative growth. The ASCC was oriented to deliver concrete recommendations from the conference to be submitted to Senior Officials as ASCC-2012 results, these recommendations are provided below.

Trade and investment liberalization, regional economic integration

- The ASCC noted that this year the new Individual Action Plan (IAP) process has started. All 21 APEC economies have submitted their IAP according to their revised formula. The ASCC pointed out that APEC can utilize this new IAP and play a core positive role in merging TPP and ASEAN tracks. It was also discussed that mapping exercises of TPP, ASEAN++ and other tracks would help to assess APEC economies' progress in the new IAP process.
- The ASCC participants discussed the importance of the progress of co-evolving integration processes in the region beyond the framework of APEC. The delegates favored deeper cooperation with ASEAN, as the long-term strategic plans of APEC nearly coincide with those of ASEAN regarding ASEAN's target of establishing the ASEAN Economic Community by 2015. The participants also mentioned the progress in enhancing integration and fostering prosperity within the China-Japan-Korea FTA.
- The ASCC regional economic integration discussion reaffirmed the importance to focus on advancing REI and moving towards FTAAP after achieving the Bogor Goals by 2020.
- The ASCC expressed support for further facilitation of customs administration procedures for the sake of lowering business costs, faster trade documentation processes and smaller proceeding times, easier trade compliance, and more effective and efficient deployment of resources. The ASCC appraised the pilot projects on easing administrative procedures and encourage further experience sharing and research on outcomes of these projects.
- Concerning the issues that are being included into the recent RTAs ASCC participants discussed the provisions of competition policy and government procurement in such agreements. It was mentioned that it is necessary to explore further the effects and arguments of these provisions for widening FTAs political support as well as optimizing trade creation effects of RTAs.
- The ASCC expressed the need to address the labor movement processes that are the important factor influencing regional development and integration, it was mentioned that these issues could add to agenda for the economic cooperation and development of the APEC member economies.
- The ASCC welcomed the findings that official Development Assistance (ODA) plays an important part in bringing East Asian integration to a new level in terms of incorporating new countries and increasing development adding instruments for East Asia integration.
- The participants also suggested to deepen APEC discussion on financial market integration and connectivity in regional economies and to increase collaboration in order to reduce the vulnerability of APEC economy to financial contagion and to promote more efficient and competitive financial markets and to investigate mechanisms to support member economies in case of the threat of financial turmoil. Participants took note of a proposal by the APEC Business Advisory Council at its recent meeting in Kuala Lumpur for the establishment of the Asia Pacific Financial Forum.

Establishing reliable supply chains

- The ASCC stressed that the key issue concerning supply and value chains refers to challenges of reliability. It is essential to ensure appropriate risk management and emergency preparedness, to improve coordination and management in emergency situations. The crucial aspects of management and mitigating risks in supply chains refers to identifying and measuring risks at critical points in the supply chain.
- The ASCC appraised the supply chains "traceability" project implemented under Australian leadership and welcomed its recommendations on developing common standards for risk aversion and mitigation, which should cover such areas, as standards on technology, cross-agency government coordination, the issues of data ownership and secure data transmission, improved supply chain security, operations and financial benefits. Secure and modern supply chains require visibility of all processes and associated risks in a common framework, as well as real time monitoring and reporting risk throughout the supply chain.
- The delegates highly evaluated reports on lessons learned from 2011 natural disasters in terms of avoiding similar unpredictable disruptions in supply chains in future. The ASCC recommends sharing outcomes and findings of the reports with the concerned stakeholders and emphasizes the necessity of shift towards the awareness of the low-probability high-impact events and their consequences as the cornerstone of managerial mindsets.
- The ASCC recognizes physical connectivity as equal to institutional connectivity in terms of ensuring reliable and stable supply and value chains. While physical connectivity reduces business transaction costs, institutional efforts in the form of, e.g. liberalizing trade in services, will significantly contribute to an even more enhanced connectivity of supply and value chains across the Asia Pacific region.
- The ASCC considers enhanced trade logistics as another important source for improving trade performance. Moreover, the improved logistics performance could also increase the flow of capital, labor and people across the region. A probable way to achieve this could be the development and introduction by APEC economies of domestic and international logistic performance indices to be evaluated annually.
- ASCC discussed critical role that services play in the operation of global value chains, constituting the "links" at the beginning, middle and end of the production processes that enable these to operate. Trade in business services is the fastest growing component of world trade. Another important area of concern lies in the sphere of financial services, and it is extremely important to monitor the main tendencies in regulating the financial services sector.
- ASCC also addressed the issue that APEC developing economies are not only targeting enhanced participation in global value chains but also trying to move up the ladder to capture tasks of higher-productivity and value. It is expected that such a trend will constitute an enormous pressure for services liberalization and domestic reform. The delegates discussed the failure of the WTO/Doha Round to make progress on the liberalization of trade in services. With the stagnation of the Doha Development Agenda, a relevant solution for APEC could be developing and implementing its own service trade liberalization agenda, possibly in the form of APEC's new Individual Action Plan.
- As for the concrete measures promoted by the ASCC in terms of enhanced cross-border logistics, the ASCC recommends intensifying the processes of accession to and implementation of international facilitation conventions. Similarly, the appropriate APEC bodies are advised to assist the economies in establishing or strengthening national facilitation coordination mechanisms, in identifying the transport logistics needs of the region, and in initiating sustainable training programs across the APEC region.

Within the field of **food security**, ASCC participants discussed the issues of regional food market integration and innovative development of agriculture. It was mentioned that under little progress within the WTO FTAs in practice became the main vehicle for international agreements to liberalize trade. The participants indicate varying effectiveness of FTAs in opening food markets: both comprehensive liberalization in some cases and evidence of concentration of product exclusions in others.

With regard to **intensive cooperation to foster innovative growth**, the participants discussed barriers to innovation in regional services business models. It was stressed that building of local centers or hubs of services are good examples of facilitating a collaborative cluster of talent and ideas. The ASCC concluded that effective regional integration would require from member economies focus on facilitating collaborative innovation.

As a general organizational recommendation the ASCC participants called for holding of ASCC annual conference early in the year in order for the recommendations to be delivered to the host economy and senior officials earlier for them to have more information while selecting and developing priority areas.