Editorial Statement

The Pacific Economic Cooperation Council (PECC) is a unique tripartite partnership of senior individuals from businesses and industries, governments, academia and other intellectual circles. All participate in their private capacity and discuss freely on current, practical policy issues of the Asia-Pacific region.

PECC was established in 1980. It currently has 25 member committees from all over the Asia-Pacific region. Each member committee comprises tripartite senior representatives. In addition, PECC comprises two institutional members: the Pacific Trade and Development Conference (PAFTAD) and the Pacific Basin Economic Council (PBEC).

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The Chairman of CTPECC is Dr. David S. Hong who is also the President of Taiwan Institute of Economic Research (TIER). The Secretariat of CTPECC is set up at the Department of International Affairs, Taiwan Institute of Economic Research. The Director General is Dr. Darson Chiu.

Asia-Pacific Perspectives is a key publication of CTPECC and an open forum welcoming submissions of analyses, perspectives, and commentaries on the Asia-Pacific region. The periodical focuses on political, economic, business and social issues.

For enquiries and submitting papers, please contact Ms. Tzuying Chen.
Address: Taiwan Institute of Economic Research, 5F, No.16-8, Dehuei Street, Taipei 10461, Taiwan.

Email: d17699@tier.org.tw

ISSN: 1997-5511

Asia-Pacific Perspectives

Publisher: Dr. David S. Hong 洪德生
(Chairman, CTPECC / President, TIER)

Asia-Pacific Perspectives online: http://www.ctpecc.org.tw

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Table of Contents

Food Security, Climate Change and the Future of Our Agriculture

Wayne Chen

The world is producing enough food, however today almost one billion people are starving while another billion is malnourished as articulated in FAO reports[1]. The shortage of food and malnutrition was due to food lost, e.g. the after-harvest loss problem as articulated by Chiou published in Issue 3 of the Asia-Pacific Perspective, 2012, and unstable economical and physical accessibility of food for one sixth populations in the globe.

Food security and climate change are two factors become interdependent and present new challenges to modern agriculture. On the one hand, agricultural practices should increase food production in quantity, quality as well as diversity to meet rapidly rising demand of humans on the planet. According to the FAO reports, food production needs to increase by 60% for 2050 compared to today. The increase of food will mainly come from developing countries where agricultural technology and production is comparatively low and at the same time facing the demand of food growing in an accelerating pace.

[1] For instance, FAO (2012), *Greening the Economy with Climate-Smart Agriculture*, Hanoi, Vietnam, 3-7 Sep, FAO.

The trend of climate change and its consequence, on the other hand, present emerging, severe challenges to current development of agriculture. There are two sides of the relation between agriculture and climate change. Agriculture is an important contributor to climate change and meanwhile greatly influenced by the latter. Agriculture is consuming natural resources heavily in many aspects. It is one of primary sources of greenhouse gases[2], including nitrous oxide (N_2O) and methane (CH_4); accounts for 70% of water withdrawal, and is one significant activity responsible for deforestation, forest degradation and loss of biodiversity. In EU, the food system accounts for 31% of the greenhouse emission. IPCC[3] estimates that by 2030, nitrous oxide will increase by 35-60% while methane by 60%. It is not difficult to see the desire burning for new ways of agriculture considering that huge additional portion of food production is needed to feed our future generations but constrained by the inefficiency of natural resources of current agricultural activities.

Agriculture is, at the same time, significantly impacted by climate change. According to *Climate Trends and Global Crop Production Since 1980* by Lobell et al.[4], global average temperatures have risen by 0.13ºC since 1950. At the global level, maize and wheat showed negative impacts and suffered net loss of 3.8% and 5.5% respectively in relation to the criteria without the climate trends in 1980-2008. Nevertheless, the magnitude of food

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[2] Agriculture is not a significant source directly responsible for carbon dioxide emission. However, agriculture imposes negative effects on carbon dioxide density in indirect ways, e.g. deforestation reduces the sinks capacity of original vegetation.

[3] Metz, B, Davidson, O., Bosch, P., Dave, R. and L., Meyer (Eds), Glossary, *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the IPCC*, Cambridge University Press, Cambridge.

[4] Lobell, D., Schlenker, W. and Costa-Robers, J. (2011), *Science*.

reduction varies between countries, e.g. Russia had 15% loss of wheat while US had little effect due to the weak trend of climate change.

Another feature of the impact of climate change on agriculture is that temperature is a more significant driver of food reduction than precipitation and for the past decades the change in temperature was larger than precipitation. This implies agriculture in low latitude regions can be more fragile than in high latitude, and thus food security will be greatly undermined in tropical and subtropical areas where economically vulnerable countries locate. Gap between developing and developed countries as a result is widening and conflicts become more possible when the situation is getting worse. Lobell et al. (2010) illustrate a different story happening in high latitude where rice production may be benefitted from warming. This observation is consistent with the IPCC report (2007)[5] which also illustrates that global warming may increase productivity of both crop and livestock in mid to high latitudes. For instance, the need of irrigation is increasing in Greenland and even in some areas where permanent irrigation system can be found today due to longer growing season on terrestrial vegetation.

Modern technology is another factor transforming agriculture to be more sensitive to climate change. As shown in Schlenker and Lobell's[6] survey on maize, sorghum, millet, groundnut and cassava in Sub-Saharan Africa that high fertilizer rate which increased yield also strengthens crop sensitivity to weather. In other words, climate change has more impact on highly fertilized

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[5] Parry, M., Canziani, O., Palutikof, J., van der Linder, P. and C.E. Hanson (Eds), Glossary, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. *Glossary*, Cambridge University Press, Cambridge, pp.869-883.

[6] (2010)Environ. Res. Lett. 5 014010

crop. Similarly, a study conducted by the World Bank[7] illustrate that irrigated crop are expected to continue to increase despite the challenge of climate change, however merely up to 2030, by then their yield will drop rather quickly.

Numerous existing evidences show that mitigating climate change and ensuring food security are not incompatible but in fact imperative to each other. Developing agricultural activities of resource efficiency and climate friendly (or climate-smart) is not only achievable but one of primary method to feed our future. The main objective of such win-win evolvement is to transform both agricultural activities and food systems to be (resource and land) efficient and resilient at both community and global levels.

There are at least 3 tasks governments have to address. First is to assist pastoralists by introducing innovative ways to improve resource efficiency and increase crop yield. For instance, the Urea Deep Placement technique is a good climate-smart solution to reduce the use of fertilizer and increase yield of rice by just placing urea deep in the soil and close to the roots of the paddy. Second is to establish overarching policy framework to transform agriculture to be efficient and resilient, and concert the food system management with the climate regime at the national and global spheres. This includes reduce subsidies on variety of agricultural practices, e.g. fertilizer, and provide incentives to climate mitigation actions, e.g. reduce deforestation, or even further linked to green economy/growth strategies. The last but surely not the least is to manage agricultural activities under the overarching framework of food systems and ecosystems as a whole. In considering agriculture's impact on climate change, discovering its mitigation

[7] Gommes, R., Hairech, T., Rosillon, D., Balaghi, R., and H., Kanamaru (2009), *Morocco Study on the Impact of Climate Change on the Agricultural Sector*, 20091007.

potentials and evaluating possible methods, policy makers should view in a wider perspective and make decision/planning in a holistic manner. In so doing, governments could create favorable policy environment in various spheres to increase yield of crop, decouple agricultural production from greenhouse gas emission and contribute to food security as well as mitigation of climate change simultaneously.

Strengthening the East Asian Production Networks

Darson Chiu

The production network or production sharing has been evolving and playing a key role in the global economy. Multinational production networks through international trade have been evolving, and international trade is all about the competition and cooperation with respect to diverse industrial comparative advantages. It has been identified that there are 3 major developments that have been transforming multinational production networks: a) speedily improving production technology of industries has enabled the capacity to further breakdown the value chains into smaller proportions, b) advancing technology in communication and transportation has shortened the geographical distances among cross-borders production networks and helped promote relevant services links, and c) liberalization trend via the World Trade Organization (WTO) or free trade agreement (FTA) processes has eliminated substantial obstacles hindering the proper function of trade and production networks.

Many have agreed with the concept that fragmentation theory and the game of comparative advantage jointly create production networks, whereas technological advance and freer trade make the theory and game practicable. The objectives of forming production networks in this first place were to fulfill better efficiency and pursue lower costs. However, it is noteworthy that major disruptions are capable of holding back all efforts and hindering the

networks from functioning properly.

The estimated global economic loss in 2011 caused by natural disasters stood at around US$ 363.79 billion, and the estimated loss in the region of East Asia was around US$ 224.62 billion in the same year. Accordingly, the economic loss of East Asia in 2011 accounted more than 60% of the world's entire loss due to natural disasters. That means East Asia is a region specifically vulnerable to impacts of natural disasters.

Efficiency in production and distribution would be the reason of forming multinational production networks in the first place. As "efficiency" in economics concept is defined as a) cost minimization with respect to fixed profit or b) profit maximization with regard to constant cost. Regarding cost minimization, technology leading economies expanding their production lines to emerging economies are looking less expensive labor costs, mitigating impacts of exchange rate fluctuation, and avoiding expenses on carrying redundant inventory.

To strengthen the East Asian production networks, policy measures can be conducted at the regional level or at the economy level. The difference is that improving production networks at the regional level is an attempt to optimize the overall regional objective by ensuring the properly function of supply chains and relevant networks; whereas improving the networks at economy level is focus on strengthen an economy's capacity associated with the supply chains and networks.

Improving the East Asian Production Networks at the Regional Level

Intra regional trade in intermediate goods and extra regional trade in final goods have been jointly providing East Asia the much needed growth

momentum. Increasing intra regional trade in parts and components has also been the result of expanding regional production networks. In addition, the extra regional trade in finished products with developed economies such as the US and Europe is still the main growth engine for East Asia. Since trade, intra-regional and extra-regional, plays a key role in linking production networks and economic growths for East Asia, eliminating redundant barriers to promote trade through regional economic integration (REI) would be necessary.

A comprehensive REI can help advance and strengthen production networks; however, political obstacles can hinder the progress of good economic cooperation. Therefore, in addition to REI, It's needed to enter the APEC. In the 2012 APEC Leaders' meeting, they stressed that it's confirmed by all to achieve a 10% improvement in supply chain performance by 2015, whereas the performance will be evaluated in terms of efficiency in moving goods and services in the region of Asia-Pacific with respect to diverse conditions facing regional economies. Since decision makers at the very top have openly announced an objective to be met, the working levels will take specific actions to improve the region's supply chain performance.

Both REI and APEC are mechanisms that can be utilized to improve production networks at the regional levels. The differences are a) REI is binding and APEC is non-binding, b) REI is rule based, and APEC is voluntary, and c) REI is flexible on the number of members, and APEC is set with 21 members for the time being. Regional level solutions are ideal for resolving regional issues; however, the most challenging issue is that this region lacks of effective leadership to start concrete actions.

Improving the East Asian Production Networks at the Economy Level

To maximize or optimize the region's overall objective is not easy, because there are diverse interests of players. Decision makers, say APEC leaders, have their own domestic agendas that could be very different from the region's overall priorities. For that reason, to improve the East Asian production networks at the economy level would be supported by a relatively stronger incentive, as a means to sustain the supply side of an individual economy's economic growth. Decision variables derived from the regional level objective function requires leadership; decision variables obtained from the economy level objective needs incentives.

It has been argued that economies in the East Asian region that have the potential to advance their high technology and compete with Japan are Korea and Taiwan. Therefore, if Korea and Taiwan can move closer to the network stream of Japan, the regional networks would be more resilient by meeting the ends of risk sharing and cost down. In spite of everything, East Asian economies especially Korea and Taiwan that rely more on Japan's supply for specific parts and components would suffer from more consequent costs resulted from the Great East Japan Earthquake. It is sensible that Korea and Taiwan would wish to relieve the reliance.

Enhancing R&D is the means to improve the East Asian production networks at the economy level, and the idea is to upgrade technology of certain economies, so they can step in and supply key parts and components when the critical supplier cannot supply normally due to unexpected disruptions.

In general, large firms dominate production networks; however, it is important to include SMEs in the regional networks as SMEs serve as the

major driving force for East Asia's economic performance and sustainability.

To improve the regional production networks at the economy level, regional economies' specific economic structures and characteristics need to be taken into account in addition to incentives. As SMEs play a very significant role for most economies in the region, engaging SEMs in the production networks meets the ends of cost down and risk sharing.

When it comes to regional production networks, large firms play the leadership role, and SMEs serve as followers. Since SMEs are mainstay of the East Asian economy and production networks provide growth momentum for the region, engage SMEs in the regional production networks is needed. As the operation of SMEs is more challenging than large firms due to the gaps in financial and technological capacity, the government must provide in due course policy incentives.

Conclusions

The ongoing expansion in production networks has been accelerated through advance in information and transportation technology with respect to globalization and regionalization. Fragmentation of production helps enhance efficiency and reduce costs, whereas the production networks would be joined by both developed and emerging economies in the region of East Asia. As certain economies possess the most critical or irreplaceable phase of the production networks, unexpected and significant disruptions may stop the networks from functioning regularly.

Formula suggested in this short article has two folds: a) improve the East Asian production networks at the regional level and b) improve the networks at the economy level. The former approach can be conducted by forming REI or utilizing an existing intergovernmental platform, APEC. For REI, starting

with bilateral economic cooperation is suggested, and REI as a means to improve the networks can be fulfilled by adopting functions of enlarging, docking and merging. APEC process include natures of voluntary, non-binding, peer pressure and top down decision making; leadership is required to make use of APEC as a platform to enhance the regional production networks.

By comparison, incentives for improving the regional production networks at the economy level are stronger, since relevant incentives are related to the economic sustainability of specific economies. Enhancing R&D and promoting SMEs are means necessary to improve the networks. R&D capability is the key to continue the proper functioning of production networks especially when disruptions deter the critical player from operation. As for SMEs, they are essential for this region's economic growth but they are also relatively more vulnerable, the government needs to take an active role and provide policy incentives.

Changing Dynamics of Production Network in Asia-Pacific region

Eric Chiou

In the past, the production network in East Asia had been portrayed as a "Flying Geese Paradigm," led by Japan through transfers of technology and foreign direct investment (FDI) to undertake industrial division of labor in different countries. Nevertheless, this paradigm has changed significantly since the early 2000s. In the aftermath of the 2008 global financial crisis and the disaster of the 2011 Great East Japan Earthquake, a new wave of industrial relocation in East Asia has been quietly undertaken. Many indications suggest that a new production network in Asia-Pacific region has gradually emerged. This article aims to briefly depict the crucial features of these ongoing changes in Asia-Pacific region.

Traditionally, a Japanese scholar, Kaname Akamatsu's "Flying Geese Paradigm" has been broadly cited and used to interpret the development of international division of labor in East Asia. In this model, Japan plays a lead goose in a regional hierarchy of industrial division of labor, followed by the second-tier of nations, including newly industrializing economies (NIEs), such as Taiwan, South Korea, Singapore and Hong Kong, as well as the third-tier of nations, like Thailand, the Philippines, Indonesia and Malaysia. The final group of nations in the model consists of Vietnam, China, and other developing countries, which make up the rear portion of the paradigm (Kojima 2000).

Nevertheless, given the new circumstance of the global economy, such as improved production capabilities in China and ASEAN countries, the traditional Flying Geese Paradigm may not be suitable to explain new phenomena in the production network in East Asia. With the rapid rise of newly emerging markets, such as China and some Southeast Asian countries as both production locations and consumer markets, traditional roles played by these emerging countries in the production chain may no longer meet the demands of the changed global economy.

Specifically, the first change comes from the increased production capabilities in developing countries. With enormous FDI inflows continuingly flooding into China and ASEAN countries, the introduction of high-performance production facilities has enhanced the manufacturing capabilities in these emerging economies. For instance, many firms in China and ASEAN countries have benefited tremendously from OEM/ODM opportunities through European and U.S. companies in terms of improving their specialization skills in mass and low-cost production. As a result, their industrial capabilities to produce intermediate goods and the capacity to provide manufacturing component parts for their individual needs have been significantly strengthened. Therefore, traditionally one-way direction flow of intermediate goods from Japan and NIEs to China and ASEAN may no longer be self-evident.

In addition, after the 2008 global financial crisis, the production network in Asia-Pacific region had experienced some re-alignments, due to multinationals' adaption and adjustment to the new reality of the global economy. One of the most significant characteristics is robust economic growth in emerging economies. For example, China, India and Brazil have been able to remain strong and outstanding economic growth during the global recession. More importantly, while many export-led economies, such

as Japan and NIEs, suffered from weak demands in the U.S. and European markets, some emerging countries, like China, on the other hand, could still sustain vigorous economic growth by aptly implementing economic stimulus policies to encourage domestic consumption. Particularly, given that China has gradually transformed itself from the world's factory into the world's market, the conventional thinking of the global production chain that targets at Europe and the United States as the final destinations of consumer goods becomes obsolete. Moreover, considering sluggish consumer demands in the United States and the EU over the past few years, plus rising population of the middle class in emerging economies, it is not surprising that more and more multinationals have changed their marketing strategies and attempt to sell consumer goods locally in these emerging markets to meet their huge domestic demands.

Another critical feature affecting the production network in Asia-Pacific reigon is the promotion of "re-industrialization" in advanced economies. Traditionally, U.S. and European companies have been major proponents and drivers of economic globalization. By moving less competitive manufacturing works out of their countries and conducting the global out-sourcing for cheaper materials, labor, and services, these western multinationals have been aggressively producing consumer goods with low costs for penetrating worldwide markets and have earned enormous profits. Nevertheless, merely emphasis of specialization in capital and high-tech intensive industries and the over-dependence on consumption-led economy growth in developed countries have generated some consequential drawbacks, such as "hollowing-out effect" and a high unemployment rate.

As a result, some developed countries, like the United States, have actively promoted "re-industrialization" by encouraging multinationals to move their overseas production factories back to their homeland. The

advocates of re-industrialization consider that manufacturing and other industrial jobs are also crucial for a national economy, since these jobs are more socially and economically durable than these in service sector and can enhance the sense of social security for people and reinforce national security for a nation. Thus, in the foreseeable future, the policies of re-industrialization in advanced economies will not only draw many manufacturing jobs back to their homeland, but may also change the existing role of these countries played as major and final consumer markets in the world economy. The relocation of production base implies that these advanced economies may again transform themselves into manufacturing powerhouse and resume their pervious glory as leading exporting countries, which will accordingly transform the landscape of the production network in Asia-Pacific region.

In sum, the new global production network has emerged and dramatically altered the original pattern of the industrial division of labor in Asia-Pacific region. Traditionally, Taiwan's strength rests on its solid foundation in the highly-integrated global production chain as a reliable supplier of intermediate goods for downstream manufacturers. However, Taiwan's existing advantages in this on-going new production network may face some severe challenges. How Taiwan can aptly deal with these challenges and transform them into new opportunities to revitalize Taiwan's economy will be an important task that policy-makers should thoroughly mull over.

Notes from APEC CEO Summit, Vladivostok 2012

Peng Wang

I attended the APEC CEO Summit held in Vladivostok as an APEC Voices of the Future delegate (a program allowing students from the 21 APEC economies to participate in the APEC Summit). The CEO Summit provides business elites the opportunity to share visions, challenge conventional wisdom, and exchange ideas to restore and sustain mutual growth. The main topics discussed were regional and global integration, sustainable growth and trade and investment liberalization, elimination of trade and investment barriers for small and medium-sized enterprises, and establishment of reliable supply chains.

As a youth delegate, I had access to the panel discussions, keynote speeches and other social events held during the course of two days. The Summit was composed of various multilateral panel discussions that gave business leaders a chance to communicate directly with their counterparts and political leaders on issues of concern to the Asia-Pacific region. As special highlights of the Summit, economy leaders delivered keynote speeches illustrating how their economies currently stand within the world. Economy leaders that were present include USA Secretary of State Hilary Clinton, President of the People's Republic of China Hu Jintao, President of Mexico Felipe Calderon, President of Indonesia Susilo Bambang Yudhoyono, Economy Leader of Chinese Taipei Lien Chan, and Prime Minister of New

Zealand John Key. In this article, I will summarize main points from selected discussions and speeches.

Panel discussion - Economic integration: benefits and unintended consequences

"What gains do countries achieve by integrating their economies? Does economic integration contribute to sustainable economic growth? Are there limits to productive integration (APEC CEO Summit website)"?

The speakers were generally in favor of further economic integration and cooperation among Member Economies. Free trade agreements (FTA) - especially the Trans-Pacific Partnership (TPP) - were heavily emphasized on. New Zealand PM John Key states, however, that TPP cannot substitute for international trade organizations such as the World Trade Organization. FTAs only deal with trade and investment barriers. Subsidized industries like agriculture are not considered in FTA. Igor Shuvalov, the First Deputy Prime Minister of Russia Federation, aims to unify the country, sign FTAs and gradually eliminate tariffs by 2015. More trade activities are yet to be conducted in the Asia-Pacific region. Export rates higher than that in Europe are anticipated. John Faraci (chairman & CEO of International Paper) points out the importance of foreign direct investment in economic integration. He mentions the three main difficulties in conducting business in Russia are (1) shortage of human resources (global talents who can lead others and understand sustainability), (2) infrastructure, and (3) bureaucracy ("bureaucracy is the enemy of efficiency").

How many currencies does the world need?

Is there need for a new gold standard in a world where governments are massively printing money to cover their own debts?

With the growth of China and a possible shift in global politics (multi-polar), the US dollar might be losing its sole importance. This is accelerated by the economic crisis in 2008. As a consequence, individuals and corporations alike seek to diversify their currency risk. Jing Ulrich from JP Morgan Chase explained that the way economies are classified ought to be modified. The "new first world" consisting of USA, Europe and China (Asia) has emerged. There is a need for three separate currencies to accommodate each superpower. The RMB will rise in 5-10 years but it is not yet open on capital account and should be included in the SDR (Special Drawing Rights). Clifford Bennett (White Crane Group) mentions that since RMB is not a freely traded currency, it faces barriers in moving towards internationalization. Then, should we go back to gold standards? This is not a practical proposal but the idea to limit central banks from printing too much money to survive through crisis is appropriate. Andrey Kostin of the VTB Bank calls for the internationalization of the Russian Ruble. There is a strong demand for the Ruble to become a regional currency. Central banks around the world being huge buyers of gold indicate that the economy is growing and thus the need for reserves is increasing.

Resources: what are the limits to growth?

The discussion focused on the availability and efficient use of resources in order to ensure sustainable growth.

Peter Voser (CEO Royal Dutch Shell) opens the discussion by stating that the development of energy supply should be able to accommodate future needs. More research on "energy-poor parts of society" – places short of energy and awaiting development – is desirable. Consequences of using energy, which include climate change, excessive water usage, and pollution, should not be overlooked. Despite the difficulties and dilemmas in balancing development and environmental conservation, we should nevertheless remain optimistic. Michael Klare (Director of the Five College Program in Peace and World Security Studies) highlights the tension between resources, and peace and security. The need for traditional materials (especially oil) grows in tandem with the population. Governments need to meet such expectations and deal with skyrocketing oil prices because demand is overwhelming. Lesser developed regions not only face such challenges but are running out of easily accessible materials such as seaside and wind power. Such countries tend to also be socially unstable. The competition for resources often leads to disputes and in turn impacts economic growth and integration. Karen Agustiawan (CEO of Indonesia's state oil and gas company Pertamina) urges for the implementation of greener and more efficient methods.

Water: the new global strategic resource

The discussion focused on the limited reserves of water on the Earth and the ways to prevent its irrational usage. Best-practices were also shared.

The President of Vietnam, Truong Tan Sang, mentions that while Asia hosts most of the world's population, it holds only 35% of the world's water supply. In other words, clean water is scare, but every single person is entitled to clean water - it is a right. Competition for clean water often leads

to conflict. He suggests taking a comprehensive and strategic approach and establishing a dialogue platform within APEC. Participation of businesses is essential to the success of the plan. Sebastian Pinera, the President of Chile, believes it is not earth that is endangered rather life on earth. Water has turned into a strategic resource. Humans are suffering from consequences of water shortage and uneven distribution which is aggravated by soil degradation. Civilization and the damage of forests lead to desertification. We need better politics and technologies.

In response to President Truong's talk, Umran Beba (President in Asia Pacific Region, PepsiCo) spoke from the business perspective. Gaining profits is no longer the only aim for businesses nowadays. PepsiCo has taken measures to decrease water usage in production. As a beverage company, it is their self-defined responsibility to provide safe water for their customers. PepsiCo works with NGOs (water.org) and supports water projects. Chew Men Leong (CEO of the Public Utilities Board, Singapore's national water agency) shares successful experiences in Singapore. He illustrates how Singapore changed drastically from being dependent on neighboring countries for clean water to becoming a water supplier. Overcoming water scarcity is NOT impossible. The challenges posed by the environment prompted their government prioritize and solve the problem. His advice for enforcing change via the government is to help them recognize the consequences of, in this case water scarcity. Governments do not have all the solutions to a problem but they certainly play an important role. Thus governments should seek to include multiple opinions.

President Pinera concludes the panel with a concise but powerful expression, "Time is our judge. What are we doing now? We need to change now!"

The Speech by Lien Chan, Leader's Representative of Chinese Taipei

Mr. Lien spoke in the panel, Emerging multinationals: joining the club.

Measures have been taken to promote the growth of multinational corporations in Taiwan. The environment as a whole is also favorable to their expansion. An important factor is the support from business incubators. Taiwan is moving from Original Equipment Manufacturer (OEM) to Original Design Manufacturer (ODM). That is to say, from a production role to a development role. Incubation centers take on an important role in cultivating human resources. One good example is Taiwan Semiconductor Manufacturing Company (TSMC), where engineers are well trained and young entrepreneurs provided with start up funds.

Mr. Lien proposes that companies should develop "Triple Ls" – linkage, leverage, and learning. Linkage includes FDI and availability of funds. Leverage is a company's ability to use its strength in a productive manner. Learning refers to the ability to learn from others. Government should be able to provide 3Ls in order to drive company growth continuously. In order to compete in the global economy, accelerating production and establishing an effective global supply chain are also issues for further research.

The Complementarity between APEC and WTO: Regime, History, and Future

Faustina Nuanting Huang

Under the global economic depression, free trade has been thought as a good remedy to motivate economic growth. Although acting as a worldwide trade management mechanism, during the recent decade the World Trade Organization (WTO) has been inactive on the aspect of trade liberalization and facilitation because of the stagnation of the Doha Round, which resulted in many countries now seeking bilateral and regional free trade agreements instead. In Asia Pacific, the Asia Pacific Economic Cooperation (APEC)-once-leading organization of regional economic integration, is seeking its new position under the stress of free trade agreements, too: in addition to keep vowing to support multilateral trade and encouraging the Doha Round to achieve a conclusion, in 2010 and 2011 APEC announced that itself will contribute as an incubator of the Free Trade Area of the Asia-Pacific (FTAAP).

Different from WTO's compulsory and legal-binding regime, volunteerism and non-binding declarations are APEC's characteristics. Additionally, APEC adopts pathfinder initiatives to seek new cooperative possibilities. Therefore this essay seeks the future complementarity between APEC and the WTO by the following two ways: 1) comparing their different regimes; 2) tracing the success of the Information Technology Agreement (ITA) and the failure of the APEC Early Voluntary Sectoral Liberalization (EVSL).

Regimes in Comparison: APEC's flexible regime can be a good example of WTO

Because each international organization has its own principles, norms, rules, and decision-making procedures, and also because that both APEC and WTO take trade liberalization and facilitation as their goals, most of the literature relating to APEC and WTO adopted Krasner's (1982) international regime theory to review their similarities and differences. (Yanai, 2000; Chan and Chiang, 2002)

According to Krasner's (1982) definition, the elements to consist a regime are as follows: principles, norms, rules, and decision-making procedures. Principles are beliefs of fact, causation, and rectitude. Norms are standards of behavior defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice. (Krasner, 1982) Therefore, scholars' comparison of APEC and WTO in accordance with the four elements above can be summarized in table 1: (Yanai, 2000; Chan and Chiang, 2002)

Table 1. The Regimes of APEC and WTO in Comparison

Elements of the Regime	APEC	WTO
Principles	Mutual Beneficiary Open Regionalism	Reciprocity Non-Discrimination (Most-Favored Nation, National Treatment)
Norm	Volunteerism	Reciprocity
Rule	Non-binding	Legal-binding
Decision-making Mechanism	Consensus Building	Mainly in consensus ; voting is supplementary

It is obvious that APEC's principles of "mutual beneficiary" and "open regionalism" are similar to WTO's principles of "reciprocity" and "non-discrimination". However, in norms, APEC takes volunteerism while WTO keeps reciprocity. To put this distinction into the fields of rules and decision-making mechanism, it well explains why the Doha Round is stagnated: WTO takes legally-binding rules, and it relies mainly on consensus while supplemented by voting when making decisions. Hence under the principle of reciprocity, disagreements are easily emerged and then become barriers of decision-making. On the other hand, since APEC's rules are not legally-binding, it can build up consensus gradually by the pathfinder initiatives under volunteerism. This is also the reason why APEC may be able to facilitate the Doha Round to achieve a conclusion.

APEC had successfully promoted the Information Technology Agreement to come into effect on 1997, yet it failed to reach a consensus of the APEC Early Voluntary Sectoral Liberalization on 1998. Therefore, by reviewing the two cases this essay would like to induct the factors for a regional consensus to be well adopted under a global framework.

History: Why APEC successfully promoted ITA yet failed on EVSL

In the history of ITA under the APEC framework, although United State's bolstering was essential to the success of ITA (Peng, 1997; Okamoto, 2000), Asian countries' consensus also took an important role. In 1995, Japan and Korea had promoted the "Asia Pacific Information Infrastructure (APII)" initiative in the APEC telecommunication working group, and the Seoul Declaration on an Asia Pacific Information Infrastructure was also adopted that year. At the fourteenth APEC telecommunication working group meeting

held on the July of 1996, Japan, Korea, Singapore and China actively discussed the idea of "APEC Center for Technology" in the group discussion of APII. (Peng, 1997) Then, in the APEC Leaders' summit on 1996, most of the leaders supported the trade liberalization of technology and information products and agreed to adopt ITA into the first ministerial meeting of WTO in Singapore to eliminate the tariff of IT products by the year 2000. (Kuo, 1997)

Because of the reason that eight out of the top ten IT product exporters are APEC members (Kuo, 1997), and that the consensus which Asia Pacific countries reached on ITA under the APEC framework had been deeply integrated into the proposal raised by the Quad - United States, Japan, European Union, and Canada-(Okamoto, 2000; Tseng, 2008), the adoption of ITA in the 1996 APEC Leaders' Declaration had become the episode of the ITA's successful consultation and validation. (Tseng, 2008)

On the contrary, although EVSL was encouraged by the success of ITA, there was a great difference on the concepts of sectoral liberalization among the Asia-Pacific countries: United States, Canada, Australia, and New Zealand treated EVSL as another progress to lower or eliminate tariffs, while developing countries like China and ASEAN members thought EVSL should include trade facilitation and economic and technical cooperation. (Okamoto, 2000)

Besides, despite that APEC adopted opinions from the business community by closely cooperating with the APEC Business Advisory Council and then it chose 15 sectors into the early harvest list of liberalization, each country's recognition to the concepts of comprehensiveness and flexibility of trade liberalization differed from each other since the ways of implementing individual action plans (IAPs) were diversified. (Okamoto, 2000) Finally, although in the 1996 APEC ministerial meeting ministers agreed that EVSL should be a progress under a consistent and comprehensive promise whereas

flexible measurements were only for developing economies to extend their schedules of liberalization, Japan strongly opposed this "packaging" project because it agreed neither the free choice of early liberalized sectors under a consistent and comprehensive promise nor to join the liberalization progresses of the forestry, fishery, food, and oilseed sectors. (Okamoto, 2000)

Therefore, according to the historical review above, "economy's consensus", "the coverage of issue(s)", "recognition of liberalization" can be used as the factors to compare the progresses of the ITA and EVSL:

Table 2. Comparing the Progresses of the ITA and EVSL

Factors	ITA	EVSL
Country's Consensus	Consistent	Diversified
The Coverage of Issues	IT products	15 different sectors
Recognition of Liberalization	Similar	Different

To sum up, "consistent position", "limited issues", and "similar recognition of liberalization" are the keys to the success of ITA comparing to EVSL. Hence if APEC wants to repeat the success of ITA and then influence WTO, it should integrate relative countries' recognition to the concept of liberalization in a limited range of issues.

Conclusion: How can APEC take a balancing role between multilateralism and regionalism and then break the stagnation of the Doha Round

In recent years, the secretariat of WTO has adopted various "packages", trying to achieve conclusions in a number of given issues and to break the stalemate of the Doha Round. However, even in the negotiation progresses

of the "packages", consensuses are still hard to reach because of the diversification of developed and developing countries' advantages. APEC contains developed and developing countries, and has planned and executed a number of economic and technical cooperation plans for years with its voluntary and non-binding characteristics. Therefore, in the future APEC may be able to develop a "best practice " for WTO to gradually achieve consensus in a given issue by its pathfinder initiatives and economic and technical cooperation plans in order to narrow the gap between developed and developing countries in a less stressful way.

However, a country's recognition to trade liberalization is diversified in different sectors, and bilateral and multilateral free trade negotiations are thriving now. To comply this trend, APEC still has to realize its way to give concrete contributions to the Doha Round by seeking its own position on incubating FTAAP.

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