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What Does a Free Trade Area of the Asia-Pacific Mean to China*

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Abstract

A Free Trade Area of the Asia-Pacific (FTAAP) has been proposed as a long-term prospect by the Asia-Pacific Economic Cooperation (APEC). This paper examines the impact of the FTAAP on the national and regional economies in China using a suite of general equilibrium models: APG-Cubed, a dynamic global model; GTAP, a static global model; and CERD, a static China model with regional dimension. The impact on the Chinese economy of the APFTA is also compared with those of other forms of FTAs such as the ASEAN-China FTA (ACFTA) and the East Asia FTA (EAFTA).

China benefits from all three FTAs, and the eastern region gains the most. It is also found that China's benefit increases along with the increase in coverage of the FTAs, that is, the APFTA has the biggest positive impact on the Chinese economy, among the three FTAs considered in this study. Sector-wise, textile, clothing and footwear sector gains the most from the FTAAP, while motor vehicle and parts sector loses the most.

1 INTRODUCTION

A free trade area of the Asia-Pacific region (FTAAP) has been proposed for many years. As early as in the Bogor Declaration of 1994 the APEC economies committed themselves to the achievement of free trade and investment in the Asia-Pacific region through a three-pronged programme of trade and investment liberalisation, trade and investment facilitation, and economic and technical cooperation (APEC 1994). The call for achieving a FTAAP was renewed in recent APEC Economic Leaders' Meetings. In 2006 in Hanoi, it was proposed as a long-term prospect (APEC 2006), while in Sydney in 2007, the leaders declared, "[t]hrough a range of practical and incremental steps, we will examine

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the options and prospects for a Free Trade Area of the Asia-Pacific" (APEC 2007).

While supporting such a call for a FTAAP in general, China has been following other countries in paying more attention to regional trade agreements (RTAs) and free trade agreements (FTAs). This is partly due to the ongoing negotations under the Doha round of multi-lateral trade negotiation. China has signed six free trade agreements with the China-New-Zealand FTA being the latest one, and is currently negotiating with six partners for such an agreement. In addition, China is conducting joint feasibility studies with four partners, of which the joint feasibility studies for China-India RTA and China-Norway FTA have concluded (see Table 1). Among many proposals of regional economic integration, the East Asian Free Trade Area (EAFTA), which is based on the proposed ASEAN-China-Japan-Korea FTA (ASEAN+3), is particularly favoured by the Chinese leaders, in contrast to the ambiguous idea of FTAAP (Sheng 2006b; Sheng 2007).

Because the prospect of achieving a FTAAP appears remote and because no detailed proposals have emerged, there are limited studies on evaluating the impact of a FTAAP on the Chinese economy. And most of these studies are from a geopolitical and political economic perspective, for example, see CTASC (2007), Chou (2007), PECC and ABAC (2006), Scollay (2005), and Sheng (2006b, 2007).

A static general equilibrium model, namely, Global Trade Analysis Project (GTAP), has been used to quantify the economic impact of a FTAAP (Gilbert, Scollay, and Bora 2001; Scollay 2005). It is found that China benefits more from a FTAAP than from an ASEAN-China FTA (ACFTA) or an EAFTA (Scollay 2005, p.27).[1] However, due to the nature of comparative static analysis, these simulations "tend to lack in varying degrees the ability to capture all dynamic effects … or the full impact of services trade liberalisation" (Scollay 2005, p.25).

Moreover, an important drawback of static modelling analyses is their lack of a time profile that makes the dynamic adjustment explicit. In many cases, different outcomes may happen in different time periods. At this stage the ACFTA is a done deal, and the EAFTA, or ASEAN+3, is on track,[2] but the FTAAP has not even entered the drawing room yet. Therefore, it is somehow misleading to present the impacts that will happen in different time periods without being explicit about the timing of the impacts.

This paper examines the impact of the FTAAP on the Chinese and the regional economy in a general equilibrium framework. The impact is compared with those of other forms of FTAs such as the ACFTA and EAFTA. It contributes to the existing literature by using a dynamic general equilibrium model of the global economy, APG-Cubed[3], to examine the impact of not only tariff removals, but also productivity improvement and investment enhancement associated with the FTAAP. It also examines the impact of such an agreement on different regions and different types of households in China by using a general equilibrium model of the Chinese economy with regional dimensions, CERD.

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1 Using a gravity model, Sheng (2006a) also shows big welfare gains for China if it participates in the FTAAP.

2 In addition to the FTAs on goods and services with China as mentioned in table 1, ASEAN has signed FTAs with Korea on goods (13 December 2005) and services (4 November 2007). ASEAN also signed the Framework for Comprehensive Economic Partnership with Japa on 18 October 2003, a prerequisite for achieving a FTA. Besides, Japan and Korea are negotiating a FTA, while Korea and China are conducting feasibility studies for a FTA.

3 See Mckibbin (1998) for the Asia Pacific version of the G-Cubed model. The G-Cubed model is derived in Mckibbin and Wilcoxen (1998)

Table 1: China's Participation in Regional Trade Agreements and Free Trade Agreements

Partner	Note
Done Deal	
Hong Kong	Closer Economic Partnership Agreement (CEPA) Main text signed on 29 June 2003, 6 Annexes signed on 29 Sept 2003; Supplements I, II, III, and IV to CEPA signed on 27 Oct 2004, 18 Oct 2005, 27 June 2006, and 29 June 2007
Macao	CEPA Main text and 6 Annexes signed on 17 Oct 2003 for implementing in Jan 2004; Supplements I, II, III and IV to CEPA signed on 29 Oct 2004, 21 Oct 2005, 26 June 2006, and 2 July 2007
ASEAN	Agreement on goods signed on 29 Nov 2004 for implementation in Jan 2005; Agreement on services signed in 14 Jan 2007 for implementation in July 2007; Agreement on investment under negotiation
Chile	Agreement on goods signed on 18 Nov 2005; Agreement on services and investment under negotiation - the 5th round of services trade negotiaitons held on 14-17 Jan 2008
Pakistan	Agreement on goods signed on 24 Nov 2006; Agreement on services under negotiation.
New Zealand	Agreement signed on 7 April 2008.
Under Negotiation	
Australia	The 10th round of negotiations held on 22-26 Oct 2007
Gulf Cooperation Council	The 3rd round of negotiations held on 17-18 Jan 2006; the 4th negotiation meeting held on 19-22 July 2006
Iceland	The 3rd round of negotiations held on 17-18 Oct 2007; the 4th round to be held in March 2008
Peru	The 2nd round of negotiations held on 3-7 March 2008; the 3rd round to be held in May 2008
Singapore	The 1st round negotiation held on 26 Oct 2006
Southern African Customs Union	Negotiation started on 29 June 2004
Feasibility Study	
Costa Rica	The 1st Joint Meeting held on 9-11 Jan 2008
India	The feasibility study on Regional Trade Agreement (RTA) concluded at the 6th meeting on 21-22 Oct 2007
Norway	Feasibility study concluded on 13 Dec 2007
South Korea	The 4th Joint Meeting held on 18-20 Feb 2008

Source: People's Republic of China Ministry of Commerce news releases

The rest of the paper is organised as follows. The next section introduces the methodology used in the analysis, section 3 discusses the major findings of the analysis, and the final section summarises the results and discusses the direction for future research.

2 METHODOLOGY

2.1 Models

Three general equilibrium models are used in the analysis: a dynamic, multisectoral global model, APG-Cubed; a static global model, GTAP; and a static China model with regional dimensions, CERD. The reason for using three models is that APG-Cubed gives a dynamic story at a moderate degree of dissagregation by country and by sector and

GTAP enables this to be expanded to many more sectors. CERD enables the detailed results to be further explored in the context of regions within China.

APG-Cubed

APG-Cubed is the Asia-Pacific version of G-Cubed model[4] (McKibbin 1998; McKibbin and Wilcoxen 1992; McKibbin and Wilcoxen 1999). G-Cubed is a multi-country, multi-sector, intertemporal general equilibrium model, which includes detailed real sectors as well as financial sector, international trade and capital flows. Most parameters in G-Cubed are econometrically estimated. It has been used to study a variety of policies in the areas of environmental regulation, tax reform, monetary and fiscal policy, international trade and currency crisis.

The APG-Cubed[5] covers almost every APEC economies (see Table 2). As a compromise, its six sectors are highly aggregated (see Table 3).

Table 2: Model Coverage of Economies

APG-Cubed	GTAP
APEC Economies	
Australia	Australia
Canada	Canada
Chile	
China	China
Hong Kong	Hong Kong
Indonesia	Indonesia
Japan	Japan
Korea	Korea
Malaysia	Malaysia
Mexico	
New Zealand	New Zealand
Peru	
Philippines	Philippines
Russia	Russia
Singapore	Singapore
Taiwan	Taiwan
Thailand	Thailand
United Sates	United Sates
Vietnam	
Rest of Southeast Asia Rest of Oceania	
Non-APEC Economies	
India	
Rest of OECD	European Union
Non-oil developing countries	Rest of the world
Oil exporting developing countries	

GTAP

Global Trade Analysis Project (GTAP) is also a widely used general equilibrium model (Hertel 1997). It is a static gobal model, with detailed sector and country coverage. The GTAP Database 6 identifies 87 countries or country groups, and 57 sectors (Dimaranan

[4] G-Cubed stands for Global General equilibrium Growth Model.

[5] This study uses version 58 of APG-Cubed.

2006). This study uses an aggregated version with 23 country groups (see Table 2) and 10 sectors (see Table 3).

Table 3: List of Secotrs in APG-Cubed, GTAP and CERD

Model	Sectors
APG-Cubed	Energy; Mining; Agriculture; Durable manufacturing; Non-durable manufacturing; Services
GTAP	Agriculture; Mining; Food manufacturing; Textile, clothing and footwear; Motor vehicle and parts, transport equipment; Electronics and machinery; Other manufacturing; Primary energy; Secondary energy; Services
CERD	Agriculture (12); Mining (4); Food processing (1); Light industry (6); Chemical industry (3); Motor vehicle and parts (1); Machinary and equipment (4); Electronics and electrical equipment (3); Construction (1); Utilities (3); Services (13)

Note: Sectors in CERD are listed at aggregate level to save sapce. Numbers in parentheses are the number of sectors within each of the aggregated sectors.

CERD

The model of Chinese Economy with Regional Dimensions (CERD) is a static, one-country, general equilibrium model (Jiang 2003; Jiang 2004). It identifies three regions in China: the eastern coastal, central and western regions. Several features make the CERD different from other one-country, multi-regional, models. First, it uses the "bottoms-up" approach to model the regional economies in China. Each region in CERD is treated as an open economy with its own agents and behavioural functions, which are mainly drawn from that presented in Yang and Huang (1997).

Second, CERD identifies rural and urban households in each region according to their possession of primary factors. This feature is very important, and appropriate, for the analysis of the Chinese economy where rural and urban areas are still separated to some extent.

Third, CERD treats regional links through a national "pool" of primary factors and commodities to avoid arbitrary decision in creating the regional flows.

Finally, CERD has a fairly detailed representation of commodities. There are 51 sectors in the model, among which are 12 agricultural sectors, 4 mining sectors, 18 manufacturing, one construction sector, 3 utilities, and 13 services sectors (see Table 3).

These three models are used interactively due to their distinct features (see figure 1). As a dynamic model with financial sectors, APG-Cubed is able to provide inputs of capital stocks and time profile to the two static, real models. Because CERD is a one-country model, it needs information of world price changes due to FTAs from the other two global models.

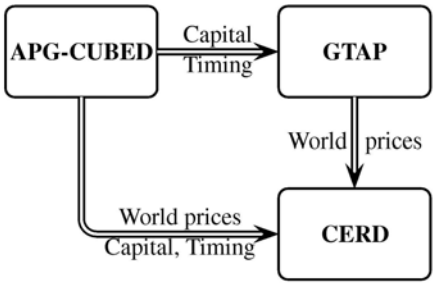
2.2 Simulations

Three FTAs, an ACFTA, an EAFTA and a FTAAP, are simulated using the above mentioned models. Each of these three FTAs has three components: trade liberalisation on goods, services and investment.

Merchandise trade liberaliation is measured by the reduction in import tariffs in participating economies of the relevant FTA. Services liberalisation is simulated with productivity improvement in services, as services are ususally non-tradeable, while investment liberalisation is modelled as reducing the uncertainties in investment environment in eachof the participating economies.

The APG-Cubed model is able to simulate all of the three components, and provides additional information, mainly the annual changes in capital stock, for the GTAP and CERD models (see Figure 1).

Figure 1: Model Interactions



Timing

As mentioned above, timing is important in assessing different FTAs. But it is also difficult to predict when a proposed FTA will be actually achieved. The uncertainty increases along with the number of parties involved.

The easiest task is to determine the timing of the ACFTA. China and ASEAN have already signed the goods and services agreements, and the negotiation for an investment agreement is under the way. Taking the consideration of past experiences,[6] it is assumed that an investment agreement will come into effect in 2010.

As for the EAFTA, a solid foundation has been established. The proposal for an ASEAN+3 took shape in 2001 when the East Asia Vision Group (EAVG) recommended formation of EAFTA (EAVG 2001). This was followed by the 2002 report of the East Asia Study Group (EASG), established by the ASEAN+3 Leaders on 24 November 2000, which proposed the EAFTA as a mid-term to long-term measure (EASG 2002). Following the decision of the ASEAN+3 Economic Ministers Meeting in 2004, a Joint Expert Group (JEG) for Feasibility Study on EAFTA was created and submitted its report, *Towards an East Asia FTA: Modality and Road Map,* in July 2006,

[6] It took three to four years for China and Korea, respectively, to reach an agreement with ASEAN. China and ASEAN signed on 4 November 2002 the Framework Agreement on Comprehensive Economic Cooperation, and signed goods and services agreements on 29 November 2004 and 14 January 2007, respectively.

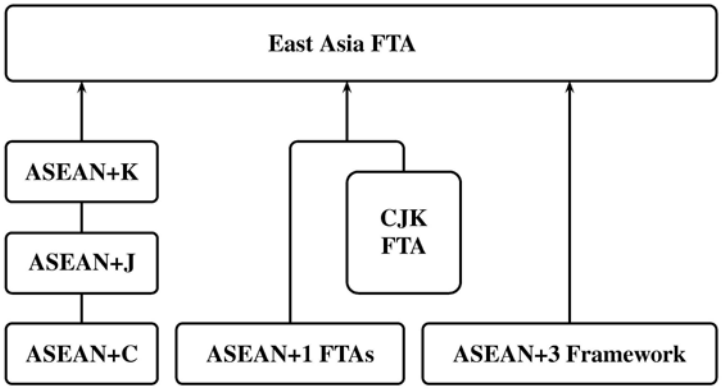
Following the ASEAN-Korea Summit in Bali in October 2003, an ASEAN-Korea Experts Group (AKEG) was set up to do the feasibility study of an ASEAN-Korea FTA. Both parties started negotiation after the Joint Declaration on Comprehensive Cooperation Partnership between the ASEAN and Korea on 30 November 2004 adopted the recommendation of forming an ASEAN-Korea FTA by the AKEG. The Framework Agreement was signed on 13 December 2005, and the agreements on goods and services were signed on 13 December 2005 and 24 August 2006, respectively.

In the case of ASEAN-Japan FTA, the negotiation was launched in April 2005 and concluded in November 2007, taking a little more than two and a half years.

recommending the ASEAN+3 framework to launch negotiations in 2009, completion of negotiation by 2011, and completion of EAFTA by 2016 (with 2020 for new ASEAN members, Cambodia, Lao PDR, Myanmar and Vietnam, CLMV) (JEG 2006).

It seems that the road map to an EAFTA has been followed closely (see Figure 2). Two ASEAN+1 FTAs, that is, ACFTA and AKFTA, have been achieved. Japan has signed agreements separately with six original ASEAN member countries, and the negotiation of an agreement with ASEAN as a whole was concluded in November 2007. The remaining block is the China-Japan-Korea FTA (CJKFTA). On this path, a trilateral joint research project on the economic effects of a possible CJKFTA has been undertaken since 2003 and it recommended CJKFTA as a mid-term goal and inclusion of services (DRC, NIRA and KIEP 2006).

Figure 2: The Path to an EAFTA



Source: Adopted from Lee (2007)

Therefore, it is assumed that an EAFTA on goods will be achieved by 2015. It is also assumed that the timing of achieving services and investment agreements follows the same profile of the ACFTA, that is, the services and investment agreements will be signed in two years and five years, respectively, after achieving an agreement on goods.

By contrast, there has not been a solid plan for forming a FTAAP. The Borgor Declaration of 1994 set a timeframe of achieving FTAs among developed and developing APEC economies by 2010 and 2020, respectively. But a joint feasibility study for a FTAAP has not been undertaken yet. Diversified development levels and different regional economic integration strategies among members have made it rather difficult to achieve an agreement in short time. Considering that it was set as a long term prospect by APEC Economic Leaders, it is assumed that a FTAAP on goods, services and investment will be formed in 2025, 2027 and 2030, respectively.

Another issue of timing is the phase-out period which is usually prolonged. For example, the North American Free Trade Agreement (NAFTA) has a phase-out period of 15 years from 1994 to 2008. In the case of ACFTA, the phase-out period for normal items is five years for China and six original ASEAN member countries (ASEAN-6)[7] and 10 years

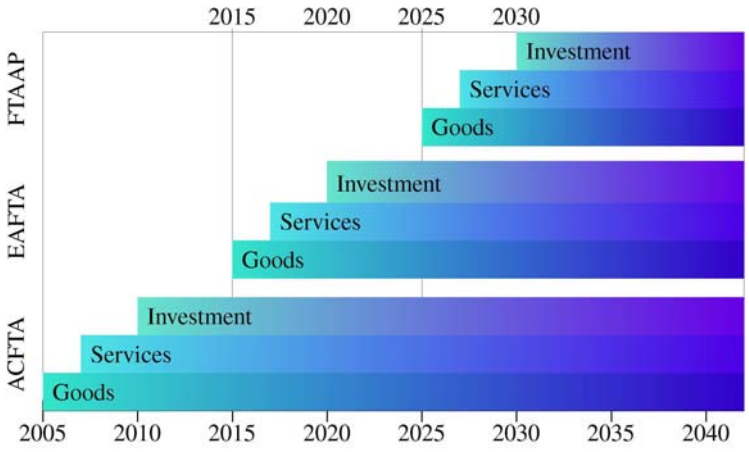
[7] The Agreement came into effect on 1 January 2005, and it states that, "each party shall eliminate all its tariffs for tariff lines placed in the Normal Track not later than 1 January 2010, with flexibility to have tariffs on some tariff lines, not exceeding 150 tariff lines, eliminated not later than 1 January 2012".

for new ASEAN members (CLMV), while tariffs on the sensitive items will be phased out in 13 years for China and ASEAN-6 and in 15 years for CLMV. In the case of AKFTA, the phase-out period of normal items is slightly shorter for Korea and ASEAN-6 (4 years).

Therefore a five year phase-out period is assumed for both EAFTA and FTAAP. This assumption is appropriate if being combined with the timing of reaching an agreement, although a FTA covering more parties with different levels of development tends to have longer phase-out period because less developed economies are usually given longer phase-out period. For example, under the provisions of ACFTA and AKFTA, the four less developed ASEAN members (CLMV) will eliminate all tariffs on normal items by 2020, five years after the assumed agreement of the EAFTA.

Figure 3 illustrates the timeing of the three FTAs and their components.

Figure 3: Timing of FTAs



Source: Authors' assumption

Quantifying shocks

For the APG-Cubed, shocks are formulated with a phase-out (for tariff reduction) or phase-in (for productivity improvement) period, usually five years. Reduction in tariffs on goods is mainly drawn from the GTAP Database version 6 (see Table 4) and the phase-out schedules discussed above. Although the GTAP 6 does not reflect some new development,[8] it remains the most comprehensive and consistent database for general equilibrium analysis.

Services liberalisation cannot be modelled as tariff reductions as in the case of merchandise trade liberalisation becuase services are mainly non-tradable and there are no tariffs data for services in GTAP 6. However, the literature shows a link between services policy reform and productivity improvement in services and other sectors, for example, see Arnold, Javorcik and Mattoo (2006), Eschenbach and Hoekman (2006),

[8] The reference year for GTAP 6 is 2001 (Dimaranan 2006, p.3-1). See, for example, Davis, Hanslow, and Stockel (2007, chart 1.3, p10), for a comparison of Korean agricultural tariffs between GTAP 6 and the 2006 Korean tariff schedule.

Kox and Lejour (2006), Mattoo, Rathindran and Subramanian (2006), Rajan and Zingales (1998). Therefore servises liberalisation is modelled by gradual improvement in productivity in the sector with a full impact of one percent increase in five years after a services agreement.

Table 4: Average Tariff Rates

Economy	Agri-culture	Mining	Food manuf	Textiles	Metal	MVP	Other manuf	Elec mach equip	Primary energy	Scnd energy
Australia	0.35	0.16	3.38	15.52	3.59	12.93	3.36	2.46	5.52	0.00
Canada	1.17	0.01	13.62	9.02	0.40	0.77	0.59	0.27	0.00	0.27
Chile	6.87	6.55	6.82	6.76	6.72	4.60	6.56	6.73	6.94	6.92
China	41.22	0.66	18.27	19.41	7.47	20.49	12.92	11.52	0.05	8.05
Hong Kong	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indonesia	1.76	1.49	9.08	7.93	5.92	9.63	4.77	2.75	0.00	3.40
Japan	22.63	0.13	31.36	9.73	0.55	0.00	1.03	0.04	0.00	1.60
Korea	123.91	1.27	26.17	9.51	3.81	3.88	6.61	3.39	4.03	5.57
Malaysia	25.26	0.25	10.11	11.03	8.54	31.67	6.66	1.58	2.15	0.32
Mexico	10.70	5.98	12.15	7.83	4.63	5.41	4.29	3.86	0.88	2.22
NewZealand	0.10	0.01	2.55	6.14	1.36	3.48	1.46	1.78	0.00	0.40
Peru	15.60	10.69	16.10	15.68	9.92	11.96	10.69	12.04	9.66	10.08
Philippines	5.65	2.72	11.08	6.49	3.91	11.51	4.76	0.69	3.27	2.73
Russia	5.24	1.51	16.68	15.80	5.80	12.75	9.77	6.37	0.14	1.06
Singapore	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Taiwan	5.58	0.19	20.21	8.26	3.38	16.07	3.99	1.52	1.95	5.15
Thailand	13.30	2.68	39.11	17.37	9.25	23.95	10.85	6.26	0.04	0.60
USA	1.07	0.09	3.22	9.80	1.15	1.09	1.34	0.62	0.00	0.97
Vietnam	10.93	3.84	43.70	28.85	5.06	46.90	8.47	8.21	0.00	9.79
RSEA	5.58	6.40	22.42	10.32	3.54	24.96	6.81	6.67	1.59	2.49
ROceania	11.74	1.36	31.18	20.19	5.98	9.52	17.74	7.66	0.00	2.15
EU	3.34	0.00	4.85	2.53	0.70	0.83	0.46	0.38	0.00	0.41
ROW	11.10	4.01	20.15	14.57	6.90	9.17	7.87	6.05	4.08	5.04

Source: GTAP Database 6

Investment liberalisation is modelled by gradual reduction in country risk premium with a full impact of one basis point reduction in five years after an investment agreement. In the study of Australia-US FTA (TheCIE 2004), a five basis points shock was used, which was based on the equity risk premium of 120 basis points for Australia relative to the US (Dimson, Marsh and Staunton 2003) adjusted by several factors such as the importance of investment rules, the share of the US investment in Australia, and the share of non-sensitive sectors. In this study, a more conservative measure is taken to reflect the uncertainty of the scope of an investment agreement.

For the two static models, shocks on goods and services trade liberalisation are formulated at their full impact level, while the investment liberalisation is modelled by increase in capital stocks generated by the APG-Cubed.

As CERD is a one-country model, the reduction in China's tariffs is adjusted according to the shares of involved parties in China's total imports to reflect the fact that FTAs are not unilateral liberalisation. On average, imports from the ASEAN, ASEAN-Japan-Korea and the Asia-Pacific regions account for 25.4, 53.4 and 72.1 per cent, respectively, of China's total imports (Table 5).

Table 5: Regional Shares in China's Total Imports

Sector	ASEAN	ASEAN-Japan-Korea	Asia-Pacific
Agriculture	14.21	15.49	67.32
Mining	2.47	4.39	46.69
Food manufacturing	25.72	32.56	73.72
Textiles	32.98	82.74	87.24
Metal	10.72	46.86	74.23
MVP and other tranport equipment	2.60	21.53	63.49
Other manufacturing	25.38	58.20	78.37
Electrical machinary and equipment	24.70	61.10	75.12
Primary energy	11.94	11.94	17.89
Second energy	24.87	59.47	74.02
Services	46.49	50.30	63.61
Average	25.39	53.35	72.11

Source: GTAP Database 6

3 RESULTS

3.1 Macro Effects

The macro impact of the three FTAs simulated by the APG-Cubed is summarised in Figure 4. These results are presented as percentage deviation from the baseline. There are three lines in each panel, showing the impact of ACFTA (black line), EAFTA (blue line) and FTAAP (red lines). It is clear from these diagrams that a FTAAP has the largest impact when it is fully implemented. However, a more meaningful measure would be the net benefit a FTA will bring about, because the three FTAs happen subsequently and a later FTA is built on top of prevous ones. Therefore, the net impact of a later FTA should exclude that of previous FTA/FTAs. Graphically, the net impact is the distance between two lines, for example, the net impact of an EAFTA is the distance between blue and black lines. One observation from the chart is that these FTAs have similar, albeit with different magnitude, impact on China.

For China, all three FTAs bring about a positive impact. Both output and welfare (measured by real consumption) increase above the baseline. Real GNP increases more than real GDP does, reflecting the fact that Chinese incease their holdings of foreign assets. Real consumption increases more than output does due to cheaper imports after the commencement of a FTA. Investment also increases above the baseline to support further growth in output.

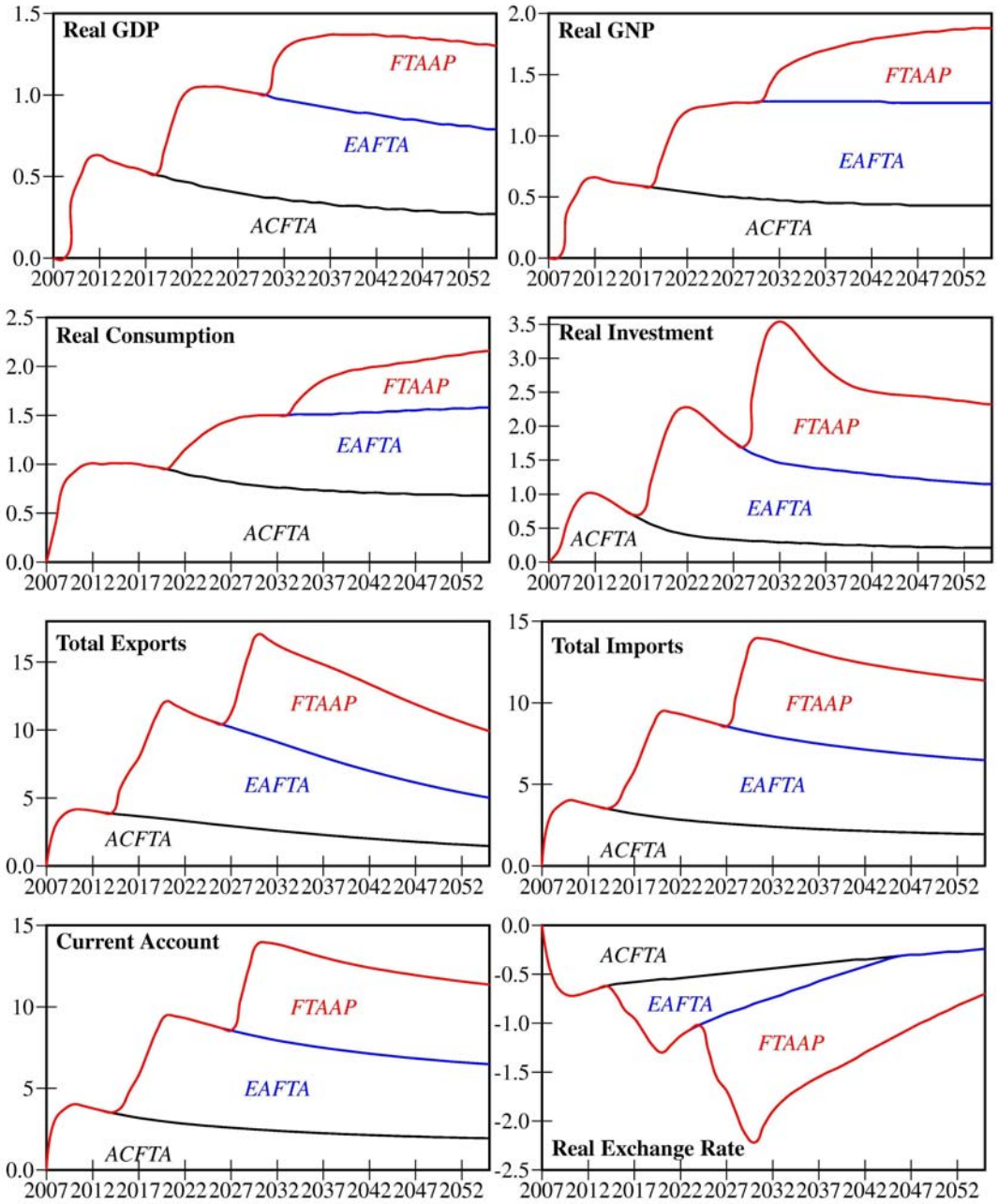
Both exports and imports increase above the baseline. Because Chinas exports are higher than imports in the baseline, increases in exports and imports lead to positive impact on the current account. The increase in current account surplus means net capital outflows, which is consistent with the result of higher GNP growth than GDP growth. To facilite these changes, the real exchange rate depreciates (reflecting the outflow of capital).

Production and welfare gains

The additional production (real GDP and GNP) and welfare (real consumption) gains over 50 years from 2007 to 2056 under the three FTAs are reported in Figure 5. Results are presented in net present value terms with a discount rate of 5 per cent, which allows

us to place a current value on gains that may not be experienced until some time in the future.

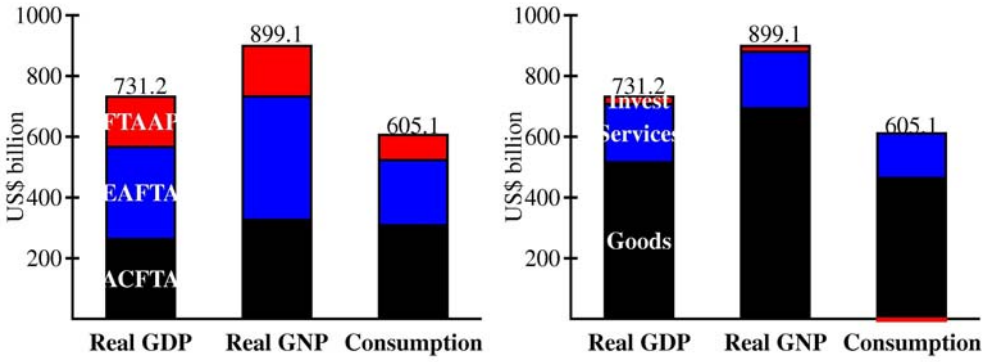
Figure 4: Macro Effects of FTAs: China



Note: Percentage deviation from the baseline except the current account which is percent of baseline GDP deviation

Source: APG-Cubed simulations

Figure 5: Production and Welfare Gains: China



Note: Over 50 years discounted at a 5 per cent real interest rate
Source: APG-Cubed simulations

Over 50 years, China gains US$731 billion in real GDP, US$899 billion in real GNP and US$605 billion in consumption. The ACFTA contributes about 36 per cent, the EAFTA more than 40 per cent, and the FTAAP about 20 per cent, to the GDP and GNP gains. To the consumption gains, the ACFTA contributes a little more than half, the EAFTA about 36 per cent, and the FTAAP about 14 per cent. As noted above, the decomposition is about the net contribution a FTA makes to the total gains. If, however, the FTAAP will be formed in 2035 without an EAFTA in place, its contribultion would be higher – about 40 per cent of production gains and 55 per cent of welfare gains, although the total benefits are smaller – US$646, 799 and 560 billion of gains in real GDP, GNP and consumption, respectively.

These gains could be further increased if the EAFTA or the FTAAP could be happening earlier. Moving the EAFTA one year earlier would see additional gains of US$7.7 billion in real GDP, US$12.6 billion in real GNP, and US$7.7 billion in consumption, over the 50 years period. Similarly, moving the FTAAP one year earlier would see additional gains of US$7.8 billin in real GDP, US$8.9 billion in real GNP and US$4.9 billion in consumption, if the FTAAP is established from an EAFTA. If there is no EAFTA before a FTAAP, one year earlier commencement of the FTAAP would see higher additional benefits – US$15.9, 21.7 and 12.9 billion additional gains for GDP, GNP and consumption, respectively (Table 6).

Table 6: Benefit of One Year Earlier Commencement of FTAs

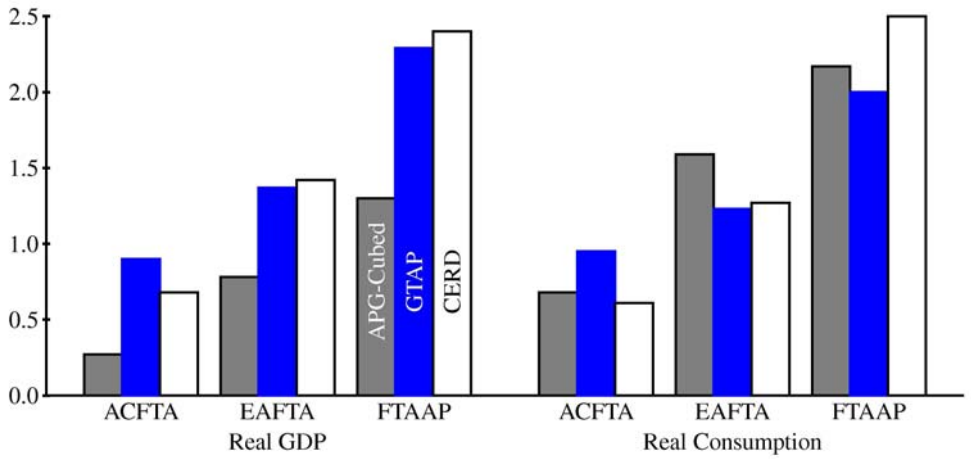
	Unit	EAFTA	FTAAP	
			With EAFTA	Without EAFTA
GDP	US$ billion	7.71	7.84	15.85
GNP	US$ billion	12.56	8.95	21.74
Consumption	US$ billion	7.69	4.93	12.85

Note: Over 50 years discounted at 5 per cent real interest rate
Source: APG-Cubed simulations

GTAP and CERD simulations reveal similar patterns of total annual gains, that is, China gains the most from a FTAAP, followed by an EAFTA and an ACFTA (Figure 6). It

should be cautious in making comparison of results from different models. For example, while the APG-Cubed results in Figure 6 are for 2055, we are not sure of the timing of the GTAP and CERD results – they will happen when the effects of proposed FTAs are fully realised. With that said, the results generated by the three models are close, especially for the gains in real consumption. The larger discrepancy in GDP gains between APG-Cubed and the two static models is understandable – the latter two do not capture international financial assets, in other words, production gains are fully reflected in domestic products without considering the increase in China's holding of foreign assets. Therefore, it might be more appropriate to compare the GNP numbers from the APG-Cubed with the GDP gains from GTAP and CERD. In fact, APG-Cubed simulations show that China's GNP will be 0.4, 1.3 and 1.9 per cent higher than the baseline under ACFTA, EAFTA and FTAAP, respectively, which are much closer to the GDP gains revealed by GTAP and CERD simulations.

Figure 6: Comparison of Total Annual Gains



Source: APG-Cubed, GTAP and CERD simulations

Sources of benefits

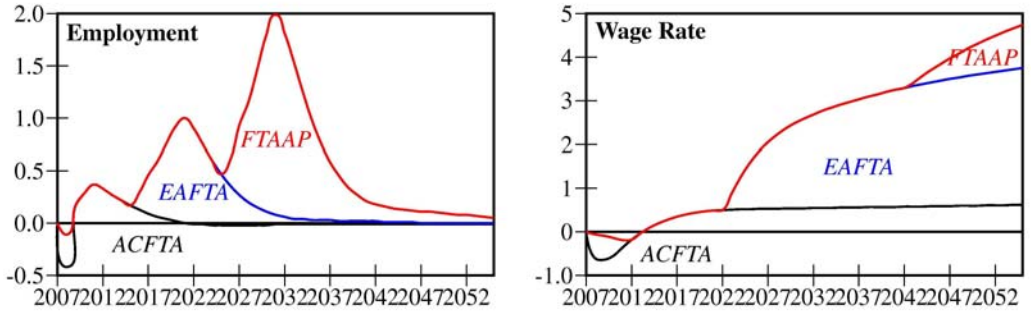
The sources of these gains are reported in the right panel of Figure 5. Over 70 per cent of the gains are from merchandise trade liberalisation, and 20-25 per cent of the gains are from services liberalisation. Investment liberalisation contributes to only 2 to 3 per cent of the production gains, due to our conservative assumption on the reduction in risk premium. It is interesting to note that the investment liberalisation brings about a small (about 1 per cent), negative impact on consumption. This is because the reduction in risk premium boosts investment at the expense of consumption initially.

Employment

All the three FTAs have positive impact on employment in China. Figure 7 reports the impact on employment (left panel) and real wage rate (right panel). Because wage rate adjusts slowly, in short time after the commencement of a FTA, employment deviates from underline long-term level. The impact on employment peaks in six years after the commencement of a FTA, which is consistent with the assumption of 5 year phase-out period

of a goods agreement. The employment could be 0.4 per cent higher than the baseline in 2011 for an ACFTA, 1 per cent higher in 2021 for an EAFTA, and 2 per cent higher in 2031 for a FTAAP. As wage adjusts, short-term employment impact dampens down over time, and the employment falls back to its long-term level. The impact transforms to permanent, higher wage rates. The real wage rate could be 5 per cent higher than the baseline level in 50 years.

Figure 7: Impact on Employment

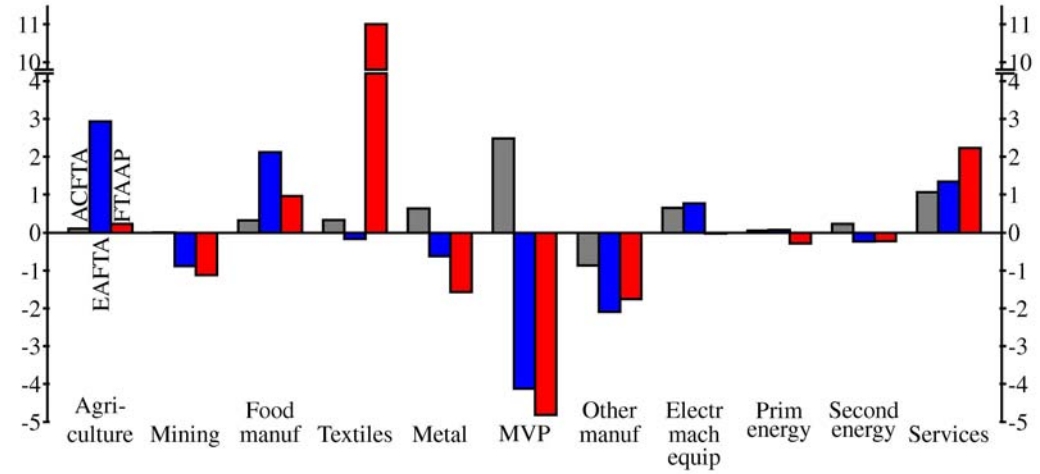


Note: Percentage deviation from the baseline
Source: APG-Cubed simulations.

3.2 Sectoral Impact

Figure 8 reports the changes in sectoral output under ACFTA, EAFTA and FTAAP, while Table 7 reports more detailed sectoral impact under the FTAAP. Textile industry would gain the most from the FTAAP, followd by the services and food manufacturing sectors; while motor vehicle and parts and other transport equipment (MVP) sector would suffer the most, followed by other manufacturing and metal sectors.

Figure 8: Sectoral Impact of Various FTAs



Note: Percentage deviation from the baseline
Source: GTAP simulations

It is interesting to note that some sectors may become from a winner to a loser under different FTA arrangements, for example, the MVP sector gains from an ACFTA and loses from an EAFTA and a FTAAP. This is because China has comparative advantage in MVP over ASEAN countries, while it faces much tougher competition from Korea, Japan and/or the United States under an EAFTA or a FTAAP.

Table 7: Sectoral Impact of a FTAAP

Sector	Output	Employment		Exports	Imports
		Unskilled	Skilled		
Agriculture	0.22	0.23	0.24	85.49	85.57
Mining	-1.12	-1.50	-1.49	1.17	-1.02
Food manufacturing	0.96	-0.36	-0.30	22.65	45.40
Textiles	11.00	9.76	9.83	39.42	75.83
Metal	-1.57	-2.54	-2.47	9.30	17.55
MVP and other transport equipment	-4.82	-6.02	-5.95	17.08	42.83
Other manufacturing	-1.75	-3.00	-2.93	8.17	31.92
Electric machinary and equipment	-0.02	-1.27	-1.21	15.80	23.89
Primary energy	-0.28	-0.72	-0.71	4.00	2.11
Secondary energy	-0.22	-1.93	-1.87	9.16	14.29
Services	2.23	0.16	0.23	-0.73	1.36

Note: Percentage deviation from the baseline
Source: GTAP simulations

3.3 Regional Impact

Figure 9 and Figure 10 report the impact on production, foreign trade, and household consumption in China's eastern coastal, central and western regions. All three regions gain from any of the three FTAs. As with the national pattern of impacts, a FTAAP has the highest impact on the regions. Regional exports increase more than imports do.

Rural and urban households in the same region increase their consumption by a similar magnitude under a FTA, although there are significant differences across regions.

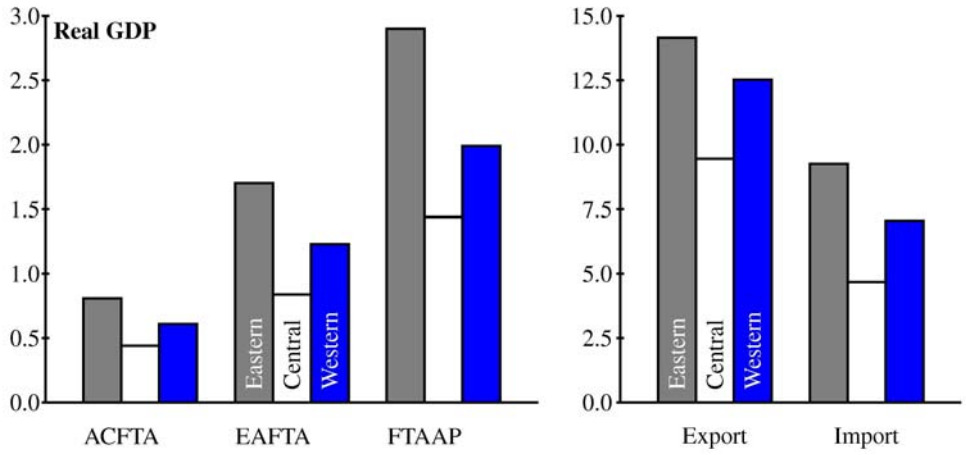
The Eastern region gains the most, followed by the western and central regions. Regional development level in China follows a gradient pattern with the eastern region being the most developed region and the western the least. The uneven pattern of gains implies that China's regional disparity would become worse under any of the FTAs.

The result that the central region gains least may surprise someone who expects a similar gradient pattern of gains across regions from a FTA. However, the result may be justified in the following way. First, the western region has the cheapest labour, which helps in the development of labour-intensive sectors.

Second, the western region has relatively abundant resource endowments which lead to its comparative advantage in resource-intensive products. In fact, under a FTAAP, the resources sector in the western region has the highest growth among the three regions.

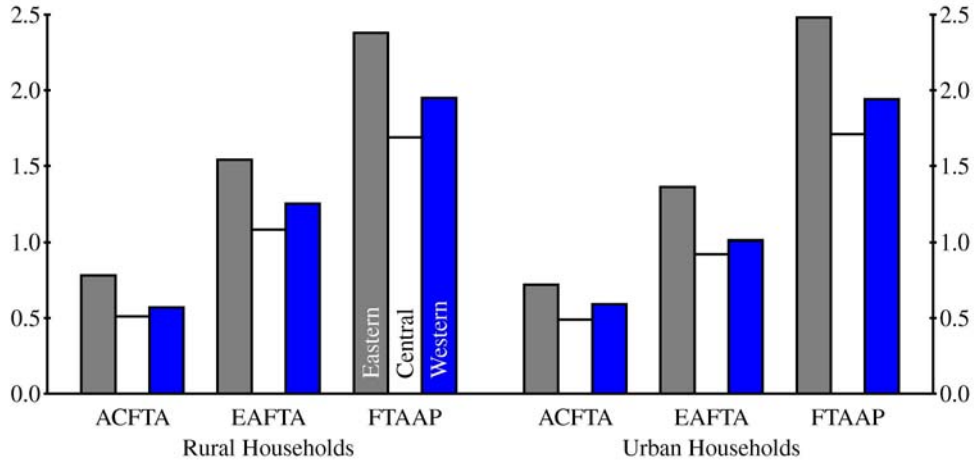
Finally, the industrial base in the western region may not be as poor as people think. The Chinese government has made huge investments in the so-called "third line" program which brought about development in some sectors. This can be evidenced by the result that electrical machinary and equipment sector in the western region boosts at a similar magnitude as in the eastern region.

Figure 9: Changes in Regional Production, Exports and Imports



Note: Percentage deviation from baseline. Imports and exports in the right panel are for FTAAP only.
Source: CERD simulations

Figure 10: Changes in Rural and Urban Household Consumption

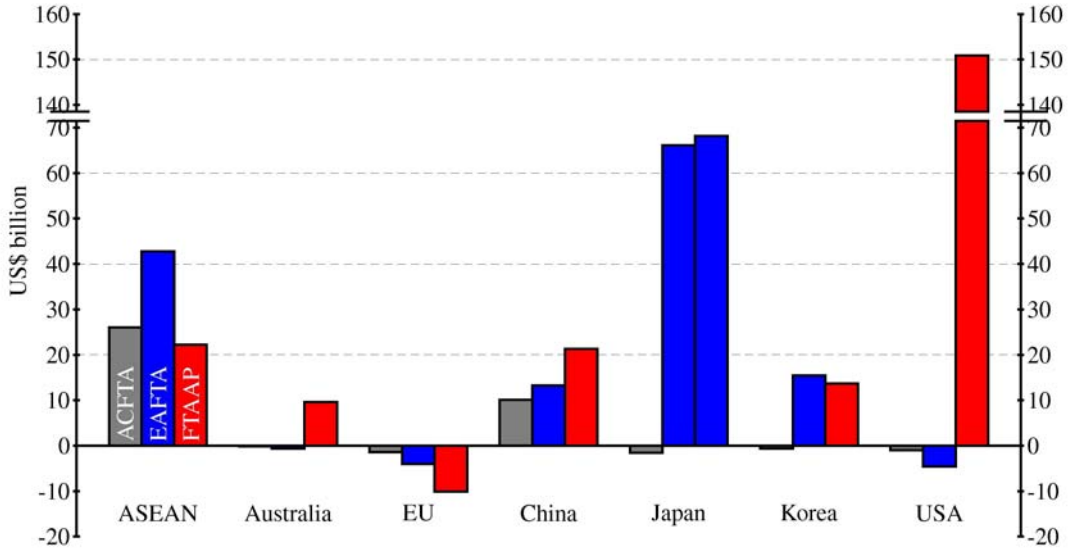


Note: Percentage deviation form baseline
Source: CERD simulations

3.4 Impact on Other Economies

Figure 11 reports the equivalent variation (EV), a welfare measure used by GTAP, of major countries or country blocs under different FTA arrangements. It shows that the trade diversion effects dominate when an economy is excluded from a FTA. For example, the United States could gain US$156 billion in EV under a FTAAP, compared to a loss of US$4.6 billion under an EAFTA; while the European Union loses under all the three FTAs. The ASEAN as a whole gains less under a FTAAP than under an ACFTA or an EAFTA because it faces more competition and as a result the capital stock increases less under a FTAAP than under the other two FTAs.

Figure 11: Impact on Other Economies



Note: Annual equivalent variation (EV)
Source: GTAP simulations

China-US bilateral trade

Soaring China trade surplus with the United States is one of the major conflicts between the two giants in the Asia-Pacific region. It is hoped that "a FTAAP can subsume into a broader and cooperative context, including orderly dispute settlement mechanism, the growing bilateral trade and other economic conflict between the United States and China", and possibly curb or even reduce the US trade deficit with China (Bergsten 2005).

The results of this study partly support the argument. Table 8 reports the simulated impact of FTAAP and EAFTA on China-US bilateral trade by GTAP. Although total US exports to China grow more than three times as its imports from China do (71 per cent versus 23 per cent) under a FTAAP, its trade deficit with China increases by more than 6 per cent due to the huge imbalance in the baseline. Of course, a FTAAP puts the US in a better position than an exclusive EAFTA which may lead to more than half reduction in its exports to China and a 9 per cent increase in trade deficit with China.

Table 8: Impact on US-China Bilateral Trade

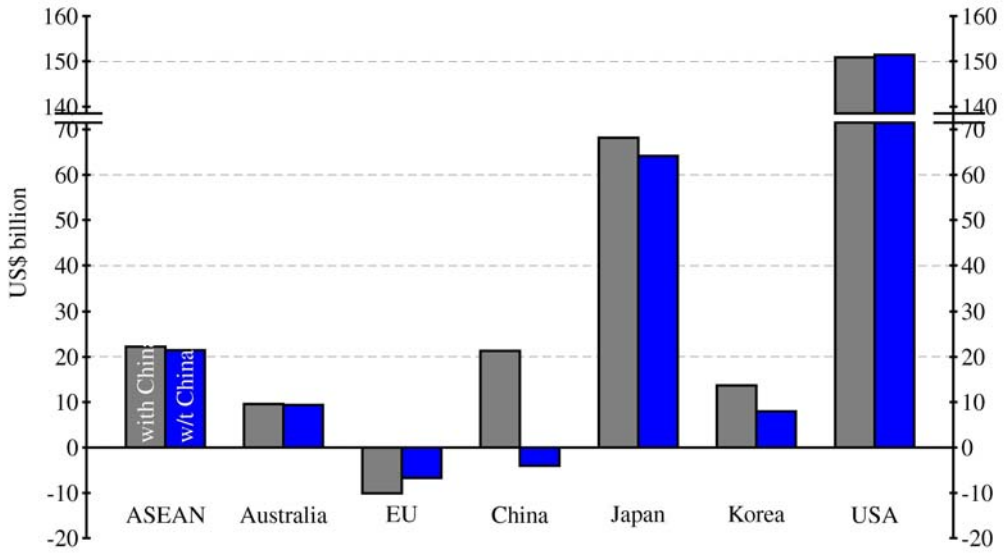
Sector	USA export to China		China export to USA	
	FTAAP	EAFTA	FTAAP	EAFTA
Agriculture	480.57	13.97	9.44	-17.42
Mining	2.51	-0.81	0.59	-0.11
Food manufacturing	59.52	-11.72	11.07	-10.10
Textiles	71.21	-43.17	69.93	-5.98
Metal	20.17	-10.73	14.59	0.17
MVP and other transport equipment	-14.79	-40.18	24.43	7.50
Other manufacturing	34.73	-28.61	7.83	-0.37
Electric machinary and equipment	61.93	-29.38	15.31	6.70
Primary energy	76.07	9.61	-4.81	-1.86
Secondary energy	26.20	-7.27	-2.07	0.21
Services	4.62	-1.33	-2.51	0.66
Total	70.93	-54.32	22.82	-17.73
US trade deficit with China	6.11	9.02		

Note: Percentage deviaiton form the baseline
Source: GTAP simulations

3.5 A FTAAP without China?

It has been proposed that a FTAAP could be launched without China's participation. It is also hoped that the trade diversion effect would induce China to join the FTAAP if it does not do so at the beginning. China should seek to join the FTAAP at the very beginning, as suggested by the quick assessment of a FTAAP without China by the GTAP simulation. China would turn to a loser of US$4 billion in EV a year if without joinging the FTAAP from a winner of US$21.3 billion with a membership of the FTAAP.

Figure 12: Impact of a FTAAP without China



Note: Annual equivalent variation (EV)
Source: GTAP simulations

4 CONCLUDING REMARKS

This study uses a suite of general equilibrium models to examine the impact of a free trade area of the Asia-Pacific, in conjuction with the possible development in the existing ASEAN-China FTA and a proposed East Asian FTA. It is found that China gains from all of the three FTAs. When all the effects are fully realised at the end, a FTAAP will bring about the largest gains to China, followed by an EAFTA and the existing ACFTA. However, if considering the difficulty of reaching a future FTA and the sequence of FTAs, an EAFTA would add more net benefits to the existing ACTFA than a FTAAP. Measured by increased consumption, the additional benefit an EAFTA will bring about would be around US$220 billion over a period of 50 years, compared to US$82 billion of net benefit from a FTAAP. It seems that China is using the same calculation to formulating its regional economic integration strategy which favours an EAFTA.

With that said, it is in China's interest to pursue early formation of a FTAAP – one year earlier commencement of the FTAAP would see additional gain of about US$5 billion of increased consumption over 50 years if an EAFTA is in place before a FTAAP. The benefit would be higher if there is no EAFTA in place when the FTAAP commences. Moreover, China should avoid the scenation where a FTAAP is formed without China's participation. Huge trade diversion effect brings China a net lose of US$4 billion in EV, compared to a gain of US$21.3 billion under a FTAAP including China.

Another issue China should consider is the worsening trend in regional disparity after the commencement of a FTA. The eastern region receives most of the gains from a FTA, although other regions gain as well. Moreover, given the fact that large scale, comprehensive, programs have been launched to develop the western region and to restructure the old industrial bases in the Northeast, the government should consider a more sensible strategy not to miss out the central region, as this region would gain the least from a FTA.

This study could be extended in several directions. First, the databases may be updated to reflect most recent economic development and protection level in China and major economies, which would be a mjaor undertaking. Second, more FTA options may be considered, such as ASEAN+6 (ASEAN+3 plus Australia, New Zealand and India), and FTAs among China's major partners. It will provide more balanced information for China to consider.

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