The Impact of Cross-Strait Trade Liberalization: A Computable General Equilibrium Analysis

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ABSTRACT

This paper applies a multi-regional computable general equilibrium model to investigate the economic effects of trade liberalization across Taiwan Strait. We first consider the effects of a free trade arrangement between Taiwan and Hong Kong. We then examine the effects of extending the Taiwan - Hong Kong free trade arrangement to include Mainland China. Our simulation results reveal that cross-Strait trade liberalization will have considerably positive impact on external trade, domestic investment, capital movements and real GDP for the economies in this area in general, and Taiwan in particular. Furthermore, the negative impact of the formation of a free trade arrangement between Taiwan and Mainland China on Hong Kong seems to be rather small.

Keywords: Trade Liberalization, free trade area, CGE, FTAP
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1. Introduction

The prolonged political hostility between Taiwan and Mainland China has been dramatically changed since Taiwan's new government took office in May 2008. Particularly, given its recognizing the important role of China's market for its economic development as well as the increasing trend of regional economic integration in East Asia, the new government of Taiwan has actively pursued a new economic policy towards Mainland China. Recently, Taiwan has removed its ban on direct cross-Strait links. Several trade liberalization measures such as cross-strait financial cooperation and Mainland investment in Taiwan among others are also under negotiation. Most importantly, a cross-Strait Economic Cooperation Framework Agreement (ECFA) has been proposed and under intensive study by both sides. These dramatic policy changes have raised heated discussion across Taiwan Strait.

Given the huge disparity in the economic sizes between China and Taiwan, a closer economic integration between Taiwan and China is considered as a threat by some people in Taiwan and an opportunity by others. Heated debate about the costs and benefits from the improvement in cross-Strait relationship is prevalent. Support from a clear consensus among Taiwanese people seems still inaccessible. From the perspective of Hong Kong, the improvement of economic relationship between China and Taiwan will inevitably weaken its intermediate role in the cross-Strait economic activity. Facing this situation, what are the policy options for Hong Kong to choose from is also an important current issue.

The purpose of this paper is to apply a computable general equilibrium model to investigate the economic impact of cross-Strait trade liberalization on Taiwan, Mainland China as well as Hong Kong. Specifically, since it has been proposed that,

given the possible difficulties in negotiating the ECFA, a free trade arrangement between Hong Kong and Taiwan could be used as a stepping stone, two scenarios will be examined in this paper: (1) a free trade arrangement between Taiwan and Hong Kong (THKFTA) prior to the ECFA, (2) a free trade arrangement between Mainland China and Taiwan (ECFA) after the THKFTA.

The remainder of this paper is organized as follows. Section 2 analyzes recent cross-Strait trade and investment relationship, and Section 3 introduces the empirical model employed in this paper. The simulation design and empirical results are discussed in Section 4. Final section concludes.

2. Recent cross-Strait trade and investment relationship

The political and economic relationship between both sides of Taiwan Strait has had dramatic changes since 1987 when Taiwan removed limitations on its people to visit their relatives in Mainland China. Despite cross-Strait political hostility remained since then until very recently, informal cross-Strait economic and trade relationship has been advancing steadily. Taiwan's exports to Mainland China via Hong Kong had increased 15 times from US$1.515 billion in 1987 to US$22.987 billion in 2008 (see Table 1). Estimates from Taiwan's Mainland Affairs Council indicate that the proportion of the cross-Strait trade in Taiwan's overall foreign trade increased from 1.7% in 1987 to 21% in 2008 (see Table 2). Mainland China now becomes not only Taiwan's most important export market but also its largest source of trade surplus. Its trade surplus from Mainland China increased from US$940 million in 1987 to US$ 42.59 billion in 2008 (see Table 3). Without these trade surpluses with China, Taiwan would have faced huge trade deficits.

As for oversea direct investment, Taiwan’s capital outflows toward China have also increased steadily since the late 1980s after the lift of its ban on outward investment. According to Taiwan’s official estimates, the accumulated Taiwan’s approved investment toward Mainland China had amounted to 37,1781 cases and US$ 75.56 billion in total (see Table 4) in 2008, which was close to 60% of Taiwan's total outward direct investment. Taiwan’s investment in Mainland China mainly concentrated on electronic components, computers, electronic products and optical products, electrical equipment, fabricated metal products, and plastic products manufacturing industry.

Since the direct trade and travel between Taiwan and Mainland China had been prohibited by Taiwan’s government due to political reasons, Hong Kong has played an intermediate role in the cross-Strait economic relationship for a long time. With rapid rises in the volume of cross-Strait trade and investment, Hong Kong’s trade-transiting status has also become increasingly prominent. The trade transit to Mainland China in 1987 accounted for only 27.5% of total trade between Taiwan and Hong Kong, but this proportion had risen sharply to nearly 73% in 2008 (see Table 1).

To rescue Hong Kong from an economic recession, the "Closer Economic Partnership Arrangement" (CEPA) between Hong Kong and Mainland China was signed in 2003. It has also had some impacts on cross-Strait economic relationship. The main features of the CEPA include liberalization in trade in goods and services, as well as trade and investment facilitation. According to the CEPA, Mainland China permitted 273 products originating in Hong Kong to be imported with zero tariffs beginning from January 1, 2004. Among those, they included electrical and electronic parts products, plastic products, textile products and garments, chemicals, pharmaceuticals, watches, jewelry, cosmetics and metal products (see Annex 1of the CEPA). In addition, nearly 4,000 other products also enjoyed zero tariff treatment no

later than January 1, 2006.

The CEPA has some negative impacts on Taiwan's economy. Its products will be in an inferior position while competing with Hong Kong products because of the preferential treatment from the CEPA. Taiwan's products inflicted include electronic forms industry, small household electrical appliances, fashion, cosmetics, jewelry, etc. Moreover, Hong Kong's service industries allowed to access into the Mainland market increase from the first phase of the 18 to 27 service sectors to date (the Commerce, Industry and Technology Bureau of Hong Kong, 2007). It is of great help for the revival of the Hong Kong's service industries and their development in Mainland China, for they have already gained advantages against other competing countries before China opens its domestic service markets according to its WTO commitments. In addition, Hong Kong also attracts some multinational enterprises attempting to develop the Mainland's service markets to engage in acquisitions or direct investment in Hong Kong's service industries. While the CEPA contributes positively to the Hong Kong's development in services industry, it may squeeze the inflows of the foreign investment to Taiwan as well as the neighboring regions (Liao, 2005).

The political tension between Taiwan and Mainland China has been eased since Taiwan's new government took office in May 2008. Taiwan has lifted its ban on direct cross-Strait links. Regular cross-strait flights, cross-strait financial cooperation and Mainland investment in Taiwan are under negotiation. Most importantly, a proposal to establish a cross-Strait Economic Cooperation Framework Agreement is under intensive study in both sides. The improvement of cross-Strait economic relationship has raised heated debate in Taiwan, partly because of its possibly deleterious economic effects and partly because of political reasons.

From the perspective of Hong Kong, the improvement of cross-Strait economic

relationship might bring forth threats as well as opportunities. On the one hand, the Hong Kong's transit role will be inevitably weakened by the three direct links. This might inflict some damage on Hong Kong economy at least in the short run. On the other hand, it is suggested that in the long run Hong Kong might benefit from the cross-strait trade liberalization, given Hong Kong's excellent location, sound legal system, as well as competitive strength in the areas of financial services, logistics, professional services, convention and exhibitions and tourism.

To sum up, closer informal economic integration across the Taiwan Strait has been advancing steadily since the late 1980s despite the political animosity in both sides of the Strait. Recent cross-Strait political and economic relations have been changing rapidly since the new government of Taiwan adopted a new policy toward mainland China after its inauguration in 2008. These changes are expected to bring forth tremendous impacts on the economies in this area and the other regions around the world as well. In the following sections, we will evaluate the possible impacts of these changes quantitatively with a computable general equilibrium model, which is a very useful tool to deal with this issue.

3. Empirical Model

The empirical model employed in this paper is an extension of the Global Trade Analysis Project model (GTAP; Hertel 1997) with foreign direct investment, known as FTAP. One of the limitations in GTAP model is its neglect of barriers in services trade. FTAP model is particularly developed to deal with the issues related to liberalization in services trade. The distinctive features of this model are as follows. (1) It incorporates FDI into its analytical framework. Its treatment of FDI follows closely the pioneering work of Petri (1997). (2)The FTAP model also incorporates

increasing returns to scale and monopolistic competition in all sectors. This follows the treatment of Francois, McDonald, and Nordstrom (1996) for manufacturing and resource sectors, and those of Brown et al. (1996, 2001) and Markusen, Rutherford, and Tarr (1999) for services industry. (3) FTAP makes provision for capital accumulation and international borrowing and lending, adopting a treatment of international (portfolio) capital mobility developed by McDougall (1993) and incorporated into GTAP by Verikios and Hanslow (1999). The model structure of FTAP is documented fully in Hanslow, Phamduc, and Verikios (1999).

The FTAP model takes the standard GTAP framework as a description of the location of economic activity. It then disaggregates this activity by ownership. On the purchasing side, agents in each economy make choices among the products or services of each firm type, distinguished by both ownership and location, and then among the individual firms of a given type. Thus, the model recognizes the firm-level product differentiation associated with monopolistic competition. Firms choose among primary inputs, intermediate inputs and investment goods, whereas households and governments choose among final goods and services.

In the FTAP model, the supply of FDI is determined by an imperfect transformation among types of wealth. Investors in each economy first divide their wealth among bonds, real physical capital, land and natural resources in their country of residence. A bond is a bond, irrespective of who issues it, implying perfect international arbitrage in bond markets. However, capital in different locations is seen as different things. Investors next choose the industry sector in which they invest. And then they choose whether to invest at home or overseas in their chosen sector. Finally, they choose a particular overseas region in which to invest.

In FTAP, although regional endowments of land and natural resources are fixed (and held solely by each regions residents), regional capital stocks can accumulate

over time, and net bond holdings of each region can adjust to help finance the accumulation of domestic and foreign capital by each regions investors. The treatment of capital accumulation follows the original treatment of McDougall (1993). With this treatment of capital accumulation, FTAP provides a long-run snapshot view of the impact of trade liberalization. To the extent that liberalization leads to changes in regional incomes and saving, this will be reflected in changes to the capital stocks that investors in each region will have been able to accumulate.

As mentioned above, one of the advantages of the FTAP model is its capability to deal with the issues related to liberalization in services trade. Traditional analysis of trade barriers has focused primarily on the effects of tariffs, which are discriminatory taxes levied on foreign-produced goods at the border of a country. In contrast, barriers to trade in services are typically regulatory barriers, rather than explicit taxes. They need not discriminate against foreigners. Indeed, barriers to market access are often designed to protect incumbent firms from any new entry, be it by domestic or foreign firms. One particularly important barrier to services trade is restrictions on foreign direct investment by service firms. These restrictions are captured in the FTAP model as tax equivalents imposed on foreign firms in the host countries.

The version of the FTAP model employed in this paper is an extension of the one developed by Dee (2007), in which the database GTAP 6 along with some estimates about the trade barriers in services trade around the world is adopted (see Dee (2005) and Table 5). In this paper, the cross-Strait trade structure and tariff barriers in the FTAP model are updated according to database of GTAP 7 released in 2008. In addition, the tariff commitments of Taiwan and Mainland China made when they entered the WTO in 2001 are also taken into account in the model. The data on the commitments are compiled from Ma and Wang (2002) and Chou et al. (2003).

4. Simulation Design and Empirical Results

A. Simulation design

In this paper, we are interested in examining the impact of cross-Strait trade liberalization under two scenarios: (1) a Taiwan-Hong Kong FTA (THKFTA) prior to the formation of the ECFA, (2) the ECFA after the THKFTA. In order to take into account the recent cross-Strait trade liberalization policies, namely, the CEPA and three direct links between Taiwan and Mainland China, we first simulate the impact of these two policies with the model along with the database. The shock parameter about the cost savings from the three direct links is based on the estimates of Dee (2007). The updated database derived from these simulations is then treated as our baseline situation.

Subsequently, our simulation analysis proceeds as follows. In the first scenario, the trade barriers in both commodity as well as services between Taiwan and Hong Kong are assumed to be abolished immediately after the formation of the THKFTA. The changes from our first scenario with respect to the baseline solution are used as a measure of the impact of the THKFTA.

In the second scenario, the updated database derived from first simulation is treated as our new benchmark. The trade barriers in both commodity as well as services between Taiwan and Mainland China are assumed to be abolished immediately after the formation of the ECFA. The changes from our second scenario with respect to the new benchmark are used as a measure of the impact of the ECFA.

B. Simulation Results

Table 6 shows the effect of cross-Strait trade liberalization on exports and imports of all regions. It is clear that Taiwan will not gain much in commodity trade from a Taiwan-Hong Kong FTA whereas it will have considerable increases in exports and imports from the formation of the ECFA. This might be attributed to the fact that Hong Kong is a tariff-free economy so that Taiwan cannot gain from further tariff reduction when establishing the THKFTA. In contrast, high tariff rates remains in some manufacturing industries of Mainland China. As a result, Taiwan can benefit much from the tariff reduction from the formation of the ECFA. After the formation of the ECFA, the exports of Taiwan will increase by 8.45% and its imports will increase by 11.95% as well. As for Hong Kong, it will have small gains in commodity trade from the THKFTA. By contrast, the exports and imports of Mainland China will increase by 3.53% and 4.60%, respectively, from the ECFA.

Table 7 illustrates the effect of cross-Strait trade liberalization on domestic investment in this area. It reveals that the formation of the THKFTA will have a large impact on the domestic investment in both Taiwan and Hong Kong. Their gross domestic investment will increase by 3.92% and 4.63%, respectively. The ECFA will bring forth a much larger impact on Taiwan's domestic investment. Its gross domestic investment will increase by 11.27% in this case. After the formation of the ECFA, however, Mainland China's domestic investment will increase by 0.35% only.

It is worth noting that the formation of the ECFA will have a considerable negative impact on Hong Kong's domestic investment, which is close to -7%, whereas its impact on the external trade is rather small. In contrast, owing to its

huge size, the formation of the THKFTA will have very small influence on China's external trade and domestic investment.

Tables 8, 9 and 10 demonstrate the effect of cross-Strait trade liberalization on inflows and outflows of foreign direct investment in this area. The formation of the THKFTA will have a negative impact on Taiwan's capital outflows and capital inflows as well. However, its impact on outflows of FDI in Hong Kong is positive whereas its impact on the inflows of FDI in Hong Kong is negative. In contrast, the formation of the ECFA will result in significant increases in Taiwan's capital inflows and outflows. These results reveal that FDI flows and external trade in Taiwan are complements. Notice that the formation of the ECFA will have a very small impact on Mainland China's capital inflows mainly because Taiwan's investment towards China will replace that from Hong Kong.

Table 11 illustrates the effect of cross-Strait trade liberalization on real GDP in all regions. It is clear that the formation of the THKFTA will have a positive impact of real GDP in this area, including China. Taiwan and Hong Kong's real GDP will increase by 0.57% and 0.70%, respectively. The formation of the ECFA will contribute additional 0.61% on Taiwan's real GDP, whereas it will cause the real GDP of Hong Kong to decline though its magnitude is very small.

In summary, our simulation results reveal that cross-Strait trade liberalization will have considerably positive impact on external trade, domestic investment, capital movements in this area in general, Taiwan in particular. The negative impact of the formation of ECFA on Hong Kong economy seems to be rather small.

5. Conclusion

Closer informal economic integration across the Taiwan Strait has been advancing steadily since the late 1980s despite the political animosity in both sides of the Strait. However, cross-Strait political and economic relationship has started to change rapidly since the new government of Taiwan adopted a new policy toward mainland China after its inauguration in 2008. The change is expected to bring forth tremendous impacts on the economies in this area and other economies around the world as well. To evaluate who will benefit and who will suffer from this development, this paper applies a multi-regional computable general equilibrium model to investigate the economic effects of trade liberalization across the Taiwan Strait.

We first consider the effects of a free trade arrangement between Taiwan and Hong Kong. We then examine the effects of extending the Taiwan - Hong Kong free trade arrangement to include Mainland China. Our simulation results reveal that cross-Strait trade liberalization will have considerably positive impact on external trade, domestic investment, capital movements for the economies in this area in general, and Taiwan in particular. Furthermore, the negative impact of the formation of a free trade arrangement between Taiwan and Mainland China on Hong Kong economy seems to be rather small.

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Table 1 Trade between Taiwan and Hong Kong and Transit Trade to Mainland China

Unit: USD million; %

Period	Taiwan's Exports to H.K.			Taiwan's Imports from H.K.			Total Trade between Taiwan and H.K.		
	Amount	Re-exports to Mainland China		Amount	Imports from Mainland China		Amount	Transit Trade with Mainland China	
		Amount	As Percentage of Exports to H.K.		Amount	As Percentage of Imports from H.K.		Amount	As Percentage of External Trade with H.K.
1984	2,224	426	19.1	624	128	20.5	2,848	553	19.4
1985	2,679	987	36.8	555	116	20.9	3,234	1,103	34.1
1986	3,074	811	26.4	761	144	18.9	3,835	956	24.9
1987	4,274	1,227	28.7	1,242	289	23.3	5,516	1,515	27.5
1988	5,687	2,242	39.4	1,812	479	26.4	7,498	2,721	36.3
1989	6,614	2,897	43.8	2,113	587	27.8	8,726	3,483	39.9
1990	7,447	3,278	44.0	2,724	765	28.1	10,171	4,044	39.8
1991	9,563	4,667	48.8	3,175	1,126	35.5	12,738	5,793	45.5
1992	11,301	6,288	55.6	3,397	1,119	32.9	14,698	7,407	50.4
1993	12,204	7,585	62.2	3,659	1,104	30.2	15,862	8,689	54.8
1994	13,936	8,517	61.1	3,700	1,292	34.9	17,637	9,810	55.6
1995	16,573	9,883	59.6	4,581	1,574	34.4	21,153	11,457	54.2
1996	15,795	9,718	61.5	4,275	1,582	37.0	20,070	11,300	56.3
1997	15,968	9,715	60.8	4,694	1,744	37.2	20,661	11,459	55.5
1998	13,343	8,364	62.7	4,343	1,655	38.1	17,686	10,019	56.7
1999	12,875	8,175	63.5	4,226	1,628	38.5	17,101	9,803	57.3
2000	15,920	9,593	60.3	5,103	1,981	38.8	21,022	11,574	55.1
2001	13,837	8,812	63.7	4,534	1,693	37.3	18,371	10,505	57.2
2002	14,860	10,312	69.4	4,433	1,708	38.5	19,293	12,020	62.3
2003	16,052	11,789	73.4	5,419	2,161	39.9	21,471	13,950	65.0
2004	19,720	14,762	74.9	6,296	2,485	39.5	26,016	17,247	66.3
2005	21,568	17,056	79.1	6,465	2,635	40.8	28,033	19,690	70.2
2006	24,989	18,707	74.9	6,680	2,910	43.6	31,670	21,617	68.3
2007	26,295	21,207	80.6	6,786	2,921	43.0	33,082	24,128	72.9
2008	24,621	20,035	81.4	7,044	2,951	41.9	31,665	22,987	72.6

Source: Bureau of Foreign Trade (BOFT), Taiwan.

Table 2 The Share of Cross-Strait Trade in Taiwan's Total Foreign Trade

Unit: USD million; %

Period	Transit Trade between Taiwan and Mainland China via HK			Estimates by Taiwan's Mainland Affairs Council		
	export share	import share	total trade share	export share	import share	total trade share
1984	1.40	0.58	1.06	1.40	0.58	1.06
1985	3.21	0.58	2.17	3.21	0.58	2.17
1986	2.04	0.60	1.49	2.04	0.60	1.49
1987	2.28	0.83	1.71	2.28	0.83	1.71
1988	3.70	0.96	2.47	3.70	0.96	2.47
1989	4.38	1.12	2.94	5.03	1.12	3.31
1990	4.88	1.40	3.32	6.54	1.40	4.23
1991	6.10	1.78	4.15	9.79	0.46	5.57
1992	7.66	1.55	4.79	12.84	1.03	7.31
1993	8.82	1.43	5.32	16.28	1.31	9.19
1994	9.03	1.51	5.45	16.99	2.17	9.93
1995	8.72	1.51	5.27	17.15	2.97	10.36
1996	8.26	1.54	5.12	17.63	2.97	10.79
1997	7.82	1.52	4.79	18.08	3.41	11.03
1998	7.43	1.57	4.60	17.62	3.91	11.00
1999	6.61	1.46	4.17	17.22	4.07	11.00
2000	6.31	1.41	3.95	16.46	4.43	10.67
2001	6.98	1.57	4.48	20.27	5.47	13.40
2002	7.62	1.51	4.84	23.30	7.04	15.89
2003	7.83	1.69	5.01	25.43	8.61	17.70
2004	8.09	1.47	4.91	26.83	9.95	18.72
2005	8.60	1.44	5.17	28.36	11.00	20.04
2006	8.35	1.44	5.07	28.27	12.23	20.60
2007	8.60	1.33	5.18	30.10	12.77	21.94
2008	7.84	1.23	4.63	28.94	13.04	21.22

Source: 1. Hong Kong Customs Statistics.
2. Taiwan Customs Statistics.

Note: The denominators are Taiwan's total trade volume; the numerators are the volume of Taiwan's trade with Mainland China.

Table 3 Taiwan's Trade Balance with Mainland China, Hong Kong, and the World

Unit: USD million; %

Period	Taiwan's Transit Trade Balance with Mainland China via HK				Taiwan's Trade Balance with HK		Taiwan's Trade Balance with the World
	HK Customs Statistics		Estimates by Taiwan's Mainland Affairs Council				
	Amount	Percentage*	Amount	Percentage*	Amount	Percentage*	Amount
1986	667	4.3	667	4.3	2,542	16.2	15,680
1987	938	5.0	938	5.0	3,370	18.0	18,695
1988	1,764	16.0	1,764	16.0	3,665	33.3	10,995
1989	2,310	16.5	2,745	19.6	4,837	34.5	14,039
1990	2,513	20.1	3,629	29.0	7,110	56.9	12,498
1991	3,541	26.4	7,200	53.7	10,484	78.1	13,421
1992	5,169	52.9	9,801	100.3	13,634	139.6	9,770
1993	6,482	75.7	12,978	151.5	16,724	195.3	8,564
1994	7,225	84.0	14,164	164.7	19,729	229.4	8,603
1995	8,309	89.1	16,343	175.2	24,263	260.0	9,330
1996	8,135	55.5	17,667	120.5	25,083	171.1	14,659
1997	7,971	86.5	18,540	201.2	26,692	289.7	9,215
1998	6,709	91.1	15,727	213.5	23,322	316.6	7,366
1999	6,547	52.2	16,784	133.9	24,602	196.2	12,537
2000	7,613	67.9	18,781	167.4	30,378	270.8	11,218
2001	7,118	38.8	19,704	107.4	26,661	145.3	18,344
2002	8,604	39.0	23,560	106.7	31,045	140.7	22,072
2003	9,628	42.6	27,275	120.7	28,951	128.2	22,590
2004	12,276	90.2	32,138	236.1	30,587	224.7	13,613
2005	14,421	91.2	36,178	228.7	31,926	201.8	15,817
2006	15,797	74.1	38,549	180.8	35,501	166.5	21,319
2007	18,286	66.7	46,231	168.6	36,155	131.8	27,425
2008	17,084	115.2	42,587	287.1	31,199	210.4	14,832

Source: Taiwan Customs Statistics.

Note: * represents the percentage as of Taiwan's total trade balance.

Table 4 Taiwan's Direct Investment in Mainland China

Unit: USD million; %

Period	Approved by Taiwan's Ministry of Economic Affairs			Official Data from Mainland China				
	Cases	Amount	Average Amount	Projects	Contracted Amount	Average Amount	Realized Amount	Realization Ratio
1991-1992	501	421	0.84	9,807	8,254	0.84	1,894	22.95
					(Include data before 1991)			
1993*	9,329	3,168	0.34	10,948	9,965	0.91	3,139	31.50
1994	934	962	1.03	6,247	5,395	0.86	3,391	62.86
1995	490	1,093	2.23	4,847	5,849	1.21	3,162	54.05
1996	383	1,229	3.21	3,184	5,141	1.61	3,475	67.59
1997*	8,725	4,334	0.50	3,014	2,815	0.93	3,289	116.87
1998*	1,284	2,035	1.58	2,970	2,982	1.00	2,915	97.77
1999	488	1,253	2.57	2,499	3,374	1.35	2,599	77.01
2000	840	2,607	3.10	3,108	4,042	1.30	2,296	56.81
2001	1,186	2,784	2.35	4,214	6,914	1.64	2,980	43.10
2002*	3,116	6,723	2.16	4,853	6,741	1.39	3,971	58.90
2003*	3,875	7,699	1.99	4,495	8,558	1.90	3,377	39.46
2004	2,004	6,941	3.46	4,002	9,306	2.33	3,117	33.50
2005	1,297	6,007	4.63	3,907	10,358	2.65	2,152	20.77
2006	1,090	7,642	7.01	3,752	-	-	2,136	-
2007	996	9,971	10.01	3,299	-	-	1,774	-
Accumulated to 2007	36,538*	64,869*	1.78	75,146	-	-	45,667	-
2008	643	10,691	16.63	2,360	-	-	1,899	-
(%)**	-51.61	-1.28	-	-28.46	-	-	7.01	-
Accumulated to Dec. 2008	37,181*	75,560.46*	2.03	77,506	-	-	47,566	-

Source: 1.Investment Commission, Ministry of Economic Affairs, Taiwan.
2. Ministry of Commerce, PRC.

Note: 1.* includes the number of the registration of previously unregistered investments.
2.Growth rate is the year-on-year growth rate.
3.The figures are not added up to the total due to rounding up.
4. **: Rate of change compared to same period of last year

Table 5　Tax equivalents of barriers in services trade and their impact on domestic production costs

Industry / Region	Communication		Financial services		Professional services		
	Output tax (%)		Output tax (%)		Output tax (%)	Export tax (%)	Cost savings(%)
	Domestic firm	Foreign firm	Domestic firm	Foreign firm	Foreign firm	Foreign firm	Domestic firm
Taiwan	0.3	2.4	16.8	11.3	10.7	10.7	6.04
China	2.4	9.8	4.9	27.8	10.4	10.4	2.64[a]

Sources: Dee (2005)，database of FTAB model and the calculation of this study.

Notes：1. It is assumed that the trade barriers of communication and financial services can be measured as equivalent output taxes on both domestic as well as foreign firms. The trade barriers of professional services are measured as equivalent output taxes and export taxes on foreign firms. Domestic firms in professional services industry are assumed that they not only are free from any trade barriers but also enjoy productivity increases in terms of cost savings as well. 2. Superscript “a” indicates that the parameter is assumed to be the same as that of Hong Kong as estimated in Chou et al. (2000).

Table 6 Effect of cross-Strait trade liberalization on exports and imports by region (unit：%)

Scenario / Region	THKFTA		ECFA	
	Exports	Imports	Exports	Imports
Taiwan	-0.6638	0.3611	8.4485	11.9512
U.S.	0.0105	-0.0437	0.0244	-0.0455
China	-0.1064	-0.2011	3.5317	4.6028
Hong Kong	0.6059	0.6184	-0.0824	-0.3591
Japan	-0.0571	0.1000	-0.0649	0.0603
Korea& ASEAN	0.0464	-0.0176	-0.1003	-0.2258
Others	0.0207	0.0013	0.0046	-0.0129

Source: This study.

Table 7 Effect of cross-Strait trade liberalization on domestic investment (unit：US$ million)

Region \ Scenario		THKFTA	ECFA
Taiwan	Gross investment	1,154	3,271
	(%)	(3.92)	(11.27)
China	Gross investment	-63	233
	(%)	(-0.10)	(0.35)
Hong Kong	Gross investment	1,235	-2,002
	(%)	(4.63)	(-6.99)

Source: This study.

Table 8 Effect of cross-Strait trade liberalization on Taiwan's foreign direct investment (unit：US$ million)

Region \ Scenario		THKFTA		ECFA	
		Gross investment	(%)	Gross investment	(%)
Taiwan's FDI outflows by region	U.S.	-7.7	(-4.75)	9.9	(6.42)
	China	-164.1	(-4.39)	359.4	(10.04)
	Hong Kong	-0.2	(-5.97)	0.1	(4.44)
	Japan	-0.1	(-4.42)	0.1	(4.48)
	Korea & ASEAN	-159.2	(-4.38)	192.5	(5.57)
	Others	-33.5	(-4.45)	46.6	(6.54)
	Total	-364.9	(-4.40)	608.6	(7.70)
Taiwan's FDI inflows by region	U.S.	-19	(-2.23)	-3.0	(-0.4)
	China	1	(5.03)	-0.1	(-0.8)
	Hong Kong	17	(6.54)	29.2	(11.7)
	Japan	-13	(-1.45)	97.0	(10.9)
	Korea & ASEAN	-40	(-9.89)	17.0	(4.3)
	Others	-89	(-5.55)	101.2	(6.4)
	Total	-144	(-3.57)	241.3	(6.1)

Source: This study.

Table 9 Effect of cross-Strait trade liberalization on China's foreign direct investment

(unit：US$ million)

Region \ Scenario		THKFTA		ECFA	
		Gross investment	(%)	Gross investment	(%)
China's FDI outflows by region	Taiwan	0.6	(5.03)	-0.1	(-0.80)
	U.S.	0.0	(0.02)	-0.4	(-2.06)
	Hong Kong	-0.5	(-1.41)	-1.6	(-4.20)
	Japan	0.0	(0.08)	-0.1	(-2.86)
	Korea & ASEAN	0.2	(0.16)	-3.6	(-2.52)
	Others	0.1	(0.05)	-5.9	(-2.06)
	Total	0.5	(0.10)	-13.1	(-2.62)
China's FDI inflows by region	Taiwan	-164.1	(-4.39)	359.4	(10.04)
	U.S.	5.9	(0.15)	23.6	(0.59)
	Hong Kong	529.8	(1.94)	-426.6	(-1.53)
	Japan	3.4	(0.12)	16.4	(0.56)
	Korea & ASEAN	0.5	(0.01)	32.2	(0.61)
	Others	4.6	(0.08)	38.0	(0.63)
	Total	380.0	(0.77)	43.1	(0.09)

Source: This study.

Table 10 Effect of cross-Strait trade liberalization on Hong Kong's foreign direct investment (unit：US$ million)

Region \ Scenario		THKFTA		ECFA	
		Gross investment	(%)	Gross investment	(%)
Hong Kong's FDI outflows by region	Taiwan	16.6	6.54	-5.4	-1.91
	U.S.	4.0	1.88	-3.2	-1.49
	Mainland China	529.8	1.94	-426.6	-1.53
	Japan	1.3	1.95	-1.6	-2.31
	Korea & ASEAN	77.5	1.95	-77.1	-1.92
	Others	11.4	1.89	-8.9	-1.45
	Total	640.5	1.98	-522.8	-1.58
Hong Kong's FDI inflows by region	Taiwan	-0.2	-5.97	0.1	4.44
	U.S.	-1.5	-1.42	-1.6	-1.44
	Mainland China	-0.5	-1.41	-1.6	-4.20
	Japan	-2.7	-1.45	-2.7	-1.45
	South Korea & ASEAN	-0.8	-1.54	-0.8	-1.51
	Others	-1.8	-1.49	-1.8	-1.45
	Total	-7.5	-1.48	-8.3	-1.62

Source: This study.

Table 11 Effect of cross-Strait trade liberalization on real GDP by region (unit：%)

Scenario / Region	THKFTA	ECFA
Taiwan	0.5721	0.6116
U.S.	-0.0009	-0.0009
China	0.0007	0.1246
Hong Kong	0.6976	-0.0108
Japan	0.0002	-0.0012
Korea& ASEAN	-0.0054	-0.0162
Others	-0.0015	-0.0017

Source: This study.