Hong Kong's Accession to ACFTA: Will it Benefits ASEAN?

Jamal Othman

Faculty of Economics and Management, National University of Malaysia, Bangi, Malaysia

Email: jortman@ukm.my

[Submitted September 2013, Accepted December 2013]

Abstract. This study was conducted to appraise if it is desirable for ASEAN to consider having Hong Kong as a member of the ongoing ACFTA. The multiple country, Computable General Equilibrium model (GTAP8) was employed to compare the static equilibrium outcomes for selected macroeconomic variables between an ACFTA without Hong Kong and an ACFTA which includes Hong Kong. Hong Kong and China are close trading partners and the latter has also been an important source for most of Hong Kong's re-exports. Further, Hong Kong is one of the most competitive economies in the world which does not impose any protectionist trade measures neither subsidizes any of her exports. One the other hand, many ASEAN member countries still institute high import levies on Hong Kong's major export products. Simulation results show clear efficiency-equity trade-offs. There will be an overall welfare gain to ACFTA existing members in aggregate upon Hong Kong's accession to ACFTA, however, the overall net welfare effect to ASEAN is projected to be negative. While overall welfare and trade effects may benefit ACFTA as a whole, it may not be to the best interest for ASEAN to pursue having Hong Kong to be a full member of ACFTA without considering the resulting equity impacts (welfare and trade). Not every ACFTA member country will gain from Hong Kong's accession to ACFTA. ASEAN countries may seek for "win-win" or at least "win-no lose" solution via active pursuance of non-trade cooperation with Hong Kong given the latter's eventual accession to ACFTA. Given Hong Kong's vibrant financial/capital markets and other services, it might be feasible for ASEAN to formulate conducive policy frameworks which would induce increased flows of quality direct investment from Hong Kong and/or to deliberate on other forms of collaborative partnerships such as technology transfers especially for countries which are projected to be made worse off under an enlarged ACFTA with Hong Kong.

Keywords: Computable General Equilibrium model, macroeconomic variables, protectionist

trade measures (export subsidy, import levy), investment, collaborative

partnership

JEL Codes: C68, E23, F21, F41, F43, H25, L51

Background

Industry and policy talks within the ASEAN community have been rife about the possibility of Hong Kong's accession into the ASEAN-China Free Trade Area (ACFTA). In late 2011, Hong Kong requested formally to join the ACFTA (HK DGTI Press Release, 2012). This study provides a quantitative macro assessment of the economic effects of Hong Kong's accession to ACFTA on ASEAN member countries. It also identifies the aggregate sectors and industries within ASEAN that have the greatest potential to benefit or lose from the inclusion of Hong Kong into ACFTA.

The study employs the multiple country, comparative statics, general equilibrium model (GTAP), which is widely used in the analysis of free trade agreements (FTA). FTAs typically seek to remove policy distortions that affect the free flows of goods and services between the contracting parties with the aims of improving trade and welfare. Partial equilibrium trade models as in most econometric-based studies di`sregard the interactions between markets. Results from such model will only be meaningful if second order effects (due to trade policy changes) are insignificant. However, in reality most markets are inter-related. General equilibrium models such as GTAP have a unique advantage over partial equilibrium models as it takes into account the interaction between all markets/sectors in the entire economy.

This study especially examines the economic effects of removing all bilateral import tariffs and export subsidies/taxes in all ASEAN member countries, China and Hong Kong in light of the proposed membership of Hong Kong in ACFTA.

The GTAP model

The GTAP (The Global Trade Analysis Project) model, developed by the Center for Global Trade Analysis, Purdue University is a multiregional, comparative static, exogenous policy, applied general equilibrium (CGE) model based on neoclassical theories. The model to date has been the most widely used tool for the ex ante analysis of economy-wide trade effects of multilateral or bilateral trade agreement (examples see Siriwardana, 2007 and Jamal et. al, 2013). The GTAP database is also widely used in a number of multi-country CGE models such as MIRAGE.

The demand side of the GTAP model assumes national income is allocated based on constant value shares among three types of final demand - government, private households, and savings, derived using an aggregate Cobb Douglas utility function. The representative household in each region maximizes a non-homothetic constant difference of elasticity expenditure (CDE) function.

Bilateral trade in the model uses the Armington assumption, which distinguishes imports by origins. Production in each country and all sectors assume constant return to scale technology and competitive markets. A Leontief, multilevel production function, represents the production for each sector in each country. It involves value added and intermediate inputs sourced from country I-O tables. A nested CES function models the demands for factors and intermediate inputs. Firms use a mix of domestically produced and imported intermediate goods, in which the optimal mix of both goods is determined given domestic and import prices.

Labor is assumed to be mobile across sectors but not across countries. However, capital is mobile across both sectors and countries. Savings and capital balance is determined endogenously through a fictitious Global Bank. The Global Bank allocates investment across regions such that it equates the change in the expected returns across countries.

In GTAP, the ratio of market price to world price gives the magnitude of trade policies (taxes or subsidies). For instance, in the case of import tax, market prices are higher than CIF price so that the power of the ad valorem tax is greater than one. Likewise, for export subsidy, market price is greater than FOB price. The model is linearized and uses a common global database.

The study does not consider dynamic effects or any technology variant. Therefore, the effects and potential gains from trade liberalization espoused in this study are highly likely to be modest or underestimated.

Limitations of the GTAP model include the constant returns to scale assumption and competitive markets. Some sectors of the economy might exhibit imperfect competition and economies of scale. The Armington assumption does not allow relocation of firms across countries. This assumption also presumes every country has market power and is able to affect its terms of trade. The comparative static feature of the model may also lead to problems in appraising the timing of the FTA. While the GTAP model has a distinct strength in examining the impact of trade policies on merchandise flow, the model is clearly lacking in bilateral FDIs and ownership data. Further, trade in the services sector is viewed from the perspective of balance of payments, not from the "modes of supply" framework as defined by the General Agreement on Trade and Services (GATS). There is also no explicit treatment of public expenditures, short- term investment flows (domestic and foreign), barriers to services trade, as well as non-tariff barriers (NTBs) and technical barriers to trade (TBTs). Given the above limitations, the use of GTAP may well underestimate the true impacts of an FTA.

This study uses the latest GTAP8 database (including tariffs), which carries a snapshot of the 2007 world economy. The database has 118 regions and 57 sectors. The database is formatted as an input-output structure within each country with bilateral international trade values, including the services sector. Details of the GTAP construct and its associated database can be found in Hertel (1997) and Narayanan *et al.* (2012).

Application of the GTAP Model

In recent years, there has been a proliferation of bilateral and regional FTAs. Malaysia and most ASEAN member countries are signatories to a host of FTAs. The most significant of all FTAs is the ACFTA. In the context of general equilibrium analysis, such ongoing trade developments cannot be ignored. Hence, model simulations in this study focused on comparing two states of static, equilibrium outcomes - an implementation of ACFTA which excludes Hong Kong (Baseline Scenario or Scenario 1) and an ACFTA Plus which considers Hong Kong as an additional member (Scenario 2).

Further the 57 GTAP commodities were aggregated into 10 sectors, as presented in Table 1. Changes in selected macroeconomic variables given a move to ACFTA Plus from the baseline were calculated. Positive changes denote Scenario 2 is desirable for the relevant variable and country.

The 118 countries in the model were aggregated into 8 regions namely;

- Hong Kong (Hkg)
- China (China)
- Malaysia (Mys)
- Indonesia (Idn)
- Singapore (Sgp)
- Thailand (Tha)
- Rest of ASEAN (Philippines, Laos, Vietnam, Cambodia) Brunei and Myanmar are not included in the GTAP database
- Rest of the World (ROW)

Table 1 Description of the complete composition of specific commodities for each aggregated sector

	Abbreviation of Sectors	Description
1.	GrainsCrops	Grains and Crops
2.	MeatLstk	Livestock and Meat Products
3.	Extraction	Mining and Extraction
4.	ProcFood	Processed Food
<i>5.</i>	TextWapp	Textiles and Wearing Apparel
6.	LightMnfc	Light Manufacturing
7.	HeavyMnfc	Heavy Manufacturing
8.	Util_Cons	Utilities and Construction
9.	TransComm	Transportation and Communication
10.	OthServices	Other Services

Model Simulations

Simulation of Scenario 1 (Baseline) captures the long-run general equilibrium impact of the ongoing ACFTA relative to the 2007 scenario. Under this scenario, all ASEAN member countries and China are active participating members. ACFTA was supposed to abolish near all intra-ASEAN and China trade tariffs and subsidies by 2015. Scenario 2 attempts to model the impact of Hong Kong's accession to ACFTA relative to the 2007 scenario.

Table 2 Bilateral Exports (USD Millions) – 2007

							Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
Hkg	0	42718	1039	726	5925	1597	1244	90054	143304
China	31380	0	17714	13528	15645	13999	18999	1111542	1222806
Mys	3082	28416	0	4263	14323	8690	4434	132312	195519
Idn	1494	11185	5469	0	5182	3724	3430	98235	128720
Sgp	10534	20634	21314	15938	0	7520	7139	122274	205352
Tha Other	2858	22687	8225	5034	4062	0	7724	125955	176543
ASEAN	1954	26199	4770	1767	4302	3132	1578	83718	127420
ROW	78806	789185	84484	60912	129685	104491	80288	11251674	12579525
Total	130108	941024	143014	102168	179125	143153	124835	13015763	14779190

Source: GTAP8 Database

The results for the above simulations represent two different equilibrium outcomes or statics relative to the same 2007 baseline. Hence to identify the impact of Hong Kong's accession to ACFTA, the two outcomes will need to be compared. Positive differences in the value of any variable which favors Scenario 2 suggest there is an improvement for the said variable and the respective country with the inclusion of Hong Kong in ACFTA.

Each scenario involves a 100 percent removal of all trade tariffs and subsidies by the participating countries including sensitive product items. This

helps the analyst gauge the potential maximum impacts of free merchandise and services trade within the trade grouping subject to the capability of the GTAP model.

Baseline Data

This section describes the baseline trade and tariff data. The focus is on Hong Kong.

Bilateral Exports

Table 2 depicts the bilateral exports within the countries that were modeled for the given baseline year (2007). It shows Hong Kong's exports to China was largest at 30 percent, followed by Singapore (4 percent). Hong Kong's exports to all ASEAN (excluding Brunei and Myanmar) stood at 7 percent only. Of all export destinations, Hong Kong's exports to the ROW was largest at 63 percent.

The same pattern showing strong Hong Kong-China trade relations can be observed for Hong Kong's imports. Hong Kong's composition of imports from ASEAN at 15 percent was slightly higher than her exports.

Composition of Trade

Table 3 and 4, respectively show the composition of Hong Kong's exports and imports for the base year. Hong Kong's major exports to her main trading partner (China) were composed of services good - Transportation and Communication, followed by Heavy Manufacturing, and Textiles and Wearing Apparel. These goods and services constituted 89 percent of her exports to China.

Hong Kong's major exports to her second major trading partner (Singapore) comprised mainly services goods. The major exports of Hong Kong to most ASEAN countries comprised Services goods and Heavy Manufacturing. For other ASEAN markets, Processed Food was also an important export commodity for Hong Kong.

Table 3 Composition of Hong Kong's Exports (USD Millions, 2007)

							Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	0	5	0	0	1	0	0	5	10
MeatLstk	0	23	0	0	3	0	0	21	47
Extraction	0	12	0	0	1	0	0	6	19
ProcFood	0	207	5	3	28	2	215	263	723
TextWapp	0	5956	20	30	80	23	52	4859	11020
LightMnfc	0	1913	17	24	96	46	65	2159	4319
HeavyMnfc	0	9876	237	25	442	373	195	8610	19758
Util_Cons	0	195	7	4	4	12	3	547	772
TransComm	0	22352	522	430	2687	801	595	46949	74336
OthServices	0	2180	230	211	2585	340	119	26634	32299
Total	0	42718	1039	726	5925	1597	1244	90054	143304

Source: GTAP8 Database

Table 4 Composition of Hong Kong's Imports (2007, USD Millions)

			88				Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	0	240	24	10	9	310	76	1186	1854
MeatLstk	0	457	6	119	6	59	51	2261	2958
Extraction	0	139	15	626	2	34	37	1017	1870
ProcFood	0	689	260	97	141	137	109	2405	3838
TextWapp	0	5788	54	91	37	96	93	3526	9685
LightMnfc	0	3521	109	110	270	172	41	8487	12710
HeavyMnfc	0	12156	2270	318	6450	1634	1354	37539	61722
Util_Cons	0	665	43	6	2	8	14	995	1731
ransComm	0	4357	197	93	1220	322	113	10881	17184
thServices	0	3368	104	26	2396	85	67	10509	16555
Total	0	31380	3082	1494	10534	2858	1954	78806	130108

Source: GTAP8 Database

Hong Kong's major imports from China were Textiles and Wearing Apparel, Light Manufacturing, Heavy Manufacturing, and Services goods. The major goods imported from ASEAN were Heavy Manufacturing. Hong Kong also imported substantial Processed Food from Malaysia and services goods from Singapore. Owing to the prominence of Heavy Manufacturing sector in both Hong Kong's exports and imports it will thus be important to have a clearer sense of the composition of goods carried by the category.

Following the GTAP classification as outlined in the GTAP8 Database, the Heavy Manufacturing sector in this study encompasses the following products;

- Manufacture of coke oven products
- Manufacture of refined petroleum products
- Processing of nuclear fuel
- Manufacture of basic chemicals
- Manufacture of other chemical products
- Manufacture of rubber and plastic products
- Manufacture of basic precious and non-ferrous metals
- Casting of non-ferrous metals
- Manufacture of office, accounting and computing machinery
- Manufacture of radio, television and communication equipment and apparatus
- Manufacture of machinery and equipment n.e.c.
- Manufacture of electrical machinery and apparatus n.e.c.
- Manufacture of medical, precision and optical instruments, watches and clocks
- Manufacture of other non-metallic minerals products
- Manufacture of basic iron and steel
- Casting of iron and steel

Baseline Tariffs

Hong Kong being one of the most competitive economies in the world does not impose any import tariffs neither provides export subsidies to any of her export products. She is virtually a free trader in the world market place.

Singapore is the only ASEAN member country which does not impose any import tariffs for intra ACFTA trade.

All other ASEAN countries still exhibit substantial import tariffs for some of the goods in the 2007 base year despite the active implementation of AFTA thus far. Tables A3 – A6 in the appendices show the import tariff levels for China, Malaysia, Indonesia, Thailand and other ASEAN. Figures highlighted in red are tariff levels which are above 10 percent. The tariff rates were calculated as trade weighted average of diasaggregate tariffs. The totals simply denote the order of relative protection across the aggregate sectors and origin of goods.

Table 5 below summarizes the major tariffs (above 10 percent) imposed by the various source countries (rows). The countries listed in the cells refer to the origin of the goods. Note again Hong Kong and Singapore do not levy any import tariffs.

The summary shows importation of Processed Food and Textiles and Wearing Apparels by 2007 are still subject to substantial protection by all countries. The next protected goods are Grain Crops and Light Manufacturing.

Hong Kong's exports of Light Manufacturing, Processed Food and Textiles and Wearing Apparel faced substantial duties in Thailand and other ASEAN countries. Malaysia also imposed heavy import duties on Hong Kong's Processed Food and Textiles and Wearing Apparel. Thus by intuition one may correctly judge that Hong Kong's exports of the relevant goods would stand to expand more upon removals of the tariff measures by the importing countries.

Table 5 Summary of Major Protected Goods by Source

	China	Malaysia	Indonesia	Thailand	Other
	Cillia	(Mys)	(Idn)	(Tha)	ASEAN
GrainsCrops	Hkg, Idn, Sgp, Tha	Sgp, Thai, Other ASEAN		Mys, Idn	Sgp, Thai, Other ASEAN
MeatLstk				Idn	China, Sgp, Tha
Extraction					
ProcFood	Idn, Sgp, Tha	Hkg, China, Sgp	Mys, Sgp, Tha	Hkg, China, Mys	Hkg, Mys, Sgp
TextWapp	Sgp	Hkg, China	Hkg, Sgp	Hkg, Mys	Hkg, China, Sgp
LightMnfc		Sgp	Sgp	Hkg, China, Mys, Idn	Hkg, China, Sgp
HeavyMnfc					
Util_Cons					
TransComm					
OthServices					

Export Subsidies

All the CAFTA member countries with the exception of China do not provide export subsidies. Table 6 depicts the subsidy levels for exports from China to the various destinations. Most of the subsidies albeit at low levels (about 4 percent) were concentrated on Textiles and Wearing Apparels, Light Manufacturing, Extraction, and Heavy Manufacturing.

Table 6 China Export Subsidies (ad valorem), 2007

			-				Other		
-	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	0	0	0	0	0	0	0	0	0
MeatLstk	0	0	0	0	0	0	0	0	0
Extraction	-3	0	-5	-10	-10	-9	-7	-6	-51
ProcFood	0	0	0	0	0	0	0	0	0
TextWapp	-4	0	-4	-4	-4	-4	-4	-15	-38
LightMnfc	-4	0	-4	-4	-4	-4	-4	-4	-26
HeavyMnfc	-3	0	-3	-4	-3	-4	-4	-3	-25
Util_Cons	0	0	0	0	0	0	0	0	0
TransComm	0	0	0	0	0	0	0	0	0
OthServices	0	0	0	0	0	0	0	0	0
Total	-14	0	-17	-22	-21	-21	-18	-28	-140

Findings

This section presents the results of model simulations on Hong Kong's possible accession to ACFTA as compared to the baseline scenario. Recall the baseline is an ACFTA in which ASEAN member countries and China continue to levy the prevailing 2007 tariffs on Hong Kong's products.

The results focus on percentage changes for selected macroeconomic variables of interest. A positive change denotes the variable of interest is made better off for the relevant country following the inclusion of Hong Kong into ACFTA.

It is important to note that for both simulations, the base trade data including tariff rates refer to the world economy in 2007. This is the most current dataset of the GTAP model. While the trade and tariff rates are rather old, we presume it would still be relevant to reflect the current policy and trade context in this study, as the major changes in tariff levels prior to 2007 had been largely incorporated in the database. We also presumed all other preexisting FTAs or bilateral/multilateral preferential arrangements which may be implemented by the individual ASEAN member countries including China, Hong Kong and Rest of the World have not made substantial inroads in terms of changing the course of trade flows such that it becomes incoherent with the base structure (internal consistency) of the 2007 database. Most importantly, the data limitation in the general equilibrium context will not invalidate the outcome of the simulation as the focus of GTAP is rather on percentage changes or order of magnitude, rather than fine tune trade or macroeconomic figures.

Impact on Welfare

National welfare impact is one of the key criteria to determine the desirability of FTAs or any regional trading arrangements. In GTAP, welfare impact is measured by the Equivalent Variation (EV) criterion. In a nutshell it measures how much income is needed to compensate the relevant sectors such that they will be willing to forego whatever benefits they were supposed to receive under an ACFTA Plus arrangement which includes Hong Kong should such change in trade regime did not take place.

The change in EV given Hong Kong's membership in ACFTA is shown in Table 7. Results indicate Hong Kong's accession to ACFTA may lead to increases in overall global welfare (World Total) as well as for ACFTA members and Hong Kong (ACFTA + HK). This is consistent with trade theory which asserts that freer trade would improve joint or global welfare. However, not every country will enjoy a welfare gain. China, Malaysia, Indonesia and Singapore are projected to be worse off, while Hong Kong may realize a whopping welfare gain of USD1.7 billion. Thailand and other ASEAN countries (Lao, Philippines, Cambodia and Vietnam) can also expect to see some welfare improvements, albeit marginally. Further, the overall welfare effect to the entire ASEAN as shown in the table is projected to be negative (last row of Table 7).

Hkg	1702.452
China	-638.966
Mys	-39.7207
Idn	-22.1606
Sgp	-60.3171
Tha	63.1516
Other_ASEAN	43.2503
ROW	-1018 72

28.97

1047.69

-15.796

Table 7 Change in EV (USD Millions)

a) Composition of Welfare Changes

World Total

ACFTA + HK

ASEAN Only

It is important to identify what causes the welfare change. The most important determinants in EV are allocative efficiency and terms of trade. Allocative efficiency refers to changes in the allocation of inputs to more competitive, productive sectors as a result of removals of protective policies such as trade tariffs and export subsidies. Terms of trade (ToT) refers to changes in import and export prices favoring a given country following changes in trade policies. Table 8 depicts the change in EV for the two major determinants due to Hong Kong's accession to ACFTA.

HK has been a free trader economy. This implies existing resource allocation is already efficient, hence little or no allocation efficiency improvement will be

expected. The negative allocative efficiency figures for the said countries denote projected resource allocation efficiency improvements under an extended ACFTA with HK will be lower relative to the baseline (ACFTA without HK as a party). China, Thailand and other ASEAN countries demonstrate positive changes in allocative efficiency.

For ToT, it is very clear Hong Kong is the only country which stands to benefit pronouncedly from changes in trade prices following her membership with ACFTA. Under the baseline scenario all member countries are free traders with each other while imports of Hong Kong's goods continue to be subject to non-ACFTA tariff regime. Thus, given Hong Kong's accession to ACFTA, the country would benefit markedly via more favorable export prices. All other countries including Malaysia are predicted to experience negative changes in ToT. It signifies the ToT under an extended ACFTA for the said countries is lower than that in the baseline scenario.

Table 8 Change in EV Composition (USD Million)

	Alloc_eff	ToT
Hkg	0	1754
China	13	-575
Mys	-2	-46
Idn	-1	-26
Sgp	-2	-67
Tha	93	-62
Other_ASEAN	144	-97
ROW	-212	-885

b) Terms of Trade Effects by Sectors

Table 9 Sectors in ToT Change (USD millions)

Tubic > Sector			(00-		-)		Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	-2	7	0	0	1	-3	-6	2	-1
MeatLstk	0	-1	0	0	0	-1	0	-2	-3
Extraction	8	15	0	0	1	1	-2	-7	13
ProcFood	6	6	-7	-2	0	-1	-19	13	-6
TextWapp	293	-201	-2	-4	-1	-1	-13	-50	21
LightMnfc	175	-91	-5	-2	-1	-37	-4	-67	-31
HeavyMnfc	585	-152	-21	-10	-15	-16	-40	-199	132
Util_Cons	2	-1	-1	0	-1	0	0	-4	-5
TransComm	481	-143	-7	-5	-25	-5	-10	-370	-82
OthServices	208	-15	-3	-2	-27	-2	-2	-201	-44
Total	1755	-575	-46	-26	-67	-62	-98	-885	-4

It will be useful to know what sectors that will gain in terms of ToT especially for Hong Kong. This is shown in Table 9. The top gainers for Hong Kong are Heavy Manufacturing, Transportation and Communication services, Textiles and Wearing Apparels, Other Services, and Light Manufacturing. On the other hand, China may see substantial losses in ToT for the same category of goods and services. Singapore is also predicted to lose substantial ToT in Services trade as a consequence of Hong Kong's membership in ACFTA.

Impact on GDP

In appraising the impacts of FTAs, the GDP variable may stir a lot of interest among the various audiences, although theoretically this isn't the most important variable that warrants strong scrutiny. Indeed the EV criterion is more important than GDP. Nevertheless, we appraised the impacts on GDP and the results depicted in Table 10.

The impact of Hong Kong's membership in ACFTA on GDP of countries seems to be insignificant. Other ASEAN countries in aggregate are projected to see the largest GDP gain of 0.06 percent, followed by Thailand. The GDP change nevertheless is less than 0.1 percent.

Table 10 Change in GDP (p	percent)
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Hkg	-0.0002
China	0.0003
Mys	-0.0004
Idn	-0.0001
Sgp	-0.0005
Tha	0.0423
Other_ASEAN	0.0664
ROW	-0.0002

Impact on Output

 Table 11 Change in Output (Percent)

		•					Other	
·	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	-0.379	-0.022	-0.066	-0.009	-0.109	-0.034	-0.084	-0.005
MeatLstk	-0.058	-0.014	0.021	0.009	0.057	0.01	0.102	0
Extraction	0.359	-0.021	0.01	0.02	0.012	-0.011	0.011	0.001
ProcFood	15.711	-0.053	-0.234	-0.077	-0.936	-0.296	-1.193	-0.015
TextWapp	-0.597	0.194	-0.011	0.06	-0.286	-0.076	0.315	-0.017
LightMnfc	5.275	-0.022	-0.08	-0.055	-0.132	0.004	-0.127	-0.008
HeavyMnfc	2.713	0.009	0.02	0.039	-0.094	0.01	0.257	-0.007
Util_Cons	0.901	0.018	0.001	-0.008	-0.047	0.109	0.021	-0.005
TransComm	-0.516	0.013	0.02	0.005	0.057	0.026	0.079	0.007
OthServices	-0.992	-0.017	0.01	0.001	0.073	-0.003	0.013	0.001
CGDS	1.391	0.025	-0.021	-0.01	-0.07	0.19	0.014	-0.008

Stakeholders in various economic sectors will be keened to know the impacts of Hong Kong inclusion in ACFTA on outputs or value adding activities within each sector. Our simulation results are presented in Table 11. Very unambiguously Hong Kong is the only country which is projected to experience substantial gains in most of her value adding activities within her economy. Pronounced increases in output (up to 16 percent) can be expected for Processed Food, Light Manufacturing, and Heavy Manufacturing. Note that the first two sectors have been heavily protected against imports in most ASEAN countries. While domestic production of these sectors is insignificant in terms of Hong Kong's GDP contribution, it is clear that the projected output expansion is largely attributed to export augmentation. Hong Kong will also see significant increases in the formation of capital goods (CGDS). This will be important to generate more productive future economic processes and outputs in the country. Expansion in Transport and Communication services may be largely realized by all other countries including Other ASEAN and ROW. This may imply that Hong Kong has not been more competitive relative to existing ACFTA countries in the provision of such services at least for the existing intra ACFTA trade.

Impact on Trade

Results from model simulations suggest that there will only be very marginal increases in overall regional exports and imports (1.18 percent) following Hong Kong's membership in ACFTA as compared to ACFTA without Hong Kong on board. Greater changes are projected in overall imports rather than exports, leading to worsening of trade balances for all countries. Some sectors will gain while others loses. Declines in Hong Kong's trade are mainly in the services sector suggesting the provision of overall services by other countries are more competitive. On the other hand, the ROW aggregate may see substantial improvements in trade balance. Table 12 illustrates the changes in overall trade balance while Table 13 outlines the changes in trade balance for the individual economic sector.

Table 12 Change in Overall Trade Balance (USD Million)

Hkg	-135
China	-458
Mys	-19
Idn	-2
Sgp	-7
Tha	-91
Other_ASEAN	-22
ROW	745
Total	12

Table 13 shows Hong Kong will gain most in Processed Food, Light Manufacturing and Heavy Manufacturing while losing most in the Services sectors. The exports of Transportation and Communication and other services from all other countries to Hong Kong are projected to increase (see also Tables 14-20). This implies that existing ACFTA member countries may have been utilizing more

of their own service providers rather than Hong Kong for the goods that are projected to see greater trade.

Table 13 Change in Trade Balance for Individual Sectors (USD million)

							Other	
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	-8	-43	12	5	3	6	38	-12
MeatLstk	-32	-20	2	2	1	1	12	32
Extraction	-126	-91	2	4	27	-3	9	148
ProcFood	950	-136	-53	-41	-31	-67	-225	-389
TextWapp	-141	269	-1	6	-2	-12	22	-167
LightMnfc	718	-296	-27	-40	-13	18	-40	-330
HeavyMnfc	608	-179	12	44	-101	-40	123	-506
Util_Cons	-24	-10	2	1	2	-1	1	29
TransComm	-1239	70	21	12	50	9	26	1164
OthServices	-829	-23	12	6	56	-2	11	770
Total	-124	-459	-17	-2	-7	-91	-22	737

It seems Singapore's services sector is more competitive relative to that of Hong Kong as implied by the expanded use of her services as trade expands. Apparently the ROW will instead gain most in the Services sector trade. This suggests that increases in trade by ROW also utilize more of their own services rather than that of HK's. China on the other hand will stand to lose all the sectors gained by Hong Kong. Likewise, China will gain the Textiles and Wearing Apparel sector at the expense of Hong Kong.

a) Trade Augmentation Effects

Countries may wish to know if the inclusion of Hong Kong in ACFTA helps enlarge their trade volume. Our simulations show total trade will increase only marginally - see Table 14. Hong Kong and China will see substantial increases in both exports and imports, followed by other ASEAN aggregate and Thailand. However, Malaysia, Indonesia and Singapore will see a decline in both imports and exports.

Table 14 Change in Bilateral Exports (USD Millions)

			•				Othor		
							Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
Hkg	0	1469	68	30	-101	843	1078	-1591	1795
China	3728	0	-73	-51	-44	-160	-165	-2015	1221
Mys	-46	11	0	2	1	-55	-72	97	-63
Idn	50	-2	-4	0	-1	-51	-45	29	-23
Sgp	-202	20	1	5	0	-15	-36	79	-149
Tha	43	-6	-1	6	-2	0	-71	128	99
Other	27	63	9	5	7	-57	-14	237	278

ROW	-1769	61	-40	-18	8	-307	-364	823	-1606
Total	1832	1616	-41	-21	-131	199	311	-2212	1552

One may also be interested to ascertain if there will be trade creation or divergence effects. This is illustrated in Table 15. For intra ACFTA trade following the accession of Hong Kong, trade creation will be largely seen for Hong Kong (7 percent) followed by China (1.5 percent), and to a much smaller extent by Thailand and other ASEAN countries in aggregate. Symmetrically, Malaysia, Indonesia and Singapore may witness a slight divergence of trade from ASEAN to the rest of the world markets. Overall trade within ACFTA will increase by 1.18 percent while with the ROW may decline marginally by 0.18 percent.

Table 15 Changes in Trade across ACFTA and ROW

	ACFTA Trade	Trade With ROW
	(percentage change)	(Percentage Change)
Hkg	6.747	-1.983
China	1.465	-0.104
Mys	-0.114	0.027
Idn	-0.061	0.007
Sgp	-0.247	0.035
Tha	0.399	-0.082
Other_ASEAN	0.622	-0.083
TOTAL	1.187	-0.176

b) Change in Exports by Country Sectors

Tables 14-22 depict the details of expected changes in exports by sectors in each reporting country. As expected, China's gain in exports will largely be in the Hong Kong's market (Table 16). Hong Kong can expect to see very pronounced increases in non-services sector exports to all destinations with the exception of Singapore (Table 17). Her exports of Light Manufacturing products to Thailand are poised to expand by more than 1000 percent. Further, her exports of Processed Food to other ASEAN countries may also increase by more than 400 percent.

Indonesia will make some gains in the exports of Extraction and Heavy Manufacturing goods to Hong Kong (Table 18). Malaysian exports of Light Manufacturing products to Hong Kong may increase by 25 percent. It is also interesting to note that Singapore may likely see increases in her Services sector exports to all regions (Table 21).

Some Notes on Hong Kong's Re-Exports

Hong Kong's trade with ASEAN and the world has long been characterized by its high level of re-exports particularly goods originating from China. For instance, in 2010, Hong Kong's total exports and re-exports to ASEAN for the year were respectively, HK\$189 billion and HK\$181 billion (96 percent).

Theoretically, from the counterfactual viewpoint, if a free trader country's exports had been performing well despite the substantial import barriers against

her products in the major importing countries, then upon removals of such barriers (no new barriers assumed), her export performance will naturally be made enhanced. Such is the case of Hong Kong where substantial tariffs are being levied on her major export products in ASEAN markets. Furthermore, Hong Kong has also benefited from low ASEAN tariffs (hence lower production costs) given China's participation in ACFTA such that she has been able to sustain her transhipments and re-exports of Chinese goods to ASEAN markets. Note goods transhipped from and to ACFTA member countries are entitled to ACFTA privileges.

The GTAP trade data is net of re-exports for Hong Kong as well as Singapore. Simulations have shown Hong Kong's exports of national origin to ASEAN markets will benefit substantially. Re-exports of Mainland origin goods to ASEAN would likely expand if Hong Kong becomes a party to ACFTA. However, re-exports of ASEAN origin goods to Mainland would at best be maintained, as Hong Kong has long been a free trader, neither do any ASEAN countries imposes any export tax for Hong Kong bound goods. Any increases are more likely a result of time momentum, not due to the accession of Hong Kong to ACFTA. Further, the expected increases in re-exports of goods from the Mainland to ASEAN inevitably imply increasing bilateral trade deficits for ASEAN. In short, the GTAP simulations outcome and implication in this study may not be altered upon appraisals of Hong Kong's transhipments and re-exports capacity.

Table 16 Change in China's Exports (%)

Table 10 Cha	1180 111 (Jillia 5 E	iiports (70)			Other	
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	0.3	-0.1	-0.5	-0.3	-0.5	-0.5	-0.8	-0.2
MeatLstk	1.0	-0.2	-0.5	-0.4	-0.6	-0.4	-2.2	-0.3
Extraction	39.0	-0.2	-0.5	-0.7	-1.1	-0.8	-0.2	-0.3
ProcFood	1.3	-0.3	-0.8	-0.3	-0.5	-0.7	-13.2	-0.2
TextWapp	17.9	-0.6	-1.2	-0.9	-0.3	-1.2	-1.9	-0.2
LightMnfc	21.4	-0.3	-0.6	-0.6	-0.4	10.0	-1.2	-0.2
HeavyMnfc	22.1	-0.3	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2
Util_Cons	0.5	0.0	-0.2	-0.2	-0.3	-0.1	-0.2	-0.2
TransComm	0.9	0.3	-0.1	-0.2	0.0	-0.1	-0.1	-0.1
OthServices	0.9	0.0	-0.2	-0.2	0.0	-0.1	-0.2	-0.2

Table 17 Change in Hong Kong's Exports (%)

-							Other	
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	-2.2	61.1	-1.7	0.5	-3.2	3.5	24.8	-2.6
MeatLstk	-3.1	42.0	18.3	-4.5	-4.8	25.9	15.4	-4.3
Extraction	-11.3	8.1	-12.0	-12.7	-13.0	63.1	83.0	-12.1
ProcFood	-1.1	32.7	87.7	27.5	-2.3	211.4	434.0	-2.4
TextWapp	-12.1	3.8	101.2	76.1	-2.1	82.9	141.0	-2.1
LightMnfc	-5.8	11.8	53.5	30.9	-2.5	1758.0	68.9	-2.3
HeavyMnfc	-6.2	11.8	19.2	40.2	-2.4	8.6	16.1	-2.4

Util_Cons	-1.2	-1.8	-2.0	-2.1	-2.1	-2.0	-2.1	-2.0
TransComm	-1.1	-1.7	-2.2	-2.2	-2.0	-2.1	-2.2	-2.1
OthServices	-1.6	-2.6	-2.8	-2.8	-2.6	-2.7	-2.9	-2.7

Table 18 Change in Indonesia's Exports (%)

			-	, ,			Other	
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	0.7	0.4	-0.2	0.1	-0.2	-0.2	-0.5	0.2
MeatLstk	1.4	0.5	0.0	0.1	-0.1	0.7	-0.7	0.2
Extraction	6.7	0.0	-0.1	0.0	-0.2	-0.1	0.1	-0.1
ProcFood	1.5	-0.1	-0.2	0.0	-0.3	-0.3	-11.5	0.1
TextWapp	-4.9	-0.3	-0.2	-0.1	0.2	-0.3	-0.2	0.2
LightMnfc	1.4	0.0	0.0	0.0	0.0	-8.6	-0.2	0.1
HeavyMnfc	4.7	0.1	0.0	0.1	0.0	0.1	0.1	0.1
Util_Cons	0.8	0.2	0.0	0.0	0.0	0.2	0.1	0.1
TransComm	1.1	0.6	0.1	0.1	0.3	0.2	0.1	0.1
OthServices	1.2	0.2	0.1	0.1	0.3	0.1	0.1	0.1

Table 19 Change in Malaysia's Exports (%)

							Other	
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	1.0	1.0	0.3	0.4	0.2	1.9	-0.1	0.6
MeatLstk	1.9	0.9	0.5	0.5	0.4	8.0	-0.2	0.6
Extraction	1.9	0.1	0.0	0.1	-0.1	0.1	0.3	0.0
ProcFood	1.7	0.1	0.0	0.2	-0.1	-0.2	-14.2	0.2
TextWapp	-10.2	-0.2	-0.2	-0.1	0.3	-0.4	-0.1	0.3
LightMnfc	25.0	0.1	0.0	-0.1	0.0	-7.4	-0.2	0.1
HeavyMnfc	-3.0	0.1	0.0	0.1	0.0	0.1	0.1	0.1
Util_Cons	8.0	0.2	0.0	0.0	0.0	0.2	0.1	0.1
TransComm	1.1	0.6	0.1	0.1	0.2	0.2	0.1	0.1
OthServices	1.2	0.2	0.1	0.1	0.2	0.1	0.0	0.1

Table 20 Change in Other ASEAN's Exports (%)

							Other	
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	1.0	0.6	0.5	0.5	0.2	1.0	-0.6	0.5
MeatLstk	2.6	2.1	1.3	1.4	1.3	2.5	1.1	1.4
Extraction	2.4	0.3	0.3	0.3	0.1	0.2	0.3	0.2
ProcFood	2.5	0.9	8.0	0.9	0.7	2.2	-11.2	1.0
TextWapp	-8.7	0.1	-0.1	0.1	0.5	-0.1	0.0	0.6
LightMnfc	0.0	0.2	0.0	0.1	0.1	-12.5	-0.1	0.2
HeavyMnfc	3.1	0.3	0.2	0.3	0.2	0.3	0.3	0.3

Util_Cons	8.0	0.3	0.1	0.1	0.1	0.2	0.1	0.1	
TransComm	1.3	0.7	0.3	0.3	0.4	0.4	0.3	0.3	
OthServices	1.1	0.3	0.1	0.1	0.3	0.2	0.1	0.1	

Table 21 Change in Singapore's Exports (%)

							Other	
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW
GrainsCrops	0.7	0.7	-0.2	0.2	0.0	0.1	-0.5	0.2
MeatLstk	1.4	0.5	0.1	0.2	0.0	0.4	-1.8	0.2
Extraction	1.9	0.2	0.0	0.1	0.0	0.1	0.3	0.0
ProcFood	1.5	-0.2	-0.4	0.0	-0.2	-0.3	-28.2	0.1
TextWapp	-9.1	-0.5	-0.4	-0.3	0.1	-1.6	-0.4	0.1
LightMnfc	-3.1	0.1	0.0	0.0	0.1	-7.5	-0.3	0.1
HeavyMnfc	-3.6	0.0	0.0	0.1	0.0	0.1	0.1	0.1
Util_Cons	0.8	0.3	0.1	0.1	0.1	0.2	0.1	0.1
TransComm	1.1	0.5	0.1	0.1	0.2	0.2	0.1	0.1
OthServices	1.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1

Table 22 Change in Thailand's Exports (%)

						Other					
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW			
GrainsCrops	0.6	0.4	-0.6	0.0	-0.2	-0.1	-1.1	0.1			
MeatLstk	1.2	0.1	-0.1	0.0	-0.2	0.0	-1.3	0.0			
Extraction	2.5	0.1	-0.1	0.0	-0.2	0.0	0.1	-0.1			
ProcFood	1.5	-0.2	-0.2	-0.1	-0.3	-0.2	-11.9	0.0			
TextWapp	-5.5	-0.5	-0.3	-0.2	0.0	-0.3	-0.2	0.0			
LightMnfc	2.7	1.0	0.6	0.7	0.7	-2.4	0.5	0.7			
HeavyMnfc	3.3	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0			
Util_Cons	0.7	0.2	0.0	0.0	0.0	0.1	0.0	0.0			
TransComm	1.0	0.4	0.0	0.0	0.1	0.1	0.0	0.0			
OthServices	1.0	0.1	0.0	0.0	0.1	0.0	-0.1	0.0			

Summary and Recommendations

This study was conducted to appraise if it is desirable for ASEAN to consider having Hong Kong as a full-fledge member of the ongoing ACFTA. The latest GTAP 8 model was employed to simulate and compare the static, general equilibrium outcomes for selected macroeconomic variables between an ACFTA without Hong Kong (baseline scenario) and an ACFTA with Hong Kong included.

Results suggest that while overall welfare to ACFTA and Hong Kong may increase as a result of Hong Kong's accession to ACFTA, not every county will enjoy a welfare gain. Hong Kong would gain most, followed marginally by Thailand and other ASEAN member countries in aggregate (Vietnam, Laos and Cambodia). However, the welfare of all other countries - Malaysia, Indonesia and Singapore are

very likely to be worse off. Much of Hong Kong's welfare gains are from improvement in Terms of Trade.

Hong Kong will also see expansion in many of her sectoral value added. Large intra ACFTA trade expansion will also be realized by both Hong Kong and China. Moreover, the impact of Hong Kong's ACFTA membership on the participating countries' GDP will be very minute.

On the basis of welfare and trade expansion effects, Hong Kong is likely to benefit most from ACFTA membership. China may also benefit substantially, largely from trade augmentation effects. However, many ASEAN countries, namely Malaysia, Indonesia and Singapore are predicted to endure welfare losses and trade reductions. Indeed, there will be no positive welfare gains to ASEAN as a whole. Having this in consideration, it may not be to the best interest of ASEAN to pursue having Hong Kong as a full member of ACFTA without considering the resulting equity impacts. This conclusion may not at all be counter intuitive given the fact that Hong Kong has long demonstrated strong competitiveness and resiliency in the regional and global economy while her ASEAN neighbors still imposed considerable trade protectionist measures on Hong Kong's export products in the 2007 base year.

ASEAN may however benefit from non-trade pursuance with Hong Kong under ACFTA Plus. Given Hong Kong's vibrant financial/capital markets, it might be feasible for ASEAN to develop strategic partnerships or conducive policy frameworks to induce increased flows of quality FDIs from Hong Kong into ASEAN and also to entice her on other forms of cooperation including technology transfers. Such pro investments, non-trade collaborative strategies may lead to sustained, long term mutual benefits for ASEAN and Hong Kong.

Acknowledgement

This Paper was presented at the Malaysia-Indonesia International Conference on Economics, Management and Accounting 2013 (MIICEMA 2013), October 9-10, 2013, organized by Bogor Agricultural University, Bogor, West Java, Indonesia. The author appreciates and acknowledges funding from the Asian Strategy and Leadership Institute (ASLI) for this study undertaken in 2012. The paper draws heavily from the final technical report presented to ASLI.

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ASEAN Journal of Economics, Management and Accounting

Appendices

 Table A1
 Detailed Composition of Sectors

Name	Components (GTAP Codes)
GrainsCrops	Paddy rice; Wheat; Cereal grains nec; Vegetables, fruits
	and nuts; Oil seeds; Sugar cane and beets; Plant-based
	fibers; Crops nec; Processed rice
MeatLstk	Cattle, sheep, goats, horses; Animal products nec; Raw
	milk; Wool, silk-worm, cocoons; Meat: cattle, sheep, goats,
	horses; Meat products nec
Extraction	Forestry; Fishing; Coal; Oil; Gas; Minerals nec
ProcFood	Vegetable oils and fats; Dairy products; Sugar; Food
	products nec; Beverages and tobacco products
TextWapp	Textiles; Wearing apparel
LightMnfc	Leather products; Wood products; Pape products,
	publishing; Metal products; Motor vehicles and parts;
	Transport equipment nec; Manufactures nec
HeavyMnfc	Petroleum, coal products; Chemical, rubber, plastic
	products; Mineral products nec; Ferrous metals; Metals
	nec; Electronic equipment; Machinery and equipment nec
Util_Cons	Electricity; Gas manufacture, distribution; Water
	distribution; Construction
TransComm	Trade (retails); Transport nec; Sea transport; Air
	transport; Communication
OthServices	Financial services nec; Insurance; Business services nec;
	Recreation and other services; Public
	Admin/Defence/Health/Education; Dwellings

 Table A2 China Import Taxes (2007, ad valorem)

			(====				Other		
-	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	11	0	8	9	14	14	2	10	70
MeatLstk	6	0	3	9	8	1	5	17	49
Extraction	2	0	0	1	5	0	1	0	10
ProcFood	8	0	8	11	14	14	6	11	73
TextWapp	1	0	7	8	14	7	7	9	53
LightMnfc	2	0	6	3	5	5	4	9	33
HeavyMnfc	2	0	3	9	3	4	2	14	37
Util_Cons	0	0	0	0	0	0	0	0	0
TransComm	0	0	0	0	0	0	0	0	0
OthServices	0	0	0	0	0	0	0	0	0
Total	31	0	35	51	64	46	28	70	324

 Table A3
 Malaysia Import Taxes

							Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	0	3	0	4	21	27	26	12	93
MeatLstk	3	0	0	0	1	0	0	0	4
Extraction	0	0	0	1	1	0	3	2	7
ProcFood	18	20	0	3	30	3	3	10	89
TextWapp	15	10	0	0	7	0	0	11	43
LightMnfc	8	6	0	2	17	1	1	10	44
HeavyMnfc	3	2	0	1	3	1	0	4	13
Util_Cons	0	0	0	0	0	0	0	0	0
TransComm	0	0	0	0	0	0	0	0	0
OthServices	0	0	0	0	0	0	0	0	0
Total	47	41	0	11	79	32	33	49	292

 Table A4
 Indonesia Import Taxes

Tuble III							Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	1	2	0	0	5	6	7	3	24
MeatLstk	0	2	0	0	3	0	0	3	9
Extraction	0	1	0	0	5	0	0	0	6
ProcFood	7	6	13	0	12	16	3	8	65
TextWapp	10	8	1	0	11	1	2	9	42
LightMnfc	5	6	2	0	16	4	3	8	45
HeavyMnfc	6	3	1	0	3	2	1	3	20
Util_Cons	0	0	0	0	0	0	0	0	0
TransComm	0	0	0	0	0	0	0	0	0
OthServices	0	0	0	0	0	0	0	0	0
Total	28	27	19	0	55	29	18	35	210

Table A5 Thailand Import Taxes

able 115 Than							Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
CrainaCrana	1	6	44	28	9	0	31	11	130
GrainsCrops	1	O	44	20	9	U	31	11	130
MeatLstk	4	2	5	24	10	0	9	8	62
Extraction	5	1	1	1	3	0	0	0	11
ProcFood	34	14	23	9	13	0	34	12	140
TextWapp	11	8	12	7	31	0	10	10	90
LightMnfc	64	14	13	17	17	0	23	21	169
HeavyMnfc	2	4	3	5	9	0	2	5	31
Util_Cons	0	0	0	0	0	0	0	0	0
TransComm	0	0	0	0	0	0	0	0	0
OthServices	0	0	0	0	0	0	0	0	0
Total	121	49	102	91	93	0	110	67	633

Table A6 Other ASEAN Import Taxes

		iii iiipoi					Other		
	Hkg	China	Mys	Idn	Sgp	Tha	ASEAN	ROW	Total
GrainsCrops	7	7	8	6	14	28	46	10	124
MeatLstk	3	10	4	3	20	10	6	14	70
Extraction	7	4	3	3	5	1	1	3	26
ProcFood	53	8	11	5	30	6	7	10	130
TextWapp	20	22	3	3	15	2	3	29	96
LightMnfc	11	14	3	4	14	6	4	13	70
HeavyMnfc	3	5	3	2	4	5	1	4	25
Util_Cons	0	1	0	0	0	3	0	0	4
TransComm	0	0	0	0	0	0	0	0	0
OthServices	0	0	0	0	0	0	0	0	0
Total	103	71	33	26	102	62	67	82	546