

TTIP and TPP: Impact on Bangladesh and India Economy

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Abstract

The aim of this paper is to investigate the potential economic impacts of tariff eliminations under TPP and TTIP on various macro and trade variables of Bangladesh and Pakistan. In this context, a standard computable general equilibrium (CGE) analysis has been adopted by using the Global Trade Analysis Project (GTAP) model and database to explore the aggregate impact as well as sectorial implications. The analysis evinces that under completely integration in terms of tariff elimination under these two mega deal, both Bangladesh and India could face tremendous negative impact on their economy. The analysis also consider that if Bangladesh and India may consider joining to the TPP to minimize the negative economic impact due to arise from these mega deals. Such decision produce positive results that Bangladesh and India could gain significantly in terms of welfare, real GDP as well as exports. This indicates that Bangladesh and India should try to enter into the TPP deal.

Keywords:

TPP, TTIP, India, Bangladesh, GTAP, CGE JEL Classification:F12, F15, F19

Introduction

Trade theory argues that trade liberalization by reducing tariff and non-tariff barriers promotes efficiency, scale economies and trade flows, thereby, promoting economic growth. In spite of liberal economic reforms for trade liberalization in many countries, scholars have identified a variety of country-specific barriers like domestics' regulations, supply side capacity, trade facilitation, tariff and non-tariff barriers, etc. which impede the growth of world trade. In this backdrop, besides multilateral efforts, regional and bilateral efforts facilitate countries to address some of these issues.

The Trans-Pacific Partnership (TPP) negotiations are already taking place involving the U.S. and 11 other countries, which account for about 40 percent of the global economy. The TPP is a proposed trade agreement under negotiation by (as of August 2013) Australia, Brunei, Chile, Canada, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and . The TPP intends to enhance trade and investments among the TPP partner countries, promote

innovation, economic growth and development, and support the creation and retention of jobs.

Recently, the U.S. and the EU reaffirmed their commitment to conclude expeditiously a comprehensive and ambitious Transatlantic Trade and Investment Partnership (TTIP) that already accounts for nearly half of global output (EU 2014). On 13 February 2013, the President of the United States, the President of the European Commission and the President of the European Council made a joint announcement to be effect that the EU and the USA have agreed to launch negotiations on the TTIP with the aim of signing an agreement in 2015. The key issues that are considered here relate to identification of the most important products in the US or the EU imports from South Asia and how vulnerable the products are to trade diversion/preference erosion.

In this context, an effective free trade agreement (FTA) would force the two countries to move out of the present commodity-by-commodity approach in negotiation and allow free market access bilaterally and eliminate all non-tariff barriers within a given timeframe for all commodities except an agreed short negative list.

There are numerous studies using Computable General Equilibrium (CGE) modelling, like Lee and Itakura (2014), Cheong (2013), Rahman and Cheong (2014) Arif et.al (2014), Xin (2014), **Narayanan and Sachin** (2014) and Petri et.al (2011) try quantifying the impact of TPP and TTIP on different regions. Study by Lee and Itakura (2014) used GTAP dynamic model to examine welfare impact of Regional Comprehensive Economic Partnership (RCEP) and TPP on various regions.

Cheong (2013) analyzes the progress on major issues regarding the current TPP negotiations which are being led by the United States, and draws implications for East Asian economic integration. The impact of forming the TPP under three scenarios was estimated using the GDyn, a recursive dynamic computable general equilibrium (CGE) model developed by the Global Trade Analysis Project (GTAP). The three scenarios are TPP9 (nine TPP members), TPP12 (12 members), and TPP12+ China (13 members). The paper argues that the TPP should be promoted for its economic value, not for geopolitical purposes. It should be open to all Asia and Pacific countries, including the People's Republic of China.

Narayanan and Sachin (2014) conducted a comparative analysis of the likely impact of tariff reduction under TPP of Indian economy under different scenarios, by using the standard GTAP model and suggested that there are mixed prospects and no strong reason for India to pursue being part of the TPP.

Arif et.al (2014), examine the impacts of TPP on Turkish economy. By using Global Trade Analysis Project

(GTAP) database and a general equilibrium model, the effects of various scenarios on GDP and exports are studied. Obtained results show that Turkey could face losses on GDP up to 1% if the TPP covers only current twelve countries. Xin (2014) show that most of the macroeconomic indicators are positive like GDP, consumption, real export, import employment for China, US, Japan but for Vietnam, Singapore and Australia & New Zealand it is negative, if China becomes a member of TPP.

Petri et.al (2011) did a quantitative assessment of the Trans-Pacific Partnership and Asia-Pacific integration by using GTAP database. According to this study, TPP and an Asian Track could consolidate the “noodle bowl” of current smaller agreements and provide pathways to a Free Trade Area of the Asia-Pacific (FTAAP). The effects on the world economy would be small initially, but by 2025 the annual welfare gain would rise to \$104 billion on the TPP track, \$303 billion on both tracks and \$862 billion with an FTAAP. The study also mentioned that strong economic incentives would emerge for the USA and China to consolidate the tracks into a region-wide agreement.

Akhtar and Vivian (2014) conclude their paper and envisioned that the TTIP could be the largest FTA in the world in terms of economic size and serve a number of strategic U.S. policy goals. Ham (2013) has explored the logic of TTIP in geopolitical in nature and global normative convergence. He has shown that the TTIP may have a rather unpredictable impact on the future of the EU. Jim Rollo et.al (2014) evaluate some of the potential effects of EU-US TTIP economic integration on the trade in goods of 43 low-income countries and show that most of the low income countries will suffer negative impact due to the mega deal.

The above brief review shows that various aspects of TPP and its impact on different regions have been analyzed. However, not much research has been done to quantify the impact of TPP and TTIP on South Asian economy. It would be interesting to see the impact of TPP and TTIP on South Asianeconomy. If these two sets of trade talks are successfully concluded, most of the South Asian countries may find itself put in a disadvantageous position. The US and the EU is the major trading partner of South Asian Countries including India, Bangladesh, Pakistan, Sri Lanka and Nepal (table 2). Indian Exports to the EU and the USA was US\$ 49 billion and US\$ 42 billion while import from the EU and the USA was US\$ 48 billion and US\$ 23 billion respectively in 2013 (UNCOMTRADE 2014). Bangladesh's exports to the EU and the USA were US\$ 14 billion and US\$ 5 billion respectively which is 80 percent of countries total exports in 2013. The other South Asian countries are similar trend

as well.

With this background, the objective of this study is to make a comparative analysis of likely impact of tariff reduction under TPP and TTIP on various macro and trade variables of Bangladesh and India economy by using GTAP model. The unique contribution of this paper lies in the evaluation of scenarios wherein Bangladesh and India may be involved in the TPP as alternative. This has the potential to provide deep insights to the currently active policy debate on TPP and TTIP for South Asian countries.

The rest of the paper is organized as follows: GTAP methodological caveats are highlighted in Section 2. Section 3 analyses the results of the simulations. The paper ends with a brief concluding remark in Section 4.

Methodology

Before moving into the GTAP methodology, we have a look at the total bilateral trade flows between the regions

involved in this paper (see table 1 and table 2 for details). The top sources of South Asian's imports are EU27, Japan, USA, Canada and Australia, of which the last four are current TPP members. All major South Asian's top export destinations include EU27, USA, Japan and Korea. Therefore, South Asian is closely related to the proposed TPP members and it is important to consider their involvement in this partnership.

Simple average tariff of the EU against the USA is 4.1 per cent and the average US MFN tariff against the EU is 3.5 per cent (Europa 2014). These are not high average tariffs and as such do not suggest a Free Trade Agreement (FTA) would endow major competitive advantage to either the EU or the USA through transatlantic trade. While the average tariff between the USA and EU stands 3-4 percent, non-tariff barriers are extremely high, ranging from 25.5 ~73.3 percent. Therefore, elimination of non-tariff barriers may actually cause more damage to South Asia than elimination of tariffs.

Table 1. Overview of Economies of the TPP and TTIP Countries in 2013

Country	GDP (US\$ Billion)	Exports (US\$ Bill)	Imports (US\$ Bill)	Tariff (Simple Avr MFN)
China	8227	2248	2017	9.6
USA	16244	2195	2743	3.4
Canada	1779	541	576	4.3
EU	16661	7472	7150	5.5
Japan	5961	873	991	4.6
Australia	1532	331	326	2.7
New Zealand	171	51	50	2.0
Chile	270	92	91	6.0
Mexico	1178	387	415	7.8
Brunei	17	11	5	2.5
Singapore	276	551	490	0.2
Malaysia	305	265	230	6.5
Vietnam	155	124	119	9.5
Bangladesh	116.4	26.9	37.4	14.4
India	1858.7	446	571.3	13.7

Source: World Development Indicators (2014) and http://www.wto.org/english/tratop_e/tariffs_e/tariff_data_e.htm

Table 2. Intra-regional Trade among TPP and TTIP countries (US\$ Billion)

	China	USA	Canada	EU	Japan	AZ	BMSV	CM	Bangladesh	India
China		369.06	29.22	371.90	150.13	51.73	127.75	42.07	9.70	51.64
USA	153.39		240.70	260.13	65.14	27.51	60.63	243.74	0.71	22.60
Canada	25.24	345.74		35.70	10.38	2.37	2.67	6.06	0.64	3.01
EU	196.83	382.46	41.98		71.67	48.05	66.45	48.68	2.20	47.62
Japan	162.25	142.15	13.34	75.06		20.45	49	11.39	0.87	10.49
AZ	95.44	10.92	1.47	17.10	33.58		13.72	1.057	0.64	11.51
BMSV	96.14	68.38	4.49	76.05	61.91	33.61		2.78	4.13	19.95
CM	30.95	294.24	27.62	35.23	12.25	3.24	3.60		0.01	7.54
Bangladesh	0.60	5.59	1.16	14.36	0.89	0.49	0.21	0.24		0.53
India	16.42	41.96	2.3	48.87	7.33	2.69	25.71	2.86	5.99	

Note: AZ: Australia and New Zealand, BMSV: Brunei, Malaysia, Singapore and Vietnam
CM: Chile and Mexico

Source: UNCOMTRADE 2014

The GTAP Model for Macroeconomic Analysis

The most common modeling technique for estimating economic impacts of a trade agreement with economy-wide effects involves the computable general equilibrium (CGE) modeling framework of the Global Trade Analysis Project (GTAP). The general equilibrium model is thoroughly documented in Hertel (1997) and in the GTAP database documentation (Dimaranan, 2006). It is a comparative static multi-regional CGE model.

The basic structure of the GTAP database includes: industrial sectors, households, governments, and global sectors across countries. Countries and regions in the world economy are linked together through trade. Prices and quantities are simultaneously determined in both factor markets and commodity markets. The main factors of production are skilled and unskilled labor, capital, natural resources and land.

Producers operate under constant returns to scale, where the technology is described by the Leontief and CES functions. Two broad categories of inputs are identified: intermediate inputs and primary factors of productions. In the model, firms minimize costs of inputs given their level of output and fixed technology. *First*, producers use composite units of intermediate inputs and primary factors in fixed proportions following a Leontief production function. At the second level of the production nest, intermediate input composites are obtained combining imported bundles and domestic goods of the same input-output group. Trade policy can affect the price of traded goods relative to domestically produced goods. As a result, a key relationship for model analysis is the degree of substitution between imported and domestic goods. This key relationship is commonly identified as the Armington elasticity. It is assumed that domestically produced goods and imports are imperfectly substituted. This is modeled using the Armington structure.

Households' behavior in the model is determined from an aggregate utility function. The aggregate utility is modeled using a Cobb-Douglas production function with constant expenditure shares. This utility function includes private consumption, government consumption and savings. Current government expenditure goes into the regional household utility function as a proxy for government provision of public goods and services. Private households' consumption is explained by a constant difference elasticity expenditure function.

Domestic support and trade policy (tariff barriers) are modeled as ad valorem equivalents. These policies have a direct impact on the production and consumption sectors in the model. In equilibrium, all firms have zero real profit, all households are on their budget constraint, and global investment is equal to global savings. Changing

the model's parameters allows one to estimate the impact from a country's/region's original equilibrium position to a new equilibrium position.

The simulation represents what the economy would look like if the policy change or shock had occurred. The difference in the values of the endogenous variables in the baseline and the simulation represents the effect of the policy change. All the policy simulations as well as results reported in the paper, as in other major models of this type, may be thought of as occurring in one-shot over a time-period that is needed for equilibrium to be achieved. This time-period is akin to what is widely thought of by economists as 'medium run', possibly 3-5 years in a go. So the model should be able to foretell the effect on trade and production patterns if the trade policy was changed. Furthermore, based on the change in welfare, the policy-maker would be able to judge whether the country benefited from the change in policy or not.

The GTAP framework has strength because of theoretical rigor, its ability to represent direct and indirect interactions among all sectors of an economy and precise detailed quantitative results. The strength of the multi-country CGE model is that incorporates in an elegant manner, the features of neo-classical general equilibrium and real international trade models in an empirical framework (Thierfelder, et al., 2007). However, this study does not adequately capture the service trade reforms and thus the result may underestimate the potential effect of liberalization where services sector is to be included. It is to be noted that GTAP model has both static and dynamic versions. However, in this paper, static GTAP model is used. Gilbert (2013) mentioned that the static model has disadvantages relative to dynamic techniques, of not describing the time path, i.e. attention in the analysis is concentrated on the end outcome rather than the transition. The model's results may be very sensitive to the assumptions and data used. Almost all CGE exercises include a sensitivity analysis to obtain a range of results based on different assumptions or data.

Data and Country and Sectoral Aggregation

The study makes use of Version 8 of the GTAP database which has been released in 2012. Data on regions and commodities are also aggregated to meet the objectives of this study. Version 8 of the GTAP database covers 57 commodities, 129 regions/countries and 5 factors of production. For the sake of convenience the 129 regions have been aggregated to 17 regions and the 57 commodities have been aggregated into 10 as shown in *Annex 1*. The regions selected include major nine TPP countries (Australia and New Zealand as one country), the EU, five South Asia countries, China, Sub Saha Africa (SSA) and Rest of the World. The study has

simulated three different scenarios including on EU-USA FTA, TPP free trade agreement and a alternative scenario where if South Asian join into the TPP.

Analysis of the Simulation Results: Welfare and Macroeconomic Effects

Based on the model simulations, this section reports the results that show the likely impacts on important macro-

economic variables, economic welfare, industry outputs and exports. We have analyzed four different scenarios. Under *Scenario I*, elimination of all import tariffs by the EU and the USA and their vice versa, under *Scenario II*, all 12 TPP countries eliminates tariff for each other. We have also adopted one alternative scenario if South Asia joins into the TPP.

Table 3. Impact of Tariff Eliminations under TPP (Scenario I)

Country	Welfare Effect (US\$ million)	% Change of Real GDP	ToT	% Change of Exports	% Change of Imports
China	-2115.31	-0.19	-0.15	-0.12	-0.29
USA	100.88	-0.05	0.01	0.48	0.28
EU27	-1575	-0.09	-0.02	0.04	-0.05
Canada	219.58	-0.06	-0.02	0.13	0.13
Mexico	318.32	-0.12	-0.14	0.38	0.36
AustNewz	1177.03	0.76	0.56	0.42	1.31
Japan	5966.24	0.51	0.43	0.77	1.81
Singapore	186.05	0.2	0.09	0.15	0.27
Malaysia	1126.81	0.41	0.09	1.21	2.46
Viet Nam	2201.71	4.74	1.4	4.41	7.82
Bangladesh	-41.46	-0.29	-0.19	-0.05	-0.37
India	-348.47	-0.14	-0.09	0.02	-0.14
SSA	-76.84	-0.09	-0.01	0	-0.09
Rest of World	-2426.32	-0.11	-0.05	-0.02	-0.15
Rest South Asia	-383.77	-0.65	-0.39	0.22	-0.56

Source: Author's simulation of GTAP version 8.

The effects of TPP can be assessed at both the macro-economic and sectoral levels of analysis. The welfare and other macroeconomic effects of the simulations for the countries/regions concerned are presented in *Table 3*.

Under *Scenario I*, if the TPP countries completely eliminate import tariffs each other. Among south Asian countries, Bangladesh and India could also face tremendous pressure in terms of export and welfare. In terms of real GDP, Bangladesh may the biggest suffer, followed by India among the South Asian countries. **Bangladesh** exports are expected to drop by about **0.05** per cent and the welfare loss equals US

\$0.42 billion whereas, **India** exports are expected to increase by about **0.02** per cent and the welfare loss equals US **\$3.49** billion. In addition to **China** would experience a fall in real GDP by 0.2 per cent if the deal becomes realized. However, the biggest welfare gains from this mega FTA could be by Japan followed by the USA and Vietnam. The EU may lose their welfare and real GDP significantly. This mega TPP FTA deal could tremendously negatively affect Bangladesh and India economy and which could be much higher compared to TTIP.

Table 4. Impact of Tariff Eliminations under TPP on Output

	Grains Crops	MeatLstk	Extraction	Proc Food	Text Wapp	Light Mnfc	Heavy Mnfc	Util_ Cons	Trans Comm	Oth Services
China	-0.16	-0.31	0.09	-0.16	-0.07	0.05	0.12	-0.04	0.05	0
USA	1.14	0.59	0.01	0.17	-0.73	-0.14	-0.02	0	0	0
EU27	0.01	-0.2	0.05	-0.04	-0.16	-0.01	0.04	-0.06	0.03	0.01
Canada	1.45	2.67	0.01	-0.04	-1.06	-0.35	-0.12	0.02	0	-0.01
Mexico	0.18	-0.53	0.06	-0.13	-1.2	-0.06	0.04	0.11	0.01	0
AustNewz	1.42	5.16	-0.62	3.6	-1.71	-1.02	-1.28	0.22	-0.13	-0.11
Japan	-4.97	-7.24	-0.28	0	2.82	0.74	-0.07	0.24	0.02	0.01
Singapore	1.27	-0.06	-0.07	5.78	0.62	-0.85	0.39	0.12	-0.12	-0.18
Malaysia	-0.65	1.51	-0.62	0.71	17.89	0.51	0.1	0.51	0.15	-0.68
VietNam	-1.84	-1.32	-2.89	-3.82	39.73	0.98	-7.36	4.16	0.87	-3.58
Bangladesh	0.04	-0.01	0.05	0.05	-0.22	0.29	0.37	-0.09	0.02	0.04
India	-0.01	-0.02	0.08	-0.09	-0.33	0	0.03	-0.05	0	0.04
SSA	-0.06	0.01	0.04	-0.03	-0.23	0.02	0.05	-0.08	0.02	0.01
Rest of World	-0.03	-0.21	0.05	-0.12	-0.28	-0.04	0.04	-0.07	0.02	0.01

Source: Author's simulation of GTAP version 8.

The table 4 shows the sectotal analysis under TPP. It shows that under TPP, South Asian Textiles and Clothing will suffer tremendously and production may fall significantly. **Bangladesh** (0.22%) and **India** (0.33%) could be affected negatively the most among the South Asian. The production in textiles and clothing of Vietnam could be increased about 40%.

Under Scenario II (table 5), if the EU and the USA completely eliminates import tariffs each other, Bangladesh and India would experience a fall in real GDP

and loss welfare but not very significantly compared to TPP. This mega FTA deal could affect negatively almost all part of the world. However, the biggest welfare gain by the USA which could be about US \$ 6.1 billion and the EU would also gain welfare significantly. Chinese exports are expected to drop by about 0.01 per cent and the welfare loss equals US \$ 1.2 billion. China would experience a fall in real GDP by 0.14 per cent if the deal becomes realized.

Table 5. Economic Impact of Tariff Eliminations under TTIP (Scenario II)

Country	Welfare Effect (US\$ million)	% Change of Real GDP	ToT	% Change of Exports	% Change of Imports
China	-1157.06	-0.14	-0.04	-0.01	-0.1
USA	6051.83	0.23	0.26	1	1.07
EU27	1051.82	-0.05	0	0.17	0.16
Canada	-793.99	-0.18	-0.16	-0.04	-0.34
Mexico	-439.22	-0.18	-0.16	-0.01	-0.34
AustNewz	-149.96	-0.11	-0.04	0.05	-0.11
Japan	-587.33	-0.13	-0.06	0.12	-0.13
Singapore	-73.62	-0.1	-0.02	-0.03	-0.09
Malaysia	-68.54	-0.12	-0.03	-0.02	-0.09
Vietnam	-45.78	-0.19	-0.04	-0.04	-0.12
Bangladesh	-19.82	-0.2	-0.08	0.02	-0.17
India	-220.39	-0.11	-0.03	0.01	-0.09
SSA	-157.23	-0.12	-0.03	0.02	-0.11
RestofWorld	-2240.17	-0.12	-0.04	0	-0.1

Source: Author's simulation of GTAP version 8.

The table 6 under TTIP both Bangladesh and India industry may face some difficulties for Textile and Clothing industry. The service sector of the USA and the

EU may gain enormously. The TTIP could also heat Chinese textiles and apparels and service industry

Table 6. Impact of Tariff Eliminations under TTIP on Output

	Grains Crops	MeatLstk	Extraction	Proc Food	Text Wapp	Light Mnfc	Heavy Mnfc	Util Cons	Trans Comm	Oth Services
China	0.01	0	0.02	-0.02	-0.08	0.01	0.01	-0.04	0.01	0
USA	0.06	0.24	-0.14	0.12	-0.42	0.17	-0.04	0.1	-0.01	-0.02
EU27	-0.14	-0.19	-0.04	0.03	0.69	-0.07	0.03	0.01	0.02	0.01
Canada	0.17	0.18	0.04	-0.18	-0.3	0.05	-0.02	-0.15	0	0.02
Mexico	0.11	0.07	0.06	-0.08	-0.54	0.15	0.06	-0.19	0	0.01
AustNewz	0.02	0.03	0	-0.06	-0.03	0.01	0.03	-0.06	0	0.01
Japan	0.07	0.03	0.02	-0.01	-0.02	0.04	0.04	-0.09	0	0
Singapore	0.01	-0.03	-0.01	-0.1	-0.34	-0.04	-0.1	-0.1	0.04	0.06
Malaysia	0	-0.02	0.01	-0.05	-0.33	0.01	-0.04	-0.02	0.01	0.05
VietNam	0.03	0.01	0.04	-0.1	-0.64	-0.01	0.11	-0.07	0.01	0.1
Bangladesh	0.01	0	0.01	-0.02	-0.06	0.06	0.14	-0.07	0.01	0.04
India	-0.01	0	0	-0.02	-0.18	-0.01	-0.02	-0.04	-0.01	0.04
SSA	-0.01	-0.01	0.01	-0.02	-0.09	-0.01	0.01	-0.1	0.01	0.02
RestofWorld	0.01	-0.01	0.01	-0.04	-0.18	-0.01	-0.01	-0.06	0.01	0.02

The table 7 shows the economic impact of TPP if South Asian countries able to join TPP (*under scenario III*). It shows that Bangladesh and India could gain significantly

in terms of welfare, real GDP as well as exports. This indicates that Bangladesh and India should try to enter into the TPP deal.

Table 7. Economic Impact of Tariff Eliminations under TPP including SA (Scenario III)

Country	Welfare Effect (US\$ million)	% Change of Real GDP	ToT	% Change of Exports	% Change of Imports
China	-3936.98	-0.37	-0.23	-0.22	-0.5
USA	1913.24	-0.03	0.07	0.79	0.52
EU27	-2548.74	-0.17	-0.03	0.04	-0.1
Canada	359.7	-0.02	0.02	0.2	0.23
Mexico	479.52	-0.16	-0.16	0.42	0.32
AustNewz	2343.82	1.15	1.02	0.85	2.24
Japan	7104.12	0.63	0.58	0.89	2.1
Singapore	815.97	0.82	0.4	0.46	0.96
Malaysia	1857.25	0.94	0.43	1.43	3.04
Viet Nam	2184.27	4.63	1.38	4.52	7.94
Bangladesh	428.61	2.39	1.51	7.37	8.88
India	4672.5	0.39	0.1	4.25	4.07
SSA	-624.88	-0.31	-0.16	0.02	-0.32
RestofWorld	-6379.23	-0.26	-0.15	-0.05	-0.33

Source: Author's simulation of GTAP version 8.

The sectoral analysis (table 8) shows the positive pictures. The main textiles and clothing sector could increase output for **Bangladesh (6.59%)** and **India (6.11%)** tremendously. However, the agricultural and industrial

sector may reduce production in this regards, adverse effects on agricultural sectors could be more negative if non-tariff measures are taken into consideration

Table 8. Impact of Tariff Eliminations under TTIP on Output

	Grains Crops	MeatLstk	Extraction	Proc Food	Text Wapp	Light Mnfç	Heavy Mnfç	Util_ Cons	Trans Comm	Oth Services
China	-0.16	-0.29	0.1	-0.14	-0.46	0.13	0.15	-0.09	0.09	-0.02
USA	1.26	0.68	-0.08	0.21	-2.33	-0.09	0.06	0	0	0
EU27	0.04	-0.18	-0.13	-0.03	-0.13	-0.03	-0.01	-0.11	0.07	0.02
Canada	4.38	2.85	-0.11	-0.09	-3.54	-0.42	-0.06	0.03	0	-0.02
Mexico	0.25	-0.37	0.13	-0.09	-3.6	0.02	0.05	0.06	0.02	0.02
AustNewz	1.68	3.58	-0.07	2.7	-2.68	-1.41	-0.64	0.34	-0.16	-0.1
Japan	-5.01	-7.31	-0.39	-0.11	2.51	0.87	-0.13	0.25	0.02	0.02
Singapore	1.76	-0.3	-0.11	22.42	2.41	-0.14	0.96	0.48	-0.47	-0.57
Malaysia	-0.02	1.55	-0.11	4.18	17.97	0.58	-0.52	0.43	0.03	-0.72
VietNam	-1.69	-2.26	-2.84	-3.86	38.08	1.18	-6.97	4.24	0.88	-3.65
Bangladesh	-0.6	-0.41	-1.04	-2.49	6.59	-6.67	-7.51	0.92	-0.48	-0.76
India	-0.22	0.09	-0.99	-0.22	6.11	-0.79	-0.39	0.65	0.25	-0.34
SSA	-0.07	0	-0.03	0.03	-0.3	0.18	0.08	-0.2	0.07	0.02
RestofWorld	-0.02	-0.18	-0.02	-0.14	-0.8	-0.01	0.1	-0.12	0.06	0.03

Source: Author's simulation of GTAP version 8.

Conclusion

The CGE analysis show mix results under three different situation for Bangladesh and Indian Economy. Under *Scenario I*, **Bangladesh** exports are expected to drop by about **0.05** per cent and the welfare loss equals US **\$.042** billion whereas, **India** exports are expected to increase by about **0.02** per cent and the welfare loss equals US **\$.083** billion. In addition to **China** would experience a fall in real GDP by 0.2 per cent if the deal becomes realized. Under *scenario II*, Bangladesh and India would also experience a fall in real GDP and loss welfare but not very significantly compared to TPP. This mega FTA deal

could affect negatively almost all part of the world. *Scenario III* shows that Bangladesh and India could gain significantly in terms of welfare, real GDP as well as exports. This indicates that Bangladesh and India should try to enter into the TPP deal.

Limitation of the Study

The model's results may be very sensitive to the assumptions and data used, almost all CGE exercises include a sensitivity analysis to obtain a range of results based on different assumptions or data. A second problem with CGE analysis is the lack of a time dimension. A CGE analysis of an FTA will not provide results on how long it

will take for economies to adjust and reach the new equilibrium. Recent work in CGA modeling has attempted to include some dynamic effects via financial markets, but it is a long way from capturing the dynamic features that are most relevant to FTAs. Moreover, it is difficult to model certain non-tariff barriers to trade, such as sanitary, phytosanitary and technical barriers, or customs issues if these are included in an FTA.

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Annex 1. Regional and Commodity Aggregation of GTAP Database

SL	Aggregated Region	GTAP Region	S L	Aggregated Commodities	GTAP Commodities
1	China	China	1	Grains Crops (9 products)	pdrwhtgrov_fosdc_bpfbo crpcr
2	USA	United States of America	2	Meat Lstk (6 products)	ctloaprmkwolcmtomt
3	EU27	EU 27 Countries	3	Extraction (6 products)	frsfshcoa oil gas omn
4	Canada	Canada	4	ProcFood (5 products)	vol mil persgrofd
5	Mexico	Mexico	5	Text Wapp (2)	texwap
6	AustNewz	Australia and New Zealand	6	LightMnfc (7)	lea lumpppfnpmvhotnomf
7	Japan	Japan	7	HeavyMnfc (7)	p_ccrpnmmi_snfmeleome
8	Singapore	Singapore	8	Util_Cons (4)	elygdtwtrens
9	Malaysia	Malaysia	9	Trans Comm (5)	trdotpwtpatpcmn
10	Viet Nam	Viet Nam	10	Oth Services (6)	ofiisrobsrososgdwe
11	Bangladesh	Bangladesh			
12	India	India			
13	Pakistan	Pakistan			
14	Sri Lanka	Sri Lanka			
15	Nepal	Nepal			
16	SSA	All Sub-Saharan African			
17	Rest of the world	Rest of countries in the World of GTAP Database			

Source: GTAP version 8