Economy wide Impact of CEPA between Canada and India

Kakali Mukhopadhyaya
Department of Agricultural Economics,McGill University, MacDonald Campus
21,111 LakeShore, Ste Anne De Bellevue, Montreal, Québec, Canada

Paul J. Thomassin
Department of Agricultural Economics, McGill University, MacDonald Campus
21,111 LakeShore, Ste Anne De Bellevue, Montreal, Québec, Canada

&
Debesh Chakraborty
Department of Economics, Jadavpur University,
Kolkata, India

Abstract

India has emerged as one of the world's fastest-growing economies. India's rising per capita income, rapidly expanding manufacturing base and services sectors, with renewed focus on infrastructure and natural resources requirements, make it a market of tremendous opportunity. Canada is one of the G8 industrial economies. It has been ranked the 9th most competitive economy in the world, according to the Global Competitiveness Index 2009–10.

Bilateral trade between Canada and India expanded considerably in the past decade. Canada's total merchandise export to India has increased from US$1981 million in 2008 to US$2029 million in 2011. India's exports to Canada also grew by 7.50% CAGR during the same period. Since imports from Canada were larger than exports to Canada, India had a trade deficit vis-à-vis Canada of nearly US$668 million in 2011.

India's leading sectors of exports to Canada in 2008 were chemical products, which accounted for 25.2% of total exports to Canada, followed by textiles and wearing apparel, miscellaneous manufacturing products as well as machinery and equipment. These four categories together made up more than 70.0% of the total Indian merchandise exports to Canada. Products that reported strong import growth in the past ten years included chemical, rubber and plastic products, textiles and apparel, machinery and equipment, as well as miscellaneous manufacturing products. The structure of India's bilateral trade with Canada is different from its overall exports to the rest of the world.

In recent years, both India and Canada have been engaged in the process to enhance bilateral cooperation in a number of areas of mutual priority such as trade and investment; education; science, technology and innovation; environment and energy. In 2009, India and Canada

announced the setting up of a Joint Study Group (JSG) that will explore the possibility of a Comprehensive Economic Partnership Agreement (CEPA) between India and Canada.

In July 2011, Canada and India completed the second round of negotiations toward a Comprehensive Economic Partnership Agreement (CEPA). In the second round, progress was made in the areas of goods, services, origin procedures, temporary entry for business persons, technical barriers to trade, sanitary and phytosanitary measures, and institutional provisions. Prime Ministers from both the countries are committed to conclude CEPA negotiations by 2013. A joint study group has estimated the gains and losses of the proposed CEPA between two countries. The exercise considers the current scenario, not the long run impact.

In this background, the current study estimates the economy wide impact of proposed CEPA between Canada and India for the year 2030. It uses a global CGE Model based on GTAP Database 7. A number of simulation exercises involving shallow and deep integration are conducted focusing on sensitive sectors for both the countries. The findings of the study show that both the economies will benefit from the growth in GDP, export and import from the proposed CEPA at 2030. The study estimates the trade creation and trade diversion effects. The proposed agreement will also improve the welfare of both the countries at 2030. The study concludes by suggesting an in-depth enquiry.

1. Introduction

India has emerged as one of the world's fastest-growing economies. India's rising per capita income, rapidly expanding manufacturing base and services sectors, with renewed focus on infrastructure and natural resources requirements, make it a market of tremendous opportunity. Canada is one of the wealthiest and top ten trading nations in the world. It is a member of the Organization for Economic Cooperation and Development (OECD) and the G8. Canada is endowed with vast natural reserves in potash, uranium, coal, oil and gas, diamonds, forest products, etc. Canada is well-known for its advanced technological base in agriculture, food processing, education, science and technology, innovation, environment, cleaner technologies, etc.

In recent years, India and Canada have been working to enhance bilateral cooperation in a number of areas of mutual importance. In July 2011, Canada and India completed the second round of negotiations toward a Comprehensive Economic Partnership Agreement (CEPA). In the second round, progress was made in the areas of goods, services, origin procedures, temporary entry for business persons, technical barriers to trade, sanitary and phytosanitary measures, and institutional provisions. Prime Ministers from both the countries are committed to conclude CEPA negotiations by 2013.

Bilateral trade between Canada and India expanded considerably in the past decade. The total value of two-way trade was US$3.390 billion in 2011 versus US$958.78 million in 1999. Canada's total merchandise export to India has increased from US$1981 million in 2008 to US$2029 million in 2011. India's exports to Canada also grew by 7.50% CAGR during the same period. Since imports from Canada were larger than exports to Canada, India had a trade deficit vis-à-vis Canada of nearly US$668 million in 2011(GOI, 2012). These figures likely understate the value of trade, as a significant portion of trade between the two countries. Even so, Canada-India trade remains far below potential. India represents less than one per cent of Canada's overall merchandise trade. By contrast, the United States represents more than 70 per cent of Canada's merchandise trade (GOI, 2012).

In terms of Canada's composition of trade, its exports to India are dominated by aircraft and spacecraft, followed by edible vegetables roots and tubers, fertilizer, pulses including dried peas and lentils, pulp and paper products, and machinery and equipment. Together, these accounted for 80 per cent of total merchandise exports from Canada to India in 2011. Other important export sectors include iron and steel, transportation equipment and minerals. As Indian consumption moves up in sophistication, there will be room for robust export growth in knowledge and technology industries (GOI, 2012).

Most of Canada's imports from India consist of organic chemicals, chemical products, textiles and apparel, electrical machinery, miscellaneous manufactured products as well as machinery and equipment, gems and jewelry. These made up 80 per cent of Indian merchandise imports to Canada in 2011. Ferrous and non-ferrous metals, food products and minerals were also important imports (GOI, 2012).

In terms of balance of trade, Canada has always a trade surplus since 2008. To further strengthen its trade ties with India, Canada must better match its products and expertise with the subcontinent's shifting consumption needs. Trading more will also mean trading smarter—plugging products into new value chains as opposed to selling finished goods to India from existing value chains. Canada's commercial services trade with India has expanded over the past several years. Canadian commercial services imports from India have exceeded than its export. Canada's commercial services exports to India, including management services, financial, architectural, engineering and other technical services and miscellaneous business services. Though commercial services represent most of Canada's total services exports worldwide, in India, these amounted to only 17 per cent of the total in 2007, behind transportation, government services and travel. More needs to be done to facilitate and encourage Canadian service providers to pursue opportunities in India. Financial services including insurance, ICT and business services see room for growth in India.

On the investment side, both Canada and India have a long way to go in realizing their potential. Canada's stock of foreign direct investment (FDI) in India was C$492 million in 2010 out of a total stock of Canadian outward FDI of C$49,708 million, or less than one per cent of Canada's total overseas FDI. In comparison, the United States and Europe held C$261 billion and C$159 billion in Canadian FDI, respectively in 2010 (Statistics Canada, 2011). India's direct investments in Canada are limited but have mushroomed over the past two years. Canada is a net importer of FDI from India.

Canadian investments in India are present in energy, infrastructure, banking, insurance, oil and gas, transportation sectors, as also in engineering and consultancy services. The Indian economy has attracted many Canadian companies including SNC Lavalin, Bombardier, RIM, CAE Electronics, Sun Life, MDS Nordion, BCE, etc. Royal Bank of Canada, and Scotia bank have branches in India. Canadian clean technology companies have also entered into joint ventures with Indian companies in India.

So far Canada with several countries of the world tied up with different types of FTAs. Since our focus country is Canada and India, here we try to capture the status of FTAs between Canada and other countries of the world and same for India.

Canada FTAs

In 1987, the two nations agreed to a historic agreement that placed Canada and the United States at the forefront of trade liberalization. Key elements of the agreement included the elimination of tariffs, the reduction of many non-tariff barriers, and it was among the first trade agreements to address trade in services (CUSFTA). In January 1994, when Canada, the United States and Mexico launched the North American Free Trade Agreement (NAFTA), the world's largest free trade area was formed. The Agreement has brought economic growth and rising standards of living for people in all three countries. In addition, NAFTA has established a strong foundation for future growth and has set a valuable example of the benefits of trade liberalization. The CIFTA entered into force on January 1, 1997, eliminating tariffs on all industrial products manufactured in Canada and Israel as well as a limited number of agricultural and fisheries products. Between 1999 and 2003, additional agricultural and agri-food tariff reductions on goods previously excluded from the Agreement were successfully negotiated. This included preferences for many of Canada's top agricultural and agri-food exports to Israel. Signed on December 5, 1996, and implemented on July 5, 1997, the Canada-Chile Free Trade Agreement (CCFTA) is a comprehensive agreement that covers trade in goods and services, as well as the bilateral investment relationship. The CCFTA was Canada's first Free Trade Agreement (FTA) with a South American country, while for Chile it was the first comprehensive FTA concluded with any country. The Canada-Costa Rica Free Trade Agreement

(CCRFTA) and two parallel accords on environmental and labour cooperation entered into force on November 1, 2002. The free trade agreement (FTA) between Canada and the European Free Trade Association (EFTA) countries of Iceland, Liechtenstein, Norway and Switzerland entered into force on July 1, 2009. Also entering into force at the same time as the FTA were three associated bilateral agreements on agriculture with Iceland, Norway and Switzerland, with the Canada-Switzerland bilateral agreement covering Liechtenstein. The Canada-Peru Free Trade Agreement, Labour Cooperation Agreement and Agreement on the Environment entered into force on August 1, 2009. The Canada-Colombia Free Trade Agreement (FTA), the Labour Cooperation Agreement and the Agreement on the Environment came into force on August 15, 2011. On November 15, 2011, the Government of Canada tabled legislation to implement the Canada-Jordan Free Trade Agreement and two parallel accords on environmental and labour cooperation in the House of Commons. Canada and Panama launched free trade negotiations in October 2008. Following several rounds of talks, including intersessional work, both countries announced on August 11, 2009, the conclusion of negotiations towards an FTA, as well as agreements on labour cooperation and the environment. The Canada-Panama Free Trade Agreement and two parallel accords on environmental and labour cooperation were signed on May 14, 2010. On August 12, 2011, Prime Minister Harper announced the conclusion of negotiations toward a Canada-Honduras free trade agreement. It will benefit Canadian businesses and workers in regions across the country and in many sectors of the Canadian economy, including agriculture, professional services, value added food processing and manufacturing, as well as commodity- and resource-based industries.

Other ongoing FTAs with Canada include Andean Community, Caribbean community, Central America 4, Dominican Republic, European Union, Morocco, Ukraine, Costa Rica and Turkey.

Recently some FTA negotiations announced/or partially concluded/or concluded between Canada and some Asian countries such as Japan, Korea and India. On March 25, 2012, Canada and Japan announced the launch of comprehensive and high-level economic partnership agreement (EPA) negotiations, or free trade negotiations, in Tokyo, Japan. Canada and Korea met for a thirteenth round of negotiations in Ottawa, March 25-28, 2008, with progress achieved in several areas, and in particular on goods market access issues. Negotiations are now well advanced, but resolving the remaining sensitive issues will be challenging. Through the elimination of Korean tariffs, non-tariff barriers and restrictions to services exports and investment, we expect that an FTA with Korea would create substantial new opportunities for Canadian business - from agriculture and electronics to high-tech and financial services. An FTA with Korea would not only generate increased export opportunities in the Korean market, but it would also help open doors for Canadian companies to other fast-growing economies in the dynamic Northeast Asian region. The elimination of barriers to the Canadian market would also

generate welfare benefits for Canadian consumers by increasing choice and reducing prices through a more competitive domestic economy.

India FTAs

India has series of FTAs with different countries such as SAFTA, EUFTA, EU, ASEAN, JAPAN. A Framework Agreement on Economic Cooperation between Republic of India and Gulf Cooperation Council was signed on 25th August, 2004. The Framework Agreement provided that both the parties shall consider ways and means for extending and liberalizing the trade relations and also for initiating discussions on the feasibility of a FTA between them. The initiative to establish Bangladesh-India-Sri Lanka-Thailand Economic Cooperation (BIST-EC) was taken by Thailand in 1994 to explore economic cooperation on a sub regional basis involving contiguous countries of South East & South Asia grouped around the Bay of Bengal. The India-Thailand Trade Negotiating Committee (TNC) has been constituted to negotiate a comprehensive FTA covering Trade in Goods, Trade in Services, Investment, Rules of Origin, Dispute Settlement Mechanism etc. The tariff concessions on 82 items of EHS list began from September, 2004 and have become zero for both sides from September, 2006. India-Sri Lanka Free Trade Agreement (ISLFTA), which was signed in 1998, has become operational in 2000. India's engagement with the Association of South East Asian Nations (ASEAN) started with its "Look East Policy" in the year 1991. After 23 meetings of the ASEAN-India Trade Negotiating Committee (TNC), India and the ASEAN have signed the following Agreements on 13th August 2009. A Joint Study Group (JSG) was constituted in November 2003 to study modalities of the India-Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA) negotiations. Following Memorandum of Understanding related to the CECPA were signed by India and Mauritius in October, 2005 Chapter on Trade in Goods (Preferential Trade Agreement) has been finalised. This Chapter includes Tariffs, Texts of Preferential Trade Agreement (PTA) and its annexure, viz. Rules of Origin, Operational Certification Procedures and Trade Defence Measures. India and South Africa have agreed to ensure an early conclusion of the India-SACU (Southern African Customs Union) Preferential Trade Agreement and the Bilateral Investment Promotion and Protection Agreement 2012. Since 2007, India and EU have been negotiating a free trade pact, officially known as Bilateral Trade and Investment Agreement (BTIA). Notwithstanding several rounds of negotiations, the finalisation of BTIA has been delayed as differences cropped up between India and the EU over certain issues. This will finalise sometime this year.

Canada welcomed the conclusion of the fourth round of negotiations toward a Comprehensive Economic Partnership Agreement (CEPA) with India that took place February 13 to 16, 2012. A fifth round of negotiations is scheduled to take place sometime this year. CEPA negotiations

remain a key priority in the Government of Canada's international trade plan and Canada will seek to conclude the CEPA in 2013. In this background, the objective of the present study estimates the economy wide impacts of Comprehensive Economic Partnership Agreement between Canada and India by the year 2030.

Rest of the paper is organized as follows: Section 2 presents a brief review of literature. A methodological framework is provided in Section 3. Data, aggregation scheme and scenarios are outlined in section 4. Empirical results is analysed in section 5. Section 6 concludes the paper.

2. Literature Survey

There are numerous studies on the impact of trade liberalization including WTO impact, economic effects of RTAs and its sectoral and regional implications, environmental as well as poverty implications. Studies attempted to address Regional Trade Agreements (RTAs) in Asia and pacific-JETRO (2003), Cheong(2003),Gosh and Yamarik(2004), Igawa and Kim(2005), Chawin(2006), Lee and Park(2005), Urata and Kiyota (2003), Ando and Urata (2006), Scollay and Gilbert (2001), Park(2006), McKibbin, Lee and Cheong (2004), Srutt and Rae(2007), Thierfelder et al. (2007), Lochindratn(2007), Lendle (2007), Kawai and Wignaraja (2007,20008, 2008a), Manchin(2008), Mukhopadhyay and Thomassin (2008, 2010) Mukhopadhyay, Thomassin and Chakraborty(2008).

Recently an impact of CEPA between India and Japan has been attempted by Kawai, Bhattacharya and Mukhopadhyay (2011) and Mukhopadhyay and Bhattacharya (2011). Impact of FTA between India, European Union and Latin American countries has been studied by Mukhopadhyay, Chakraborty and Thomassin (2010). Literature on environment-trade linkage, an important objective in applied economic policy analysis, is growing. Kuik and Gerlag(2001), Kang and Kim(2004), Eickhout et al. (2004), Strutt and Anderson(2002), Dagoumas et al. (2006). Couple of studies in that direction has done by Mukhopadhyay and Thomassin (2008, 2010, 2010a), Gumilang, Mukhopadhyay and Thomassin(2011) on the impact of East Asian free trade on the environment using GTAP (Global Trade Analysis Project) frame work.

The study on Canada and India trade is rare in trade literature. After the announcement of CEPA recently the Joint Study Group (GOI, 2010) has undertaken the economic modelling with a view to identifying the possible economic impact of trade liberalisation. Simulations using the GTAP version 6 were carried out by both Canada and India. The simulations covered a wide range of liberalisation issues such as trade in goods and services and trade facilitation, and they examined the implications of productivity gains and increases in the supply of labour and capital, and their consequent impact on the economies of the contracting parties. The purpose

of the current study is to estimate the trade liberalization impact between two countries using version 7 of the GTAP model. The direction of both studies is same, but using different simulation exercises. Further the current study estimates the future impact in case of Business as usual at 2030 and with tariff policies at 2030, while joint study group only presents the impact of the updated GTAP data base at 2008.

3. Modelling Framework

The static version of the GTAP model is chosen for this study. As a general equilibrium model where countries and regions in the world economy are linked together through trade, the GTAP model incorporates both the demand and supply in its specifications (for details see, Hertel 1997). On the demand side, the model uses a Cobb-Douglas aggregate utility function to allocate regional household expenditure among private expenditure, government expenditure and savings along a constant budget share to provide an indicator of welfare for the regional household. Here, a representative household in each region maximizes constant difference of elasticity expenditure (CDE) functions that are calibrated to an income level and elasticity of demand that vary according to the level of development and consumption pattern of the region.

On the supply side, firms combine primary factors and intermediate goods using the Leontief production structure and a constant return to scale technology to produce final goods in a perfectly competitive environment. The final goods produced are then sold to both private household and the government. There are five primary factors of production in the model, which are capital, land, natural resources, skilled and unskilled labours. Among these factors, land and natural resources are made to be sector-specific. Labours are considered to be mobile across industries but not countries while capital is both mobile across industries and countries. The GTAP model uses a nested CES functions to determine firms' demand for primary and intermediate inputs. As with many other general equilibrium models, it utilizes the Armington's approach goods and services are differentiated by region of origin and are imperfect substitutes. Using this price, the optimal combination of imported and domestic goods to be used can be calculated. All sectors in the model produce a single output and firms face a zero profit assumption.

The GTAP model also incorporates 2 global sectors apart from the regional sectors. They are the global banking sector that facilitates global savings and investments and global transportation to account for the difference between f.o.b and c.i.f values. In addition, domestic support and trade barriers (tariff and non-tariffs) are measured in ad-valorem equivalents. The equilibrium nature of the model is derived from the exhaustive accounting relationship that makes up the

model. The GTAP model by itself does not take into consideration macroeconomic policies or monetary phenomena and since it is static in nature, the impact of investment on production and trade is felt through its effects on final demand.

Lastly, there are two ways to achieve macroeconomic closure in the model based on the accounting identity $S - I \equiv X - R - M$ where $R = 0$ in the model due to the absence of observation in the database. The first is to fix trade balance to zero while national savings or investment is allowed to adjust. The second is through the use of the global bank that adjusts its purchase of shares in regional investment goods to account for changes in global savings. The later allow modellers to endogenize both side of the identity above. Both the methods above are neoclassical in nature. Closure is an important part of the model because it is used to capture policy changes and structural rigidity. It is the classification of the different variables in the model into either endogenous or exogenous variable. In performing simulations, the modeller must make some choices with regard to which variables in the model are to be exogenous (i.e., fixed at predetermined values specified by the modeller) and which are to be endogenous (i.e., the values for which are solved by the model). Under the GTAP's default microeconomic closure, the supply of labour, capital, land and resources are fixed; factor prices (i.e. wages, and return to capital and land) adjust to restore full employment of the factors of production in the post shock equilibrium. For the closure to work, the number of endogenous variable considered has to be equal to the number of equations used. This is a necessary but not a sufficient condition. The choice of exogenous variable will help determine whether the model is in a general or partial equilibrium. Last but not least, in a standard GTAP closure, all markets are in equilibrium with all firms earn zero profit and regional household on its budget constraint.

The economics of the welfare effects of tariff eliminations are modelled as allocative efficiency gains stemming from reallocation of productive resources across sectors. By contrast, modelling of regulatory barriers such as barriers to trade in services is less straightforward. Regulatory barriers require the use of real resources to meet regulatory requirements. They are not a necessary part of the production and delivery process, but rather are an added or discretionary burden of costs added by government. A reduction of regulatory barriers represents a saving of real resources. In general, the reduction of regulatory barriers would result in greater gains from liberalisation compared to tariff reductions on the price of traded products. This reflects the fact that tariffs represent a transfer of income. They contribute to national income in the country or region collecting the tariffs and, therefore, expand economic welfare commensurately with the reduction in economic welfare in the country/region paying the tariffs.

4. Data, Aggregation scheme and Scenario Development

GTAP version 7 with reference year 2004 has been used for the current study. GTAP Version 7 consists of 113 region/countries aggregated into 4 individual countries-Canada, USA, China and India with an emphasis on the countries for the current study. Other countries and regions are aggregated into 4 regions: EU_27, Rest of OECD, Rest of Asia, and Rest of the World. 57 sectors have been aggregated to 29 sectors on the basis of sensitive sectors identified in CEPA and trade intensiveness. Overall, 8 regions and 29 sectors have been considered for the current study.

First, a counterfactual equilibrium benchmark is created by projecting the economies to year 2030 through a recursive process using estimated macroeconomic variables. Three discrete steps have been applied. Here, the 2004 model has been projected in a 10-year interval up to the year 2030 by shocking it with the estimated macroeconomic variables. In this scenario, no tariff shocks are employed. This scenario will provide a counterfactual base of comparison for the other scenarios together with economic changes in Canada and India for the year 2030.

Next, the process is repeated with the addition of tariff shocks to carry out the trade liberalization scenarios. The results are then compared to analyze the impact of trade liberalization on the economy of Canada and India. Tariff shocks have been selected on the basis of agriculture and non agricultural commodities. It is 60% for agriculture sector and 80% for non agricultural sector. In the current study, selected agricultural commodities such as Grains, fruits and vegetables and non agriculture such as Textile, wearing apparel, machinery, manufacturing, chemical rubber and plastic, paper and paper products, minerals nec, energy have been shocked on the basis of recent CEPA announcement between two countries. The sectors identified for tariff reduction scenario in India are Machinery, Manufacturing, Chemical rubber and plastic, Paper and paper products, Minerals nec, Grains, Fruits and Vegetables and nuts, Energy. While for Canada, the identified sectors are Grains, Textile, Wearing apparel, Machinery, Manufacturing, Chemical rubber and plastic.

5. Analysis of Results

In the BAU scenario, the world economy is projected to the future without implementing any policy shocks in the form of tariff reductions. Table 1 shows the projected percentage changes in the output level of the different economies up to the year 2030 and the difference between BAU2030 and tariff reduction scenario at 2030. Highest output growth is observed for China followed by rest of the world and India while lowest for EU_27 in BAU scenario upto 2030. Tariff reduction scenario shows positive growth for almost all countries including Canada and India except the USA and the Rest of the world.

Table 1 Output growth of India and Canada and other regions of the world: BAU vs. Tariff reduction scenario (%)

	BAU 2010-20	BAU 2020-2030	BAU 2030-Tariff reduction scenario at 2030
Canada	35.86	21.08	3.48
Rest of OECD	27.12	13.38	2.33
USA	23.44	14.77	-2.33
Rest of Asia	59.12	51.03	0.70
China	105.97	87.65	8.01
India	69.25	80.36	6.14
EU_27	25.65	8.09	8.11
Rest of the world	73.80	51.36	-5.63
Total	40.03	30.56	2.51

The status of export growth during BAU and tariff reduction scenarios is presented in table 2. The highest export growth is observed for China and lowest for EU_27 and the USA in BAU scenario. The tariff reduction scenario reveals some interesting note. Though the reduction has been applied on Canada and India, but the additional highest export growth is likely to achieve by EU_27. The partner countries-Canada and India is expected to attain 2.26 and 3.71 respectively.

Table 2 Export growth of India and Canada and other regions of the world: BAU vs. Tariff reduction scenario (%)

	BAU 2010-20	BAU 2020-2030	2030-Tariff reduction scenario
Canada	25.02	27.91	2.26
Rest of OECD	39.73	36.71	2.41
USA	24.96	10.67	-0.26
Rest of Asia	53.96	49.98	1.72
China	106.56	77.76	3.12
India	91.52	65.78	3.71

EU_27	18.03	16.8	4.67
Rest of the world	52.63	66.47	4.27
Total	40.12	41.74	3.61

Table 3 can provide more insight in this regard. The bilateral trade between these countries shows that Canada to India in two consecutive BAU scenarios is expected to grow reasonably well. While India's trade to Canada will grow only 14.23 and 21.45% in two BAU periods. In this two way trade (exclusively between Canada and India) tariff reduction reflects a gain for India (35.43% additional) compared to Canada (19.71%)

Table 3 Bilateral trade between Canada and India at BAU 2030 and Tariff reduction scenarios.

	India		
	BAU 2010-2020	BAU2020-2030	Tariff reduction scenario
Canada	110.03	82.59	19.71
	Canada		
India	14.23	21.45	35.43

The direction of trade from Canada to rest of the world shows that Canada's trade to USA is highest and lowest to India during BAU 2010-2020 and a marginal increase in BAU 2020-2030(table 4). Due to tariff reduction between Canada and India, it is expected to have an increase in trade compared to BAU (3.39 to 4.61%). While a reduction in trade is noticed for USA compared to BAU. Overall, a marginal trade diversion and trade creation is observed.

Table 4 Direction of trade between Canada and other regions of the world: BAU vs. Tariff reduction scenario (% share)

	2010-20	2020-30	2030-Tariff shock
Rest of OECD	5.62	5.04	5.27
USA	69.16	66.81	65.45

Rest of ASIA	2.68	2.76	2.74
China	5.68	7.85	7.15
INDIA	2.37	3.39	4.61
EU_27	8.31	6.46	7.07
Rest of World	6.17	7.69	7.71
Total	100	100	100

India's trade always dominates with EU_27. Recently India's look east policy accentuates India's trade with other Asian countries. Table 5 captures the trend of the direction of India's trade pattern at 2020 and 2030. It reveals almost the similar recent trend. It is expected to have highest trade with EU_27 and rest of Asia followed by USA and rest of the world, while lowest with Canada. Due to tariff shock, India's trade share with Canada is likely to be 6% (2.55% at BAU 2030), while a marginal reduction in trade share is observed for USA and EU_27.

Table 5 Direction of trade between India and other regions of the world: BAU vs. Tariff reduction scenario (% share)

	2010-20	2020-30	2030 tariff shock
Canada	1.56	2.55	5.99
Rest of OECD	7.13	6.32	6.24
USA	13.32	11.55	10.08
Rest of ASIA	12.66	12.56	12.22
China	8.68	9.96	9.85
EU_27	31.4	29.44	27.62
Rest of World	25.25	27.61	28.67
Total	100	100	100

We have already mentioned that the sectors for tariff shock have been selected on the basis of trade weights and recently identified sectors in CEPA announcement. Table 6 and 7 present the

sectoral impact between Canada and India on output due to tariff reduction at 2030 compared to BAU 2030. Table 6 shows the impact on the sectors that have been shocked, while table 7 presents the sectors having indirect impact. As we know that the sectors are integrated vertically as well as horizontally, so a certain shock in grains as for example, will have an impact on other agriculture and agri-food commodities. The sectors responded reasonably high are machinery equipment, manufacturing and chemical rubber and plastic from Canada, while textiles and wearing apparels, grains from India side (Table 6).

Table 6 Percentage change in major sectoral output after tariff shock at 2030 compared to BAU 2030

direct impact	CANADA	INDIA
Grains	8.57	10.73
Vegetables fruits and nuts	11.16	-
Energy	0.24	-
Minerals nec	3.18	3.5
textile	2.64	50.3
Wearing apparel	1.37	37.88
Paper and paper products	0.95	5.09
Chemical rubber and plastic	20.93	14.42
Machinery and equipment	62.84	3.05
Manufacturing nec	41.5	14.63

Table 7 shows the important sectors having indirect effect are electronic equipment, transport equipment and leather products in Canada, while sugarcane, animal products, metal products are in India.

Table 7 Percentage change in major sectoral output after tariff shock at 2030 compared to BAU 2030

Indirect Impact	Canada		India
oilseed	1.27	oilseed	9.62
Animal product	1.89	Animal product	12.07
Meat products	7.6	Sugar cane and sugar beet	15.12
Vegetables oil and fats	11.1	Crops nec	11.79
Wood products	18.85	Vegetables oil and fats	2.42
Leather and leather products	105.05	sugar	12.28
Petroleum and coal products	2.07	Food products nec	9.61
Motor vehicle	9.45	Lumber	8.18
Transport equipment nec	42.03	Metal products	10.83
Electronic equipment	65.98	Motor vehicle	1.47
		Transport equipment nec	6.24
		Electronic equipment	8.09
		Transport nec	5.22

The bilateral sectoral trade impacts also reflect a similar trend as output change. India's leading export gains are concentrated in manufactured products and services. Among manufacturing sectors, the sector that leads India's gains are textile and apparel products30, which accounts for more than 70% of total India's gains in goods exports. For Canada, the gains in exports are widely spread, ranging from primary agricultural and resources-related products, to chemical

products, transport equipment, machinery and equipment, and services. From this exercise, it is apparent that energy sector growth is positive for Canada but not significant. However, environmental impact is expected to be unfavourable particularly for India because of the growth of pollution intensive sectors (CO2, BOD and COD) such as Textile and Wearing Apparel, Chemical, rubber and Plastic. Environmental regulations differ between two countries.

The discussion of the results so far has focused on changes in output and trade arising from the tariff reduction adopted in the different scenarios. How did these tariff reduction policies affect the welfare of the different regions involved is outlined in Table 8. Welfare results indicate that trade liberalization lead to welfare level improvement in agreement countries at the expense of non-agreement countries resulting in a net gain in global welfare. The distributions of welfare increase among agreement countries however are varied. Canada and India will achieve an additional welfare gain of $524 million USD and $ 460 million USD due to the proposed trade agreement between India and Canada. The highest welfare loss has been observed for USA and EU_27.

Table 8 Welfare implications due to proposed trade agreement between India and Canada (in million USD)

	BAU 2010-20	BAU 2020-30	Additional welfare generated due to tariff shock at 2030
Canada	356245.9	386505	524
Rest of OECD	1852800	1554068	-26.8
USA	2779716	2518322	-68.8
Rest of Asia	804398.8	1175480	-39.7
China	1914538	2891969	-79.1
India	517630.1	984688.7	460.5
EU_27	2957849	1943208	-82.1
Rest of World	3194483	5166469	2.8
Total	14377661	16620710	690.9

6. Conclusion

In recent years, both India and Canada have been engaged in the process to enhance bilateral cooperation in a number of areas of mutual priority such as trade and investment; education; science, technology and innovation; environment and energy. Though, it appears that the India-Canada trade relationship is significantly under-traded but the Impact of CEPA between Canada and India will be positive for both the countries. Both the countries will be benefitted, if CEPA materialises at 2030. Bilateral merchandise exports increase as trade barriers are removed. The gains are asymmetric, as would be expected given the relative size of the two economies and each country's respective initial level of trade barriers. Bilateral exports are likely to gain from the CEPA. As we move from BAU towards comprehensive liberalisation, incremental gains for the export sectors are likely to increase, but these gains may not be significantly large. Highest sectoral output growth is observed for Textile and wearing apparel in India due to tariff reduction, while Machinery and equipment, manufactures nec for Canada. The results indicate that both India and Canada experience small welfare gains as a result of trade (tariff) liberalisation alone.

Future direction of research

Since the CEPA is going to be concluded by the beginning of 2013, so it would be reasonable to exercise this with new GTAP version 8 database. The methodological limitations can further be avoided by applying dynamic GTAP. Since Canada is a resource rich country, due to trade liberalization Canada will export some mineral and mineral product. So the extraction of minerals has some impact on the economy and environment which cannot be ignored. On the other hand, if India exports textiles and apparels as reflects in the study also have some likely impact on the environment. These issues need to be addressed in future.

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