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**An Analysis of Bilateral
Trade Between Canada
and India**

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AN ANALYSIS OF BILATERAL TRADE BETWEEN CANADA AND INDIA

Malini L Tantri* and Preet S Aulakh**

Abstract

This paper explains the characteristics of the bilateral trade between Canada and India and analyses whether trade between both the countries is complementary or competitive. The analysis is based on the International Trade Centre (ITC) database for the years 2001-2015. The key findings of the paper help us to argue that over the years, India has emerged as an important trading partner for Canada, and there exists a strong comparative advantage in bilateral trade for both countries. Export and import intensities, which are less than unity, indicate the future prospects for the increasing trade participation between the countries. In this context, we argue for further research in this area, specifically non-tariff measures and trade facilitation issues affecting exporters of both countries.

Introduction

Since 2010, efforts have been stepped up to conclude a Comprehensive Economic Partnership Agreement between Canada and India on the lines of a Free Trade Agreement with commitments to tariff reductions and reforms in the business environment. With CEPA, Canada was looking forward to greater openness in the form of non-discriminating, hassle-free procedures. This is not only for tapping the efficient Indian market in the information technology sector but also to gain wider market access to other Asian nations by setting up a regional base in India (Dobson, 2011). The draft CEPA agreement focussed on a wide range of issues. The Joint study constituted by both the nations suggested CEPA be built upon the WTO work in order to avoid duplication. The export gains from bilateral trade are expected to be between 32% and 60% for India and between 39 % and 47 % for Canada¹. Despite the win-win scenario projected by the report, the formalisation of CEPA has been delayed as Canada is pushing India to first agree to and sign the Canada-India Foreign Investment Protection and Promotion Agreement (FIPA), (The Hindu, 2016). The FIPA would ensure the two-way investment flows are safeguarded by the laws and agreements of FIPA rather than the host countries' laws. The delay in FIPA and other differences in FTA have kept the CEPA on hold.

While the CEPA study projected the overall benefits of the proposed agreement for both countries, surprisingly, there has not been an in-depth analysis of the structural and sectoral factors of the bilateral trade efforts between Canada and India. Even studies (see for detail: Mukhopadhyaya *et al*, 2012 and GoI, 2010) that have attempted to calculate export gains from bilateral trade between India and Canada have their own limitations. For instance, these estimates are based on two assumptions: of full elimination of goods trade protection and reduction of trade costs at a liberal level. For many of the export commodities of Canada such as vegetable and animal products, the tariff is seen to be the highest among the WTO nations (GoI, 2010). Further, the Canadian Chamber of Commerce (2012) has suggested that in order to gain from CEPA, the tariffs that would affect Canadian exports are to be eased, thereby indicating a longer road to be covered before expecting actual gain from the CEPA.

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In addition to this, highlighting possible gain by signing such a treaty would be incomplete in the absence of clear understanding of the characteristics of the bilateral trade relations between both the economies and whether trade between both the countries are complementary or competitive.

With this background and also considering the commitments at the institutional level of both the countries for closer trade and investment cooperation, limitations of the existing set of studies on this issue and the fact that both the countries have complementarity in resource endowments,ⁱⁱ it becomes quite interesting to investigate the major characteristics of bilateral trade relation between the countries and thereby analyse whether trade between both the countries are complementary or competitive. Based on the findings, the paper suggests the directions for CEPA between Canada and India.

In order to explain the issues raised above, the analysis is carried out on the database of the International Trade Centre (ITC) for the years 2001-2015. To understand the product composition, we have confined our exercise to HS classification at two-digit level and four-digit level. The top 20 commodities/products that account for nearly 80% of the country's total exports are taken up for the analysis. The section following this outlines the brief trade related macroeconomic profiles of both the countries. The third section sketches the trends and patterns of trade between both the countries and its major characteristics. The last section summarises the paper.

A Brief Economic Profile of Canada and India

Canada's population as a percentage to the world is very minimal at 0.48% in 2015 (Table 1) compared to India's share in world population (17.84 %). For the same reference period, Canada's per capita income and also trade as a percentage to GDP has shown tremendous increase. The sectoral composition of employment (Table 2) reveals the dominance of the service sector followed by the industry in Canada, while in India, the agricultural sector, followed by the service sector, dominate the scenario.

On the trade front, India's total exports increased substantially from US\$ 43878 million in 2001 to US\$ 264381 billion in 2015 (Figure 1). Out of the total exports of 97 categories of commodities, the top 20 categories (P20) had a share of 74.85 per cent in 2015 (Figure 2). Canada also witnessed the same pattern of growth in its exports and imports as India (Figures 5, 6, 7, 8). But Canada's total trade value is quite higher than the Indian trade value. Canada is consistently a net exporter of commodities. In order to understand the sectoral composition, we have classified the top 20 export and import commodities into two categories - primary sector and secondary sectorⁱⁱⁱ (Appendix **Table A1**). Out of the total merchandise exports of India, the bulk of the contribution was made by the secondary sector or manufactured goods in 2001. But, over the years, the trends have changed towards the primary sector. On the other hand, Canada's export basket mainly consists of manufactured goods and over the years, it has emerged as the largest supplier of manufactured articles to the world. The share of manufacturing goods is still the highest as in the case of exports. So far as trade in service is concerned, India is a net exporter of services whereas Canada is a net importer.

With respect to the direction of trade, India's exports and imports to its top 20 trading partners (C20) covered 75 and 84 per cent of its total exports and imports, respectively, in the year 2001 and it

declined to 65 and 62 per cent respectively for the year 2015. The share of C20 countries in total imports has come down from 84 per cent in 2001 to 62 per cent in 2015. This implies the growing diversification in the direction of Indian trade. Similar trends can be seen in Canada's direction of trade with a slightly higher rate of diversification (Table A2).

With respect to trading partners, in 2001, India was exporting to 210 countries and it increased to 215 countries in 2015. The ranking of Canada fell from the 21st rank to 33rd rank over the years in India's trade. India's ranking in Canada's trade improved during this period. The number of Canada's export destinations is slightly lower than India's destinations. In 2001, Canada had 213 export partners and it declined to 210 in 2015. India was in the 19th position among Canada's export destinations in 2001. But it moved up to 6th place in 2015. India was in the 23rd place among 210 import sources of Canada in 2001; its position improved and it was in 14th place among 215 countries in 2015. With this background, the next section explores the broad characteristics of bilateral trade between Canada and India and explores the sustainability and long-term prospects of trade between the two economies.

Table 1: Macroeconomic Indicators of Canada and India – A Comparison

<i>Population as a % of World Population</i>						
	1990	1995	2000	2005	2010	2015
Canada	0.52	0.51	0.50	0.49	0.49	0.48
India	16.47	16.83	17.22	17.56	17.77	17.84
<i>GDP per capita (constant 2010 US\$)</i>						
Canada	36488	37568	43637	47180	47446	50109
India	5418	6289	770	982	1346	1752
<i>Trade as a % of GDP</i>						
Canada	49.96	69.09	82.85	69.70	60.06	65.54
India	15.23	22.47	26.43	41.30	49.69	42.21
<i>Unemployment^{iv}</i>						
Canada	N/A	9.5	6.8	6.8	8.1	6.9
India	N/A	3.974	4.31	4.4	3.55	3.49

*Source: WDI

Table 2: The Sectoral Composition of Employment (% of total employment)

		1990	1995	2000	2005	2010	2015
Canada	Agriculture	3.35	3.15	2.52	2.12	1.81	1.64
	Industry	25.29	22.93	23.29	22.69	20.15	19.92
	Services	71.35	73.92	74.19	75.19	78.04	78.43
India	Agriculture	N/A	N/A	N/A	55.82	51.06	N/A
	Industry	N/A	N/A	N/A	18.97	22.38	N/A
	Services	N/A	N/A	N/A	25.2	26.57	N/A

* Source: WDI

Figure 1: Trends in Total Exports and Top 20 Exports of India (at HS 2 Digit Level)

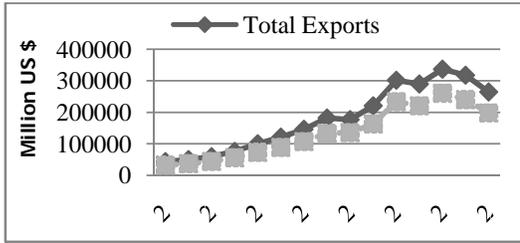


Figure 3: Trends in Total Imports and Top 20 Imports of India (at HS 2 Digit Level)

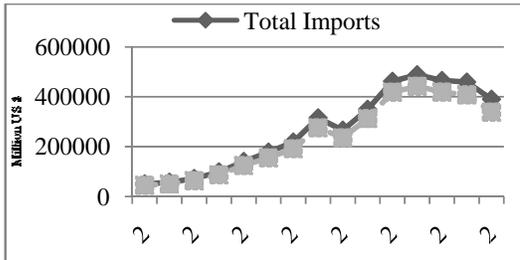


Figure 5: Trends in Total Exports and Top 20 Exports of Canada (at HS 2 Digit Level)

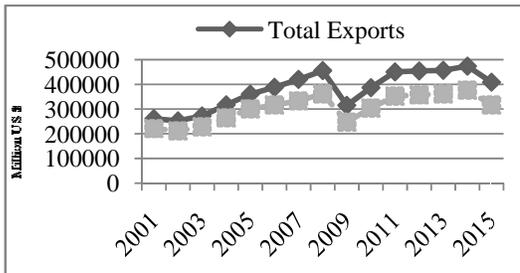


Figure 7: Trends in Total Imports and Top 20 Imports of Canada (at HS 2 Digit Level)

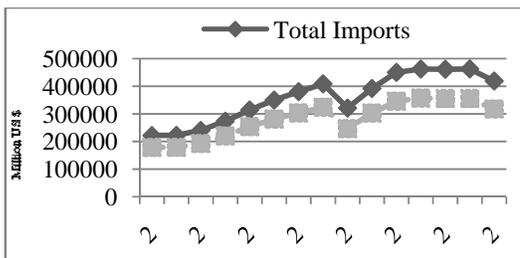


Figure 2: Trends in Share of Top 20 Export Products (at HS 2 Digit Level) in Total Exports of India

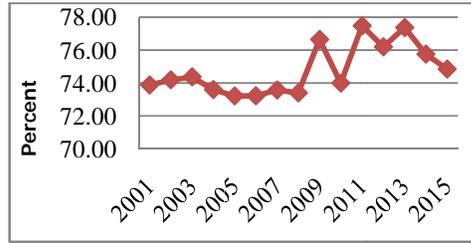


Figure 4: Trends in Share of Top 20 Import Products (at HS 2 Digit Level) in Total Imports of India

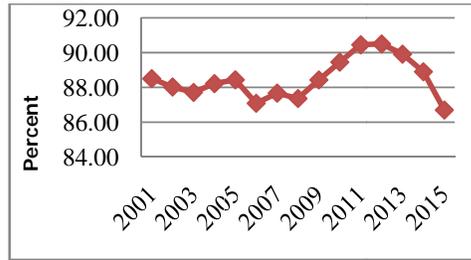


Figure 6: Trends in Share of Top 20 Export Products (at HS-2 Digit Level) in Total Exports of Canada

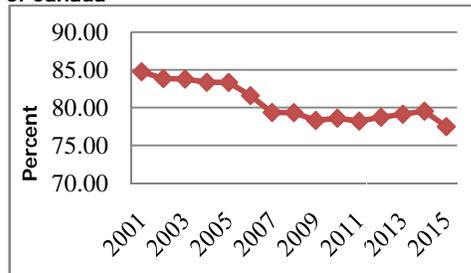
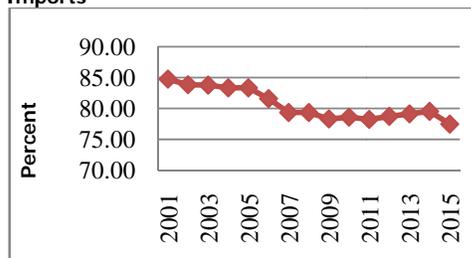


Figure 8: Trends in Share of Top 20 Import Products (at HS 2 Digit Level) in Canada's Total Imports

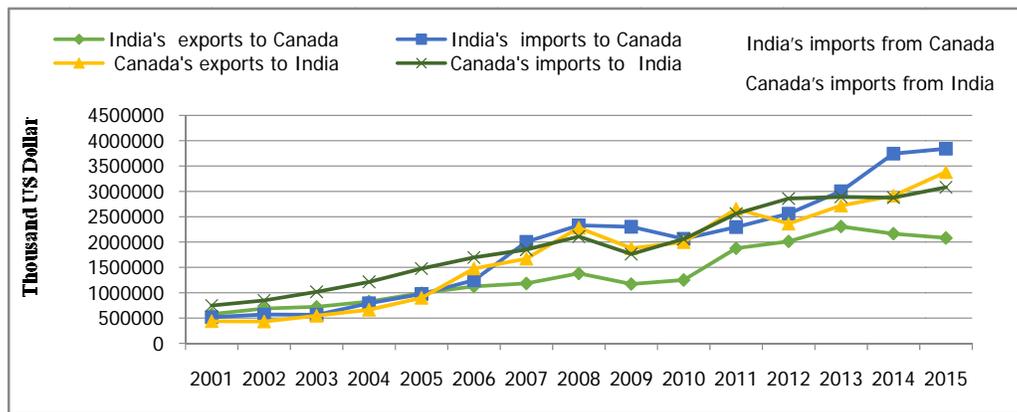


Source: Calculated from the data extracted from International Trade Centre

The Characteristics of Bilateral Trade between Canada and India

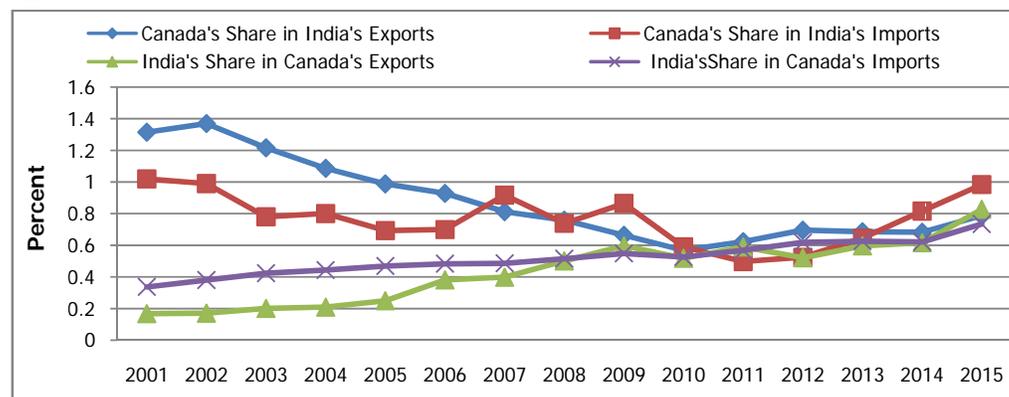
The bilateral trade between Canada and India over the study period reveals a steady growth (Figure 9). The trend growth rates of India's trade with Canada (10.19% for exports and 16.18% for imports), however, were quite lower than the growth rates of the overall trade of India (16.30% for exports and 18.41% for imports). For the same period, the growth rates of Canada's trade with India (16.53% for exports and 10.41% for imports) were higher than the growth of its overall trade (4.08% for exports and 5.23% for imports). Further, Canada's share in India's trade is quite higher than India's share in Canada's trade basket (Figure 10). Interestingly, over the study period, Canada's rank in India's total exports and imports has reduced substantially (from 21st rank in 2001 to 33rd rank in 2015) whereas India's rank in Canada's exports and imports has improved quite notably (from 19th rank in 2001 to 5th rank), thereby indicating the growth of India's trade relations with Canada.

Figure 9: Trends in Bilateral Trade Relation of Canada and India



Source: Calculated from the data extracted from International Trade Centre

Figure 10: Trends in Bilateral Trade Relation of Canada and India



Source: Calculated from the data extracted from International Trade Centre

Sectoral Composition of Trade

The sectoral composition of top 20 products in the total bilateral trade of India to Canada is 78% and Canada to India covers 79% of its total exports. The bilateral trade in top 20 items has also registered spectacular growth during 2001-15. With respect to the sectoral composition of trade, secondary sector products have the major share in the total exports of India to Canada (Figure 11 and 12), although over the years it has become marginally reduced. This shows that the role of primary sector in the export scenario of India is minimal. In the case of Canada, the share of exports of secondary goods has been reduced drastically from 2001 to 2015 (54.85% to 34.58%), whereas the share of export of primary products has increased substantially during the study period (45.15% to 65.42%), implying that the trade is driven by the export of primary goods. This pattern is quite different from the national figure, where Canada is known as one of the largest suppliers of manufactured articles.

The sophistication of a country's export products provides insight into its level of economic development and its location in the global production chain. Thus, in order to study the diversification of exports, we employ Technological Classification of Exports Index (TCEI). This indicator gives a percentage breakdown of a country's exports according to five broad technological categories embodied in the final products. The categories are: high tech, medium tech, low tech, primary products, and resource-based products (Lall, 2000). Categories are defined at the SITC-3 level. A standard correspondence is used to compute the index using HS 6-digit product codes.^v The results so derived out of bilateral trade data between Canada and India (Figure 13) reveal that the export of primary products has a larger share in the trade followed by resource-based products. The share of low technology products in export is the least compared to high and medium technology products. In contrast, bilateral trade between Canada and India shows that the share of low technology products stands the highest among the other exports followed by resource-based products. The share of the least exported category of products belongs to high technology products. These findings corroborate the trends observed in the sectoral composition of merchandise exports in bilateral trade of Canada and India.

Figure 11: Sectoral Composition of exports from India to Canada



Figure 12: Sectoral Composition of exports from Canada to India

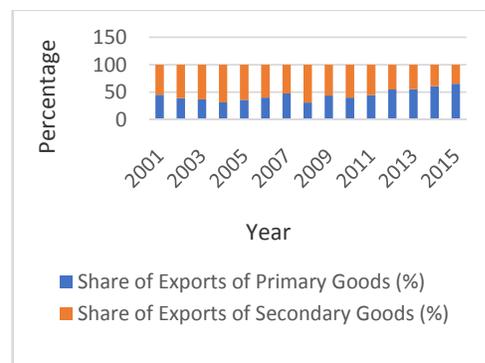
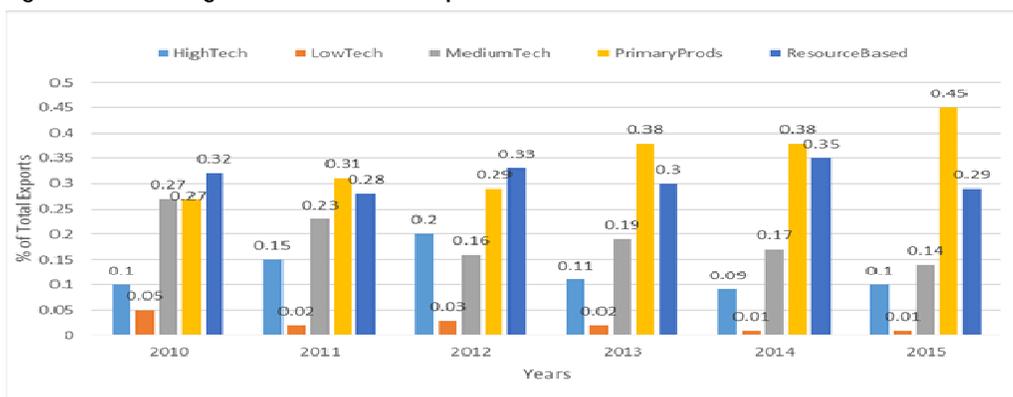


Figure 13: Technological Classification of Exports in Bilateral Trade between Canada and India



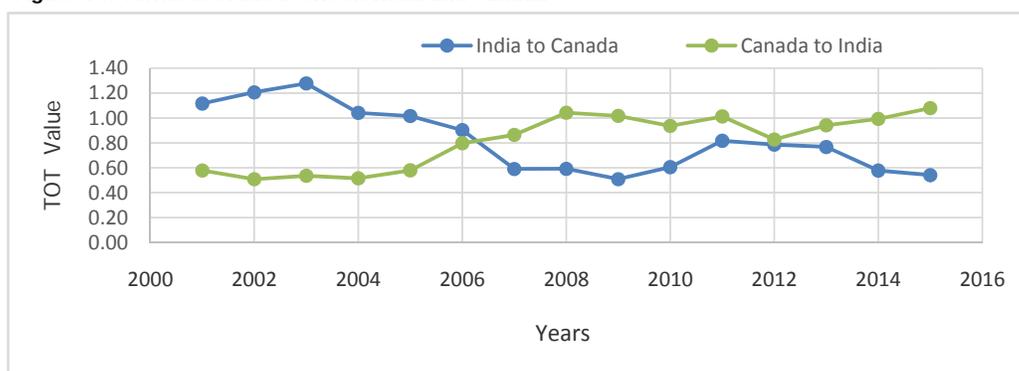
Source: Calculated from the data extracted from International Trade Centre

Terms of Trade between Canada and India

Terms of trade is a relationship between the prices at which a country sells its exports and the prices paid for its imports. It is a measure of a country's relative competitiveness. A value greater than one indicates that the terms of trade are favourable for the country as the share of gain from trade would be relatively large. A value of less than one indicates that the terms of trade are unfavourable for the country as its share of gain from trade would be relatively smaller and hence it may incur loss.

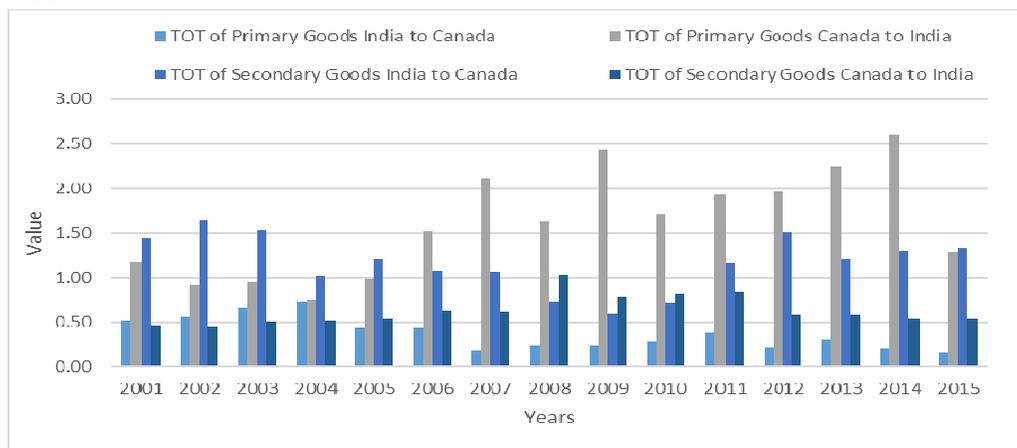
Total terms of trade of India to Canada has reduced to a vast extent from 1.12 in 2001 to 0.54 in 2015 (Figure 14). This indicates a deterioration in India's trade with Canada. On the other hand, we observe a substantial increase in the total trade between Canada and India, meaning that for Canada, the trade with India is favourable. We see that India enjoys favourable terms of trade in the case of secondary goods (1.44 in 2001 and 1.33 in 2010) and unfavourable terms of trade in the case of primary goods against Canada (0.52 in 2001 to 0.16) (Figure 15). Canada enjoys favourable terms of trade in the case of primary goods (1.18 in 2001 and 1.29 in 2015) and unfavourable terms of trade in the case of secondary goods against India (0.47 in 2001 and 0.54 in 2015). It is thus evident that the results observed in the case of terms of trade corroborate the results of Technological Classification of Exports Index.

Figure 14: Terms of Trade between India and Canada



Source: Calculated from the data extracted from International Trade Centre

Figure 15: Terms of Trade of Primary and Secondary Sector in Bilateral trade between Canada and India



Source: Calculated from the data extracted from International Trade Centre

Results and Discussion on Trade Indices

This particular sub section presents the characteristics of bilateral trade relations between Canada and India through the lenses of trade indices.

Revealed Comparative Advantage Index

In order to examine the products which are causing variations in trade, bilateral Revealed Comparative Advantage Index has been computed for the top 20 export products in the bilateral trade between Canada and India (according to the 4-digit classification of the Harmonized System). The RCA Index is also known as the Balassa index^{vi} which determines the position of the different sectors^{vii} of foreign trade. The RCA is based on the export performance and observed trade patterns. BRCA is the RCA measurement for countries conducting bilateral trade. It measures a country's export of a commodity relative to its total export. The Balassa index for bilateral trade is calculated as follows:

$$BRCA_{ij}^k = (X_{ij}^k / X_{ij}) / (X_{wj}^k / X_{wj})$$

Where X_{ij}^k , X_{ij} are the country i 's export of goods k and its total export to country j respectively. X_{wj}^k , X_{wj} are the world's export of goods k and the world's total export to country j . The Balassa index varies between zero and infinity; A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have a revealed comparative advantage in the product. The advantage of using the revealed comparative advantage index is that it considers the innate advantage of a particular export commodity and is consistent with changes in an economy's relative factor endowment and productivity. We make use of BRCA rather than RCA in our analysis as BRCA is superior to RCA such that we can easily understand the product that leads the trade, and also identify those products that lag in trade in the case of those countries that engage in bilateral trade.

The results so derived are presented in the table three helps us to argue that BRCA during the reference period has largely remained greater than one with very few exceptions [HS9999 -

Commodities not elsewhere specified (RCA=0.45)-2010; HS9999 Commodities not elsewhere specified (RCA=0.38), HS2710 Petroleum oils and oils obtained from bituminous minerals (excluding crude) (RCA=0.65)- 2013; [HS8708 Parts and accessories for tractors, motor vehicles for the transport of ten or more persons (RCA=0.29)-2015]. We see that over our study period, there is inconsistency in the Top 10 product basket, indicating that every year, new product has been added and deleted; exception to this, however, is HS2942 - Separate chemically defined organic compound has been consistent throughout the years and has had a very high BRCA value among the Top 10 in the product basket. If we view the BRCA data from a sectoral perspective, we can see that the secondary goods have a higher share in the trade of India to Canada when compared to the primary goods. The results derived from BRCA were found to be consistent with the results that we obtained from Terms of Trade Data (Figure 9). Similarly, in the case of Canada's trade with India also, we find that there is inconsistency in the top 10 product basket. BRCA during the study period mostly had a value greater than one except for a few [HS8477- Machinery for working rubber or plastics or for the manufacture of products from these materials (RCA= 0.0029), HS 8517- Telephone sets, including telephones for cellular networks or for other wireless networks; other (RCA= 0.40)-2010]. [HS 2701- Coal; briquettes, ovoids and similar solid fuels manufactured from coal (RCA= 0.55), HS 8471- Automatic data-processing machines and units thereof; magnetic or optical readers, machines (RCA=0.48) -2011]. [HS 0270- Petroleum oils and oils obtained from bituminous minerals, crude (RCA=0.11), HS 7108- Gold, including gold plated with platinum, unwrought or not further worked than semi-manufactured (RCA=0.21)-2013]. An exception to the inconsistency in the products throughout the study period [HS 0713- Dried leguminous vegetables, shelled, whether or not skinned or split]. The sectoral perspective of the BRCA data tells us that the share of export of secondary goods and primary goods is almost similar. This pattern, however, is not consistent with the results of Terms of Trade and implies that Canada has further potential to export primary goods.

Table 3: BRCA Calculation of India to Canada

2010			2011			2012		
HS Code	Product	BRCA	HS Code	Product	BRCA	HS Code	Product	BRCA
2942	Separate chemically defined organic compounds, n.e.s.	237.0771	'2942	Separate chemically defined organic compounds, n.e.s.	172.2274	'2942	Separate chemically defined organic compounds, n.e.s.	179.4272
'6304	Articles for interior furnishing, of all types of textile materials (excluding blankets and ...	70.03404	'1302	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other ...	42.48636	'1302	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other ...	93.2328
'7325	Articles of iron or steel, cast, n.e.s.	51.91936	'7325	Articles of iron or steel, cast, n.e.s.	41.40348	'6304	Articles for interior furnishing, of all types of textile materials	56.36491

'6206	Women's or girls' blouses, shirts and shirt-blouses (excluding knitted or crocheted and vests)	33.79718	'6206	Women's or girls' blouses, shirts and shirt-blouses	31.44049	'7325	Articles of iron or steel, cast, n.e.s.	40.8315
'6802	Monumental or building stone, natural (excluding slate), worked, and articles; mosaic cubes ...	21.34032	'2941	Antibiotics	25.86578	'2941	Antibiotics	40.55784
'7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal ...	21.33932	'7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal ...	22.80521	'6206	Women's or girls' blouses, shirts and shirt-blouses (excluding knitted or crocheted and vests)	27.33589
'0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine, ...	20.78961	'6302	Bedlinen, table linen, toilet linen and kitchen linen of all types of textile materials	21.42281	'1006	Rice	24.55154
'6109	T-shirts, singlets and other vests, knitted or crocheted	20.71772	'1006	Rice	21.14092	'6302	Bedlinen, table linen, toilet linen and kitchen linen of all types of textile materials (excluding ...	21.03884
'7102	Diamonds, whether or not worked, but not mounted or set (excluding unmounted stones for pick-up ...	20.46058	'0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine	21.12732	'0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine, ...	19.04193
'6205	Men's or boys' shirts (excluding knitted or crocheted, nightshirts, singlets and other vests)	18.96517	'7102	Diamonds, whether or not worked, but not mounted or set (excluding unmounted stones for pick-up ...	19.79798	'7102	Diamonds, whether or not worked, but not mounted or set (excluding unmounted stones for pick-up ...	17.47898

2013			2014			2015		
HS Code	Product	BRCA	HS Code	Product	BRCA	HS Code	Product	BRCA
'2942	Separate chemically defined organic compounds, n.e.s.	145.6419	'2942	Separate chemically defined organic compounds, n.e.s.	151.178	'6304	Articles for interior furnishing, of all types of textile materials (excluding blankets and ...	63.28313
'6304	Articles for interior furnishing, of all types of textile materials (excluding blankets and ...	73.9927	'6304	Articles for interior furnishing, of all types of textile materials (excluding blankets and ...	74.19991	'7325	Articles of iron or steel, cast, n.e.s.	52.28031
'1302	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other ...	59.89672	'1302	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar-agar and other ...	72.93025	'1201	Soya beans, whether or not broken	42.48466
'7325	Articles of iron or steel, cast, n.e.s.	42.65934	'7325	Articles of iron or steel, cast, n.e.s.	47.80702	'5402	Synthetic filament yarn, incl. synthetic monofilaments of < 67 decitex (excluding sewing thread ...	28.76917
'2941	Antibiotics	38.60461	'6206	Women's or girls' blouses, shirts and shirt-blouses (excluding knitted or crocheted and vests)	29.61564	'1006	Rice	23.98311
'7102	Diamonds, whether or not worked, but not mounted or set (excluding unmounted stones for pick-up ...	28.41721	'0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine	27.59399	'0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine, ...	23.0814

'0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine, ...	28.03034	'1201	Soya beans, whether or not broken	27.30527	'7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal ...	19.29681
'1006	Rice	21.23722	'6302	Bedlinen, table linen, toilet linen and kitchen linen of all types of textile materials (excluding ...	20.99253	'6302	Bedlinen, table linen, toilet linen and kitchen linen of all types of textile materials (excluding ...	17.89275
'7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal ...	17.91135	'1006	Rice	20.94774	'6802	Monumental or building stone, natural (excluding slate), worked, and articles; mosaic cubes ...	15.56495
'6302	Bedlinen, table linen, toilet linen and kitchen linen of all types of textile materials (excluding ...	17.44599	'7113	Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal	20.15233	'2933	Heterocyclic compounds with nitrogen hetero-atom[s] only	13.10096

BRCA Calculation of Canada to India

2010			2011			2012		
HS Code	Product	RCA	HS Code	Product	RCA	HS Code	Product	RCA
'8805	Aircraft launching gear (excluding motor winches for launching gliders); deck-arrestor or similar ...	123.7183	'0713	Dried leguminous vegetables, shelled, whether or not skinned or split	65.983	'1514	Rape, colza or mustard oil and fractions thereof, whether or not refined, but not chemically ...	71.16114
'4705	Wood pulp obtained by a combination of mechanical and chemical pulping processes	87.22524	'4705	Wood pulp obtained by a combination of mechanical and chemical pulping processes	60.74284	'4705	Wood pulp obtained by a combination of mechanical and chemical pulping processes	50.70252

'4801	Newsprint as specified in Note 4 to chapter 48, in rolls of a width > 36 cm or in square or ...	39.0488	'4801	Newsprint as specified in Note 4 to chapter 48, in rolls of a width > 36 cm or in square or ...	35.24111	'4702	Chemical wood pulp, dissolving grades	50.48182
'0713	Dried leguminous vegetables, shelled, whether or not skinned or split	35.27634	'3104	Mineral or chemical potassic fertilisers (excluding those in tablets or similar forms, or in ...	35.20484	'0713	Dried leguminous vegetables, shelled, whether or not skinned or split	45.56546
'2524	Asbestos (excluding products made from asbestos)	29.93983	'8802	Powered aircraft "e.g. helicopters and aeroplanes"; spacecraft, incl. satellites, and suborbital ...	21.39151	'4801	Newsprint as specified in Note 4 to chapter 48, in rolls of a width > 36 cm or in square or ...	35.13096
'3104	Mineral or chemical potassic fertilisers (excluding those in tablets or similar forms, or in ...	23.19809	'2524	Asbestos (excluding products made from asbestos)	16.38412	'8802	Powered aircraft "e.g. helicopters and aeroplanes"; spacecraft, incl. satellites, and suborbital ...	18.93912
'4703	Chemical wood pulp, soda or sulphate (excluding dissolving grades)	12.31099	'7604	Bars, rods and profiles, of aluminium, n.e.s.	14.24071	'3104	Mineral or chemical potassic fertilisers (excluding those in tablets or similar forms, or in ...	17.67314
'7502	Unwrought nickel	12.09547	'4702	Chemical wood pulp, dissolving grades	12.10609	'7502	Unwrought nickel	8.914941
'7102	Diamonds, whether or not worked, but not mounted or set (excluding unmounted stones for pick-up ...	3.904148	'4703	Chemical wood pulp, soda or sulphate (excluding dissolving grades)	10.36157	'4703	Chemical wood pulp, soda or sulphate (excluding dissolving grades)	8.101441

'8802	Powered aircraft "e.g. helicopters and aeroplanes"; spacecraft, incl. satellites, and suborbital ...	2.668561	'7502	Unwrought nickel	9.854328	'3815	Reaction initiators, reaction accelerators and catalytic preparations n.e.s. (excluding rubber ...	5.602238
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2013			20140			2015		
HS Code	Product	RCA	HS Code	Product	RCA	HS Code	Product	RCA
'0713	Dried leguminous vegetables, shelled, whether or not skinned or split	60.98554	'0713	Dried leguminous vegetables, shelled, whether or not skinned or split	55.61255	'4705	Wood pulp obtained by a combination of mechanical and chemical pulping processes	25.35113
'8805	Aircraft launching gear (excluding motor winches for launching gliders); deck-arrestor or similar ...	50.63808	'4705	Wood pulp obtained by a combination of mechanical and chemical pulping processes	37.50453	'4801	Newsprint as specified in Note 4 to chapter 48, in rolls of a width > 36 cm or in square or ...	24.53265
'3104	Mineral or chemical potassic fertilisers (excluding those in tablets or similar forms, or in ...	40.81339	'4801	Newsprint as specified in Note 4 to chapter 48, in rolls of a width > 36 cm or in square or ...	31.7114	'3104	Mineral or chemical potassic fertilisers (excluding those in tablets or similar forms, or in ...	21.18805
'4705	Wood pulp obtained by a combination of mechanical and chemical pulping processes	35.35269	'3104	Mineral or chemical potassic fertilisers (excluding those in tablets or similar forms, or in ...	30.14912	'4702	Chemical wood pulp, dissolving grades	21.06425
'4801	Newsprint as specified in Note 4 to chapter 48, in rolls of a width > 36 cm or in square or ...	30.915	'4702	Chemical wood pulp, dissolving grades	21.75771	'9999	Commodities not elsewhere specified	17.18161

'4702	Chemical wood pulp, dissolving grades	27.81529	'6309	Worn clothing and clothing accessories, blankets and travelling rugs, household linen and articles ...	12.40467	'2844	Radioactive chemical elements and radioactive isotopes, incl. their fissile or fertile chemical ...	14.71148
'4703	Chemical wood pulp, soda or sulphate (excluding dissolving grades)	7.455987	'2601	Iron ores and concentrates, incl. roasted iron pyrites	10.12016	'8802	Powered aircraft "e.g. helicopters and aeroplanes"; spacecraft, incl. satellites, and suborbital ...	5.702535
'7502	Unwrought nickel	5.725884	'4703	Chemical wood pulp, soda or sulphate (excluding dissolving grades)	9.572043	'2603	Copper ores and concentrates	5.658655
'2603	Copper ores and concentrates	5.079334	'2603	Copper ores and concentrates	6.366719	'7502	Unwrought nickel	4.247051
'8802	Powered aircraft "e.g. helicopters and aeroplanes"; spacecraft, incl. satellites, and suborbital ...	3.628194	'7502	Unwrought nickel	3.820355	'4703	Chemical wood pulp, soda or sulphate (excluding dissolving grades)	3.965731

Trade Intensity Index

Trade intensity index measures the robustness of bilateral trade and is used to determine whether trade between the two countries is greater or smaller than what would be expected on the basis of their share in world trade. TII is calculated as follows:

$$TII = T_{ic}/T_{iw}/T_{wc}/T_{ww}$$

Where say i=India and c=Canada; T_{ic} = India's exports to Canada; T_{iw} = India's exports to World; T_{cw} = Canada's imports from the world; T_{ww} = World's Total Export. We have also divided Trade Intensity Index to Export and Import Intensity Index in order to understand the diversified picture of trade. The range is from zero to one. A value closer to one implies a bilateral trade flow that is larger than expected compared with the two countries' trade with the rest of the world.

Table four shows the export and import intensity of the two countries in the period of 2001-2015. During the study period, we find that in the case of trade from India to Canada, trade intensity has decreased from 0.36 % to 0.31 % and this has been caused due to the reduction in export intensity. In the case of trade from Canada to India, Trade Intensity Index has increased substantially

from 0.20 % to 0.35 %, the reason for this trend can be attributed to the increase in both Export and Import Intensities. As can be seen, Canada and India's export and import Intensities have been less than unity implying that the bilateral trade flow is smaller than expected. We also see that the export intensity with Canada was high in this period, though it decreased gradually over time. This implies that India's exports to Canada were much less than that to the rest of the world. Canada's export intensity with India fluctuates and is less than unity, which indicates the growth rate of Canada's exports to India is less than the rest of the world. Similar trend follows in the case of import intensity and even though the index for both the countries is less than unity, it is the trade between Canada to India that is larger than the trade of India to Canada. Overall, the bilateral trade between Canada to India has been less intense than the respective trade of India to Canada during our period of study.

Trade Complementarity Index

The trade complementarity index can provide information on prospects for intraregional trade in that it shows how well the structures of a country's imports and exports match. TCI is calculated as

$$TCI_{ij} = 100(1 - \text{sum} (| m_{ik} - x_{ij} | / 2))$$

Where, x_{ij} = share of good i in global exports of country j

m_{ik} = share of good i in all imports of country k.

The index is zero when no goods are exported by one country or imported by the other and 100 when the export and import shares exactly match. We can infer from Table 4 that the trade complementarity between Canada and India has improved during the study period and it is more than 50 per cent for both the countries. The results of TCI indicate that bilateral trade between India and Canada is highly complementary. When taking Canada as importer, we find the TCI to be higher than India (62 per cent in 2015). This means that Canada's import structure matches with the export structure of India. Alternatively, in the case of India as an importer, we find that the TCI value is less than Canada's (54 per cent in 2015) meaning that it is not as highly compatible as the former.

Table 4: Trade intensity and complementarity index between India and Canada's Bilateral trade

Trade Intensity Index															
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TII-India to Canada	0.36	0.39	0.38	0.36	0.32	0.32	0.29	0.30	0.25	0.22	0.25	0.28	0.28	0.28	0.31
TII- Canada to India	0.20	0.19	0.21	0.19	0.18	0.26	0.25	0.25	0.28	0.22	0.23	0.20	0.24	0.25	0.35
Export Intensity Index															
EII- India to Canada	0.37	0.40	0.39	0.37	0.33	0.32	0.30	0.30	0.25	0.22	0.25	0.27	0.27	0.27	0.31
EII- Canada to India	0.20	0.19	0.21	0.19	0.18	0.25	0.25	0.25	0.28	0.22	0.23	0.19	0.24	0.25	0.34
Import Intensity Index															
III- India to Canada	0.24	0.26	0.22	0.23	0.20	0.22	0.30	0.26	0.34	0.23	0.20	0.21	0.26	0.32	0.39
III- Canada to India	0.46	0.48	0.53	0.53	0.48	0.47	0.46	0.45	0.38	0.36	0.34	0.39	0.34	0.36	0.45
Trade Complementarity Index															
TCI- India to Canada	42.87	42.98	45.24	47.21	49.55	50.57	50.35	55.62	53.6	54.85	55.09	55	54.86	54.48	54.47
TCI- Canada to India	49.25	46.71	50.49	51.37	55.51	57.58	59.39	68.11	64.25	65.14	66.03	64.94	65.5	66.04	62.23

Summary

The paper attempted to investigate the major attributes of bilateral trade between both the countries and thereby analyse whether trade between both the countries was complementary or competitive. The analysis is carried out in the backdrop of current ongoing efforts to conclude a Comprehensive Economic Partnership Agreement between the two countries on the lines of a Free Trade Agreement.

The key findings of the study help us to locate that, over the years, India has emerged as one of the most important trading partners for Canada. At the same time, Canada's position has deteriorated from 21st rank to 33rd rank in India's total trade. Accordingly, the terms of trade between India and Canada have reduced substantially over the reference period and for the same period, Canada enjoys favourable terms of trade. With respect to the sectoral composition of trade, secondary sector has the major share in the total exports of India to Canada. In the case of Canada, the trade is driven by export of primary goods, which is definitely against the national trend/pattern. On the issue of trade competitiveness, BRCA during the reference period has largely remained greater than one, thereby indicating a strong comparative advantage in trade between both the countries. Canada and India's export and import intensities have been less than unity implying that the bilateral trade flow is smaller than expected and indicate future prospect for the same.

Nevertheless, the finding of the study based on exploratory approach definitely has certain set of limitations. As finding product-specific market opportunities could be a necessary condition, the sufficient condition would be to ensure the identification and reconciliation of non-tariff measures and procedural obstacles to trade that perhaps affect the export supply chain and thereby the overall trade-oriented development. It is equally necessary to examine the market access and other issues affecting doing business in both countries. This definitely calls for further research in this area, specifically non-tariff measures and trade facilitation issues affecting exporters of both countries. Any such exercise will also explain in detail perhaps the factors that explain the deteriorating position of Canada in overall trade of India.

End Notes

ⁱ The CEPA is drafted as an overall trade agreement; hence it also focusses on issues related to intellectual property, electronic commerce, trade and labour, trade and environment, etc. As of now, nine rounds of negotiations have been completed, the recent one being held in March 2015. Several MoUs were signed between various departments of India such as ISRO, Railways etc. with the Canadian agencies.

ⁱⁱ India's proliferating manufacturing base and service sector make it a market of enormous opportunity, with cheap and easy access to abundant raw materials and labour. Canada is well-known for its advanced technological base in agriculture, food processing, education, science and technology, innovation, environment, cleaner technologies, etc.

ⁱⁱⁱ Products listed in primary sector represent a lower resource base and low technology export. On the other hand, products listed in secondary sector represent a good manufacturing base in the country and relatively high technology intense products.

^{iv} Unemployment, total (% of total labour force) (modeled ILO estimate)

^v Source- WITS User Manuel

^{vi} (Balassa 1965 and 1989)

^{vii} (Bowen 1983)

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Appendix Table A1: Trends in Sectoral Composition of Trade of India and Canada to the World

Year	Top-20 Merchandise Exports of India to the World		Top-20 Merchandise Imports of India from the World		Top-20 Merchandise Exports of Canada to the World		Top 20 Merchandise Imports of Canada from the World	
	Primary Sector share	Secondary Sector share	Primary Sector share	Secondary Sector share	Primary Sector share	Secondary Sector share	Primary Sector share	Secondary Sector share
2001	46.81	53.19	66.88	33.12	40.62	59.38	12.72	87.28
2002	49.58	50.42	64.70	35.30	28.74	71.26	9.99	90.01
2003	50.31	49.69	63.85	36.15	32.99	67.01	11.70	88.30
2004	51.06	48.94	65.03	34.97	35.30	64.70	13.81	86.19
2005	51.54	48.46	64.65	35.35	38.26	61.74	16.61	83.39
2006	52.60	47.40	63.11	36.89	38.85	61.15	17.00	83.00
2007	54.80	45.20	62.48	37.52	40.51	59.49	17.27	82.73
2008	54.52	45.48	63.05	36.95	49.06	50.94	21.73	78.27
2009	51.76	48.24	61.96	38.04	44.80	55.20	18.41	81.59
2010	56.06	43.94	65.85	34.15	47.95	52.05	20.20	79.80
2011	57.30	42.70	67.98	32.02	51.32	48.68	23.04	76.96
2012	58.22	41.78	68.73	31.27	50.22	49.78	21.41	78.59
2013	59.42	40.58	68.22	31.78	51.33	48.67	20.55	79.45
2014	57.87	42.13	66.71	33.29	51.59	48.41	19.97	80.03
2015	49.53	50.47	58.77	41.23	42.48	57.52	15.58	84.42

Source: Calculated from the data extracted from International Trade Centre

Appendix Table A2: Trends in Share of Top-20 Trading Countries (C-20) in Total Merchandise Trade of India and Canada

	Share of C-20 in Total Exports of India	Share of C-20 in total imports of India	Share of C-20 in Total Exports of Canada	Share of C-20 in total imports of Canada
2001	74.66	84.60	97.17	93.07
2002	72.87	84.58	97.05	91.14
2003	72.18	85.34	96.64	90.44
2004	71.67	84.57	96.33	89.83
2005	72.48	84.40	96.05	88.53
2006	69.05	64.32	95.46	88.09
2007	68.41	60.68	94.58	88.04
2008	66.97	59.34	93.62	86.41
2009	70.09	62.71	93.11	86.66
2010	67.18	63.17	93.69	85.78
2011	69.13	62.03	93.75	84.31
2012	66.02	57.45	93.92	85.36
2013	65.43	55.42	94.07	86.80
2014	62.99	55.70	94.00	88.23
2015	65.00	62.83	93.92	88.73

Source: Calculated from the data extracted from International Trade Centre

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