Final Report

Assessing Export Opportunities for Canada in India

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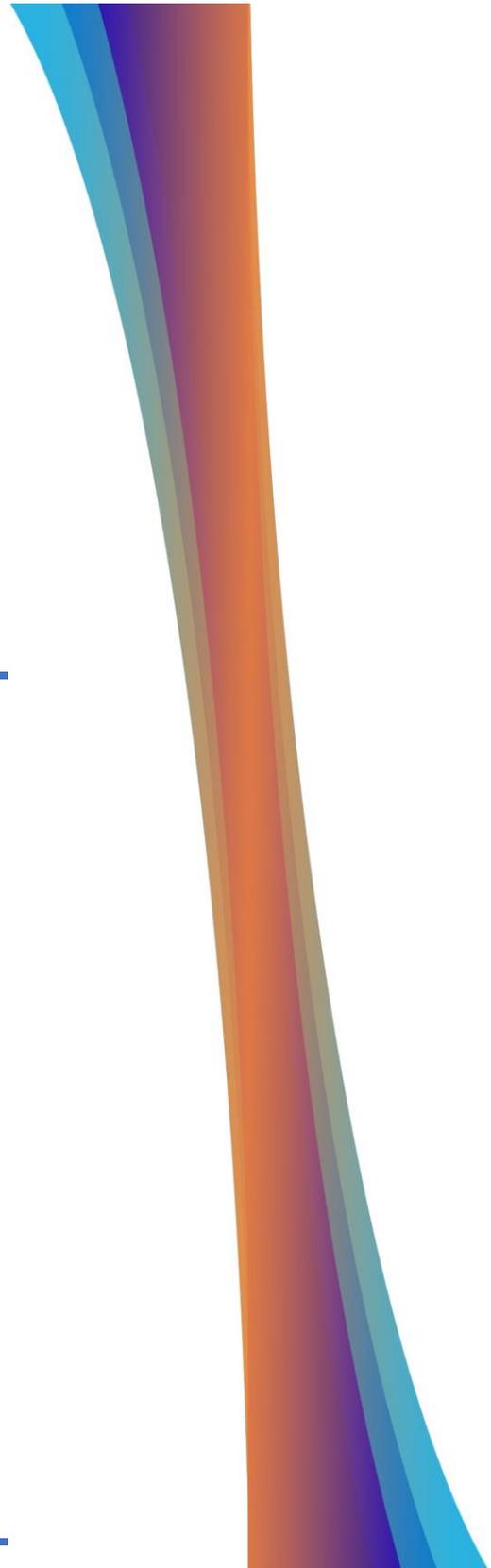
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Abstract: India has recently attracted considerable new interest as a trade partner both as part of increased focus on the Indo-Pacific as a region and as a diversification play for global value chain sourcing and production and is being actively courted by many of Canada's trading partners, including the United States, the United Kingdom, the European Union, and Australia. For its part, India is seeking to diversify its markets; after taking a hiatus from trade liberalization for the better part of the last decade, it is getting back in the game, with several trade deals back on a fast track and a new foreign trade policy about to be unveiled in 2022. This study provides an updated perspective on Canada-India trade and its unfulfilled potential. It develops a gravity model to identify unexploited trade potential and analyzes the potential impact of an FTA on the basis of computable general equilibrium model simulations that take into account realistic scenarios for commitments by Canada and India. The analysis suggests that an FTA would lead to palpable increases in trade and real GDP and generate solid gains in Canadian household incomes, all without significant disruption to industry in Canada. The same would be true for India. This would be a win-win policy initiative that would put some genuinely constructive "Indo" into the new Indo-Pacific strategy that Canadian officials have been tasked with developing.

Keywords: Canada, India, free trade agreement, gravity model, CGE model, Indo-Pacific

JEL Codes: F13

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Executive Summary

India has recently attracted considerable new interest as a trade partner both as part of increased focus on the Indo-Pacific as a region and as a diversification play for global value chain sourcing and production and is being actively courted by many of Canada's trading partners, including the United States, the United Kingdom, the European Union, and Australia. For its part, India is seeking to diversify its markets; after taking a hiatus from trade liberalization for the better part of the last decade, it is getting back in the game, with several trade deals back on a fast track and a new foreign trade policy about to be unveiled in 2022.

Accordingly, as Canada draws up its new Indo-Pacific Strategy, the most positive approach that it could take would be to revitalize commercial relations with the subcontinent. This study considers the potential trade and economic benefits of expanded Canada-India commerce.

Canada has seen an erosion of its market share in India

Over the past two decades, as India earned its place in the BRICs club of fast-growing emerging markets, Canada saw its share of India's import market squeezed as Asian economies captured growing shares. Between 2001 and 2019, Canada captured only about US$6 billion or about 1% of the US$ 592 billion total expansion of global exports of goods, services and intellectual property to India. Canada's share of India's merchandise imports fell from 1% to only about 0.8% over this period.

Canada Under-trades in India Compared to Expectations

Is it realistic to expect that Canada could do better in the Indian market? Put another way, does Canada under-trade in India? To calibrate expectations, this study compares Canada's actual export performance for merchandise to the expected level based on the workhorse gravity model of trade. According to this model, countries trade more intensively with partners that are larger, geographically closer, more open, have greater economic freedom, and with which they share commonalities that tend to reduce trade costs, such as common language, common cultural characteristics, common legal systems, common currencies, historical ties, and so forth. Bilateral free trade agreements (FTAs) and diplomatic representation boost trade as does having complementary patterns of comparative advantage.

Using a gravity model for Canada's merchandise exports, we find that, if Canada exported to India on a par with its average global performance, exports to India would have been in total US$3.1 billion or 242% higher than they were on average in 2017-2019. Both agricultural products and manufactures were under-traded, with agricultural and agri-food exports falling 56% short of the predicted level and manufacturing exports 57% short.

Considered in an Asian context, India was the most under-traded market for agri-food, the third most under-traded for manufactures, and overall the third most under-traded market. This suggests that Canada could do better.

Considered in a dynamic context, the shortfall in Canada's exports to India (which amounted to about USD 3.1 billion in 2017-2019), would more than double to US$ 6.3 billion by 2027 and rise

even further to over US$ 10 billion in the absence of policy measures to address this under-performance.

Revisiting the Impact of a Canada-India FTA

Perhaps the most powerful tool to invigorate bilateral commerce is an FTA that addresses both tariff and non-tariff barriers. This study provides an up-to-date assessment of the impacts of a Canada-India FTA (CIFTA) based on the template of the Regional Comprehensive Economic Partnership (RCEP), which establishes a realistic level of ambition for India, given that it was engaged in the negotiation of this agreement for over half a decade until dropping out at the eleventh hour.

For Canada, the CIFTA boosts GDP in value terms by CAD $5.1 billion in 2035, or by about 0.16%; these gains would rise to CAD 8 billion or 0.25% with more ambitious tariff cuts. For a Canadian household of four, this represents an increase of CAD 470 dollars (this would rise to CAD 731 dollars with the more ambitious tariff reductions).

Bilateral trade increases by almost CAD 6.0 billion in the RCEP template scenario and by CAD 8.8 billion with more ambitious tariff reductions, which suggests there is room to squeeze out more trade gains than available under the RCEP template.

The positive impact of the CIFTA on real wages implies an increase in long-term labour supply in Canada. In equilibrium, jobs increase by over 3,900 in the RCEP template scenario and by over 6,000 in the more ambitious tariff cut scenario.

India's economy responds to liberalization with export-led growth and a relatively stronger boost to investment in the more ambitious tariff cut scenario. For India, the CIFTA generates relatively strong gains in quantity terms and improvements in consumer welfare from both higher incomes and lower prices.

Strong Gains, Minimal Pains

At the sectoral level, a CIFTA promises to create a few winners in Canada from trade-led gains but the main sectors benefiting are those that pick up sales because of the income gains generated by the effects of the agreement.

Four sectors make relatively strong increases in overall farm/factory-gate shipments due to a strong performance in bilateral exports to India: fruit and vegetables ($1.4 billion in expanded exports to India driving a $1.0 billion expansion of total shipments); the chemicals/rubber/plastics complex ($744 million additional exports to India driving a total increase of $416 million in total sales); wood products ($511 million and $401 million respectively); and mineral products ($380 million and $368 million, respectively). Overall, however, the sectors making the strongest gains in total sales are the services sectors, which make their gains almost entirely from the domestic market.

Several sectors in Canada inevitably feel a pinch as the CIFTA drives a pivot towards India. For the most impacted sectors – oil seeds and vegetable oils, automotive products, wheat and other cereal grains and other farming – the impacts are not due to market share penetration by Indian products, but rather by the impact of reallocation of resources within Canada to adjust to the new

profile of demand generated by expanded trade with India. Meanwhile, the sector that does experience significant import penetration from India – textiles and apparel – emerges relatively unscathed in terms of total production as much of this market share by India is captured from third parties through trade diversion. Overall, Canada's economy does not face any significant disruption from free trade with India.

India makes its largest bilateral export gains in textiles and apparel, business services, and "other manufacturing." In each case, the bilateral export gains contribute to solid increases in total shipments. However, like Canada, the sectors with the largest gains are made by the domestic services sectors on the back of the income gains generated by the CIFTA. Meanwhile, the manufacturing sectors in India that do see a decline in total shipments experience only a very small impact. The sectoral impacts therefore do not appear to represent a significant hurdle for India.

Bottom Lines

India has long factored into Canada's strategic trade policy plans. However, progress has been slow over the years. Over the past two decades, Canada lost market share in India to Asian competitors and captured only a relatively small slice of India's rapidly expanding import market.

However, change is in the air as India formulates a new trade policy that is tentatively scheduled for adoption at the beginning of India's fiscal year 2022-23. In the absence of a bilateral trade deal, Canada's current degree of under-trading in the Indian market stands to widen as its market share continues to erode – including due to any new FTAs that India concludes with third parties.

The time seems propitious, therefore, for Canada to reinvigorate its efforts to obtain a free trade deal. The analysis in this study suggests that an FTA would lead to palpable increases in trade and real GDP and generate solid gains in Canadian household incomes, all without significant disruption to industry in Canada. The same would be true for India. This would be a win-win policy initiative that would put some genuinely constructive "Indo" into the new Indo-Pacific strategy that Canadian officials have been tasked with developing.

1   Introduction

India has recently attracted considerable new interest as a trade partner both as part of increased focus on the Indo-Pacific as a region and as a diversification play for global value chain sourcing and production in light of the risks laid bare during the pandemic of concentrated sourcing in any one market. India is being actively courted by many of Canada's trading partners, including the United States[1], the United Kingdom,[2] the European Union,[3] and Australia[4].

For its part, India is seeking to diversify its markets in response to frictions with China (Srivastava and Sen, 2021). A comprehensive trade agreement between India and the United Arab Emirates (UAE) is anticipated to be signed in January 2022 (Jayaswal, 2021); moreover, India has an open door to join the Regional Comprehensive Economic Partnership (RCEP) which features the ten members of the Association of Southeast Asian Nations (ASEAN), plus Australia, China, Korea, Japan, New Zealand, and which entered into force on 1 January 2022.

Canada stands to face preference erosion in the Indian market if, and as, these various economies achieve better terms for trade than currently are in place under India's most favoured nation (MFN) obligations under its World Trade Organization (WTO) commitments.

India had earned its place as a major emerging market economy and membership in the group of large and fast-growing developing economies – Brazil, Russia, India and China – that were labelled the "BRICs" (O'Neill, 2001) due to an outward looking economic policy and trade liberalization under Prime Minister Manmohan Singh, a continuation of the economic liberalization on his watch as Finance Minister that brought India back from its financial crisis of 1991. Between 1991 and 2019, India averaged 5.3% annual real growth in GDP, and 7.1% in US dollar terms, raising it to fifth place in the world, behind only the United States, the European Union, China, and Japan (IMF, 2021).

The nationalist turn in economic policy under Prime Minister Modi, as exemplified by the "Make in India" and "Self-Reliant India" policies, partly reversed the opening up of India's economy – since 2014, India has implemented some 3,200 tariff increases, affecting about 70 percent of total imports (Subramaniam and Felman 2021). The average applied MFN tariff rose from 13.5% to

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[1] Building on the strategic relationship through the Quad, US President Biden and India's Prime Minister Modi committed at their meeting on 24 September 2021 to "develop an ambitious, shared vision for the future of the trade relationship" USTR (2021).

[2] At their virtual summit on 5 May 2021, British Prime Minister Johnson and India's Prime Minister Modi announced their intention to establish an enhanced trade partnership, which is to include a comprehensive free trade agreement and an interim trade agreement with an early harvest; a roadmap was to be developed by year-end 2021. Nandi (2021).

[3] Talks on an EU-India agreement on trade, investment, and geographic indications were resumed following the EU-India summit in May 2021 (Poitiers et al., 2021), although progress has been slow due to issues such as labour and the environment (Sen, 2021).

[4] The 17th India-Australia Joint Ministerial Commission meeting of 30 September 2021 re-launched negotiations towards a Comprehensive Economic Cooperation Agreement (CECA), with an interim early harvest agreement to be reached by December 2021 (Ministry of Commerce and Industry, 2021).

15% over this period (WTO, ITC, and UNCTAD, 2014; 2021). Many of India's trade negotiations stalled during this period.

India's overall trade in goods and services as well as in intellectual property expanded considerably over the past two decades. As shown in Table 1, two-way trade rose from 28.5% of GDP in 2001 to 42.05% in 2019, prior to the pandemic-induced recession. Following the 2020 recessionary decline, India's trade rebounded strongly in 2021, with exports above pre-pandemic levels and imports closing the gap (Reserve Bank of India, 2021).

Table 1: India's Trade in Goods, Services, and Intellectual Property, 2001-2019

	Imports		Exports		Two-Way Trade		Share of GDP	
	2001	2019	2001	2019	2001	2019	2001	2019
Goods	50,671	478,884	43,878	323,251	94,549	802,134	19.14	27.94
Services	23,419	179,430	20,390	214,762	43,809	394,192	8.87	13.73
Intellectual Property	317	7,890	37	872	354	8762	0.07	0.31
Total	76,408	668,223	66,306	540,904	140,713	1,207,107	28.49	42.05

Source: International Trade Centre Trade Map, except for services data for 2001, which are drawn from the WTO, International Trade Statistics 2002. IP data are from the World Bank Indicators, Charges for the use of intellectual property, Receipts and Payments.

Importantly, a new foreign trade policy is to be unveiled in 2022 (Mishra, 2021). The renewed signs of interest in trade talks suggests that India may again be looking to two-way trade as an engine of growth, especially given the renewed dynamism that it is showing in terms of establishment of fast-growing firms, most of which are in the future-oriented digital economy domains of e-commerce, edtech, fintech and logistics (India accounted for 48 of the 943 unicorns in a recent survey, well above its share of global GDP; CB Insights, 2021); and from its ambitions to establish itself as an alternative to China for value chain participation, which would require a more open trade regime (Subramaniam and Felman, 2021).

Accordingly, as Canada draws up its new Indo-Pacific Strategy as per the mandate given to Foreign Minister Joly in her mandate letter of 16 December 2021 (PM, 2021), a fresh look at the prospects for Canada-India trade is warranted. Indeed, the most positive approach that Canada could put on an Indo-Pacific Strategy would be to put a major focus on revitalizing Canada's commercial relations with the subcontinent. This study considers the potential trade and economic benefits of expanded Canada-India commerce.

The study is organized as follows. Section 2 provides the background to Canada-India bilateral trade and briefly reviews the negotiating history towards bilateral trade and investment agreements. Section 3 uses a gravity model approach to identify unexploited trade potential. Section 4 analyzes the potential impact of an FTA on the basis of computable general equilibrium model (CGE) simulations that take into account realistic scenarios for commitments by Canada and India. Section 5 discusses and draws conclusions for Canadian trade policy.

2 Background: Canada-India Trade Relations

2.1 The Evolution of Canada-India Commercial Relations

Canada's commercial engagement with India increased substantially over the past two decades: India's imports of merchandise from Canada grew from USD 517 million to USD 3.9 billion between 2001 and 2019, registering an average annual growth rate of 11.88%; while Canada's imports from India rose from USD 746 million to USD 4.1 billion, with an average annual growth rate of almost 10%. Nonetheless, Canada's share of India's two-way trade declined over the period from 1.34% in 2001 to 1.00% in 2019. This reflected a more general shift in India's trade patterns as the North Atlantic economies overall saw their share of India's two-way trade decline from a combined 39.3% in 2001 to a combined 26.3% in 2019. Meanwhile, China, ASEAN and the UAE almost doubled their share, from a combined 15.9% share of India's two-way merchandise trade in 2001 to a 28.6% share in 2019. All in all, Canada's share held up relatively better than Europe's.

Table 2: Canada's Merchandise Trade with India, 2001-2019, International Comparison

	Canada	USA	EU27	UK	ASEAN	China	UAE	World
India Imports by Partner								
Goods Imports 2001 (USD millions)	517	3,227	7,395	2,759	4,345	1,828	919	50,671
Goods Imports 2019 (USD millions)	3,901	34,918	42,724	6,878	57,040	68,402	30,309	478,884
Growth Imports 2001–2019 (%)	11.88	14.15	10.23	5.21	15.38	22.29	21.44	13.29
Share 2001 (%)	1.02	6.37	14.59	5.44	8.57	3.61	1.81	
Share 2019 (%)	0.81	7.29	8.92	1.44	11.91	14.28	6.33	
India Exports by Partner								
Goods Exports 2001 (USD millions)	746	9,737	9,813	2,961	3,561	1,699	2,674	43,878
Goods Exports 2019 (USD millions)	4,113	60,139	48,419	9,846	28,794	17,970	26,735	323,251
Growth Exports 2001–2019 (%)	9.95	10.64	9.27	6.90	12.31	14.00	13.64	11.73
Share 2001 (%)	1.70	22.19	22.36	6.75	8.12	3.87	6.09	
Share 2019 (%)	1.27	18.60	14.98	3.05	8.91	5.56	8.27	
Two-way Trade by Partner								
Goods 2001 (USD millions)	1,263	12,964	17,208	5,720	7,906	3,527	3,593	94,549
Goods 2019 (USD millions)	8,013	95,057	91,143	16,725	85,834	86,372	57,044	802,134
Growth 2001–2019 (%)	10.81	11.70	9.70	6.14	14.17	19.44	16.60	12.61
Share 2001(%)	1.34	13.71	18.20	6.05	8.36	3.73	3.80	
Share 2019 (%)	1.00	11.85	11.36	2.09	10.70	10.77	7.11	

Source: International Trade Centre, Trade Map, calculations by the study team. Note India's exports by partner are reported here on the basis of the partner imports from India which is a more accurate measure of that flow.

Canada's two-way services trade with India expanded more strongly than goods trade (Table 3), with exports and imports growing by almost 16% and 14% per annum respectively over the period.

Table 3: Canada's Services Trade with India, 2001-2019, USD millions

	2001	2019	Average Annual Growth
Canadian Exports of Services to India	185	2,658	15.97
Canadian Imports of Services from India	160	1,651	13.84

Source: Statistics Canada, Current Account, Services trade by principal trading partners, 36-10-0024-01 (Formerly CANSIM 376-0111), converted to US dollars.

The interesting statistic for Canadian business is the absolute value of growth of global exports of goods, services and intellectual property to India over the past two decades: US$ 592 billion. Notwithstanding the strong growth of bilateral trade, Canada captured less than US$ 6 billion of this – or about 1%. Canada has thus been punching well below its global weight in one of the major global markets.

Bilateral investment is also under-developed. Canada had on the order of CAD 2.5 billion invested in India in 2019 accounting for about 1.2% of India's inward FDI; India's investment in Canada was CAD 971 million, accounting for about 0.1% of Canada's inward direct investment stocks.[5]

A comprehensive economic partnership agreement could help in these regards. A joint study conducted by teams from Canada and India identified large potential gains from a free trade agreement. Across a number of scenarios, Canadian export gains were estimated to be in the range of 39 to 47%; for India, in the range of 32 to 60%. These trade gains were estimated to leverage GDP gains in the range from US$6-15 billion for Canada and US$6-12 billion for India (Joint Study Group, 2017).

Progress in formally deepening commercial relations has, however, been elusive. On the trade front, negotiations towards a Comprehensive Economic Partnership Agreement (CEPA) were launched in 2010; ten negotiating rounds were held, the last one in August 2017. Several stocktaking meetings have been held since then, most recently in June 2021. As regards investment, negotiations on a Canada-India foreign investment protection agreement (FIPA) were launched even earlier and were technically concluded in 2007; however, the deal was never signed. Talks have continued, on again and off again.

To summarize, Canada-India trade in goods and services has grown briskly over the past two decades but Canada captured only a small slice of India's expanded global imports and lost market share in the large and rapidly growing Indian market. In the following sections, we analyze the scope for Canada to recapture some of this lost market share, first through a gravity model lens, and secondly through a computable general equilibrium modelling lens.

3 Gravity Model Analysis of Unexploited Trade Potential

This section considers Canada's actual trade performance with India and potentially unexploited trade potential in a gravity model framework. The gravity model is premised on the observation that countries trade more intensively with partners that are larger, geographically closer, more open, have greater economic freedom, and with which they share commonalities that tend to reduce trade costs, such as common language, common cultural characteristics, common legal systems, common currencies, historical ties, and so forth. Bilateral free trade agreements and diplomatic representation boost trade as does having complementary patterns of comparative advantage.

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[5] Source of bilateral investment statistics (values): Statistics Canada, 36-10-0008-01; and for shares, UNCTAD estimates; details in Transnational Corporations, vol. 26(1), pages 109-146.

Gravity models take these various effects into account and enable the calculation of an expected level of trade, which can be compared to actual levels to provide an indication of possibly unexploited trade potential.

We develop a gravity model for Canada's exports to 188 partner economies in the recent pre-pandemic period, 2010-2019. While the focus of our analysis is on Canada's exports, we rely on partner economy import data to establish the size of these bilateral flows. This reflects the fact that data recorded by the country of export (Canada in this case) can be distorted by trans-shipment of goods through third countries (which might be country of consignment on export documents but not the final destination). Importing economy authorities look through to the country of origin of the goods and therefore import data tend to more accurately reflect trade patterns. Given the dominant level of trade between the US and Canada, we exclude US trade from the data.

To take account of the fact that trade in precious metals and other mined products (including oil and gas) do not follow gravity patterns (due to high weight-to-value ratios for raw materials and the use of pipelines for oil and gas), we focus on Canadian exports of manufactured goods and agri-food.

To provide a forward-looking perspective on the prospects for commerce with India, we highlight the implications of India's growth by projecting GDP and population levels forward to 2027 and 2035.

3.1 Gravity Model Estimation Results

Table 5 provides the results for the main equations on which we settle for the alternative categories of Canadian exports. Generally, the pattern of Canadian global exports of goods in these broad categories follows the lines of economic geography. The three equations explain a high percentage of the variation (about 91%) of Canadian exports by destination market.

The **size of Canada's economy**, which captures its potential as a source of exports, has the expected moderately positive effect on the scale of Canada's exports. An increase in the size of Canada's economy by 1% results in an expansion of total goods exports of about 0.66%. For agricultural and agri-food products the corresponding figure is 0.35% and for manufactures 0.71%.

The **size of the partner's economy**, which measures demand-pull, is a highly significant determinant of the direction of Canadian exports for all categories of goods. We use a combination of population and per capita GDP to capture the effect of increasing size of destination markets and demand for imports. For every 1% increase in the size of the partner economy as measured by population, Canada's exports of goods are about .99% larger (for agri-food, the increase is by 1.03% and for manufactures by 1.02%). Exports also systematically increase with increasing incomes in the destination economy: for every 1% increase in the per capita GDP of the destination economy, Canada's exports are about 0.96% higher (about 0.95% for agri-food and 1.01% for manufactures).

Increasing **distance** to foreign markets reduces Canada's exports: Canada's exports are about 0.51% smaller for every 1% increase in distance for all goods. The impact of increasing distance is smaller impact on agri-food products (-0.26%), than for manufactures (-.50%).

The impact on bilateral trade intensity of features that reduce bilateral trade costs such as common language, common legal systems, and common colonial history are captured by dummy variables, which takes the value of 1 when the commonalities are present and zero otherwise. Several of these were tested. These tend to be highly correlated. Common colonial history worked best in the estimations The estimated coefficient 0.42 for **common colonial history** in the equation for total goods is converted to a trade impact as follows: exp (0.4162284)-1 = 51.62%. In other words, Canada's exports to a given destination are about 51.6% higher if that destination has a common colonial history with Canada (higher for agri-food at 97.9% and lower for manufactures at 33.9%).

Having a regional trade agreement in place between the parties plays an important role in trade flows. The estimated coefficient (0.83) for **a regional trade agreement** in the equation for total goods is converted to a trade impact as follows: exp (0.8318892)-1 = 129.8 %. In other words, Canada's exports to a given destination are 129.8% higher if that destination has a trade agreement in place with Canada. The impact is larger for manufactures with a 160% improvement for this sector and a slightly lower impact of 46.4% for agricultural products.

A Trade Correlation Index (TCI) is the simple correlation coefficient between two economies' Trade Specialization Indices (TSIs).[6] The TCI captures the **similarity of the pattern of comparative advantage** between trading partners. An example of the application can be seen in Ciuriak (2014) which compares Canada's correlation to Australia and China. The correlation coefficient between the TSIs of Australia and Canada are positive and the correlation coefficient between the TSI's of China with both Canada and Australia are negative, consistent with expectations.

Table 4: TSI Correlation Coefficients

Canada-China	Canada-Australia	China-Australia
-0.464	0.681	-0.554

Source: Ciuriak (2014)

Further, as shown in Ciuriak & Kinjo (2006), countries with negatively correlated TSI correlation coefficients tend to trade more intensively with one another.

For the regression analysis, the TCI was calculated separately for each of the sector groups: Goods excluding mined products; Agriculture & Agri-Foods; and Manufacturing.

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[6] Following Ciuriak and Kinjo (2006), a country's TSI is calculated for each sector defined at the 2-digit HS code level.

$$\frac{X_i - M_i}{X_i + M_i}$$

This yields a vector of 97 values, one for each HS 2-digit product group, based on each country' total exports to the world and total imports from the world. The TCI is the correlation between the exporter's vector and its partner's vector then captures the degree to which they specialize in the same exports. This variable can take values that range from 1 if the exporter's TSIs are identical to its partner's over the various sectors, to –1 if the exporter tends to only export those products that the partner economy tends to import. The former group of partners (those with a positive correlation of the TSIs) would tend to be natural competitors in international trade while those in negative territory would tend to be the exporter's natural trading partners, according to the principle of comparative advantage.

The estimated coefficient (0.57) for the TSI correlation coefficient in the equation for total goods is converted to a trade impact as follows: exp (-0.565233)-1 = (-43.2) %. In other words, Canada's exports to a given destination are about 43% lower if that destination has a positively correlated TSI correlation coefficient – i.e., is a natural competitor – compared to a destination with the opposite correlation. The impact is more pronounced for agriculture with a 77.1% negative impact than for manufactures (23.9% negative impact) when trading with a natural competitor

Table 5: Estimation Results – Alternative Specification of Canadian Exports

	(1)	(2)	(3)
	Goods ex Mines and Fossil Fuels	Agriculture & Agri-food	Manufactures
Canada's GDP	0.66	0.35	0.71
Distance to Destination Market	-0.51	-0.26	-0.50
Population in the Destination Market	0.99	1.03	1.02
Per Capita GDP in the Destination Market	0.96	0.95	1.01
Sibling relationship	0.42	0.68	0.29
Regional Trade Agreement	0.83	0.38	0.96
TSI Goods/Agri-Food/Manufactures	-0.57	-1.47	-0.27

Source: Estimates by the study team. See Annex 1 for full documentation.

3.2   Canadian Export Performance to India

Based on the gravity equation, it is possible to establish a predicted level of Canadian exports by market and to compare this level to the actual level. If actual levels are below the predicted levels, this may indicate that Canada has unexploited export potential that might be addressed through trade agreements or intensified trade promotion including expanding trade missions and building Canada's brand in India.

Overall, we find that, if Canada exported to India on a par with its average global performance, exports to India would have been in total US$3.1 billion or 242% higher than they were on average in 2017-2019. Both agricultural products and manufactures were under-traded, with agricultural and agri-food exports falling 56% short of the predicted level and manufacturing exports 57% short (Table 6).

Table 6: Canadian Exports to India, 2017-2019, compared to predicted levels; USD Millions

Destination	Actual	Predicted	Under-Trading (USD millions)	Under-trading (% of Predicted)
Goods (ex precious metals and fossil fuels)	2,155	5,225	-3,070	-59%
Agri-food	534	1,217	-683	-56%
Manufacturing	1,621	3,542	-1,921	-54%

Source: Calculations by the study team.

In Table 7, we compare Canada's performance in India with other major Asian economies. Globally, India ranks 8th in the under-traded markets for goods (excluding the USA) but 2nd when looking at trade within the Asian region. In agriculture it moves from 3rd place to 1st and in manufactures from 8th place to 3rd. There are some Asian economies that stand out in terms of Canada exporting more than suggested by the model – notably, Hong Kong, Indonesia, Philippines, Singapore, and Pakistan. Accordingly, there is no general underperformance of Canadian exports in Asia.

Table 7: Unexploited Export Destinations -Asian Region, 2017-2019; USD Millions/%

Destination	USD Under Traded	Under-traded % of Forecast
Goods ex precious metals and fossil fuels		
Japan	-7,100	-46%
China	-4,002	-18%
India	**-3,070**	**-59%**
Korea	-2,104	-42%
Agri-food		
India	**-683**	**-56%**
China	-553	-8%
Manufactures		
Japan	-8,564	-67%
China	-3,397	-23%
India	**-1,921**	**-54%**
Korea	-1,866	-46%

Source: Calculations by the study team.

This analysis suggests that Canada is under-exporting to India compared to its potential and indeed India ranks amongst the most under-traded markets in Asia for Canada. This suggests that there is considerable unexploited trade potential and makes a strong case for Canada to redouble its commercial diplomacy in India as a key part of any new Indo-Pacific strategy. On this basis, we turn to the question of what a Canada-India free trade agreement (CIFTA) would potentially mean for bilateral commercial relations.

3.3   A Dynamic Perspective on Canada's Position in the Indian Market

In the absence of policy measures to address the under-trading, the foregone opportunities for Canada loom larger as India continues its rapid trend growth in the post-pandemic period. To provide some perspective on the implications of this in quantitative terms, we project India's population and GDP to 2027 and 2035 and calculate the predicted level of Canada's exports to India compared to the level that will obtain under a no policy change scenario.

Overall, given the expected growth in India's population and GDP, and assuming other factors remain constant, Canada's exports to India would be predicted to be USD 10.8 billion in 2027, if Canada exported to India consistent with its established level of exporting to the world at large. On a "business as usual" basis, the actual level would only grow to USD 4.45 billion meaning the under-trading amount would rise to USD 6.3 billion.

Table 8: Export Growth Potential India, 2027

	Business as Usual	Predicted	Foregone Trade
Goods ex precious metals and fossil fuels	4,449	10,788	-6,339
Agri-Food	980	2,234	-1,254
Manufactures	3,486	7,618	-4,132

Source: Calculations by the study team

Repeating this exercise for 2035, we find that, if Canada exported to India on a par with its global performance, exports to India would be predicted to be US$17.2 billion in 2035, whereas a

"business as usual" level would amount to only USD 7.1 billion, leaving a shortfall of over USD 10 billion.

Table 9: Export Growth Potential in India, 2035

	Business as Usual	Predicted	Foregone Trade
Goods ex precious metals and fossil fuels	7,081	17,168	-10,087
Agri-Food	1,445	3,293	-1,848
Manufactures	5,692	12,438	-6,746

Source: Calculations by the study team.

Insofar as India does indeed move into a more activist and outward looking trade policy and strikes FTAs with some of Canada's competitors, the shortfall would likely widen further. Accordingly, there is a growing cost of inaction.

4 CGE Model Analysis

4.1 Model Structure and Assumptions

A widely used approach to assessing the potential impacts of a trade agreement on an *ex ante* basis is to simulate the agreement on a multi-sector, multi-region computable general equilibrium (CGE) model. Such models have the structural features to analyze modern comprehensive trade agreements that combine tariff reductions, border facilitation measures, and commitments on services and investment (for a discussion of modelling approaches, see Narayanan et al. 2015).

For the present analysis, we use a dynamic version the Global Trade Analysis Project (GTAP) CGE model in which foreign direct investment (FDI) is directly represented (for a description of the model, see Ciuriak et al., 2017). Given that FDI is active in the model, the supply of capital, both domestic and international, responds to changes in the rate of return. At the same time, we adopt a modelling protocol under which the effective labour supply (which is broken down into increased labour force participation and increased productivity) responds to changes in the real wage rate. This treatment of the labour market response is consistent with: (a) theoretical expectations that labour is paid its marginal product; (b) the findings of labour market dynamics that confirm that labour supply responds to real wages (Evers et al., 2008, on the basis of a meta-analysis of the labour supply elasticity literature, conclude the elasticity is about 0.1 for men and 0.6 for women, or about 0.35 on average); and (c) the findings of modern heterogeneous firms trade analysis that shows that trade liberalization transfers market share to firms that feature higher productivity and higher wages (Melitz, 2003).

The investment and labour supply responses generate an endowment effect which supports real economic activity. To assess whether the model response is realistic, we report the ratio of real GDP to real trade (for a discussion see Gilbert, 2004); and the ratio of real wages to productivity (for a discussion, see Ciuriak and Xiao, 2016).

The CGE model is based on the GTAP V10 database which has a base year of 2014 and features up to 65 sectors and 141 countries/regions (Aguiar et al., 2019). We aggregate the database into

39 regions and report the results for Canada, India, the United States, the EU27 and China. We aggregate the model into 33 sectors.

The impact of an CIFTA is simulated against a baseline projection of the global economy to 2035, based on the growth projects adopted by the International Monetary Fund (IMF) in its World Economic Outlook database for April 2021.

We develop liberalization assumptions for India based on the template of the Regional Comprehensive Economic Partnership (RCEP), from which India withdrew just prior to its signing, primarily due to its concern about the impact of liberalization on its manufacturing sector. For the main scenario, we assume tariffs were unchanged for sensitive products and eliminate tariffs for non-sensitive products. Since the GTAP sectors contain both sensitive and non-sensitive product groups, the MFN tariff in the GTAP database is cut by zero, 25%, 50% ,75% or 100% depending on the weighting of sensitive products in each sector. For the ambitious scenario, we remove all tariffs to show the amount of potential there is for further liberalization. Table 8 sets out the assumed tariff liberalization schedule for India. For Canada, we use the CPTPP schedule of commitments, which excludes Canada's sensitive supply managed sectors.

For non-tariff measures, we make no change to goods trade facilitation since the RCEP template applied to the OECD's Trade Facilitation Indicators does not improve upon the WTO Trade Facilitation Agreement (TFA) commitments of the parties.

For services, we develop liberalization shocks by applying the RCEP template to the cross-border services trade components of each parties' scores on the OECD's Services Trade Restrictiveness Index (STRI) (Gelosso Grosso et al., 2015). We also take into account the extent of squeezing "water" out of the bindings in the General Agreement on Trade in Services (GATS) by comparing RCEP bindings to the parties' scores in the corresponding GATS Trade Restrictiveness Index (GTRI) developed by Miroudot and Pertel (2015). The methodology for combining the liberalization of applied measures and the effect of bindings is set out in Ciuriak et al., (2020). Table 10 sets out the services commitments for India under the RCEP.

We perform a similar exercise for investment, drawing on the Mode 3 components of the STRI/GTRI. These estimates are set out in Table 11.

Table 10: Impact of RCEP Template on India's Services Cross-Border Trade Commitments

GTAP	GTAP Sectors	India		
		CIFTA NTB Before	CIFTA NTB After	% Change CIFTA
46	Construction	0.157	0.157	0.00%
47	Trade	0.173	0.173	0.00%
48	Transport nec	0.195	0.195	0.00%
49	Water transport	0.134	0.134	0.00%
50	Air transport	0.298	0.298	0.00%
51	Communication	0.148	0.143	-3.06%
52	Financial services nec	0.221	0.221	0.00%
53	Insurance	0.226	0.226	0.00%
54	Business services nec	0.221	0.218	-1.40%

Source: calculations by the study team.

Table 11: Impact of RCEP Template on India's Services Mode 3 Commitments

GTAP	GTAP Sectors	India		
		CIFTA NTB Before	CIFTA NTB After	% Change CIFTA
46	Construction	0.103	0.096	-6.79%
47	Trade	0.330	0.277	-15.86%
48	Transport nec	0.317	0.281	-11.40%
49	Water transport	0.391	0.293	-25.19%
50	Air transport	0.424	0.424	0.00%
51	Communication	0.255	0.221	-13.35%
52	Financial services nec	0.230	0.230	0.00%
53	Insurance	0.344	0.344	0.00%
54	Business services nec	0.286	0.278	-2.91%

Source: calculations by the study team.

The horizontal components of these indexes also cover goods sectors, allowing an assessment of whether the RCEP template liberalizes investment (it does not).

We report impacts in Canadian dollars at 2021 prices and exchange rates. The original GTAP data are in 2014 USD prices; these are converted to 2021 values on the basis of the following approach:

(a) IMF estimates of inflation in US dollar prices as measured by the US GDP deflator in the IMF World Economic Outlook database of October 2021 are used to convert USD 2014 prices to USD 2021 prices; this increases values by a factor of 1.136.

(b) Exchange rate conversions to CAD 2021 prices are based on the Bank of Canada's 2021 annual average exchange rate of 1.2535.

(c) This results in a conversion factor of 1.424 from the original GTAP values.

Table 12: Conversion from 2014 USD to 2021 CAD

	Conversion Factor
USD 2014 to USD at 2021 prices (based on US GDP deflator growth)	1.1359
USD 2021 to CAD 2021	1.2535
Conversion factor	**1.4239**

Source: International Monetary Fund, World Economic Outlook Database, October 2021; Bank of Canada: https://www.bankofcanada.ca/rates/exchange/annual-average-exchange-rates/

4.2 Overview of CIFTA Macroeconomic Impacts

Table 13 sets out the estimates of the real GDP impacts of a CIFTA for Canada and India in the present study and compares them to the estimates from the Joint Study.

Table 13: Macroeconomic Impacts of the CIFTA – Comparison Across Studies

	Joint Study India (1)	Joint Study Canada (2)	RCEP Template (3)	Ambitious Tariff Cuts (4)
Canada	1.02	0.41	0.048	0.068
India	1.01	0.51	0.052	0.088

Source: Canada-India Joint Study Report (2017); simulations by the study team.

As can be seen, the impacts reported here are substantially smaller than the optimistic scenarios painted in the joint studies. However, this largely reflects the adoption of realistic assumptions about the commitments that India might be willing to make: given that India was engaged for many

years in negotiating the RCEP, it is reasonable to suppose that a trade agreement structured along the lines of the RCEP would be a manageable step for India, particularly as an agreement along these lines with Canada would not generate the same level of concern about competitiveness of India's manufacturing sector.

Table 14 provides the detailed macroeconomic impacts of a CIFTA on Canada and India under the two scenarios that were modelled. These impacts are discussed in the ensuing subsections below.

Table 14: Macroeconomic Impacts of the CIFTA

	Canada		India	
	RCEP Template	Ambitious Tariff Reduction	RCEP Template	Ambitious Tariff Reduction
Major Indicators				
Economic Welfare (CAD millions)	3,312	5,163	2,575	2,983
Economic Welfare (% change)	0.125	0.194	0.097	0.112
GDP Value Change (CAD millions)	5,148	8,008	1,054	53
GDP Value Change (%)	0.158	0.246	0.032	0.002
GDP Volume (% change)	0.048	0.068	0.052	0.088
GDP Deflator (% change)	0.111	0.180	-0.038	-0.089
CPI (% change)	0.070	0.115	-0.042	-0.105
Terms of Trade (% change)	0.100	0.177	-0.022	-0.048
Real GDP Expenditure Components				
Consumption (% change)	0.169	0.265	0.014	-0.010
Government Expenditure (% change)	0.171	0.264	0.027	0.021
Investment (% change)	0.073	0.104	0.013	0.042
Total Exports of Goods and Services (% change)	0.062	0.048	0.218	0.324
Total Imports of Goods and Services (% change)	0.181	0.250	0.121	0.204
International Trade				
Bilateral Exports of Goods and Services (CAD millions)	4,151	6,443	1,009	1,486
Bilateral Imports of Goods and Services (CAD millions)	1,831	2,329	4,257	6,682
Total Exports of Goods and Services (CAD millions)	1,338	1,870	1,484	1,939
Total Imports of Goods and Services (CAD millions)	1,787	2,484	3,023	2,479
Trade Balance (CAD millions)	-449	-614	-1,539	-540
Factor Markets				
Capital Stock (% change)	0.036	0.057	0.011	0.030
Real wage Unskilled (% change)	0.055	0.091	0.034	0.066
Real wage Skilled (% change)	0.041	0.052	0.044	0.085
Labour (number of jobs)	3,914	6,114	8,062	14,597
Unskilled	2,954	4,874	5,987	11,514
Skilled	960	1,240	2,076	3,980
Jobs (% change)	0.018	0.028	0.011	0.020
Labour productivity (% change)	0.029	0.036	0.042	0.068
Key Ratios				
Real GDP/Real Trade	0.40	0.46	0.31	0.33
Real Wages/Productivity	1.31	1.74	0.65	0.77

Source: Estimates by the study team.

4.2.1 Canadian Macroeconomic Impacts

For Canada, the CIFTA boosts GDP in value terms (taking into account changes in prices due to higher wages and terms of trade gains, etc.) by CAD $5.1 billion in 2035 when all the phased-in impacts have worked their way through the economy. This represents an increase of about 0.158% over the value of GDP in the baseline in 2035. This represents an increase in GDP per household of CAD 470 dollars (this would rise to CAD 731 dollars with the more ambitious tariff reductions).

In volume terms, the GDP impact is smaller, an increase of 0.048%, with the difference between value and volume made up by an increase in the GDP deflator of about 0.11%. Canada enjoys positive terms of trade impacts (0.1% increase), which also work to increase prices in Canada (CPI increase of 0.07%). The GDP increase in real terms would rise 0.068% with more ambitious tariff reductions.

While the higher prices boost the value of Canada's GDP, they limit the gain in economic welfare, which improves by CAD 3.3 billion or by about 0.125%. These figures rise to CAD 5.2 billion and 0.194% respectively with more ambitious tariff reductions.

Consumption grows relatively strong compared to investment and the higher price profile in Canada induces greater overall import growth compared to export growth. This pattern is seen in both scenarios.

Bilateral trade increases by almost CAD 6.0 billion in the RCEP template scenario and by CAD 8.8 billion with more ambitious tariff reductions, which suggests there is room to squeeze out more trade gains than available under the RCEP template. The increase in total trade with the world is about half of the increase in bilateral trade in each case, meaning that roughly half of the increase in bilateral trade represents trade diversion. Canada's overall trade balance with the world declines; this is expected in an FTA scenario because the rest of the world does not receive a similar boost to demand as the bilateral FTA partners.

In terms of the structure of GDP, two-way trade – and especially imports – increase more strongly in real terms than real GDP. This makes Canada a more open economy and increases the diversification of Canadian trade, especially as regards sourcing of imports.

The positive impact of the CIFTA on real wages implies an increase in long-term labour supply in Canada. In equilibrium, jobs increase by over 3,900 in the RCEP template scenario and by over 6,000 in the more ambitious tariff cut scenario. Given the sectoral structure of the impacts, there is a relatively strong weighting towards unskilled labour.

In terms of key ratios, the simulation generates results that are broadly within a reasonable range. The ratio of real GDP to real trade gains is about 0.4. This is somewhat on the high side compared with the "rule of thumb" of 20%. Similarly, real wages increase by more than productivity. While the GDP-trade ratio would point to somewhat less real GDP gain than suggested, the real wage-productivity ratio would suggest more real gain and less price increase. On balance, the simulation results are within the reasonable range for a relatively highly open economy such as Canada (see Ciuriak and Xiao, 2016, for a discussion of these reality checks).

4.2.2 India's Macroeconomic Impacts

For India, the CIFTA tends to have the opposite characteristics that Canada would experience. Where Canadian prices rise, Indian prices fall because of the steeper tariff cuts that are implied given India's relatively high MFN tariff profile. By the same token, real gains are stronger than nominal gains – real GDP rises by 0.052% compared to a gain in the value of GDP of 0.032% in the RCEP template simulation. The gap is even larger in the more ambitious tariff cut scenario where the real gain rises to 0.088% while the value gain declines to only 0.002%.

The welfare gains for India are affected by both developments – the boost to real economic activity supports welfare gains; the terms of trade decline works as a partial offset. The net result is a boost to India's welfare of CAD 2.6 billion in the RCEP reference case and about CAD 3.0 billion in the more ambitious tariff cut scenario.

India's economy responds to liberalization with export-led growth and a relatively stronger boost to investment in the more ambitious tariff cut scenario.

The impact of the CIFTA on India's labour market is likely to be concentrated on formal employment. We draw on Mehrotra (2019) for an estimate of formal non-farm employment of 42.8 million in 2017-18. This segment grew at an average annual growth rate of about 3% between 2004-05 and 2017-18. Extrapolating this trend to 2035 yields an estimate of a formal work force of about 73.5 million. Labour market dynamics in India feature a combination of rising real wages (which is consistent with limited supply of sufficiently skilled workers) and a low employment-growth elasticity (see e.g., Misra and Surehs, 2014; Sen, 2019). We tune the labour supply module to target an employment-growth elasticity for the formal sector of about 0.2 (which is consistent with the elasticity observed in the 1990s and 2000s and implies a recovery from the lowered level over the past decade). On this basis, the CIFTA generates about 8,000 jobs in the RCEP template scenario and over 14,600 jobs in the ambitious tariff cut scenario. The pace of job growth lags real output growth (employment-growth elasticities of 0.21 and 0.225 in the two scenarios) and real wage growth lags productivity growth (ratios of 0.65 and 0.77 in the two scenarios respectively).

In terms of key ratios, the simulation generates results that are broadly within a reasonable range. The ratio of real GDP to real trade gains is about 0.4. This is somewhat on the high side compared with the "rule of thumb" of 20%. Similarly, real wages increase by more than productivity. While the GDP-trade ratio would point to somewhat less real GDP gain than suggested, the real wage-productivity ratio would suggest more real gain and less price increase. On balance, the simulation results are within the reasonable range for a relatively highly open economy such as Canada (see Ciuriak and Xiao, 2016, for a discussion of these reality checks). The ratio of real GDP to real trade growth is about 0.3, which is in a reasonable range.

On this basis, we conclude that the macroeconomic implications for India of a CIFTA are relatively modest but positive.

4.3 Sectoral Impacts

Table 15 sheds light on the potential sectoral impacts. We focus on the RCEP template scenario and consider the sectors making the largest gains because of bilateral trade gains, those that are

driven mainly by income effects of the agreement and lastly the sectors that are most negatively affected.

Table 15: Canada's Gaining Sectors, CAD millions

	Bilateral Exports	Bilateral Imports	Total Exports	Total Imports	Domestic Shipments	Total Shipments
Trade-driven gaining sectors						
Fruit and Vegetables	1,429	1	1,052	104	-25	1,027
Chemicals/Rubber/Plastics	744	67	412	243	4	416
Wood Products	511	7	301	85	100	401
Mineral Products	380	14	280	62	88	368
Income-driven gaining sectors						
Other Services	0	0	-29	44	2,155	2,127
Construction	0	0	-2	3	962	960
Trade	0	1	-22	34	975	952
Business Services	71	235	-27	149	581	554
Financial Services	-1	6	-51	65	440	389

Source: Calculations by the study team.

Four sectors make relatively strong increases in overall farm/factory-gate shipments due to a strong performance in bilateral exports to India: fruit and vegetables (CAD 1.4 billion in expanded exports to India driving a CAD 1.0 billion expansion of total shipments); the chemicals/rubber/plastics complex (CAD 744 million additional exports to India driving a total increase of CAD 416 million in total sales); wood products (CAD 511 million and CAD 401 million respectively); and mineral products (CAD 380 million and CAD 368 million, respectively).

Overall, however, the sectors making the strongest gains in total sales are the services sectors, which make their gains almost entirely from the domestic market; in these cases, the gains are driven by the income growth in Canada generated by the CIFTA.

Table 16 shows the sectors that emerge the least well-off under the CIFTA, ranked by the impact on total shipments (which equal total exports plus domestic shipments).

Table 16: Canada's Declining Sectors, CAD millions

	Bilateral Exports	Bilateral Imports	Total Exports	Total Imports	Domestic Shipments	Total Shipments
Oil Seeds and Vegetable Oil	21	2	-120	4	-41	-161
Automotive Products	17	48	-145	64	-14	-159
Wheat and Cereal Grains	0	0	-88	1	-5	-93
Other Farming	1	2	-85	14	5	-80
Textiles and Apparel	10	989	14	136	-62	-47

Source: Calculations by the study team.

For the most part, the impacts are indirect: for example, the most impacted sectors – oil seeds and vegetable oils, automotive products, wheat and other cereal grains and other farming – are not directly impacted by market share penetration by Indian products, but rather by the impact of reallocation of resources within Canada to adjust to the new profile of demand generated by expanded trade with India. Meanwhile, the sector that does experience significant import penetration from India – textiles and apparel – emerges relatively unscathed in terms of total

production as much of this market share is captured from third parties through trade diversion. Overall, Canada's economy does not face any significant disruption from free trade with India.

India makes its largest bilateral export gains in textiles and apparel, business services, and "other manufacturing". In each case, the bilateral export gains contribute to solid increases in total shipments.

Table 17: India's Gaining Sectors, CAD millions

	Bilateral Exports	Bilateral Imports	Total Exports	Total Imports	Domestic Shipments	Total Shipments
Trade-driven gaining sectors						
Textiles and Apparel	345	14	245	14	-62	183
Business Services	265	32	317	79	581	897
Other Manufacturing	113	19	106	44	38	144
Income-driven gaining sectors						
Other Services	1	-1	6	7	2,155	2,162
Trade	2	-1	22	3	975	996
Construction	0	0	7	4	962	969
Financial Services	9	-7	86	-14	440	526

Source: Calculations by the study team.

Of particular note, the price dynamics driven by liberalization with Canada support expanded Indian exports to third parties (as can be seen from the fact that the increase in total exports of business services in particular is larger than the increase in bilateral exports to Canada).

However, like Canada, India makes its largest gains on the back of the income gains generated by the CIFTA; these gains are registered primarily in the services sectors.

India does not experience any disruptive impacts from free trade with Canada. At the sectoral level, only three sectors that experience significant import penetration by Canadian products wind up with negative impacts on total shipments due to erosion of domestic sales – machinery and equipment, metal products and electronic equipment (Table 18).

Table 18: India's Declining Sectors, CAD millions

	Bilateral Exports	Bilateral Imports	Total Exports	Total Imports	Domestic Shipments	Total Shipments
Machinery and Equipment	12	216	0	185	-37	-37
Metal Products	56	341	42	276	-69	-27
Electronic Equipment	5	154	-4	111	-15	-19

Source: Calculations by the study team.

In each case the impacts are small. Notably, the sector sustaining the largest import penetration – fruit and vegetables, sees an expansion of overall shipments as increased exports offset a very small erosion of domestic sales. In this case, the dynamic is that increased domestic demand induced by the lower prices driven import penetration offset the market share gains made by Canadian exporters; meanwhile the Indian sector becomes more globally competitive and sees its global exports increase.

5   Discussion and Conclusions

As Canada draws up its new Indo-Pacific Strategy, and as India revises its foreign trade policy in a context of renewed interest in leveraging trade for economic development and strengthening political relationships, it behooves both parties to take a fresh look at the advantages of a Canada-India free trade agreement.

From a Canadian perspective, this study demonstrates but there are substantial unexploited trade gains to be made in the Indian market. India has long been a rapidly growing emerging market with an expanding share of imports in its economy. Canada has captured only a minimal portion of that expansion over the past few decades. Without taking steps to expand its market share, Canada will continue to miss out on substantial trade opportunities as India continues to climb its developmental curve.

From an Indian perspective, the study shows that returning to a trade-led strategy would drive economic gains for India not only through its bilateral relationship with Canada but through becoming a more competitive global economy due to the pro-competitive effects of trade liberalization.

To summarize, India has long factored into Canada's strategic trade policy plans. However, progress has been slow over the years. Over the past two decades, Canada lost market share in India to Asian competitors and captured only a relatively small slice of India's rapidly expanding import market.

However, change is in the air as India formulates a new trade policy that is tentatively scheduled for adoption at the beginning of India's fiscal year 2022-23. In the absence of a bilateral trade deal, Canada's current degree of under-trading in the Indian market stands to widen as its market share continues to erode – including due to any new FTAs that India concludes with third parties.

The time seems propitious, therefore, for Canada to reinvigorate its efforts to obtain a free trade deal. The analysis in this study suggests that an FTA would lead to palpable increases in trade and real GDP and generate solid gains in Canadian household incomes, all without significant disruption to industry in Canada. The same would be true for India. This would be a win-win policy initiative that would put some genuinely constructive "Indo" into the new Indo-Pacific strategy that Canadian officials have been tasked with developing.

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Annex 1: The Gravity Model of Trade

As the name suggests, the gravity model of trade is based on an analogy to the concept of gravity in physics, relating bilateral trade between two countries to the size of trading partners and the distance between them, as well as to trade frictions (which stand in for the physical concept of a gravitational constant). Gravity models are a workhorse tool for the analysis of international trade patterns and the impacts of many types of trade policies (e.g., the level of diplomatic representation, the presence of an FTA, etc.).

In terms of theoretical foundations, gravity equations can be derived from standard trade theories, including the modern workhorse heterogeneous firms theory (Melitz, 2003).[7] Protection/tariff data are included in some gravity models; however, differing levels of protection get picked up as part of "multilateral resistance" (Anderson & Wincoop, 2003), which captures the effect on any given bilateral trade flow of other trading possibilities that face the bilateral partners.[8]

To implement this analysis, we estimate the following equation:

$$X_j = \beta_0 + + \beta_1 \ln GDP_{CDA} + \beta_2 \ln PCGDP_j + \beta_3 \ln POP_j + \beta_4 \ln D_j + \beta_5 G_{gj} + \beta_6 H_j + \varepsilon$$

X_j denotes Canadian exports to country j (measured by partner imports)

D_j denotes the distance of country j from Canada

GDP_{CDA} denotes Canada's GDP

POP_i denotes the GDP of country j

$PCGDP_j$ denotes the per capita GDP of country j

G_{gij} stands for a set of dummy variables indexed by g that control for a range of factors that have been demonstrated to affect trade intensity, including whether Canada and country j share a common language, common legal system, a common currency, or a common colonial history (e.g., being a member of the British Commonwealth); if the partner country is landlocked, or is an island; the physical size of the partner country, the existence of trade agreements, and others.

H_j is an index measuring economic freedom in the destination market, the World Banks's Trade Across Border indicator, or the TSI Correlation Coefficient.

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[7] For recent reviews of the theoretical foundations of the trade gravity equation, see Anderson (2010), Bergstrand and Egger (2011), and Costinot and Rodríguez-Clare (2014). Olivero and Yotov (2012) develop the basis for a dynamic gravity model to support the estimate of gravity equations using panel data (for an example of dynamic panel methods, see inter alia De Benedictis and Vicarelli (2005).

[8] The concept of multilateral resistance is best illustrated by comparing trade between Australia and New Zealand and trade between Austria and Portugal. These two country pairs are about the same distance apart and have comparable sizes to each other, but Australia and New Zealand trade more intensively with each by an order of magnitude than do Austria and Portugal, because between the former lies the Tasman Strait and between the latter lie many trade opportunities in Spain, France, and Germany.

Data

We draw on data for the period 2010-2019, which provides a large panel dataset covering the recent pre-pandemic period. We include Canada's trading partners outside of India to help tune the coefficient estimates. Given the dominant level of trade between the US and Canada, we exclude the US trade from the data. We anticipate that Canada will be found to be "under-exporting" to India when this trade is put in a global perspective.

To take account of the fact that trade in precious metals and other mined products (including oil and gas) do not follow gravity patterns (due to high weight-to-value ratios for raw materials and the use of pipelines for oil and gas), we focus on Canadian exports of manufactured goods and agri-food.

To provide a forward-looking perspective on the implications of committing to an Indian commercial strategy, we take into account the implications of differential rates of growth for the Indian economy by projecting GDP levels forward to 2027 and 2035.

This provides the basis for several insights for each destination market for each category of exports:

- Expected actual exports on a "business as usual" growth through 2027/2035; and taking into account a higher growth trajectory.
- The potential for expanding exports based on closing the under-trading gap compared to Canada's global average export performance.

Data are sourced as follows: trade data are drawn from UN Comtrade and International Trade Centre Trademap; distance and the conventional gravity variables are drawn from CEPII's gravity data set, population and GDP data from the IMF's World Economic Outlook; economic freedom is based on the Fraser Institute's Economic Freedom Index and the World Bank's Trade Across Borders measure.

It is generally accepted that import values are more accurate than export values since customs authorities are more diligent in documenting final destination of goods for the purposes of applying tariffs and other trade policies. Accordingly, all trade data are based on import statistics.

Estimation technique

To estimate the gravity equation, we use the popular pseudo-Poisson maximum likelihood (PPML) estimator (Santos Silva and Tenreyro, 2006) which has a particularly important advantage for the present exercise in that it accommodates zero values of the dependent variable (which ordinary least squares regression techniques cannot handle when equations are estimated in double-log form). PPML also successfully addresses the issue of heteroskedasticity, which is a common issue in trade data.

Robustness checks are conducted through the inclusion/exclusion of relevant variables so as to assess the sensitivity of the results under alternative specifications of the model. We estimate the model sequentially, adding variables to identify the final form in which any modification of the

variables leads to only minor changes in the results, suggesting a high level of robustness and validity of the suggested model.

Table 19: Estimation Results – Alternative Specification of Canadian Exports

	(1)	(2)	(3)
	Goods ex Mines and Fossil Fuels	Agriculture & Agri-food	Manufactures
ln(gdp_o)	0.6615596	0.3489096	0.7066477
	0.0000164	0.0000324	0.000019
ln(distw)	-0.5142287	-0.2610715	-0.4993653
	0.0000037	0.0000087	0.0000039
ln(pop_d)	0.9908174	1.02603	1.017069
	0.0000011	0.0000020	0.0000014
ln (GDPPC_d)	0.9611427	0.951865	1.014216
	0.0000016	0.0000032	0.0000019
sibling_ever	0.4162284	0.6827961	0.2919255
	0.0000043	0.0000082	0.0000050
rta	0.8318892	0.3808807	0.9553313
	0.0000038	0.0000090	0.0000042
TSI_HS2_Goods /Manufacturing/Manufacturing	-0.565233	-1.472287	-0.2725293
	0.0000050	0.0000101	0.0000055
constant	-1.969463	0.5009631	-3.79506
	0.0003512	0.0006949	0.0004066
Observations	1,118	1,115	1,116
R-squared	0.919600	0.848500	0.902800

Source: Estimates by the study team.
Note: Robust standard errors $p < 0.01$ for all variables