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GROWING PREFERENTIAL TRADE AGREEMENTS ACROSS THE GLOBE: LESSONS FOR CANADA

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INTRODUCTION

A growing debate on whether Canada should sign preferential trade agreements (PTA) with its Asian partners has necessitated a more detailed study on the topic. The concern has arisen as a result of this explosion of trading partnerships in the Asia-pacific region, with inherently closed economies like Japan and Korea announcing negotiations for bilateral Free Trade Agreements (PTAs), and distant neighbors New Zealand and Singapore forging ahead with bilateral negotiations.¹

The issue of concern, which I address in this research piece, is that of growing PTAs across the globe. According to the WTO' 2002 reports there are 250 regional trading arrangements in place, 70% of these are already in force and the rest are believed to be operational but not notified or underway to be operational by the end of the year.² There are strong economic rationales for signing PTAs. PTAs give member countries access to larger markets for their exports and the agreement helps lock out competition from other nations in the exporting market. A resultant effect is the changing trade patterns that result from this.

In case our trading partners sign PTAs with other developing or developed countries, would that divert trade away from Canada. If that is the case, then Canada needs to strategize its future trading plans. We need to look ahead at building trading relationships with growing giants like China and India. It would be highly detrimental to the Canadian economy if it was left out of these global trading groups. There seems to be a shift of emphasis in trade negotiations from WTO to Bilateral agreements. Please refer to Panagariya (1999) for a detailed debate on the economic effect of PTA on member countries and global trading system.

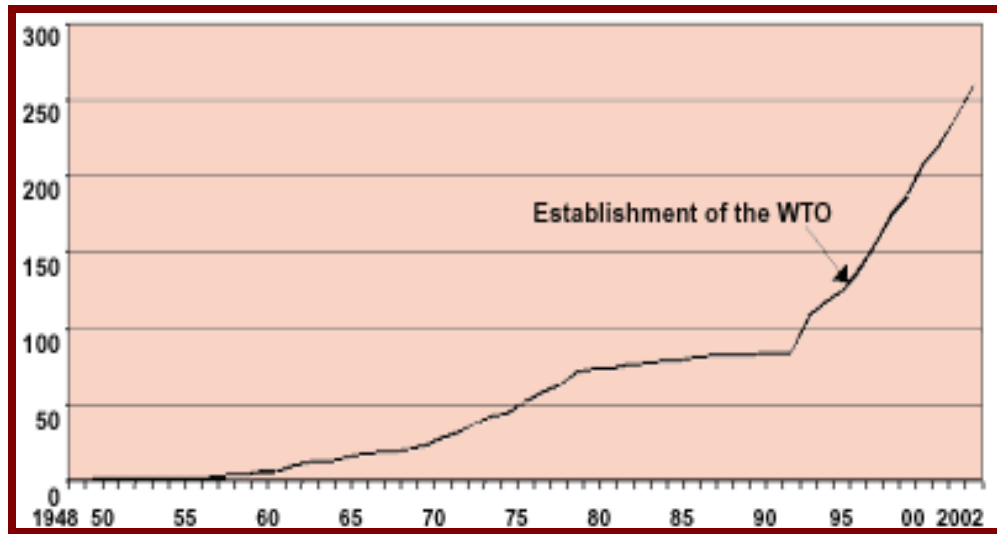
In order to better understand the impact of PTAs on Canadian Trade, I address two questions. The first aim of this paper is to measure if and to what extent is trade diverted away from Canada once Canada's trading partners sign PTAs with other (3rd) countries, these I'll refer to as foreign PTAs (agreements between Canada's trading partner and the 3rd country). Thus, in this

¹ Earlier work uses simulated models to predict the trade patterns after the signing of PTAs and calculate welfare changes. I take a different approach to the problem – and study what has been the impact on trade of previous trading relationships between our trading partners.

² http://www.wto.org/english/thewto_e/whatis_e/tif_e/bey1_e.htm

paper, I analyze the impact of these foreign PTAs on Canada' trade with the partner countries. The second aim is to measure the trade benefits, if any, of the past PTAs signed by Canada itself. Earlier work uses simulated models to predict the trade patterns after the signing of PTAs and calculate welfare changes. I take a different approach to the problem – and study what has been the impact on trade of previous trading relationships between Canada and our trading partners.

FIGURE 1: EVOLUTION OF REGIONAL TRADING AGREEMENTS: NUMBER OF RTAS OVER THE YEARS³



Source: WTO secretariat

³RTA or PTA can take the form of free-trade areas (PTAs), customs unions (CUs), or agreements leading to the formation of one or the other,

PTAS IN THE ASIA PACIFIC REGION

The following table lists the PTAs in the Asia Pacific region. Agreement concluded since 1999 have been reported as well as those that are under negotiations. (As of December 2006)

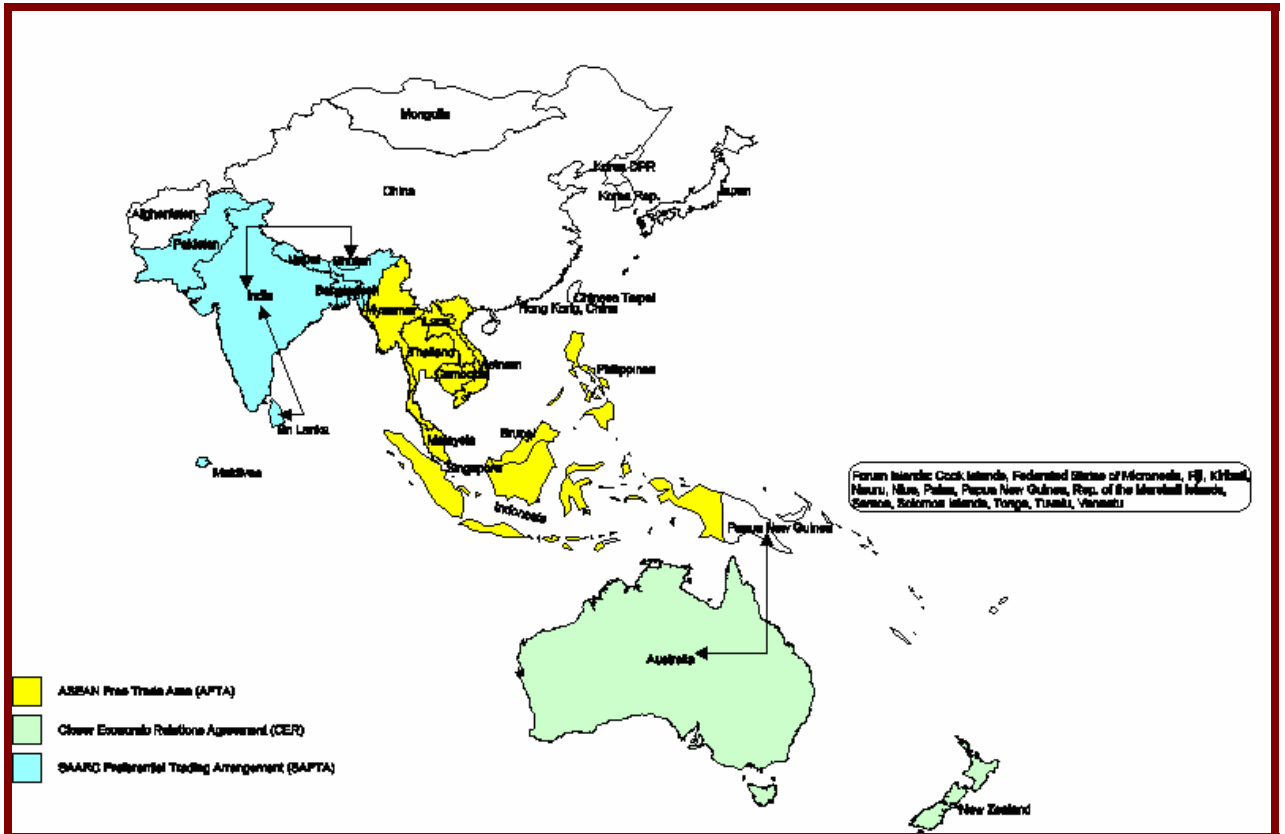
TABLE 1 : PREFERENTIAL TRADING AGREEMENTS BETWEEN APEC ECONOMIES

<p><u>Concluded “New” Agreements (6)</u></p> <p>Singapore-New Zealand Singapore-Japan Singapore-Australia Chile-Korea Singapore-U.S.A. Chile-U.S.A.</p> <p><u>New Developments in Old Agreements (1)</u></p> <p>Bangkok Agreement</p> <p><u>Under Negotiation or Negotiations Announced (12)</u></p> <p>ASEAN-China ASEAN-Japan U.S. Australia FTAA Singapore-Canada Singapore-Mexico Singapore-Korea Korea-Mexico Japan-Mexico Japan-Thailand Thailand-Australia Singapore-Chile-New Zealand</p> <p><u>Proposed and Under Discussion (6)</u></p> <p>ASEAN Plus Three (‘East Asian FTA’) Japan-Korea US-ASEAN (‘Enterprise for ASEAN’) US-Andean Community Canada- Andean Community Mexico-New Zealand</p>
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Source: Scollay 2003

Map 1 highlights the RTAs in force in the Asia Pacific region. The large Asian giants like China, Japan and Hong Kong are not members of any PTA as of 2000. The three main agreements are ASEAN (Association of South East Asian Nations) Free Trade Area (AFTA) with 10 members SAARC (South Asian Association for Regional Cooperation) Preferential Trading Arrangement (SAPTA) with 7 members; Closer Economic Relations Agreement (CER) with two members.

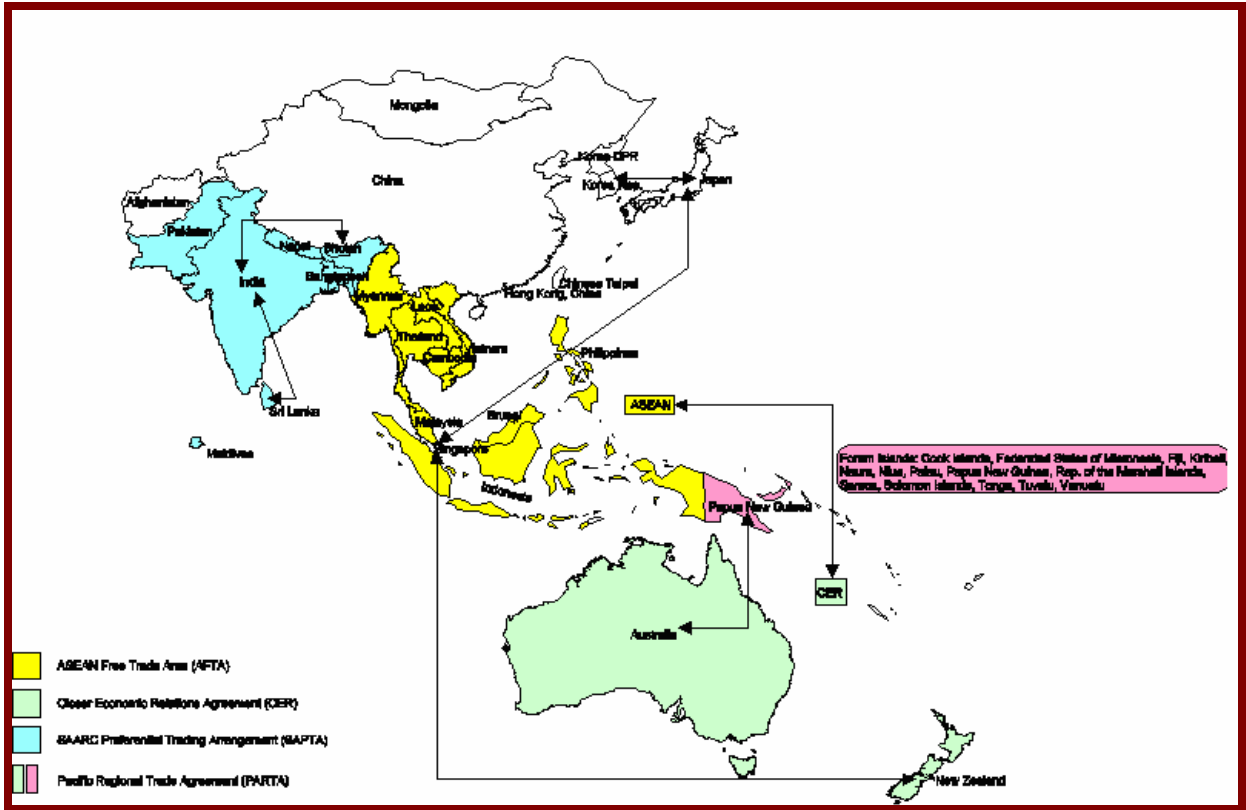
MAP 1: PTAS IN PLACE



Source: report number WT/REG/W/41 of the WTO

Map 2 depicts the PTAs coming into force – this would have significant effect on Canadian trade with its partners. An avalanche of PTA formation in the Asia Pacific region necessitates Canada to consider such bilateral arrangements to maintain if not increases its trade with other partners. ASEAN and CER are negotiating for a joint PTA between its members. Australia and New Zealand, including 14 other Pacific islands, that form the south Pacific forum, are also considering a Pacific Regional Trade Agreement (PARTA). At the same time, Japan, Korea, and Singapore are considering signing new bilateral trade agreements

MAP 2: FUTURE PTAS



Source: report number WT/REG/W/41 of the WTO

CANADA: PTAS AND FOREIGN PTAS

The following table lists the PTAs that are incorporated in the analysis. I consider Canada's PTA with Costa Rica, Chile, Mexico (NAFTA) and Israel to measure the trade benefits of PTAs for Canada. I also consider 23 foreign PTAs to study the impact of PTAs where Canada is left out from the agreement. Among the multilateral agreement I consider MSG and SAPTA.

TABLE 2: PTAS IN THE ANALYSIS

<i>Bilateral Trade Agreements</i>			
<i>Country I</i>	<i>Country II</i>	<i>Effective date</i>	<i>Type</i>
Mexico	Costa Rica	1-Jan-95	FTA
Mexico	Guatemala	15-Mar-01	FTA
Mexico	Honduras	1-Jun-01	FTA
Mexico	Salvador	15-Mar-01	FTA
Mexico	Japan	1-Apr-05	FTA
Mexico	Nicaragua	1-Jul-98	FTA
Mexico	USA	1-Apr-94	FTA
Mexico	Israel	1-Jul-00	FTA
Chile	Korea	1-Apr-04	FTA
Chile	USA	1-Jan-04	FTA
Chile	Costa Rica	15-Feb-02	FTA
Chile	Salvador	1-Jun-02	FTA
Chile	Mexico	1-Aug-99	FTA
Singapore	USA	1-Jan-04	FTA
Singapore	Australia	28-Jul-03	FTA
Singapore	Japan	30-Nov-02	FTA
Singapore	New Zealand	1-Jan-01	FTA
Thailand	Laos	20-Jun-91	FTA
Canada	Costa Rica	1-Nov-02	FTA
Canada	Chile	5-Jul-97	FTA
Canada	Israel	1-Jan-97	FTA
Canada	Mexico	1-Apr-94	FTA
<i>Accession to Multilateral Trade Agreements</i>			
<i>Country</i>	<i>Trade Agreement</i>	<i>Date of Entry</i>	<i>Type</i>
Mexico	EFTA	1-Jul-00	FTA
Chile	EFTA	1-Feb-03	FTA
Singapore	EFTA	1-Jan-03	FTA
China	ASEAN	1-Jul-03	FTA
<i>Multilateral Trade Agreements</i>			
<i>Name</i>	<i>Member countries</i>	<i>Effective date</i>	<i>Type</i>
MSG	Papua New Guinea, Solomon Islands, Vanuatu	22-Jul-03	FTA
SAPTA	Bangladesh, India, Maldives, Pakistan, Sri Lanka	7-Dec-95	FTA

TRADE PATTERNS: CANADA AND ASIA

The next few tables⁴ reflect the growing importance of Asia as Canada's trading partner. Canadian import share from Asia has grown since 1990 from 14% to 17% in 2005; however, the export share has shown a decline. Share of Canadian exports to the US has shown an increase from 75% (1990) to 84% (2005).

The following tables (table 3 4, 5) highlight Canadian trade with the Asian countries. Canada exports 2.1% of its total exports to Japan, the figure has fallen from 1990 when Japan accounted for 5.52%. Exports to China have grown from 1.15% in 1990 to 1.63% in 2005 as a percentage of Canadian total exports. However, the increase in Canadian imports has been extremely significant. In 1990 Canada imported 1.02% of its total imports from China, the number increased to 7.75% in 2005. At present China is the largest exporter to Canada among the Asian countries.

TABLE 3: CANADIAN TRADE WITH DIFFERENT REGIONS AS A PERCENTAGE OF TOTAL CANADIAN TRADE⁵

<i>Regions</i>	<i>Canadian Imports</i>				<i>Canadian Exports</i>			
	1990	1995	2000	2005	1990	1995	2000	2005
APEC	80%	83%	82%	79%	86%	90%	93%	91%
Asia, Excl. Middle East	14%	13%	14%	17%	11%	10%	5%	6%
Latin America, Excl. Mexico	2%	2%	2%	3%	1%	2%	1%	1%
South America	2%	1%	1%	3%	1%	1%	1%	1%
Central America Excl. Mexico	0%	1%	0%	1%	0%	0%	0%	0%
United States (U.S.)	65%	67%	64%	57%	75%	79%	87%	84%
Mexico	1%	2%	3%	4%	0%	0%	0%	1%

⁴ Source: Statistics Canada.

⁵ Please see the appendix for classification of countries in different regions.

TABLE 4: CANADIAN EXPORTS TO ASIAN COUNTRIES AS A PERCENTAGE OF TOTAL CANADIAN EXPORTS (TOP ASIAN COUNTRIES)

	1990	1995	2000	2005
<i>Japan</i>	5.52%	4.60%	2.25%	2.10%
<i>China</i>	1.15%	1.32%	0.89%	1.63%
<i>Korea, South</i>	1.04%	1.04%	0.57%	0.65%
<i>Hong Kong</i>	0.46%	0.67%	0.35%	0.33%
<i>Taiwan (Taipei)</i>	0.54%	0.66%	0.29%	0.31%
<i>India</i>	0.22%	0.17%	0.14%	0.25%
<i>Indonesia (includes East Timor)</i>	0.21%	0.25%	0.17%	0.16%
<i>Singapore</i>	0.27%	0.19%	0.09%	0.15%
<i>Thailand</i>	0.34%	0.22%	0.09%	0.11%
<i>Malaysia</i>	0.17%	0.22%	0.10%	0.09%
<i>Philippines</i>	0.14%	0.13%	0.09%	0.08%
<i>Pakistan</i>	0.06%	0.05%	0.02%	0.07%
<i>Vietnam</i>	0.01%	0.01%	0.01%	0.05%
<i>Sri Lanka</i>	0.01%	0.01%	0.01%	0.03%
<i>Bangladesh</i>	0.06%	0.03%	0.03%	0.02%

TABLE 5: CANADIAN IMPORTS FROM ASIAN COUNTRIES AS A PERCENTAGE OF TOTAL CANADIAN IMPORTS (TOP ASIAN COUNTRIES)

	1990	1995	2000	2005
<i>China</i>	1.02%	2.06%	3.16%	7.75%
<i>Japan</i>	6.99%	5.36%	4.65%	3.89%
<i>Korea, South</i>	1.66%	1.42%	1.48%	1.41%
<i>Taiwan (Taipei)</i>	1.55%	1.24%	1.39%	1.02%
<i>Malaysia</i>	0.28%	0.69%	0.70%	0.69%
<i>Thailand</i>	0.30%	0.45%	0.47%	0.52%
<i>India</i>	0.17%	0.24%	0.35%	0.47%
<i>Singapore</i>	0.40%	0.58%	0.39%	0.26%
<i>Indonesia (includes East Timor)</i>	0.15%	0.26%	0.25%	0.25%
<i>Philippines</i>	0.15%	0.22%	0.39%	0.24%

<i>Hong Kong</i>	0.78%	0.58%	0.41%	0.15%
<i>Vietnam</i>	0.01%	0.03%	0.06%	0.15%
<i>Bangladesh</i>	0.03%	0.04%	0.05%	0.13%
<i>Pakistan</i>	0.07%	0.09%	0.08%	0.07%

EFFECT ON TRADE FLOWS: TRADE CREATIONS VS. TRADE DIVERSION

With the growth of regional trading blocs across the globe, question arises whether such arrangements benefit Canadian trade or not? The answer depends upon the difference between the trade creation and trade diversion effects of these trading blocks. I use the concept of trade creation and trade diversion as conceptualized by Viner (1950)

The trade creation effect is a result of removal of trade barriers, in case the member of PTAs were natural partners⁶ – the removal of trade barriers generally lead to trade creation within the block. In such a scenario it is unlikely that the countries outside the PTA (like Canada) would loose from such an arrangement.

The trade diversion effect would arise if the countries within the trading block (PTA) replace trade from countries outside the trading block. This generally happens because the lowering of trade barriers gives member countries a chance to sell their goods cheaper than the non-member countries purely due to the removal of trade barriers, trade is diverted away from non-member countries that had the natural comparative advantage. In case PTA leads to trade diversion towards the member countries, non-member country (like Canada) would be adversely affected by the PTA.

There are many studies that have looked at the trade impact of PTAs on member countries, Cernat (2001) considered many PTAs, and found that some were trade creating (AFTA, EU, SADC and COMESA) while others were trade diverting (MERCOSUR and Andean Community). Tumbarello (2006) and Hirantha (2004) found net trade creation for SAPTA.

Since Viner (1950) distinguished between trade creation and trade diversion effects of preferential trade liberalization, a great deal of research has been done in that area, both

⁶ Natural Partner: Without any preferential agreements who does Canada trade the most with?

theoretical and empirical. The majority of empirical research analyzes trade effects of PTAs using the gravity model. Frankel and Wei (1993, 1995), Bayoumi and Eichengreen (1995), Frankel, Stein and Wei (1995), Freund (2000), Gilbert, Scollay and Bora (2001) analyzed trade creation and diversion effects for different PTAs using gravity models. The majority of previous studies found both trade creation and diversion for most major PTAs (EU, NAFTA, MERCOSUR, AFTA, EFTA, CER) and a net trade creation tendency. However, the magnitude of trade creation and diversion effects varies substantially across studies.

Cernat (2001) considered many PTAs, and found that some were trade creating (AFTA, EU, SADC and COMESA) while others were trade diverting (MERCOSUR and Andean Community). For the EU, he estimated 20% trade creation measured as a share of total EU imports, while for NAFTA results are mixed. Frankel and Wei (1995) report 15% trade creation for the EU and found no evidence of trade diversion for the period 1972-92. Tumbarello (2006) and Hirantha (2004) found net trade creation for SAPTA.

Soloaga and Winters (2001) introduced a third dummy for the exports from FTA country to third countries since it may be an extra trade effect of PTA. For the period of 1990-96 total trade creation coefficients were estimated to be insignificant for NAFTA, EU, MERCOSUR and ASEAN, and coefficients on trade diversion dummies for NAFTA and EU to be significantly negative, i.e. NAFTA and EU were claimed to be net trade diverting. Magee (2004) was the first to use SIC-4 data in a gravity model and run a separate regression for each importer. 31% of PTA-members bilateral import increase was estimated to be a result of trade creation, which is only 7% greater than trade diversion.

Although most gravity model studies predict strong trade creation and weaker trade diversion for the main PTAs, the general conclusions are mixed and very contradictory. In this study I look at what happens to Canada's trade.

METHODOLOGY

The data for the analysis has been obtained from different sources the World Bank, UN and the International Monetary Fund (IMF). Trade flows data is obtained from the World Bank (Nicita

and Olarrega (2001)⁷, and the financial data (exchange rate and interest rates) have been obtained from IMF's International Financial Statistics. The trade flow data is classified at the 3-digit level ISIC (International Standard Industrial Classification) revision 2. This covers 28 manufacturing sectors. For this analysis I use panel data that covers 28 industries of various countries for the period from 1990-2004. The data for the graphs comparing the comparative advantage is at the HS-2 level and has been obtained form UNCTAD Train Database.

Gravity Model: The gravity model is a well received and robust model for predicting trade patterns across countries. It predicts bilateral trade flows that are based on distance between the trading partners, and demand measured by economic mass (GDP, GDP per capita etc). The model can include a cast array of variables to account for other determinants of trade like exchange rate, common language, connecting borders, treaties and other trade policies. For an in depth literature review on gravity model refer to Feenstra (2003)

I use gravity model to study the impact on Canadian trade, once Canada's trading partners form bilateral partnerships with other WTO members. This will help us predict the impact of future PTAs that are in pipeline. Measures of Canadian and partner countries GDP approximate demand in Canada and partner countries. Canada-trading partner exchange rate is included as it determines the relative price of Canadian goods.

One version of the 'gravity' equation model that I seek to estimate has the following specification.

$$x_{iet} = \alpha_0 + \alpha_1 y_{iet} + \alpha_2 y_{CAet} + \alpha_3 dist_i + \alpha_4 Ex_{it} + \alpha_5 R_{it} + \alpha_6 PTA_{it} + X' \beta + u_{iet}^8$$

where x_{iet} is log value of exports from partner country i for industry e to Canada (annual), y_{iet} is log GDP (Gross Domestic Product) of partner country i for industry e at time t, and y_{CAit} is log GDP of Canada at time t. $dist_i$ is the log of distance from partner country i to the Canadian border, R_{it} is the partner country rate of interest, and Ex_{it} is the Canada-trading partner exchange rate. PTA_{it} is a dummy variable, for partner countries, that takes the value of one if country i is a part of a PTA at year t and zero otherwise (1990-2002). The coefficient on the

⁷ (Trade, Production and Protection database).

⁸ The third dimension in these regressions is the industry. There are 28 industries used for the analysis.

PTA variable would capture the trade effect of PTA. Vector X' consists of other gravity model variables. These are Common language and whether country is land locked.

A second version of this model will be a modified specification with exports from Canada into the partner country i as a dependent variable. A third version will have total trade between the two countries as a dependent variable.

In our model, for the aggregate equation, there are two PTA variables, PTA-CA and PTA-3rd country: PTA-CA is when Canada signs a PTA like NAFTA; PTA-3rd country is a dummy variable that picks up PTA, which, Canada's trading partner signs with a third country like Chile-Mexico PTA. One can distinguish between Trade Creation and Trade Diversion, depending on whether Canada signs a PTA or the partner country signs a PTA with the third country.

$$x_{iet} = \alpha_0 + \alpha_1 y_{iet} + \alpha_2 y_{CAet} + \alpha_3 dist_i + \alpha_4 Ex_{it} + \alpha_5 R_{CAit} + \alpha_6 PTA-CA_{it} + \alpha_7 PTA-3^{rd} country_{it} + X' \beta + u_{iet}$$

RESULTS AND CONCLUSIONS

TABLE 6. AGGREGATE REGRESSION FOR ALL THE PTAS

<i>Dependant variable (log):</i>	<i>Imports</i>		<i>Exports</i>		<i>Total trade</i>	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>(α_7) PTA 3rd country</i>	0.008	0.27	-0.014	-0.44	-0.009	-0.35
<i>(α_6) PTA Canada</i>	0.957***	6.87	0.934***	5.99	1.059***	7.91
<i>log(GDP)</i>	0.70***	55.91	0.857***	49.84	0.815***	68.07
<i>log(Exchange Rate)</i>	-0.14***	-20.89	-0.136***	-15.23	-0.150***	-23.52
<i>log(IR)</i>	-0.386***	-11.79	-0.309***	-7.77	-0.406***	-13.24
<i>Distance</i>	-0.401***	-4.82	-0.520***	4.45	-0.123***	-1.56
<i>Common Language</i>	0.163***	3.67	0.324***	5.29	0.236***	5.56
<i>Land locked</i>	-0.513***	-9.03	-0.198**	-2.44	-0.696***	-13.03
<i>Island</i>	0.094*	1.85	-0.164**	-2.51	0.245***	5.06
R2	0.45		0.54		0.54	
N	28637		19598		29993	

In the aggregate regression with PTA Dummies, coefficients on PTA-CA and PTA-3rd (multiplied by 100%) show the average percentage increase in industrial trade after the year the

FTA was signed. Canada's PTAs with US, Mexico, Chile, Israel and Costa Rica, on average, led to an increase in trade by roughly 90 percent (export and import).

The other variables in the gravity model have the expected signs and are highly significant. Log provincial distance from Canadian border is negative and statistically significant across all specifications. This is according to our expectations and implies that distance plays a significant role in the level of trade between Canada and its trading partners. Further GDP is found to be positively correlated with trade. Common Language is positive and significant; implying that common language between two countries is a nourishing factor for trade. A landlocked country is less likely to trade with Canada than a non-land locked country. A possible explanation is the relatively higher cost of land and air transport compared to water transport.

However, I don't see a significant change in trade as a result of PTAs between Canada's trading partners and 3rd countries. The possible reason is that at the aggregate level there might be opposite forces at work. Once Chile signs a PTA with Mexico it might lead to an increase in trade between Canada and its trading partners Chile and Mexico, while the PTA between Singapore and Australia might lead to a decline in trade between Canada and its trading partners. Thus, I assess the impact of the Asia-pacific PTAs separately. In order to analyze the trade effects of the entire set of existing PTAs separately I ran regressions for all the PTAs under consideration and the results are reported in table 7.

The regression equation for each PTA is as follows

$$x_{et} = \alpha_0 + \alpha_1 y_{et} + \alpha_2 y_{CAet} + \alpha_3 dist + \alpha_4 Ex_t + \alpha_5 R_{CAet} + \alpha_6 PTA_t + X' \beta + u_t$$

For each i

This is run separately for each PTA signed. For example for Chile-USA trade agreement: the dependent variable is trade flow between Chile and Canada. x_{et} is the annual log value of exports/Imports/Trade from Chile, for industry e, to Canada. The regressor are: log GDP of Chile for industry e at time t; log GDP of Canada, for industry e, at time t; log of distance from Chile to the Canadian border; Canadian rate of interest; and Canada-trading partner exchange rate. PTA_t is a dummy variable, that takes the value of one for years that Chile was member of US-Chile PTA and zero otherwise.

The variable of interest is PTA, and the coefficients (and t-stat) are reported in Table 7. The three columns are the results for the equations on imports, exports and total trade. The sign of this PTA coefficient would be positive, whenever the PTA⁹ led to an increase in trade between Canada and its trading partner, and negative if trade was diverted away from Canada. The other Gravity model variables like distance and exchange rate were similar across all these regressions. These had the same signs as those reported in Table 6. Thus, we don't report them again for the next set of regressions.

⁹ (between Canada's trading partner and a 3rd country)

TABLE 7: REGRESSION RESULTS FOR BILATERAL TRADE AGREEMENTS

<i>Dependent variable (log):</i>		<i>Imports</i>	<i>Exports</i>	<i>Total trade</i>
<i>County I</i>	<i>Country II</i>			
<i>Mexico</i>	<i>Costa Rica</i>	0.279* (1.88)	0.460*** (2.62)	0.621*** (4.39)
<i>Mexico</i>	<i>Guatemala, Honduras, Salvador</i>	0.122 (0.78)	-0.607*** (3.01)	-0.03 (-0.02)
<i>Mexico</i>	<i>Nicaragua</i>	0.199 (1.26)	0.056 (0.27)	0.103 (0.70)
<i>Mexico</i>	<i>USA</i>	0.432* (1.89)	0.414* (1.75)	0.177* (1.71)
<i>Mexico</i>	<i>Israel</i>	0.979*** (5.68)	0.657*** (3.58)	1.059*** (6.41)
<i>Chile</i>	<i>Korea</i>	-0.132 (-0.40)	-0.132 (-0.58)	-0.387 (-1.22)
<i>Chile</i>	<i>USA</i>	-0.140 (-0.42)	0.185 (0.53)	-0.193 (-0.61)
<i>Chile</i>	<i>Costa Rica, Salvador</i>	-0.019 (-0.10)	0.020 (0.09)	-0.069 (-0.36)
<i>Chile</i>	<i>Mexico</i>	0.506*** (2.84)	0.167 (0.88)	0.295* (1.72)
<i>Singapore</i>	<i>USA</i>	-0.300 (-0.92)	-0.729** (-2.14)	-0.584* (-1.85)
<i>Singapore</i>	<i>Australia</i>	-0.489 (-1.50)	-1.264*** (-3.65)	-1.019*** (-3.22)
<i>Singapore</i>	<i>Japan</i>	-0.280 (-1.19)	-0.606** (-2.44)	-0.655*** (-2.88)
<i>Singapore</i>	<i>New Zealand</i>	-0.426*** (-2.48)	-3.198** (-2.16)	-0.540*** (-3.24)
<i>Thailand</i>	<i>Laos</i>	0.540*** (3.64)	1.003*** (6.39)	1.103*** (7.80)
<i>Canada</i>	<i>Costa Rica</i>	0.066 (0.20)	-0.075 (-0.19)	0.088 (0.28)
<i>Canada</i>	<i>Chile</i>	0.588** (2.48)	0.291 (1.14)	0.314 (1.38)
<i>Canada</i>	<i>Israel</i>	1.458** (7.68)	1.594*** (7.47)	1.807*** (9.86)
<i>Canada</i>	<i>Mexico</i>	0.432* (1.89)	0.414* (1.75)	0.177* (1.71)

Interpreting the results is a little tricky here. The dependent variable exports/imports/Total trade increased by a certain percentage which is calculated as $\{\text{exponential}(\text{coefficient})-1\}$. For example PTA between Canada and Mexico led to 19 percent $\{\exp(.177)-1\}$ increase in total trade. However, this number is an average across all industries considered in the analysis. For some industries the increase might have been more and for some less and for some industries

there might have been a decline in trade. Thus, the important thing that we should take away from this table is whether there was an increase or a decrease in trade between Canada and the trading partner. Whether the PTAs led to trade creation or trade diversion – depends on the sign of the coefficient reported in the last 3 columns.

The results in table 7 and 8 differ across PTAs. Canada signing a PTA led to increase in trade between Canada and the other member countries. However, the results are not significant for PTA signed with Costa Rica, but are significant for PTA signed with Chile (imports significantly increased), Mexico and Israel (significant increase in both imports and exports for both the countries).

TABLE 8: REGRESSION RESULTS FOR MULTILATERAL TRADE AGREEMENTS

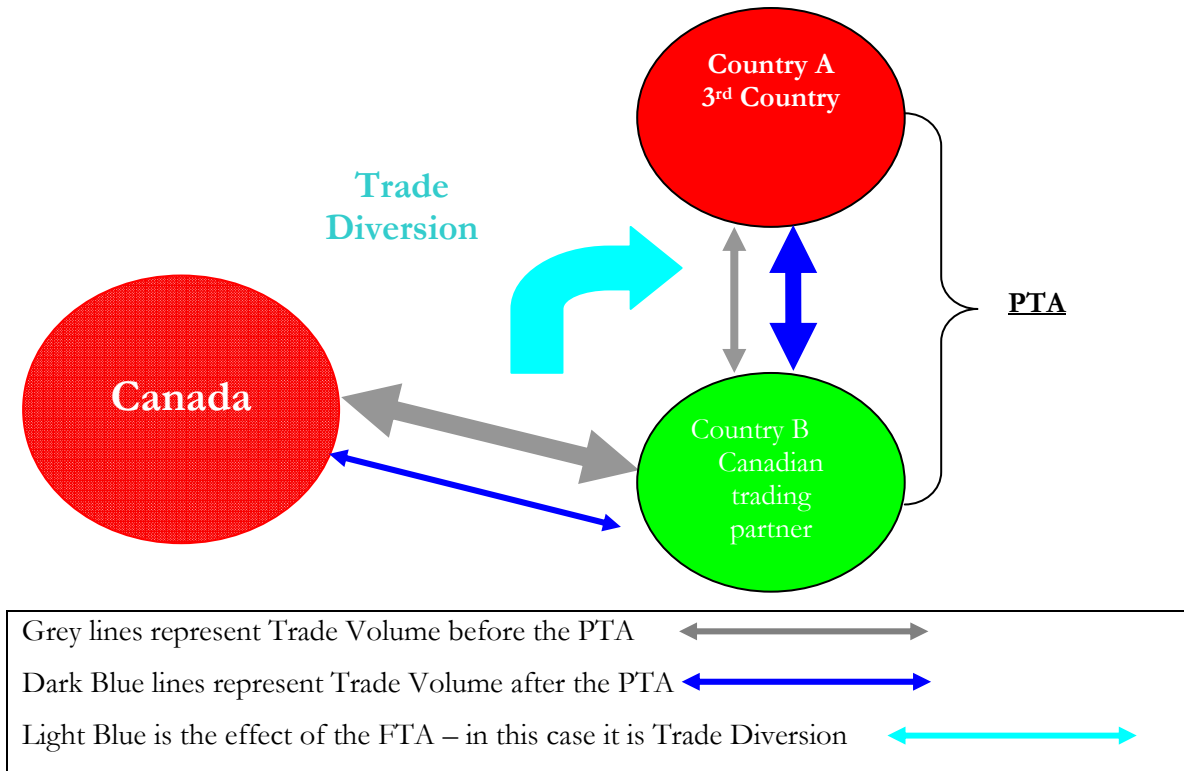
Accession to Multilateral Trade Agreements				
Country	Trade Agreement	Imports	Exports	Total Trade
<i>Mexico</i>	<i>EFTA</i>	0.162 (1.5)	0.004 (0.03)	0.037 (0.36)
<i>Chile</i>	<i>EFTA</i>	0.021 (0.13)	0.184 (1.00)	-0.026 (-0.16)
<i>Singapore</i>	<i>EFTA</i>	-0.047 (-0.28)	-0.270 (-1.48)	-0.229 (-1.39)
<i>China</i>	<i>ASEAN</i>	1.303*** (3.76)	1.126*** (3.20)	1.125*** (3.44)
Multilateral Trade Agreements (Member countries)				
<i>MSG (Papua New Guinea, Solomon Islands, Vanuatu)</i>		-2.184*** (-7.30)	-3.943*** (-6.20)	-3.047*** (-11.08)
<i>SAPTA (Bangladesh, India, Maldives, Pakistan, Sri Lanka)</i>		-0.313** (-1.96)	0.255 (1.47)	0.107 (0.76)

TRADE DIVERSIONS

Impact on trade differs across PTAs when I consider the agreements between Canada's partner and 3rd country. Whether PTA-3rd country leads to higher or lower trade relations between Canada and its trading partner depends on the relative comparative advantage across the 3 countries. For example if Canada's member country signs a PTA with another developed country that has similar comparative advantage as that of Canada – Canada would be replaced with the 3rd country for tradable by Canadian trading partner. In such a case trade would be diverted away from Canada (see figure 2).

A similar result might also hold if PTA is signed between two capital abundant countries (e.g. Singapore and Australia), this may crowd out Canadian firms from those markets and lead to a decline in trade between Canada and the new PTA members.

FIGURE 2: TRADE DIVERSION AS A RESULT OF CANADA'S TRADING PARTNER SIGNING A PTA WITH A 3RD COUNTRY THAT IS SIMILAR TO CANADA.



Index: To measure "proximity" of Canadian trade to export patterns of other countries, I constructed a "Revealed Comparative Advantage" index:

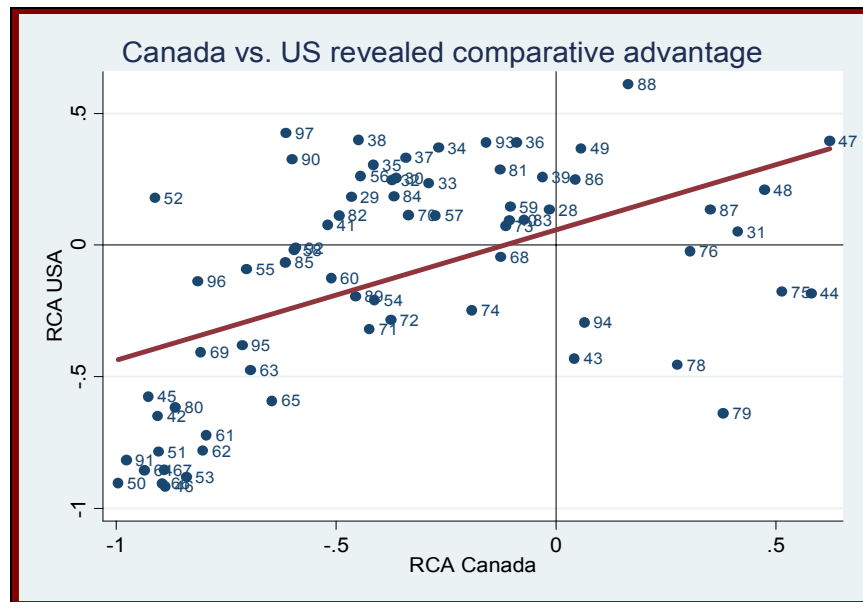
$$rca_{ic} = \frac{X_{ic} / \sum_j X_{jc}}{\sum_d X_{id} / \sum_j \sum_d X_{jd}} \in [0; \infty]$$

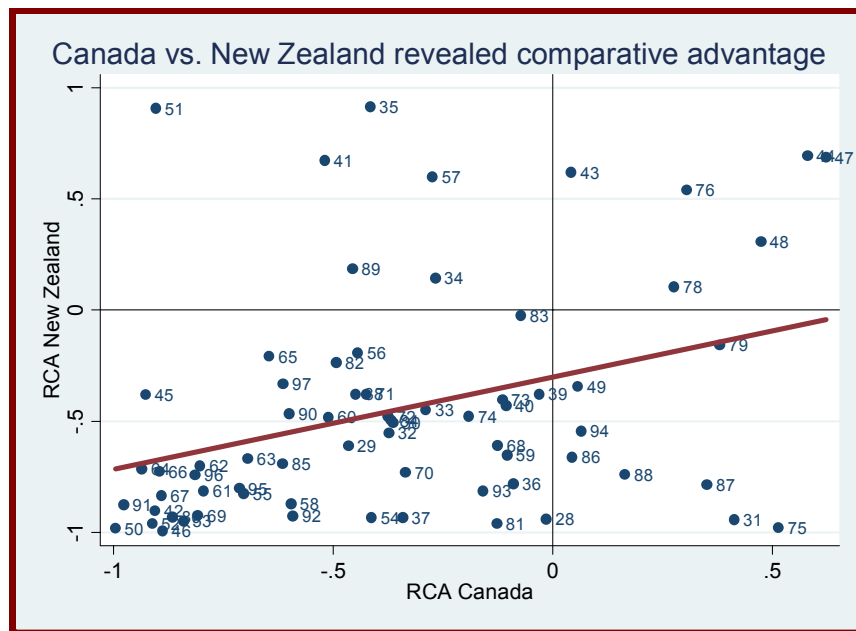
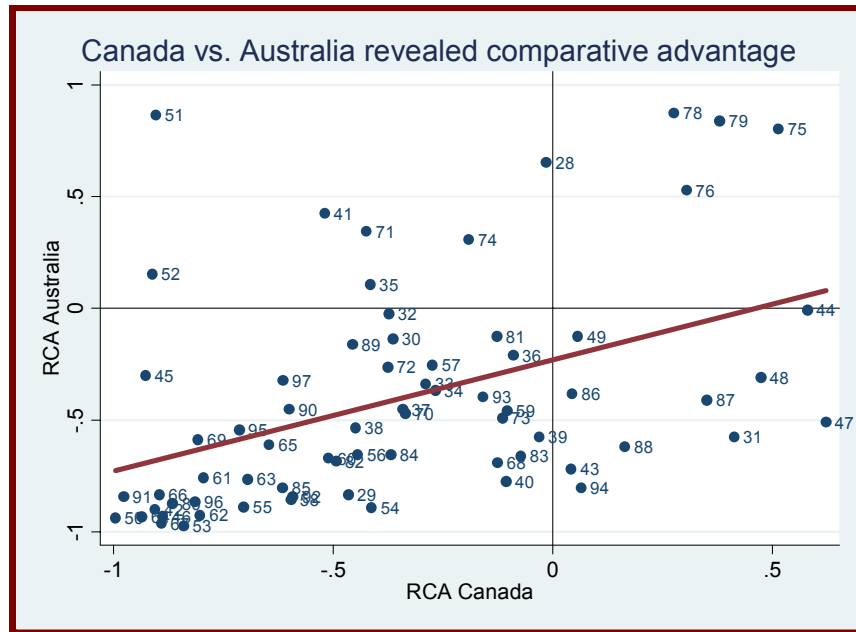
Where i denotes industry and c denotes country i is total exports of product i by country c . The numerator is the share of product i in total exports of country c , and the denominator is the share of product i in the flow of total exports of all products. The following transformation is used to make the index symmetric around zero.

$$RCA_{ic} = \frac{rca_{ic} - 1}{rca_{ic} + 1} \in [0; \infty]$$

Now positive values denote comparative advantage and negative comparative disadvantage. This index shows a country's comparative advantage as it is revealed by the observed trade flows.

Then I plot the value of Canadian index versus other countries at HS2. A significant positive relation implies that the two countries patterns of specialization are very similar. Results show that Canadian patterns of specialization are very similar to those of USA, Australia and New Zealand. This explains the results in table 7, where PTA between USA-Chile, USA-Singapore, Australia-Singapore and New Zealand-Singapore resulted in trade diversion. Chile-USA PTA also shows a negative coefficient but is not significant. The other PTA signed by USA is Mexico, but this was inclusive of Canada (signing of NAFTA), which led to trade creation between Canada and Mexico.



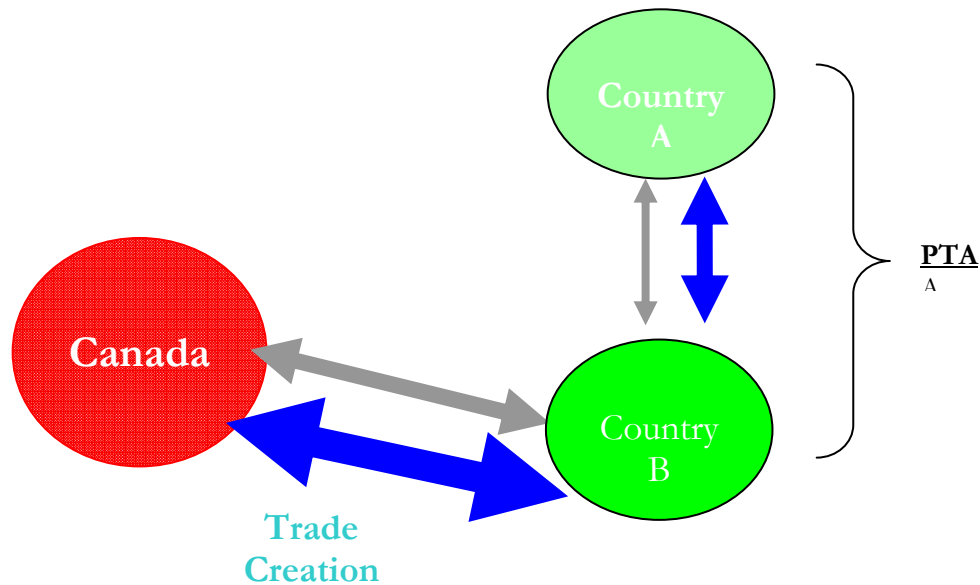


TRADE CREATION

In case the 3rd country is similar to the Canadian partner – trade between Canada and its trading partner should increase. Suppose Canada exports relatively more capital intensive goods to Country B (Canada’s trading partner) and imports Labor intensive goods. Once Country A signs a PTA with a 3rd country, which is also relatively more labor abundant compared to Canada, it is possible that there would not be any significant trade diversion. On the other hand this might

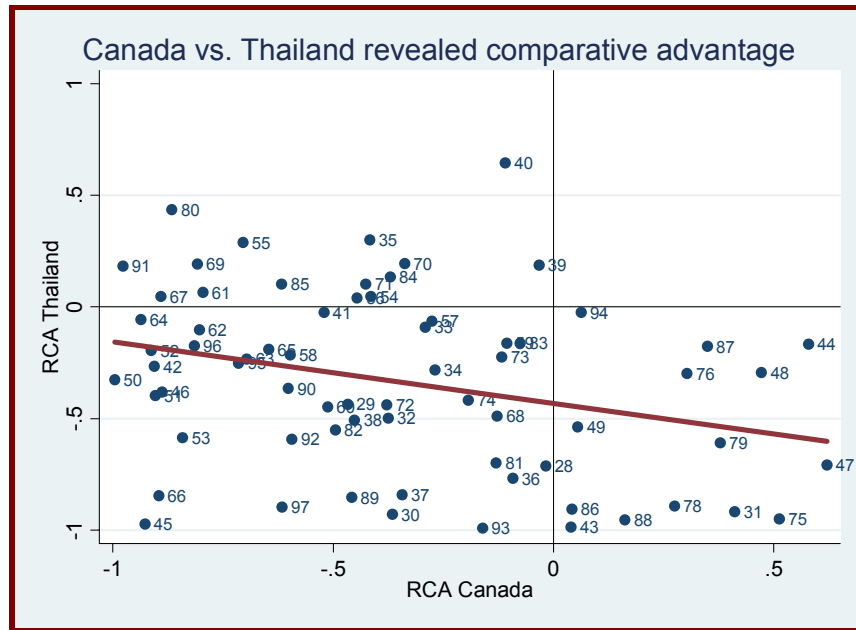
lead to increase in market size for Canada's manufacturing goods (mainly for intermediates used to produce final goods that country B can export to Country A) – we should see trade creation in this case. So, whether Canada benefits or loses out from its trading partner signing PTA with 3rd country really depends on the relative comparative advantage across the 3 countries and whether the 3rd country can replace Canada as a trading partner (if the 3rd country is similar to Canada).

FIGURE 3: TRADE CREATION AS A RESULT OF CANADA'S TRADING PARTNER SIGNING A PTA WITH A 3RD COUNTRY THAT IS SIMILAR TO ITSELF.



Grey lines represent Trade Volume before the PTA	←————→
Dark Blue lines represent Trade Volume after the PTA	←————→

A good example is that of the PTA signed between Thailand and Laos that led to an increase in trade volumes between Canada and the trading partners – Thailand and Laos.



The other PTAs that led to trade creation were that between (Mexico-USA), (Mexico-Israel) and (Chile-Mexico). The common feature is that all these countries had PTAs with Canada prior to signing trade agreements with each other. The literature on PTAs doesn't say much on what should the effect be if a country's trading partners have significant PTAs with each other. In case of Canada it sure has led to an increase in trade.

TABLE 9: CONCLUSION

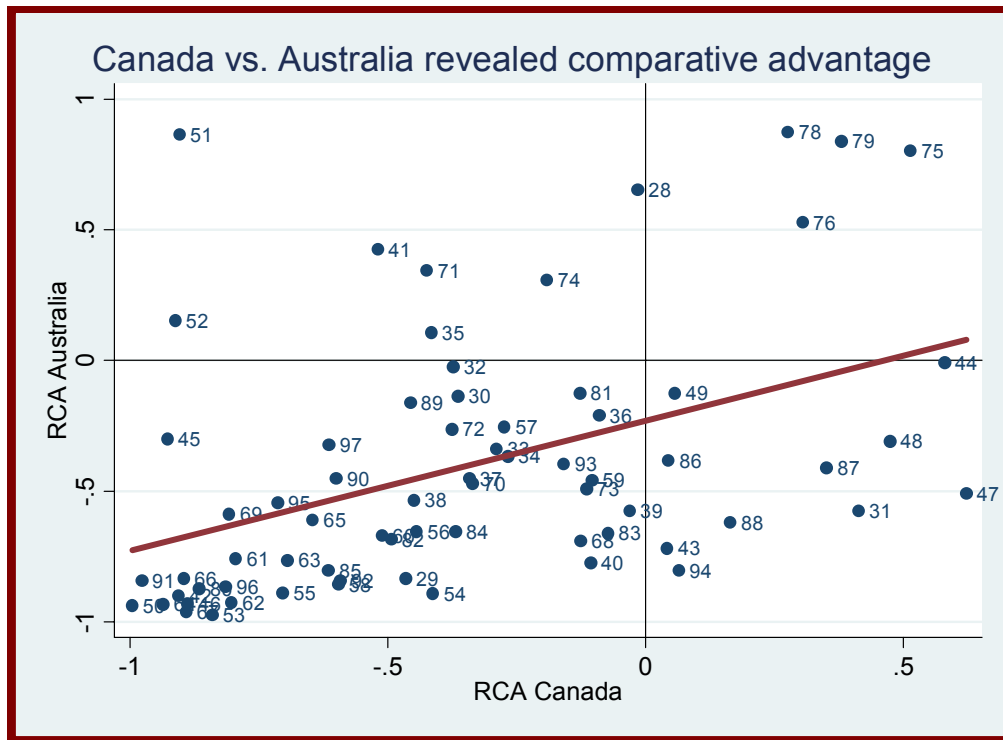
<i>Country I</i>	<i>Country II</i>	Possible Reasons	Did Canadian trade increase with the partner country or was trade diverted away from Canada?
<i>Mexico</i>	<i>Costa Rica</i>	Indeterminate	Creation
<i>Mexico</i>	<i>Guatemala, Honduras, Salvador</i>		No significant change
<i>Mexico</i>	<i>Nicaragua</i>		No significant change
<i>Mexico</i>	<i>USA</i>	Both Have PTAs with Canada	Creation
<i>Mexico</i>	<i>Israel</i>	Both Have PTAs with Canada	Creation
<i>Chile</i>	<i>Korea</i>		No significant change
<i>Chile</i>	<i>USA</i>	Similar Both Have PTAs with Canada	No significant change
<i>Chile</i>	<i>Costa Rica, Salvador</i>		No significant change
<i>Chile</i>	<i>Mexico</i>	Both Have PTAs with Canada	Creation
<i>Singapore</i>	<i>USA</i>	Similar	Diversion
<i>Singapore</i>	<i>Australia</i>	Similar	Diversion
<i>Singapore</i>	<i>Japan</i>	Similar	Diversion
<i>Singapore</i>	<i>New Zealand</i>	Similar	Diversion
<i>Thailand</i>	<i>Laos</i>	Different	Creation

AUSTRALIA AND FUTURE FTA'S

Australia is heading forth with its talks for free trade areas with quite a few of Canadian Trading partners.

Free Trade Agreements under Negotiation/Consideration:

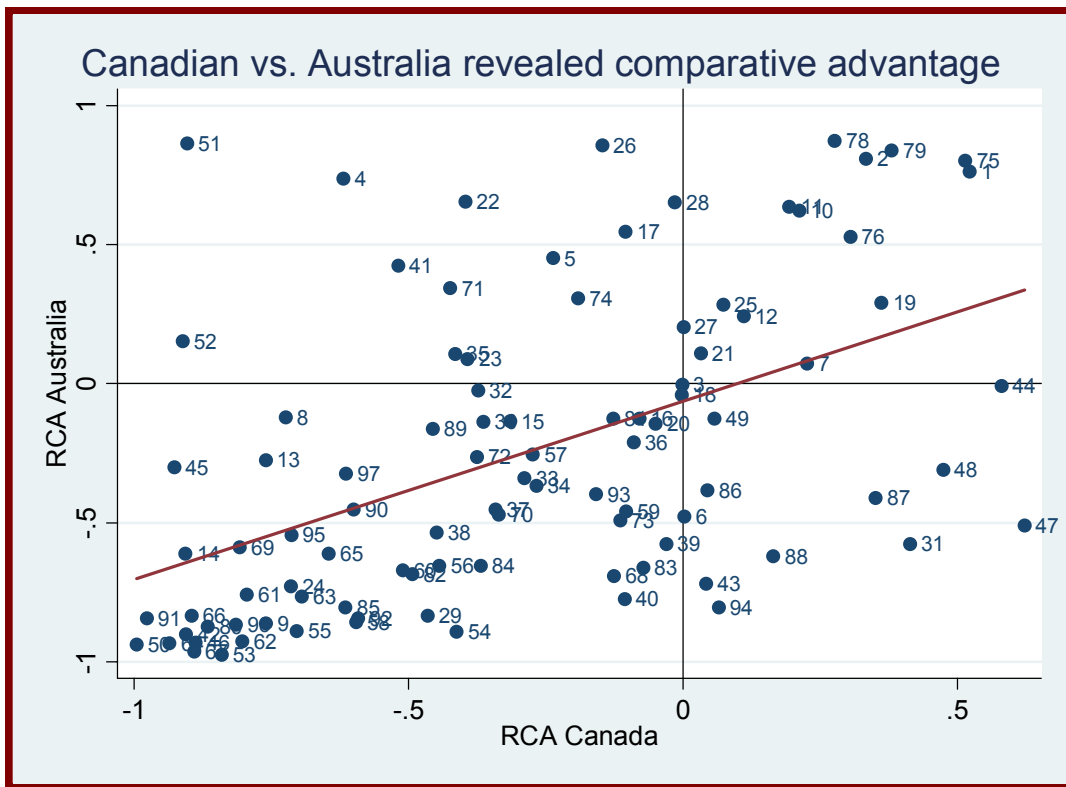
- ❖ Australia-ASEAN-New Zealand FTA Negotiations
- ❖ Australia-Chile Free Trade Agreement Negotiations
- ❖ Australia-China Free Trade Agreement Negotiations
- ❖ Australia-Korea FTA
- ❖ Australia-Malaysia FTA Negotiations
- ❖ Australia-Gulf Cooperation Council (GCC) FTA
- ❖ Australia-Japan FTA Negotiations



From the above graphs with HS2 classification one could see which manufacturing sectors are more likely to suffer (those in a positive-positive quadrant) if, say, Australia or New Zealand signs trade agreement with Canadian partner. In order to look at both agriculture and manufacturing sector, I got data from a different Agriculture is a strong exporting sector for both these economies. 26.2 % of total merchandise exports for Australia in 2002 were attributed to agriculture and for Canada this figure was 12.9%. The following graphs, is for all the merchandise trade including agriculture.

Some of the sectors in which both Australia and Canada have comparative advantage (positive-positive quadrant) are ¹⁰

- ❖ Live animals
- ❖ Meat and edible meat
- ❖ Edible vegetables and certain roots and tubers
- ❖ Oil seed, oleagi fruits; miscellaneous grain, seed, fruits
- ❖ Organic chemicals.
- ❖ Salt; sulphur; earth & stone; plastering malt; lime
- ❖ Mineral fuels, oils & product of their distillation
- ❖ Nickel and articles thereof.
- ❖ Lead and articles thereof



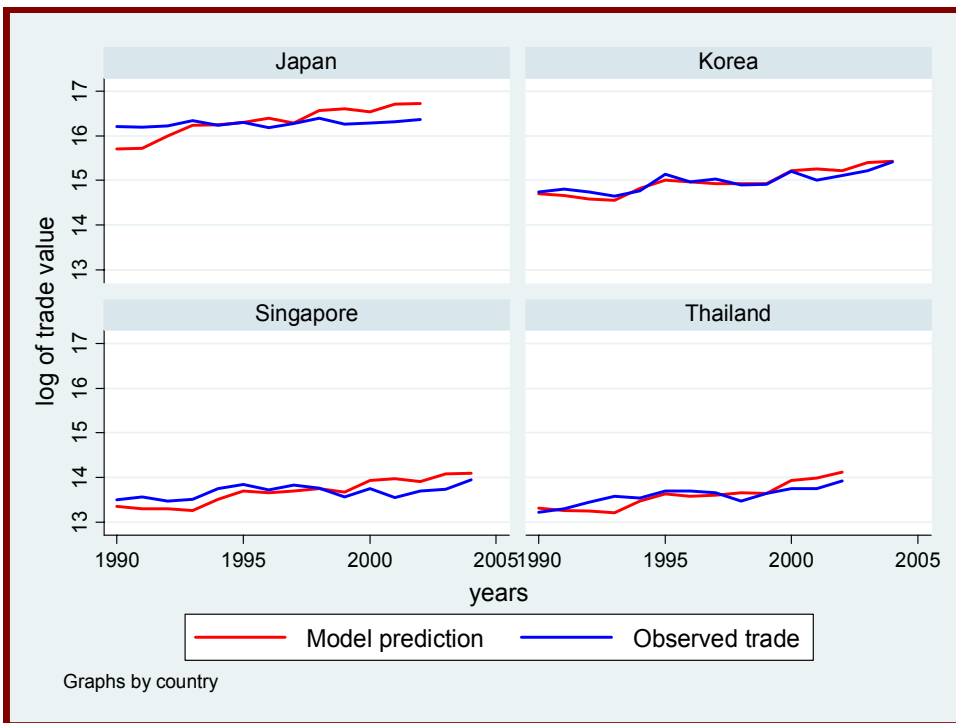
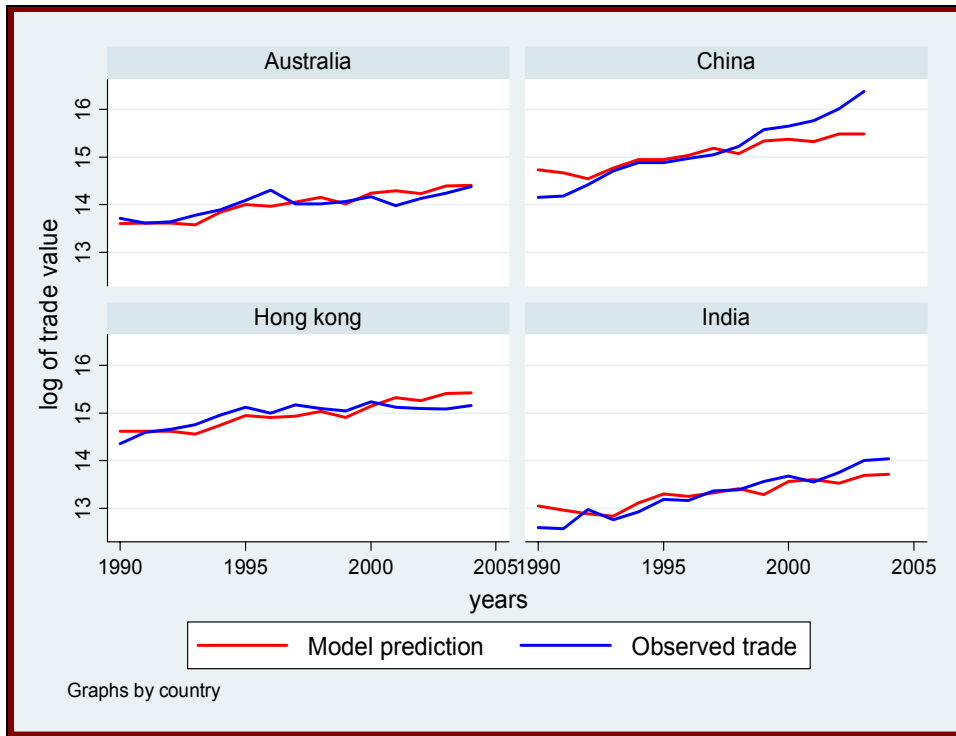
¹⁰ please see the appendix for a list of categories associated with HS2 classification on the graph

**ROBUSTNESS CHECK: PREDICTED VARIATIONS VS. OBSERVED VARIANCE IN
TRADE**

To test the performance of the model, I contrasted its predictions regarding Canadian bilateral trade flows with eight main Asian trading partners to the observed trade flows. In the following graphs the red lines represent the model forecast for the natural logarithm of bilateral value of trade. The predicted results are from the gravity model previously used and is based on GDP, real exchange rate, interest rate, time trend and a set of geographic characteristics and regional variables. The blue line shows the natural logarithm of the observed value of bilateral trade.

As we can see, this (parsimonious) model is capable of capturing a large fraction of variation in the value of bilateral trade flow. Given the fact that the main purpose of the gravity model is to estimate the individual effect of different country-specific characteristics on the patterns of trade rather than making predictions, it is possible to claim that our model provides a very good fit for the real data.

For all eight pair of countries the model reasonably predicts the direction of change in the value of trade. In some cases (Japan, Singapore) the model overestimates the growth rate of the trade flow, the actual trade for these countries grew less than the Canadian average with other trading partner. For other countries (China) the model under predicts the growth rate of trade with Canada for the opposite reason. However, in all of these cases it is able to predict fluctuations in the value of trade. Overall, this analysis suggests that our model fits the real data with reasonable degree of accuracy and provides an additional support to the obtained estimates of trade creation and trade diversion effects.



REFERENCES

- Cernat, L. (2001). "Assessing Regional Trade Arrangements: Are South-South RTAs More Trade Diverting?" *Global Economy Quarterly* 2(3): 235-259.
- Coulibaly, S. (2004), "On The Assessment Of Trade Creation And Trade Diversion Effects Of Developing Rtas," Paper Presented At The Annual Meeting 2005 Of The Swiss Society Of Economics And Statistics On Resource Economics, Technology, And Sustainable Development. (Available At <http://www.wif.ethz.ch/resec/sgvs/078.pdf>)
- Dee, P., Gali, J., (2003) "The Trade And Investment Effects Of Preferential Trading Arrangements", Nber Working Papers No. 10160.
- Feenstra, R. C. (2003), "Advanced International Trade: Theory And Evidence. Princeton University Press: Usa.
- Frankel, J., Wei, S., (1993) "Trade Blocs And Currency Blocs", Nber Working Paper No. 4335.
- Frankel, J., Wei, S., (1995) "Open Regionalism In A World Of Continental Trade Blocs", *Imf Staff Papers*, 45(3).
- Hirantha, S.W. (2004), "From Sapta To Safta: Gravity Analysis Of South Asian Free Trade" Paper Presented At The European Trade Study Group (Etsg) 2004 Programme, September, Nottingham.
- International Monetary Fund. International Financial Statistics [Computer File]. Washington, D.C.: International Monetary Fund, 1948 - 1 Data File And Accompanying Documentation.
- Magee, C., (2004) "Trade Creation, Trade Diversion And Endogenous Regionalism", *Econometric Society*, Nasm No. 289.
- Nicita, A. And Marcelo O. (2004), "Trade, Production And Protection 1976-2004", World Bank Policy Research Working Paper.
- Panagariya, A. (1999), "The Regionalism Debate: An Overview", *World Economy* 22, 477-51
- Scollay, R., (2003), "Economic Impact Of Rtas In Asia And The Pacific", Paper Prepared For The Escap Expert Group Meeting On Regional Trade Agreements In Asia And The Pacific, Bangkok, 30-31 January 2003.
- Soloaga, I., Winters, L., (2001) "Regionalism In The Nineties: What Effect On Trade?", *North American Journal Of Economics And Finance*, 12(1), Pp. 1-29.
- Tumbarello, P. (2006), "Are Regional Trade Agreements In Asia Stumbling Or Building Blocks? Some Implications For The Mekong Countries", Paper Prepared For The Seminar On Accelerating Development In The Mekong Region—The Role Of Economic Integration, Siem Reap, Cambodia, June 26-27, 2006. (Available At <http://www.imf.org/external/Np/Seminars/Eng/2006/Mekong/Pt.Pdf>)
- Unctad Trains. Trade Analysis And Information System, Powered By World Integrated Trade Solution (<http://wits.worldbank.org/>).

Viner, J., (1950) "The Customs Union Issue", New York: Carnegie Endowment For International Peace

World Bank Report (2000) "Mapping Of Regional Trade Agreements", Report Number Wt/Reg/W/41 (Available At [Http://Www.Wto.Org/English/Tratop E/Region E/Wtregw41 E.Doc](http://www.wto.org/english/tratop_e/region_e/wtregw41_e.doc))

APPENDIX

TABLE A1. MEMBER COUNTRIES OF DIFFERENT REGIONS

APEC (Total)	Australia	APEC EXCL. THE AMERICAS (Total)	Russia
APEC (Total) Brunei	Darussalam	APEC EXCL. THE AMERICAS (Total)	Singapore
APEC (Total)	Chile	APEC EXCL. THE AMERICAS (Total)	Taiwan (Taipei)
APEC (Total) East	Timor	APEC EXCL. THE AMERICAS (Total)	Thailand
APEC (Total) Hong	Kong	APEC EXCL. THE AMERICAS (Total)	Vietnam
APEC (Total) Indonesia (Includes East	Timor)	ASIA, EXCL. MIDDLE EAST (Total)	Afghanistan
APEC (Total)	Japan	ASIA, EXCL. MIDDLE EAST (Total)	Bangladesh
APEC (Total) Korea,	South	ASIA, EXCL. MIDDLE EAST (Total)	Bhutan
APEC (Total)	Malaysia	ASIA, EXCL. MIDDLE EAST (Total)	Brunei Darussalam
APEC (Total)	Mexico	ASIA, EXCL. MIDDLE EAST (Total)	Burma (Myanmar)
APEC (Total) New	Zealand	ASIA, EXCL. MIDDLE EAST (Total)	Cambodia (Kampuchea)
APEC (Total) Papua New	Guinea	ASIA, EXCL. MIDDLE EAST (Total)	China
APEC (Total)	Peru	ASIA, EXCL. MIDDLE EAST (Total)	East Timor
APEC (Total)	Philippines	ASIA, EXCL. MIDDLE EAST (Total)	Hong Kong
APEC (Total)	Russia	ASIA, EXCL. MIDDLE EAST (Total)	India
APEC (Total)	Singapore	ASIA, EXCL. MIDDLE EAST (Total)	Indonesia (Includes East Timor)
APEC (Total) Taiwan	(Taipei)	ASIA, EXCL. MIDDLE EAST (Total)	Japan
APEC (Total)	Thailand	ASIA, EXCL. MIDDLE EAST (Total)	Korea, North
APEC (Total) United States (U.S.)		ASIA, EXCL. MIDDLE EAST (Total)	Korea, South
APEC (Total) U.S. Minor Outlying	Islands	ASIA, EXCL. MIDDLE EAST (Total)	Laos
APEC (Total)	Vietnam	ASIA, EXCL. MIDDLE EAST (Total)	Macao (Macao)
APEC EXCL. THE AMERICAS (Total)	Australia	ASIA, EXCL. MIDDLE EAST (Total)	Malaysia
APEC EXCL. THE AMERICAS (Total)	Brunei Darussalam	ASIA, EXCL. MIDDLE EAST (Total)	Maldives
APEC EXCL. THE AMERICAS (Total)	China	ASIA, EXCL. MIDDLE EAST (Total)	Mongolia
APEC EXCL. THE AMERICAS (Total)	East Timor	ASIA, EXCL. MIDDLE EAST (Total)	Nepal
APEC EXCL. THE AMERICAS (Total)	Hong Kong	ASIA, EXCL. MIDDLE EAST (Total)	Pakistan
APEC EXCL. THE AMERICAS (Total)	Indonesia (Includes East Timor)	ASIA, EXCL. MIDDLE EAST (Total)	Philippines
APEC EXCL. THE AMERICAS (Total)	Japan	ASIA, EXCL. MIDDLE EAST (Total)	Singapore
APEC EXCL. THE AMERICAS (Total)	Korea, South	ASIA, EXCL. MIDDLE EAST (Total)	Sri Lanka
APEC EXCL. THE AMERICAS (Total)	Malaysia	ASIA, EXCL. MIDDLE EAST (Total)	Taiwan (Taipei)
APEC EXCL. THE AMERICAS (Total)	New Zealand	ASIA, EXCL. MIDDLE EAST (Total)	Thailand
APEC EXCL. THE AMERICAS (Total)	Papua New Guinea	ASIA, EXCL. MIDDLE EAST (Total)	Vietnam
APEC EXCL. THE AMERICAS (Total)	Philippines		

CENTRAL AMERICA EXCL. MEXICO (Total)
 Anguila
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Antigua and Barbuda
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Aruba Island
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Bahamas
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Barbados
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Belize
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Bermuda
 CENTRAL AMERICA EXCL. MEXICO (Total)
 British Virgin Islands
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Cayman Islands
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Costa Rica
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Cuba
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Dominica
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Dominican Republic
 CENTRAL AMERICA EXCL. MEXICO (Total) El
 Salvador
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Grenada
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Guadeloupe
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Guatemala
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Haiti
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Honduras
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Jamaica
 CENTRAL AMERICA EXCL. MEXICO (Total)

Martinique
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Montserrat
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Netherlands Antilles
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Nicaragua
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Panama
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Saint Lucia
 CENTRAL AMERICA EXCL. MEXICO (Total) St.
 Kitts-Nevis
 CENTRAL AMERICA EXCL. MEXICO (Total)
 St.Vincent-Grenadines
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Trinidad And Tobago
 CENTRAL AMERICA EXCL. MEXICO (Total)
 Turks And Caicos Islands
 LATIN AMERICA, EXCL. MEXICO (Total)
 Anguila
 LATIN AMERICA, EXCL. MEXICO (Total)
 Antigua And Barbuda
 LATIN AMERICA, EXCL. MEXICO (Total)
 Argentina
 LATIN AMERICA, EXCL. MEXICO (Total) Aruba
 Island
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 Barbados
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 Bermuda
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 LATIN AMERICA, EXCL. MEXICO (Total) Brazil
 LATIN AMERICA, EXCL. MEXICO (Total) British
 Virgin Islands
 LATIN AMERICA, EXCL. MEXICO (Total)
 Cayman Islands
 LATIN AMERICA, EXCL. MEXICO (Total) Chile

LATIN AMERICA, EXCL. MEXICO (Total) Colombia

LATIN AMERICA, EXCL. MEXICO (Total) Costa Rica

LATIN AMERICA, EXCL. MEXICO (Total) Cuba

LATIN AMERICA, EXCL. MEXICO (Total) Dominica

LATIN AMERICA, EXCL. MEXICO (Total) Dominican Republic

LATIN AMERICA, EXCL. MEXICO (Total) Ecuador

LATIN AMERICA, EXCL. MEXICO (Total) El Salvador

LATIN AMERICA, EXCL. MEXICO (Total) Falkland Islands

LATIN AMERICA, EXCL. MEXICO (Total) French Guiana

LATIN AMERICA, EXCL. MEXICO (Total) Grenada

LATIN AMERICA, EXCL. MEXICO (Total) Guadeloupe

LATIN AMERICA, EXCL. MEXICO (Total) Guatemala

LATIN AMERICA, EXCL. MEXICO (Total) Guyana

LATIN AMERICA, EXCL. MEXICO (Total) Haiti

LATIN AMERICA, EXCL. MEXICO (Total) Honduras

LATIN AMERICA, EXCL. MEXICO (Total) Jamaica

LATIN AMERICA, EXCL. MEXICO (Total) Martinique

LATIN AMERICA, EXCL. MEXICO (Total) Montserrat

LATIN AMERICA, EXCL. MEXICO (Total) Netherlands Antilles

LATIN AMERICA, EXCL. MEXICO (Total) Nicaragua

LATIN AMERICA, EXCL. MEXICO (Total) Panama

LATIN AMERICA, EXCL. MEXICO (Total) Paraguay

LATIN AMERICA, EXCL. MEXICO (Total) Peru

LATIN AMERICA, EXCL. MEXICO (Total) Saint Lucia

LATIN AMERICA, EXCL. MEXICO (Total) St. Kitts-Nevis

LATIN AMERICA, EXCL. MEXICO (Total) St. Vincent-Grenadines

LATIN AMERICA, EXCL. MEXICO (Total) Surinam

LATIN AMERICA, EXCL. MEXICO (Total) Trinidad And Tobago

LATIN AMERICA, EXCL. MEXICO (Total) Turks And Caicos Islands

LATIN AMERICA, EXCL. MEXICO (Total) Uruguay

LATIN AMERICA, EXCL. MEXICO (Total) Venezuela

SOUTH AMERICA (Total) Argentina

SOUTH AMERICA (Total) Bolivia

SOUTH AMERICA (Total) Brazil

SOUTH AMERICA (Total) Chile

SOUTH AMERICA (Total) Colombia

SOUTH AMERICA (Total) Ecuador

SOUTH AMERICA (Total) Falkland Islands

SOUTH AMERICA (Total) French Guiana

SOUTH AMERICA (Total) Guyana

SOUTH AMERICA (Total) Paraguay

SOUTH AMERICA (Total) Peru

SOUTH AMERICA (Total) Surinam

SOUTH AMERICA (Total) Uruguay

SOUTH AMERICA (Total) Venezuela

FIGURE A1: TRADE CREATION IN CASE CANADA IS AGRARIAN AND CTY A AND B ARE MORE CAPITAL INTENSIVE.

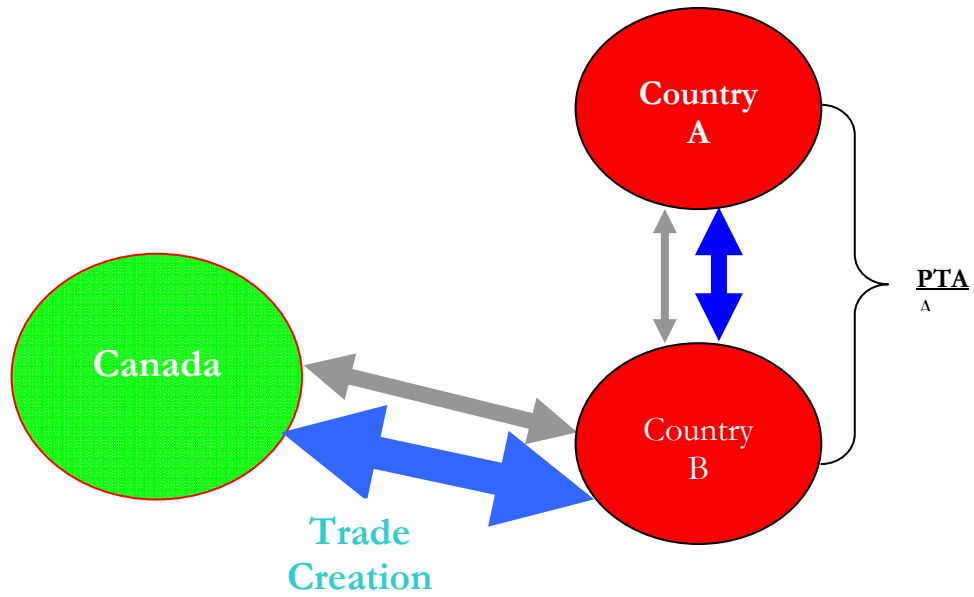


FIGURE A2: NO SIGNIFICANT CHANGE IN TRADE

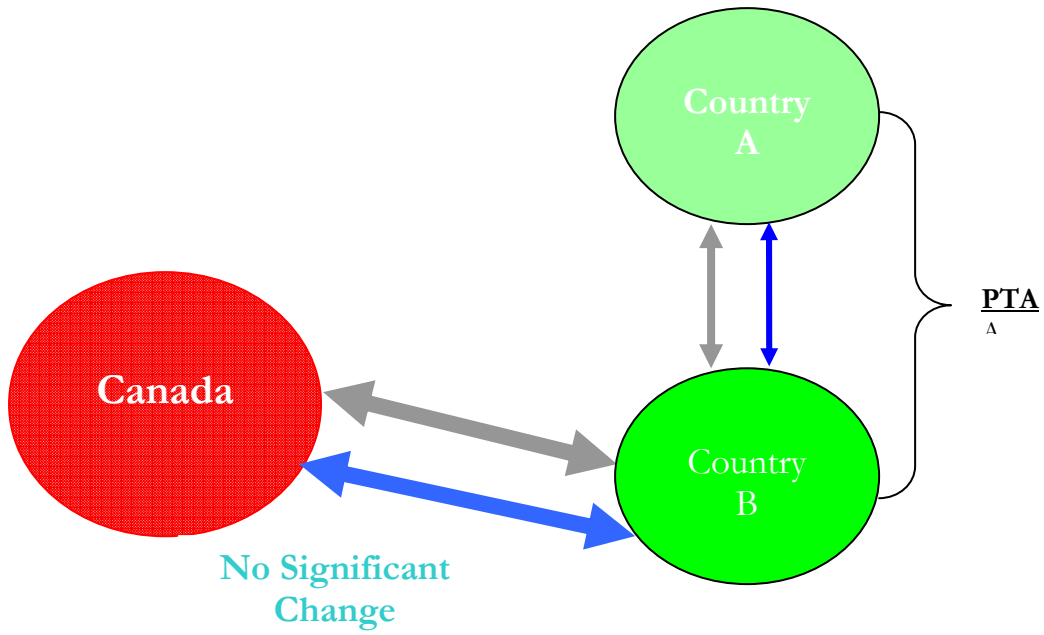


TABLE A2. HS2 CLASIFICACIÓN

1 Live animals	43 Furskins and artificial fur; manufactures thereof
2 Meat and edible meat offal	44 Wood and articles of wood; wood charcoal.
3 Fish & crustacean, mollusc & other aquatic invert	45 Cork and articles of cork.
4 Dairy prod; birds' eggs; natural honey; edible pr	47 Pulp of wood/of other fibrous cellulosic mat; was
5 Products of animal origin, nes or included.	48 Paper & paperboard; art of paper pulp, paper/pape
6 Live tree & other plant; bulb, root; cut flowers	49 Printed books, newspapers, pictures & other produ
7 Edible vegetables and certain roots and tubers.	50 Silk.
8 Edible fruit and nuts; peel of citrus fruit or me	51 Wool, fine/coarse animal hair, horsehair yarn & f
9 Coffee, tea, matn and spices.	52 Cotton.
10 Cereals	53 Other vegetable textile fibres; paper yarn & wove
11 Prod.mill.indust; malt; starches; inulin; wheat g	54 Man-made filaments.
12 Oil seed, oleagi fruits; miscell grain, seed, fru	55 Man-made staple fibres.
13 Lac; gums, resins & other vegetable saps & extrac	56 Wadding, felt & nonwoven; yarns; twine, cordage,
15 Animal/veg fats & oils & their cleavage products;	57 Carpets and other textile floor coverings.
16 Prep of meat, fish or crustaceans, molluscs etc	58 Special woven fab; tufted tex fab; lace; tapestri
17 Sugars and sugar confectionery.	59 Impregnated, coated, cover/laminated textile fabr
18 Cocoa and cocoa preparations.	60 Knitted or crocheted fabrics.
19 Prep.of cereal, flour, starch/milk; pastrycooks'	61 Art of apparel & clothing access, knitted or croc
20 Prep of vegetable, fruit, nuts or other parts of	62 Art of apparel & clothing access, not knitted/cro
21 Miscellaneous edible preparations.	63 Other made up textile articles; sets; worn clothi
22 Beverages, spirits and vinegar.	64 Footwear, gaiters and the like; parts of such art
23 Residues & waste from the food indust; prepr ani	65 Headgear and parts thereof.
24 Tobacco and manufactured tobacco substitutes	66 Umbrellas, walking-sticks, seat-sticks, whips, et
25 Salt; sulphur; earth & ston; plastering mat; lime	67 Prepr feathers & down; arti flower; articles huma
26 Ores, slag and ash.	68 Art of stone, plaster, cement, asbestos, mica/sim
27 Mineral fuels, oils & product of their distillati	69 Ceramic products.
28 Inorgn chem; compds of prec mtl, radioact element	70 Glass and glassware.
29 Organic chemicals.	71 Natural/cultured pearls, prec stones & metals, co
30 Pharmaceutical products.	72 Iron and steel.
31 Fertilisers.	73 Articles of iron or steel.
32 Tanning/dyeing extract; tannins & derivs; pigm et	74 Copper and articles thereof.
33 Essential oils & resinoids; perf, cosmetic/toilet	75 Nickel and articles thereof.
34 Soap, organic surface-active agents, washing prep	76 Aluminium and articles thereof.
35 Albuminoidal subs; modified starches; glues; enzy	78 Lead and articles thereof.
36 Explosives; pyrotechnic prod; matches; pyrop allo	81 Other base metals; cermets; articles thereof.
37 Photographic or cinematographic goods.	82 Tool, implement, cutlery, spoon & fork, of base m
38 Miscellaneous chemical products.	83 Miscellaneous articles of base metal.
39 Plastics and articles thereof.	84 Nuclear reactors, boilers, mchy & mech appliance;
40 Rubber and articles thereof.	85 Electrical mchy equip parts thereof; sound record
41 Raw hides and skins (other than furskins) and lea	86 Railw/tramw locom, rolling-stock & parts thereof;
42 Articles of leather; saddlery/harness; travel goo	87 Vehicles o/t railw/tramw roll-stock, pts & access
	88 Aircraft, spacecraft, and parts thereof.
	89 Ships, boats and floating structures.
	90 Optical, photo, cine, meas, checking, precision,
	91 Clocks and watches and parts thereof.
	92 Musical instruments; parts and access of such art
	93 Arms and ammunition; parts and accessories thereo

94 Furniture; bedding, mattress, matt support,
cushi

95 Toys, games & sports requisites; parts & access t

96 Miscellaneous manufactured articles.

97 Works of art, collectors' pieces and antiques.