› October **2010**

Out of Equilibrium

The Impact of EU-Canada Free Trade on the Real Economy

Jim Stanford

CCPA
CANADIAN CENTRE
for POLICY ALTERNATIVES
CENTRE CANADIEN
de POLITIQUES ALTERNATIVES

CCPA
CANADIAN CENTRE
for POLICY ALTERNATIVES
CENTRE CANADIEN
de POLITIQUES ALTERNATIVES

Please make a donation... Help us continue to offer our publications free online.

We make most of our publications available free on our website. Making a donation or taking out a membership will help us continue to provide people with access to our ideas and research free of charge. You can make a donation or become a member on-line at www.policyalternatives.ca. Or you can contact the National office at 613-563-1341 for more information. Suggested donation for this publication: $10 or what you can afford.

ISBN 978-1-926888-23-1

This report is available free of charge from the CCPA website at **www.policyalternatives.ca**. Printed copies may be ordered through the National Office for a $10 fee.

410-75 Albert Street, Ottawa, ON K1P 5E7

TEL 613-563-1341 FAX 613-233-1458
EMAIL ccpa@policyalternatives.ca
www.policyalternatives.ca

CAW 567
OTTAWA

Out of Equilibrium

The Impact of EU-Canada Free Trade on the Real Economy

Executive Summary

The Canadian and EU governments are working toward a free trade agreement that would comprehensively liberalize trade in goods and services, government procurement, foreign investment, and other important economic interactions between the two parties.

As negotiations continue, it is important to describe the starting point of trade flows between the two parties. Canada enters these negotiations with a notable disadvantage in terms of both quantitative trade flows, and the qualitative composition of trade. Canada currently incurs large bilateral trade deficits with the EU ($15 billion in goods, and close to $4 billion in services). About half of Canada's total EU trade deficit results from our especially skewed trade with Germany — a country which has successfully pursued export-led growth and generated the second largest trade surplus in the world. A disproportionate share of Canada's exports to the EU consist of raw or barely processed resources; almost all of Canada's imports from the EU consist of more sophisticated and technology-intensive products. Aggregate trade imbalances, and the skewed sectoral composition of trade, imply that Canada currently loses some 70,000 jobs (51,000 in goods, and another 19,000 in services) as a result of bilateral trade with the EU.

The European Commission and the Canadian government commissioned a joint economic study which predicted mutual economic gains from a free trade agreement, worth approximately $12 billion per year to Canada by 2014. However, this finding relies upon extreme and far-fetched assumptions regarding the self-adjusting nature of all markets, and the manner in which free trade would be implemented and experienced. More specifically, the joint report made the following assumptions, with no actual empirical evidence presented to support them:

- full employment is maintained throughout
- full income-expenditure equilibrium is maintained throughout (hence there are no changes in debt or in aggregate trade balances)
- the only limit to national output is the available supply of productive factors; macroeconomic issues (such as aggregate

demand, unemployment, currency swings, etc.) are ignored

- the landed cost of all processed goods traded between Canada and the EU will fall 2 percent (in addition to any tariff reductions) because of the free trade agreement
- services will become as extensively traded between Canada and the EU, as they are within Europe
- national savings and investment rates will increase in both parties, expanding productive capacity and total output
- there is no capital mobility between countries

The findings of the EU-Canada study amount to an *assertion* that free trade will produce mutual economic gains, not a *demonstration* that this will be the case. Despite its aggressively optimistic modelling methodology, even the commissioned joint report indicates that Canadian imports (of both goods and services) from the EU will increase by twice as much as Canadian exports to the EU, resulting in a substantial widening of the existing bilateral trade deficit. How does Canada experience significant GDP and national income gains, despite this visible deterioration in what is already a disadvantageous trading relationship? Only thanks to the idealized assumptions built into the model (namely that widening trade deficits with the EU will be offset by trade flows with other countries, and that any displaced workers will find equally or more productive work in other sectors), could Canada hope to "snatch victory from defeat": attaining aggregate economic gains despite such a marked deterioration in bilateral trade performance.

The real-world experience of other free trade agreements implemented by Canada does not support the hope that a free trade agreement with the EU is the way to make that unbalanced relationship more beneficial for Canada. The five free trade agreements which have been fully implemented by Canada (with the U.S., Mexico, Israel, Chile, and Costa Rica) resulted in an average (across the five FTAs) annual growth in exports of 4.77 percent, but an average annual growth in imports of 8.67 percent. In fact, exports grew less rapidly with FTA partners than with non-FTA partners, but imports grew quicker with FTA partners than with non-FTA partners. Trade balances worsened with all but one of Canada's FTA partners. There is no historical basis to conclude that free trade agreements are good for either Canadian exports, or for Canadian trade balances. Despite this observed failure, signing more free trade agreements seems to be the default policy response in Ottawa to Canada's worsening global trade performance.

This paper concludes by presenting some alternative simulations of the likely trade and employment impacts of EU-Canada free trade — unconstrained by the traditional neoclassical assumptions regarding full employment, balanced trade, international capital immobility, and so on. Three scenarios are presented: one in which tariffs are mutually eliminated; one in which EU-Canada trade expands in line with the historical experience of Canada's previous FTAs; and one in which tariff elimination is combined with the appreciation of Canada's currency (versus the euro) which has been experienced in fact since the two parties launched free trade negotiations. In every case, the bilateral trade balance worsens significantly (and in the third scenario, it worsens dramatically — since the higher Canadian dollar *reduces* Canadian exports, even as imports from the EU are surging). Based on average employment intensity across 23 goods-producing industries, the simulations suggest an incremental loss of between 28,000 jobs (in the first scenario) and 150,000 jobs (in the third). Direct losses in Canadian GDP range between 0.56 percent in the first scenario, and almost 3 percent in the third. Those losses would be even higher in the presence of multiplier effects ex-

perienced in non-tradeable sectors, and/or the same sorts of savings/investment spillovers as were assumed (in a positive context) by the EU-Canada joint economic report.

Enhancing Canadian exports, and diversifying export markets away from the U.S., are important economic policy goals for Canada. It is clear, however, that merely signing another free trade agreement — even with a partner as important as the EU — holds no prospect of achieving either goal. A free trade agreement with the EU will exacerbate Canada's existing large bilateral deficit, at the expense of output and employment in many important sectors of the economy. Those real costs cannot be assumed away on the basis of faith in idealized, self-adjusting equilibrium mechanisms which do not exist in the actual world. Canadian policy-makers would be better advised to tackle the more pragmatic, and in many ways more challenging, tasks associated with constructing globally successful and innovative industries and firms: addressing Canada's technological and productivity deficiencies, assisting Canadian-based firms in becoming more globally oriented, mobilizing investment in capital and technology (rather than simply assuming, as does the EU-Canada economic report, that that investment will automatically occur), managing exchange rate fluctuations, and using trade policy and other measures to ensure that our purchases from successful exporters (like the EU) are balanced by our sales to them. Ironically, these are exactly the sorts of hands-on industrial development strategies which European countries have historically pursued, and which have made the EU in general (and Germany in particular) a global export powerhouse. We should learn carefully from Europe about what is really required to build successful, innovative export industries, instead of continuing to naively hope that more free trade agreements will solve all that ails our trade performance.

1. The Current Structure of Canada-EU Trading Relationships

Free trade agreements are not signed between previously isolated countries, as if they had encountered each other for the first time and decided to commence economic relationships. Free trade agreements are signed between countries which already engage in extensive goods trade, services trade, foreign investment, and other forms of economic interchange. Hence, the impact of trade policy will inevitably be tailored by that "starting point" for the new policy.

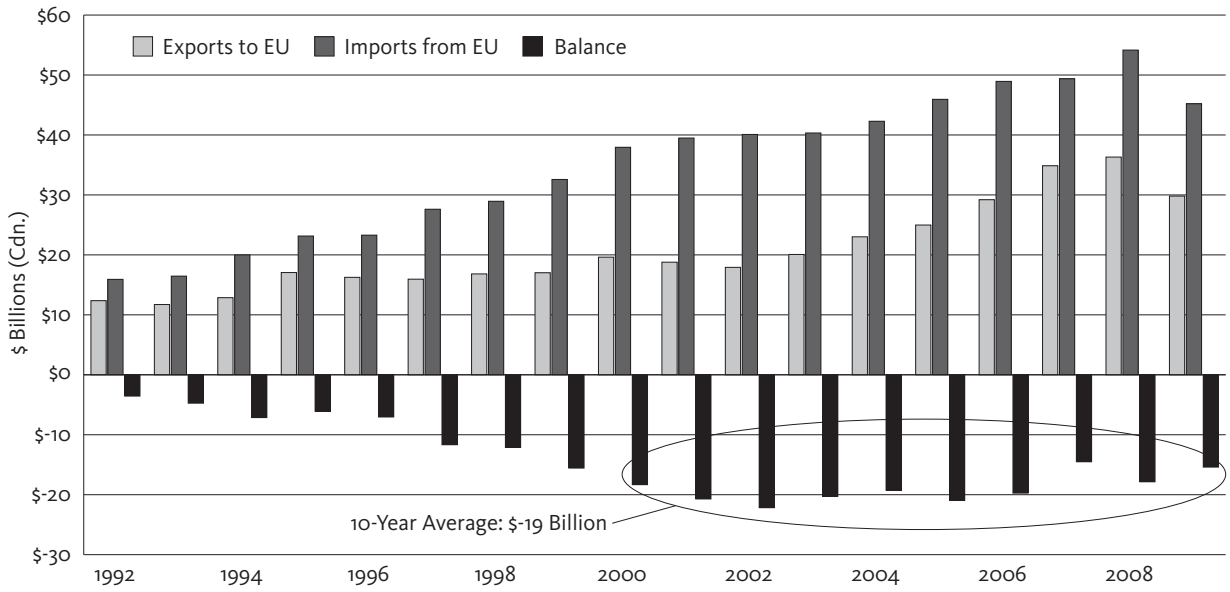
For this reason, it is important to carefully examine the existing structure of trade relationships between the EU and Canada, in order to pragmatically assess the likely impacts (both negative and positive) of a free trade agreement on specific trade flows, and on specific sectors. This sort of context is often lost when analysts resort to the use of theoretically specified quantitative models which, although they incorporate considerable sector-specific detail, rely on strong theoretical assumptions which effectively impose the result that trade liberalization will be mutually beneficial — no matter what the starting point. This section of the report will review some of the major characteristics of Canada's existing trade with the EU.

1.1 Canada-EU Goods Trade is Imbalanced Quantitatively

Collectively the EU is Canada's second largest trading partner (after the U.S.). Total bilateral goods trade in 2009 equalled $75 billion. Canada's exports to the EU have remained roughly constant over the last two decades as a share of total Canadian exports (around 8%), and as a share of Canadian GDP (just under 2%). But from the European perspective, the EU's imports from Canada have declined as a share of total EU imports.

Figure 1 illustrates the evolution of aggregate goods trade flows between Canada and the

FIGURE 1 **Bilateral EU-Canada Goods Trade Flows and Balances, 1992–2009**



SOURCE Industry Canada Strategis Trade Data Online.

EU over roughly the last two decades. In each of those years, Canada has imported considerably more from EU member countries than it exports there. And since the turn of the century, that resulting trade imbalance (a bilateral deficit from Canada's perspective) has widened considerably. Since 2000, Canada's bilateral goods trade deficit with the EU has averaged some $19 billion per year. In 2009, for each dollar of goods which Canada exported to the EU, Canada imported $1.52 worth of goods back from the EU. Canada's trade deficit with the EU is the second largest we incur with any trading partner (after China).

1.2 Canada-EU Goods Trade is Imbalanced Qualitatively

It is not just the total quantity or value of goods trade which is imbalanced between Canada and the EU. The composition of goods trade also reflects the markedly different structural composition of the commerce that flows in the two directions across the Atlantic.

Table 1 provides a summary of key data across 23 goods-producing sectors of Canada's economy, as they pertain to bilateral trade between Canada and the EU.[1] Data are provided regarding total sales and employment in each sector; existing bilateral trade flows between Canada and the EU (data for 2009), existing bilateral tariff rates, and estimated substitution elasticities (indicating the ease with which consumers are willing to trade-off one national variety of a particular product for another).[2]

Across the 23 sectors, Canada's total goods exports to the EU amount to $29.4 billion, while Canada's goods imports from the EU sum to $44.3 billion, resulting in a bilateral deficit for Canada of just under $15 billion for 2009.[3] Sector-by-sector trade flows and balances are reported in Table 1.

A clear pattern emerges from an examination of the sectoral composition of these bilateral flows. Table 2 highlights this cross-sectoral aspect of Canada-EU trade. Table 2 considers three broad categories of industries: primary industries

TABLE 1 **Canadian Output, Employment, and EU Trade Patterns by Sector, 2009**

Sector	NAICS Code	Shipments ($b)	Employment (000)	Jobs per $Billion Shipments	Cdn. Exports to EU ($m)
Agriculture	111,112,115	$48.7	320.5	6581	1724
Fishing	1,141	$2.0	21.0	10763	77
Coal	2,121	$5.0	5.6	1115	568
Oil & Gas	21,110	$145.4	54.6	376	9
Minerals nec	212 ex 2121	$23.0	45.5	1983	8943
Processed Foods	311	$79.9	221.8	2778	719
Beverages & Tobacco	312	$10.6	28.1	2657	26
Textiles	313,314	$3.3	19.5	5915	53
Wearing Apparel	315	$2.2	27.1	12502	101
Leather Products	316	$0.4	3.6	9543	27
Wood Products	321	$16.7	89.4	5358	437
Paper Products, Publishing	322,323	$34.0	130.1	3826	1059
Petroleum & Coal Products	324	$58.9	15.7	267	1002
Chemical, Rubbber & Plastic Products	325,326	$61.0	172.3	2826	3127
Mineral Products nec	327	$11.7	48.7	4164	93
Ferrous Metals	3311,3312	$10.6	25.3	2385	227
Metals nec	331 ex above	$23.2	34.1	1469	1306
Metal Products	332	$29.4	147.8	5036	544
Motor Vehicles & Parts	3361,3363	$51.1	96.8	1895	174
Transportation Equipment nec	336 ex above	$23.6	68.5	2895	3669
Electronic Equipment	334,335	$26.3	112.4	4274	2431
Machinery & Equipment nec	333	$27.1	120.2	4439	2332
Manufactures nec	31-33 ex above	$20.9	124.4	5949	793
TOTAL		**$714.7**	**1933.1**	**2705**	**29443**

Sector	Cdn. Imports from EU ($m)	Trade Balance ($m)	Cdn. Tariff on EU	EU Tariff on Cdn.	Substitution Elasticity
Agriculture	258	1467	2.3%	6.6%	4.97
Fishing	8	69	0.0%	8.9%	2.5
Coal	22	546	0.0%	0.0%	6.1
Oil & Gas	2801	-2791	0.0%	0.0%	34.4
Minerals nec	344	8599	0.1%	0.0%	1.8
Processed Foods	1450	-731	32.5%	15.6%	8.83
Beverages & Tobacco	1767	-1741	4.8%	7.4%	10.91
Textiles	299	-247	9.0%	7.2%	7.5
Wearing Apparel	350	-249	16.2%	9.9%	7.4
Leather Products	310	-283	8.9%	7.9%	8.1
Wood Products	243	194	3.5%	0.7%	6.8
Paper Products, Publishing	540	519	0.0%	0.0%	5.9
Petroleum & Coal Products	1982	-981	3.7%	3.2%	4.2
Chemical, Rubbber & Plastic Products	10972	-7846	1.9%	2.1%	6.6
Mineral Products nec	548	-455	3.9%	2.9%	6.85
Ferrous Metals	794	-567	0.3%	0.4%	6.85
Metals nec	412	894	0.8%	0.7%	8.4
Metal Products	1631	-1087	3.4%	2.7%	7.5
Motor Vehicles & Parts	3698	-3524	5.3%	6.8%	9.85
Transportation Equipment nec	3401	267	0.9%	1.0%	9.85
Electronic Equipment	3932	-1501	0.3%	0.4%	9.85
Machinery & Equipment nec	6630	-4297	1.3%	1.7%	8.1
Manufactures nec	1874	-1081	3.7%	1.3%	9.33
TOTAL	**44268**	**-14825**	**3.5%**	**2.2%**	

SOURCE Author's calculations from Industry Canada Strategis Trade Data Online by Industry; European Commission and Government of Canada (2008), pp.37 and 54; Statistics Canada CANSIM Tables 281-0024, 282-0008, 20004, and 304-0014.

TABLE 2 **Sectoral Composition of Current Canada-EU Trade, 2009**

	Canadian Exports to EU		Canadian Imports From EU	
	$ Bil.	%	$ Bil.	%
Primary	$11.3	38.5%	$3.4	7.8%
Basically processed primary	$3.3	11.1%	$2.8	6.4%
Transformed/value-added	$14.8	50.4%	$38.0	85.8%
TOTAL	**$29.4**	**100.0%**	**$44.3**	**100.0%**

SOURCE Author's calculations from Industry Canada Strategis Trade Data Online by Industry.
Primary includes NAICS sectors 111, 112, 1141, 115, 21110, and 212. Basically processed primary includes NAICS sectors 322, 324, 3314, and 3315 (paper, petroleum & coal products, and aluminum & other non-ferrous basic metals).

(agriculture and primary resource extraction), basic processing of primary products (based on the initial transformation of resource commodities — in sectors such as petroleum refining, paper, and aluminum smelting), and industries which undertake the more sophisticated and complete transformation of products into value-added or final products. Canada's economy, of course, has always been rooted disproportionately in resource extraction and basic processing. In response, it has been a traditional goal of Canadian economic policy to foster additional processing and transformation of products — moving "further up" the value chain. Resource extraction and basic processing industries locate in Canada by virtue of the immediate availability of the resources in question. Higher-level transformation activities, on the other hand, are more mobile geographically, and can locate production according to cost minimization, market access, and other factors; this means they are especially sensitive to the influence of policy factors on location decisions.

As summarized in Table 2, Canada's exports to the EU are highly focused in primary resources and basic processing, which together account for half of bilateral exports. In contrast, Canada's imports from the EU represent a significantly more sophisticated mix of transformed and value-added products. Primary and basic processing industries account for only 15 percent of Canada's imports from the EU; highly transformed products account for 85% of Canada's imports. Therefore, in terms of its sectoral composition, Canada's existing trade with the EU very much reflects our stereotype as an exporter of raw or basically processed resources — the proceeds from which are used to pay for the cost of a more sophisticated portfolio of manufactured imports.[4]

A similar pattern is readily visible if we decompose trade flows according to product (as opposed to industrial sector). This decomposition is provided in Table 3, which lists the top 25 products (at the HS4 code level) flowing each way across the Atlantic in 2009. Products which reflect raw resource extraction or basic resource processing are shaded. Canada's major exports to the EU are concentrated in a range of primary and barely processed resource-based products, including minerals, agricultural products, forestry products, and petroleum products. Primary and barely processed resources account for 16 of Canada's top 25 exports to the EU; and those 16 products make up almost three-quarters of the aggregate value represented by the 25 top exports. In contrast, there are almost no resource-based products among Canada's major imports from the EU — the only exception being North Sea oil and petroleum products imported into eastern Canada. 23 of the EU's top 25 exports to Canada consist of more sophisticated, transformed products, accounting for over 80% of the combined value of those top 25 exports. Europe's high-tech onslaught is led by $5.6 billion in Canadian imports of medications and pharmaceuticals.[5]

TABLE 3 **Product Composition of Current Canada-EU Trade (Top 25 HS4 Product Codes, 2009)**
Primary or Basically Processed Products Shaded

Canadian Exports to EU		*Canadian Imports from EU*	
Category (HS4)	**Value ($b)**	**Category (HS4)**	**Value ($b)**
7108-Gold	$5.4	3004-Medications	$5.6
8802-Helicopters, Airplanes And Spacecraft	$2.4	8703-Motor Vehicles	$3.0
7102-Diamonds	$1.7	2709-Crude Petroleum	$2.8
2601-Iron Ores And Concentrates	$1.4	2710-Petroleum Products	$2.0
8411-Turbo-Jets, Turbo-Propellers And Other Gas Turbines	$1.3	8411-Turbo-Jets, Turbo-Propellers And Other Gas Turbines	$1.7
2844-Uranium	$1.1	8803-Aerospace Parts	$1.2
2710-Petroleum Products	$1.0	2204-Wines	$0.9
1001-Wheat	$0.7	3002-Blood And Blood Preparations	$0.8
3004-Medications	$0.7	8431-Machinery Parts	$0.5
2701-Coal And Solid Fuels Manufactured From Coal	$0.6	9018-Medical Instruments	$0.5
8803-Aerospace Parts	$0.5	8708-Motor Vehicle Parts (Excl. Body, Chassis And Engines)	$0.4
1201-Soya Beans (Whether Or Not Broken)	$0.4	8502-Electric Generating Sets And Rotary Converters	$0.4
4801-Newsprint-In Rolls Or Sheets	$0.4	8481-Taps, Cocks, Valves And Similar Appliances	$0.4
8471-Magnetic/Optical Readers	$0.3	8483-Transmissions and Parts	$0.4
7601-Unwrought Aluminum	$0.3	2208-Spirits & Liqueurs	$0.4
4703-Chemical Woodpulp	$0.3	8413-Pumps For Liquids	$0.4
7112-Precious Metal Waste	$0.3	2203-Beer	$0.4
8517-Telephone Sets	$0.2	8701-Tractors	$0.3
0713-Leguminous Vegetables-Dried And Shelled	$0.2	9403-Furniture	$0.3
3002-Blood And Blood Preparations	$0.2	8802-Helicopters, Airplanes And Spacecraft	$0.3
4407-Lumber (Thickness>6mm)	$0.2	3304-Beauty Or Make-Up Preparations	$0.3
0306-Crustaceans	$0.2	8517-Telephone Sets	$0.3
7502-Unwrought Nickel	$0.2	8479-Machines And Mechanical Appliances, Nes	$0.3
8542-Electronic Integrated Circuits	$0.2	3808-Pesticides	$0.3
8525-Transmission Apparatus	$0.2	4011-Tires	$0.3
SUB-TOTAL	**$20.4**	**SUB-TOTAL**	**$24.1**
# of primary products (of 25)	**16**	**# of primary products (of 25)**	**2**
Share of Top 25 Total Value	**73.5%**	**Share of Top 25 Total Value**	**19.7%**

SOURCE Industry Canada Strategis Trade Data Online by Product.

There are various reasons why a concentration in raw or barely processed resource commodities may be harmful for long-run success in trade and productivity performance. Resource commodity prices tend to decline relative to manufactured goods over the long-run (despite shorter-run swings in prices). Many resources are non-renewable and hence subject to supply constraints. Environmental costs associated with resource extraction are another consideration. Finally, productivity growth tends to be slower (or even negative) in primary industries, re-

TABLE 4 **Employment Intensity of Current Canada-EU Trade, 2009**

	All Goods Trade	Excluding Basic Agriculture
Average Jobs per $1 billion Export to EU	3123	2886
Average Jobs per $1 billion Import from EU	3242	3221

SOURCE Author's calculations as described in text.

flecting the impact of resource scarcity on final efficiency; productivity in mineral and energy extraction in Canada has declined markedly in recent years, even as Canadian exports become increasingly concentrated in those primary sectors. The EU-Canada joint economic study also acknowledges (p. 54) that returns to scale are less than one in primary sectors (with the result that productivity declines as output increases); in contrast, positive returns to scale in manufacturing industries ensure that productivity grows with output. A trade-induced concentration in primary exports therefore has perverse impacts on productivity for a resource exporter like Canada: actually reducing average productivity, while productivity grows in the trading partner (thanks to the beneficial impact of scale on productivity of manufactures production).

1.3 Existing Bilateral Trade Flows Result in a Loss of Employment in Canada

On the basis of the detailed sectoral data provided in Table 1, we can analyze the impact of existing bilateral trade flows between Canada and the EU on direct employment in each of the considered sectors. Table 1 reports the average employment intensity for each sector, representing the total number of supported jobs associated with each billion dollars of total output.

Across the 23 sectors considered, on a weighted average basis,[6] Canada's exports to the EU are slightly less employment-intensive than Canada's imports from the EU, as summarized in Table 4. Each billion dollars of Canadian exports to the EU supports, on average, 3123 jobs, while each billion dollars of imports from the EU displaces 3242 jobs. This comparison is slightly skewed by the relatively high labour intensity associated with raw agricultural products.[7] If agricultural products were excluded, then the employment intensity of Canada's exports to the EU drops appreciably — to an average of 2886 jobs per billion dollars of exports (while the corresponding figure for the EU hardly changes, since agricultural products are not important in the EU's exports to Canada).

Even if trade were balanced between Canada and the EU, therefore, bilateral trade would result in a slight reduction in direct employment in Canada by virtue of the relatively less job-intensive nature of Canada's exports to Canada. This primarily reflects the importance of minerals, petroleum products, and coal in Canada's export portfolio; these resource sectors support relatively few jobs for each billion dollars in shipments.

However, the bigger challenge to Canadian employment patterns created by bilateral trade flows with the EU results from the fact that goods trade is heavily unbalanced, with the flow of imports from the EU more than half-again larger than Canadian exports to the EU. Table 5 considers this employment impact of trade imbalances across the same 23 sectors reported earlier. The bilateral trade balance in each sector will be associated with a net gain or loss of jobs in Canada, depending on whether more jobs are supported by exports than are displaced by imports (or vice versa). Those employment impacts will depend on both the bilateral trade balance, and on the job intensity of production in each sector.

Table 5 indicates that there are 8 sectors where bilateral trade with the EU results in net job creation in Canada. The largest of these is

TABLE 5 **Employment Implications of Current Canada-EU Trade Imbalances, 2009**

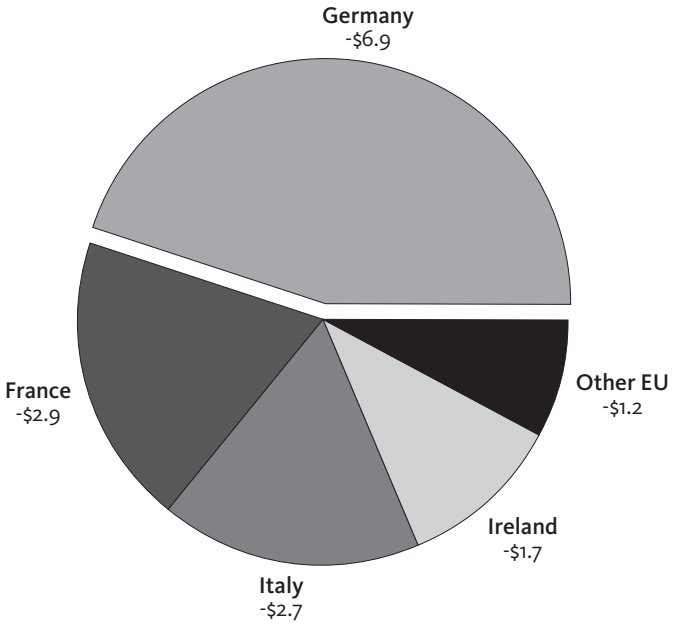
Sector	Current Cda-EU Trade Balance ($m, 2009)	Jobs Created or Destroyed
Agriculture	$1,467	9653
Fishing	$69	745
Coal	$546	609
Oil & Gas	-$2,791	-1049
Minerals nec	$8,599	17054
Processed Foods	-$731	-2030
Beverages & Tobacco	-$1,741	-4625
Textiles	-$247	-1460
Wearing Apparel	-$249	-3111
Leather Products	-$283	-2697
Wood Products	$194	1038
Paper Products, Publishing	$519	1985
Petroleum & Coal Products	-$981	-262
Chemical, Rubbber & Plastic Products	-$7,846	-22169
Mineral Products nec	-$455	-1894
Ferrous Metals	-$567	-1352
Metals nec	$894	1314
Metal Products	-$1,087	-5475
Motor Vehicles & Parts	-$3,524	-6678
Transportation Equipment nec	$267	774
Electronic Equipment	-$1,501	-6415
Machinery & Equipment nec	-$4,297	-19075
Manufactures nec	-$1,081	-6431
TOTAL	-$14,825	-51551

SOURCE Author's calculations from Industry Canada Strategis Trade Data Online by Industry; Statistics Canada CANSIM Tables 281-0024, 282-0008 and 304-0014.

minerals, where Canada's large exports to the EU support a net total of over 17,000 jobs. Agriculture is the second-largest job "winner" in Canada, with almost 10,000 net jobs supported by the bilateral trade surplus. Smaller surpluses in other sectors (fishing, coal, wood and paper products, aluminum and nickel, and non-auto transportation equipment) support a total of just under 6500 additional export-driven jobs.

In the remaining 15 sectors, however, Canada's bilateral trade deficits result in a much larger net loss of jobs. The largest net job losses occur in the machinery, chemicals, motor vehicle, and electronic equipment sectors. The net job loss associated with bilateral trade flows in these four high-tech sectors alone sums to over 54,000 positions. Additional jobs are displaced by net trade deficits in other sectors. On a net basis, across the 23 sectors considered (including both trade "winners" and trade "losers"), bilateral goods trade flows with the EU displace a combined total of over 51,000 Canadian positions in total. Again, this reflects both the fact that Canadian exports to the EU are slightly less job-intensive than Canadian imports from the EU, but mostly that Canadian imports from the EU are much larger than Canadian exports to the EU.

FIGURE 2 **Bilateral Goods Trade Balances, Canada and EU Members, 2009** $ Billion



SOURCE Industry Canada Strategis Trade Data Online.

1.4 Canada's Bilateral Trade Deficit with the EU is Concentrated with Germany

The EU is composed of 27 separate countries, and Canada's trade relationships are not symmetrical across those countries. In many cases, Canada's bilateral trade is relatively small, and relatively balanced. In a few cases (such as the U.K.), Canada even maintains a trade surplus. But a disproportionate share of Canada's total trade with the EU, and of Canada's bilateral deficit, is concentrated with Germany and a small number of other countries. Figure 2 provides a breakdown of Canada's bilateral goods trade deficit with the EU. Almost half of the deficit is created by bilateral trade with Germany, with whom Canada incurred a deficit of almost $7 billion in 2009. Significant bilateral deficits also exist with France, Italy, and Ireland. With the remaining 23 members of the EU, Canada's goods trade is almost balanced (resulting in a small combined deficit of just over $1 billion).

In bilateral trade with Germany in 2009, Canada imports almost $3 for every dollar Canada exported to Germany. That ratio of trade imbalance is therefore almost twice as severe with Germany, as with the EU as a whole.[8] Germany, of course, has implemented a very successful export-led strategy based on tight control of domestic incomes and spending, superior technological initiatives, and effective government-industry sector strategies, to become a global export powerhouse. In 2009 Germany recorded the second largest trade surplus in the world (after China). The benefits of this strategy for the German economy seem clear — however, trade surpluses on its side of the ledger must inevitably be offset by destructive trade deficits on another side (in this case, Canada's).

1.5 Canada's Bilateral Services Trade with the EU is Also Unbalanced

In addition to $75 billion per year in bilateral goods trade, Canada and the EU also exchange

TABLE 6 **Canada-EU Services Trade, 2007**

	Canadian Exports to EU ($ Bil.)	Canadian Imports From EU ($ Bil.)	Balance ($ Bil.)
Travel	$3.0	$4.6	-$1.6
Commercial Services	$4.9	$5.2	-$0.3
Transportation, Government, and Other	$3.4	$5.1	-$1.7
Total	**$11.3**	**$14.9**	**-$3.6**

SOURCE Author's calculations from Statistics Canada CANSIM Table 376-0036.
EU includes Austria, Belgium, Denmark, France, Finland, Germany, Greece, Ireland, Italy, Netherlands, Poland, Portugal, Spain, Sweden, and U.K. Other EU members excluded because of lack of data.

TABLE 7 **Current Regulations Governing International Trade & Investment**

	Canada	EU
Average tariff on bilateral goods imports.	3.5%	2.2%
Average barrier to bilateral services imports.	42.6%	31.0%
Restrictiveness of regulation on incoming FDI.	0.153	0.048

SOURCE Author's calculations from European Commission and Government of Canada (2008), pp. 37, 45, 59; OECD FDI Regulatory Restrictiveness Index (2006). Services barriers weighted by baseline services imports. EU FDI restrictiveness unweighted average of 24 EU members included in the OECD study.

$25 billion per year worth of services. Over half of this services trade consists of travel, tourism, and transportation, associated with the substantial mutual exchange of visitors hosted by both parties. The remainder consists of a range of business, commercial, and financial services.

Table 6 summarizes bilateral services trade between the two sides. As with goods trade, Canada incurs a significant net bilateral trade deficit in services — totalling about $4 billion in 2007 (most recent data available). Canada incurs a deficit in every major category of services trade reported by Statistics Canada: including travel; commercial services; and transportation, government, and other services. On average, Canada imports $1.32 worth of services from the EU, for every dollar it exports there; this measure of imbalance is only modestly less severe than is the case with Canada-EU goods trade. On average, services employment is considerably more jobs-intensive than goods production, and so that $4 billion deficit in bilateral services trade translates into a considerable net loss of domestic employment. Based on the average job intensity of sales of private services in Canada, the bilateral services deficit in 2007 translated into a net employment loss for Canadian services providers of just under 19,000 jobs.[9] Combined with net job losses of over 51,000 positions in goods trade, this implies that Canada's total bilateral trade deficit with the EU (considering both goods and services) is associated with a net loss of direct employment in affected Canadian sectors of 70,000 positions.

1.6 Canada's Trade Barriers and Regulations are More Significant than the EU's

Tariffs on imports in both Canada and the EU are relatively low, reflecting decades of incremental trade liberalization. However, remaining tariffs (as they apply to bilateral goods trade) are significantly higher (by a factor of over half) in Canada than in the EU. The trade-weighted average Canadian tariff on imports from the EU is 3.5 percent, versus a trade-weighted average EU tariff on Canadian imports of 2.2 percent (see Table 7).

This partly reflects the sectoral composition of bilateral Canada-EU trade. As noted above, Canada's exports to the EU are disproportion-

ately concentrated in primary or basically processed resource-based materials. As detailed in Table 1, EU tariffs on coal, petroleum, minerals, and paper products are already zero (since the jurisdiction sees no need to protect domestic producers in any of those resource-dependent sectors). Thus those important Canadian export industries have nothing to gain from the bilateral elimination of tariffs under a free trade agreement. EU tariffs are also near-zero for basically-processed non-ferrous metals (such as aluminum and nickel) — another important Canadian export. In contrast, Canada's imports from the EU are concentrated in more sophisticated manufacturing products, for which tariffs are still generally higher.

This pattern of greater intervention in international exchange is also visible in other dimensions of the Canada-EU relationship, as summarized in Table 7. Estimated barriers to services trade are more than one-third higher, on average, in Canada than in the EU. And remaining restrictions on foreign investment in Canada (while still insufficient to slow the pace of recent foreign takeovers, especially in Canada's resource sector) are substantially higher than average FDI restrictions in the EU.[10]

The mutual elimination of tariffs and other barriers or restrictions on goods and services trade will therefore provide a greater proportional advantage to European suppliers, than to Canadian ones, by virtue of the fact that Canadian interventions (across the range of affected policy areas) are more substantial. This is on top of the fact that European firms already sell much more in Canadian markets, than Canadian producers sell in the EU. The almost certain outcome of liberalization, therefore, will be an exacerbation of existing trade imbalances, in both goods and services sectors.

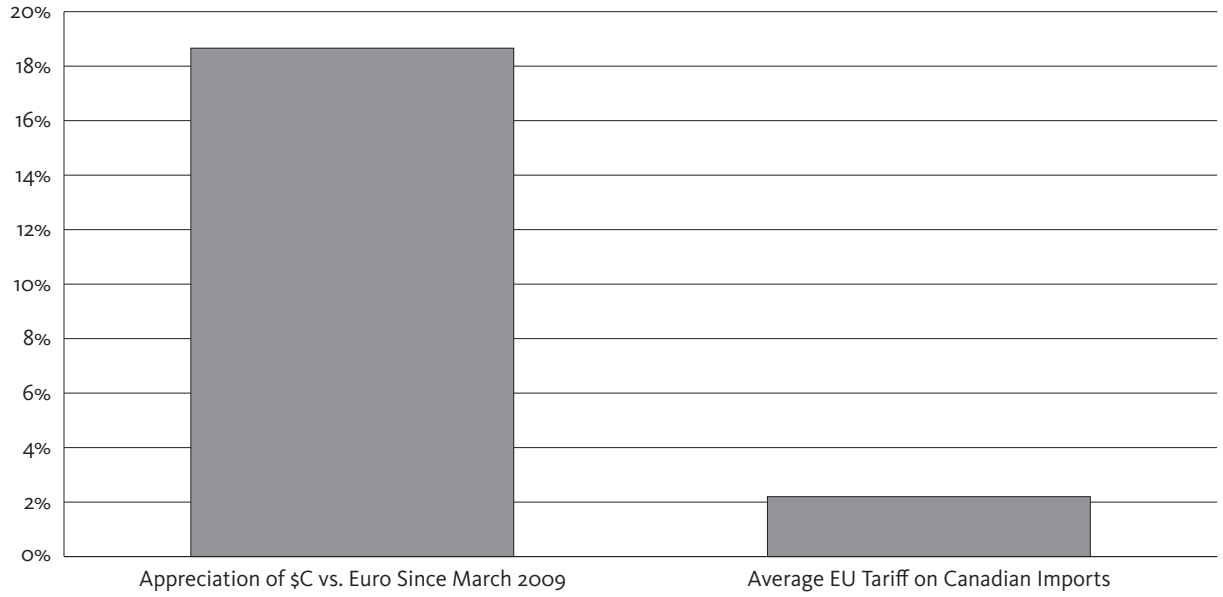
1.7 Exchange Rate Fluctuations Dwarf Tariffs in Impacting Relative Competitiveness of Canadian and EU Suppliers

Global commerce, of course, has been greatly affected by instability in financial markets in recent years, including in foreign exchange markets. Floating exchange rates have responded to numerous factors unrelated to real flows of trade and investment, including speculative behaviour by financial players, government intervention in currency markets, perceived risk and "safe haven" effects, and other financial factors.

Canada's currency has appreciated markedly against most currencies in the world since the early years of this century. This reflects various financial factors, including the link between Canada's currency and commodity prices, speculative pressures in financial markets, Canada's relatively low public debt, and other factors. The rise of Canada's currency certainly does *not* reflect Canada's success in international commerce: indeed Canada's current account deficit currently is at record levels, and foreign direct investment continues to leave Canada on a net basis. Neither a trade surplus nor an inflow of real investment spending can therefore account for the appreciation of the loonie; financial factors, not real factors, have been pushing the currency higher.

Europe's currency, on the other hand, has been negatively affected by concerns regarding sovereign debt security in some EU member states, speculative forces, and other financial pressures. In recent years, Canada's currency has appreciated substantially against the euro (the currency which governs most, but not all, trade with the EU). Exchange rates fluctuate on a daily basis, of course. But so far in 2010 (on average over the first 9 months of the year), the Canadian dollar has traded against the euro at a level 18.7 percent higher than the level that prevailed in March 2009 when the two parties issued their joint report recommending negotiations toward a comprehensive trade agreement. In other words, since Canadian and EU officials first agreed that

FIGURE 3 **Tariffs and Currency Fluctuations**



SOURCE Bank of Canada; European Commission and Government of Canada (2008).

free trade was a worthy goal, currency markets have shifted relative cost comparisons (in Europe's favour) by 18.7 percent.

Surely an analysis of the likely impact of those currency developments, and a consideration of their likely direction in future years, should be an important aspect of policy-makers' consideration of their policy choices. Failure to consider the impact and future direction of fluctuating currencies is a major lapse in the analysis that informs current negotiations between the two parties (including in the EU-Canada joint economic report).

Against other EU currencies, the appreciation of Canada's dollar has been even more severe. For example, the Canadian dollar has appreciated by close to 40 percent against the U.K. pound since early 2007.

In most sectors, the rise of the Canadian dollar results in higher prices for Canadian products in European markets, and consequently reduced sales of those products; correspondingly, the relative price of European imports in Canadian markets is reduced, and the market penetration of imports is enhanced. (For resource commodities, which are generally sold at uniform world prices, the higher dollar results in a reduction in domestic incomes received from a given volume of export sales.) Indeed, the competitive disadvantage resulting from the substantial appreciation of the Canadian currency versus European equivalents vastly outweighs any benefit that Canadian exporters might be expected to attain as a result of EU tariff elimination through a free trade agreement. As indicated in Figure 3, the appreciation of the Canadian dollar versus the euro since the March 2009 Canada-EU recommendations has done nine times as much damage to the competitiveness of Canadian products in European markets as could be hoped to be achieved from the ultimate culmination of those talks.

1.8 Summary

Canada's current trading relationships with the EU are important, but highly unbalanced. Canada imports far more from the EU than it exports

to the EU, in both goods and services, resulting in a bilateral trade deficit of $15 billion in goods and a further $4 billion in services. The composition of Canadian exports to the EU is heavily concentrated in raw and barely processed resources. Ironically, it is in most of these sectors (with the exception of agriculture) that EU tariffs are already at or near zero, implying little if any net benefit to Canadian exporters in these sectors from tariff elimination. The large Canadian deficit in bilateral trade, modestly accentuated by the slightly less job-intensive nature of Canadian exports (compared to the job content of imports from the EU), produces a substantial loss of direct employment in Canadian sectors: some 51,000 lost jobs in goods production, and 19,000 lost jobs in services sectors. Exchange rate fluctuations exert an important impact on Canada-EU relative competitiveness and trade patterns, and the recent appreciation of the Canadian dollar relative to the euro (and other EU currencies) imposes a cost disadvantage on Canadian products (in both export and home markets) many times greater than the potential cost advantage gained by Canadian exporters in the European market as a result of potential EU tariff elimination. This appreciation is likely to worsen Canada's already unbalanced trade position with respect to the EU in the coming years.

In sum, Canada's trading relationship with the EU starts from a clearly inferior position, reflected in both the quantity and the quality of our trade with the EU. In regard to trade policy initiatives, it must then be asked whether a proposed initiative (such as a free trade agreement) is likely to improve or worsen those existing disadvantages. This requires a more concrete and grounded analysis than simply "running a model" whose equations embody the belief that trade liberalization *always* produces mutual efficiency gains (thanks to assumed automatic reactions in factor markets, expenditure decisions, and capital markets). In a real-world policy setting, it is preferable to begin from an observed starting point, to understand pragmatically how trade policy changes will affect various sectors.

How do we explain this chronic, structural imbalance in trade between Canada and the EU? It seems to reflect a deep failure of competitiveness on the part of many Canadian producing firms (other than resource suppliers), relative to European competitors. Europe is not a low-cost production jurisdiction, and hence Canada's lack of competitiveness could not broadly stem from high production costs (although the recent appreciation of the Canadian dollar versus its European counterparts certainly has not helped, in that regard). More likely, the superior innovativeness, technology-intensity, and quality of European products (even in traditional labour intensive sectors, such as textiles, leather goods, and processed foods — let alone in higher-tech sectors such as machinery, chemicals, and pharmaceuticals) explains the sustained ability of European producers to out-compete their Canadian competitors in markets on both sides of the Atlantic. How do Canadians continue to pay the bill for this lopsided trade relationship? By selling increasing quantities of natural resources (to Europe and to other destinations). And increasingly, in recent years, by going into debt — as evidenced by Canada's record current account deficits.

2. Review of the EU-Canada Joint Economic Report

In late 2008 the European Commission and the Government of Canada released a joint economic report on the likely economic effects of free trade between the two parties. The report included sections analyzing in detail the nature and scope of existing economic relationships between Canada and the EU, existing forms of policy dialogue and cooperation, and the views of business submissions to both governments regarding their preferences for future trade policy. The aspect of the joint report that generated,

TABLE 8 **Predicted Effects of Canada-EU Trade Liberalization, EU-Canada Joint CGE Model**

	Change Canadian Exports to EU		Change Canadian Imports from EU		Change Trade Balance
	Bil. euros	%	Bil. euros	%	Bil. euros
Goods	6.389	24.3%	12.239	36.6%	-5.850
Services	2.194	14.2%	4.829	13.1%	-2.635
Total	**8.583**	**20.6%**	**17.068**	**24.3%**	**-8.485**

SOURCE European Commission and Government of Canada (2008)

and continues to generate, the most public attention, however, has been its effort to quantify the presumed gains from a free trade agreement between Canada and the EU. These predictions are reported in Section 2.3 of the joint report.

2.1 Summary of Joint Report Findings

Using a computable general equilibrium (CGE) modeling framework, the joint report estimated the effects of the elimination of tariffs on bilateral trade, the elimination of unspecified non-tariff barriers and so-called "trading costs" in both goods and services trade, and the presumed acceleration of savings and investment which the authors also expect to result from a free trade agreement. The report expects a total gain in equivalent national income of some 10.5 billion euros for the EU, and 8.4 billion euros (or around $12 billion Cdn.) for Canada (p. 56). This represents gains of approximately one-tenth of one percentage point of EU GDP, and three-quarters of one percent of GDP for Canada; these gains would be experienced over many years, requiring both the full adjustment of production to the new tariff and cost structure, and the time required for the accumulation and investment of the new capital which the report assumes will be saved out of higher incomes on both sides of the Atlantic.[11] Even if these full economic gains were attained, therefore, their gradual impact would be imperceptible in regular annual economic statistics (which incorporate errors in estimation much larger than the fractional annual changes in GDP or income which would be consistent with the phased-in gains predicted by the joint report).

However, the summary claim that an EU-Canada deal would "give a $12 billion annual boost to the economy"[12] has nevertheless been reported repeatedly and without query or context by media, cabinet ministers, policy commentators, and others. These numerical estimates have therefore likely influenced opinions regarding the EU-Canada negotiations. Thus it is especially important to consider how these findings were generated — examining carefully the modellers' methodology, assumptions, and data.

2.2 The Joint Report Findings in More Detail

The "headline" conclusion that a free trade agreement would boost Canada's GDP and national income by over 8 billion euros is the most-cited finding of the joint report. However, there are other interesting details in the report's simulation findings that are worth highlighting as well:[13]

i) The joint report acknowledges that Canada's existing large bilateral trade deficit with the EU will widen considerably under a free trade agreement. The report predicts (p. 59) that Canadian goods exports to the EU would grow by 6.4 billion euros under the deal — but Canadian goods imports from the EU would grow by 12.2 billion euros (see Table 8). The result is an expansion of Canada's bilateral goods trade deficit with the EU by almost 6 billion euros (or $9 billion Cdn.); this represents an increase of almost two-thirds in the existing bilateral deficit. Similarly, Canadian services exports to the EU would grow 2.2 billion

euros, but Canadian services imports from the EU would grow by 4.8 billion euros — doubling the existing bilateral services deficit (to over $7 billion Cdn.). Even the joint report acknowledges, therefore, that a free trade agreement would lead to an increase in European exports to Canada (both goods and services) twice as large as the increase in Canada's exports to the EU.[14]

ii) In macroeconomic accounting terms, GDP represents the sum of domestic expenditure on consumption, investment, and government programs, plus the net trade balance (exports less imports). The joint report predicts an 8.6 billion euro increase in total Canadian exports (goods and services), but a 17.1 billion euro increase in imports. That should lead to an 8.5 billion euro *reduction* in Canadian GDP — not an increase. How could the model nevertheless predict an increase in Canadian GDP? The report's model requires that the deterioration in Canada's bilateral trade deficit with the EU is offset by an improvement in bilateral balances with other trading nations; the model also generates increases in Canadian GDP independent of Canadian trade with Europe (including both static gains in productivity and dynamic expansion of national savings and investment). It is thus quite wrong to conclude that Canada's GDP would increase (according to this study) because Canadian exports to the EU grow. In fact, the predicted gain in Canadian GDP occurs *despite a deterioration* of Canada's bilateral trade with the EU. This counter-intuitive aspect of the model's results is never explained to the reporters or commentators who report only the headline predictions of a trade-driven "boost" to Canada's GDP.

iii) This disconnect between the deterioration in trade balances which the joint report acknowledges, and its prediction that Canada will reap economic gains from the deal anyway, is also visible in the report's findings at the sectoral level. Consider the case of the auto industry, for example — which is a crucial export industry for Canada. The report predicts that under an EU-Canada free trade agreement, Canada's existing large bilateral deficit in automotive trade with the EU (which equalled $3.5 billion in 2009) would grow by an additional 400 million euros (or about $600 million). The report predicts that Canada's automotive imports from the EU will grow about three times as much as Canada's automotive exports to the EU; moreover, the report acknowledges (in footnote 72) that it has overstated the likely impact of free trade on Canadian automotive exports to the EU because of the fact that many Canadian-made automotive products will not possess sufficient Canadian-content to qualify for tariff-free access to the EU, even under a free trade agreement. Thus the real deterioration in the automotive trade balance would be larger than reported in the study. With net exports to the EU declining by $600 million, one would expect a modest decline in output and employment in the Canadian auto industry. To the contrary, however, the report predicts a 5.2 percent *increase* in total Canadian automotive output under Canada-EU free trade. This is equivalent to an increase in automotive sales (given 2009 industry shipments of $51.1 billion) of $2.7 billion. How could a $600 million *decline* in net exports lead to a $2.7 billion *increase* in total sales? It is impossible to precisely ascertain the source of this output gain from the report's limited documentation of the underlying model and its findings, but it is likely the output gain derives from offsetting gains in trade balances with other trading nations, and from the generalized expansion in the Canadian economy which is assumed to result from services trade liberalization and from higher national savings and investment. Few stakeholders in the auto industry would take such an optimistic prediction seriously. Yet it is these types of indirect, far-fetched interrelationships which underpin the model's predictions of economic gains in each sector (and hence across the economy as a whole).

iv) The joint report acknowledges that in many primary sectors, an EU-Canada free trade agreement will have no discernable impact. In forestry, fishing, coal, oil and gas, and minerals industries, there is virtually no change in trade flows as a result of free trade (since EU tariffs in these resource sectors were already at or near zero). These sectors account for about one-third of Canada's existing exports to the EU (but only 6 percent of Canada's existing imports from the EU). In this regard, the joint report confirms that Canada's resource sectors (which are disproportionately important in our exports to the EU) have little if anything to gain from free trade. The only Canadian primary industry which benefits from free trade (according to the joint report) is agriculture, which would see a 42 percent (or $1.2 billion) increase in exports to the EU under free trade; and this prediction is contingent on the assumption that a free trade agreement would feature the complete abolition of EU agricultural tariffs and quotas on Canadian products, which seems unlikely.

v) The biggest "winners" among Canadian sectors as a result of free trade with the EU are surprising. The five goods sectors with the largest proportional growth in exports to the EU (in order of size of export expansion) are processed foods, textiles, petroleum and coal products, wearing apparel, and agriculture.[15] The claim that free trade will boost Canada's sales of more sophisticated, value-added products to the EU (as the joint report suggests on p. 31) is not supported by the joint report's own findings. Canadian exports to the EU of more technology-intensive products (such as machinery and equipment, electronic equipment, and transportation equipment) all increase more slowly under free trade than average Canadian exports to the EU. In other words, even though EU-Canada free trade offers little to Canadian resource exporters, it seems to nevertheless reinforce the existing structural pattern of EU-Canada trade (whereby Canada exports raw and barely processed resources in return for imports of higher-value manufactures), and expands Canada's bilateral trade deficit in high-technology sectors.

vi) The joint report makes no mention of changes in employment resulting from EU-Canada free trade. Modest sectoral reallocations of employment are possible (as the production structure in each country adjusts to the new relative cost environment). But total employment is unchanged in each trading partner *by assumption*. Again, non-specialists may wonder how a substantial increase in net imports (and corresponding deterioration in trade balance) could be compatible with no change in Canadian employment. The extreme modeling assumptions (in this case, that factor markets including labour perfectly adjust to ensure that all available supply is utilized in production) which underpin this counter-intuitive result are not explained, nor understood by non-specialist audiences.

In sum, when we begin to think through the actual mechanisms through which the EU-Canada joint study arrives at its optimistic conclusions regarding the impact of free trade on Canada's economy, some surprising issues arise. The report actually predicts a substantial deterioration in Canada's already unbalanced trade with the EU. Despite this, the report predicts an increase in Canadian GDP that — while imperceptible over the long-run period in which it would be experienced — is proportionately many times greater than the corresponding gain in EU GDP (even though it is EU exports which benefit the most from the trade deal). Indeed, some of the Canadian industries which experience significant deterioration in bilateral trade performance (including the automotive, machinery, textile, and chemical sectors) experience significant increases in output as a result of the deal.[16] Clearly, these predicted economic gains cannot be "trade-driven" in the sense that the term is commonly understood: that is, gains generated

via new export opportunities which stimulate new investment, output, and employment in trade-oriented sectors. If that was the case, then clearly Canadian GDP (and employment, too, if we drop the strict assumption that labour markets always automatically ensure full employment) would decline under the trade scenario which the joint study has projected. Something else must account for the expected economic gains in Canada. When we think through how the model could generate predictions of economic growth for Canada despite a visible deterioration in net bilateral exports, then the far-fetched nature of the model's assumptions and methodology become especially clear, casting into doubt the headline findings which have captured so much uncritical attention.

2.3 Weaknesses of Computable General Equilibrium Methodology[17]

The findings of the joint report (even its less far-fetched predictions regarding the impact of tariff elimination on trade patterns) all depend on the theoretical assumptions built into the computable general equilibrium model that was used in the study. The techniques of CGE modeling are not well understood by non-specialists; they are hence likely to interpret the numerical findings of CGE analysis such as those reported in the EU-Canada joint study as "empirical evidence" in support of the claim that free trade will boost the economy. In fact, however, a CGE model is not an empirical investigation at all: it is an elaborate simulation model, whose results are fully dependent on the *a priori* theoretical specifications and quantitative parameters built into the model by its designers. Numbers can be attached to any such set of theoretical specifications, but the mere act of attaching numbers to arbitrarily specified theoretical relationships in no way makes it grounded or reliable as a quantitative depiction of the real world economy.[18]

A CGE model is simply a numerical representation of a system of equations describing supply and demand forces, and equilibrium conditions, in all of the individual markets which compose the total economy. The model consists of a large number of mathematical equations — one for each supply, demand, technology, or equilibrium condition which the modeller wants to consider. The modeller then imposes a condition of "general equilibrium," in which demand equals supply in every single market (including, crucially, the labour market). Modern CGE models typically contain hundreds of such equations. Numerical parameters are attached to each equation in the model using a process of "calibration." It is important to note that any CGE model can be calibrated to precisely replicate the outcome of any national economy. This does not mean that the CGE model is empirically "accurate," only that the mathematical formulae built into the model are sufficiently flexible that the modeller can always precisely "fine tune" the model's output. The quantitative detail which CGE models produce in their results should not be misinterpreted as empirical reliability.[19]

The model is first solved to describe an initial "base case" solution: that is, a snapshot of the economy before any assumed policy change or shock is applied. Then the modeller changes some parameter in the model to simulate the policy change in question, and re-solves the model. The difference between the base case solution and this simulated "counterfactual" solution is taken as the potential economic impact of the policy change. But this estimate is 100 percent contingent on the modeller's specification of the model: both its theoretical and behavioural structure, and the precise parameter values which were assigned to its numerous equations. A CGE model cannot "prove" anything. Moreover, since different economists will have different views regarding both the theoretical underpinnings of the model and its numerical specification, different CGE models will produce different results — and none is more "correct" than any other. The relative credibility of each model, rather, depends

TABLE 9 **Key Assumptions of CGE Trade Policy Models**

Full (or constant) utilization of labour. No unemployment (or no change in unemployment).
No demand constraint on output or employment. All production is sold, and output is limited only by the supply of factors.
Full equilibrium between income and expenditure (for nations and households). As a result, no change in aggregate trade balance can occur due to changes in trade policy.
Factor returns perfectly reflect marginal productivity; no role for institutional, legal, or social factors in determining income distribution and hence production costs.
Society described by a single "representative household." Changes in income distribution do not matter, nor do they affect economic outcomes.
Exchange rates are constant, and/or have no impact on output and employment (since market prices will adjust as needed to ensure full resource utilization).
Capital is immobile between countries; investment is limited only by a country's propensity to save.
Products are differentiated by country of origin; companies cannot relocate existing production to another country.

SOURCE Adapted from Stanford (2003).

on the relative realism of the assumptions and relationships that are built into it.

Most CGE models (including the model utilized in the EU-Canada joint study) incorporate a very dubious mix of assumptions which essentially predetermine their optimistic findings — but which can hardly be interpreted as a realistic depiction of the workings of any real-world economy. Here are some of the most important standard assumptions of CGE models (summarized in Table 9):

- **Full employment of all factors (including labour):** The models require that all labour be employed, both before and after trade liberalization. So there is no worry that anyone can become unemployed as a result of shifting competitive pressures after free trade. In capital markets, the equivalent assumption is that all savings "endowed" as a result of the autonomous saving preferences of households, will be productively invested by business in their most productive uses. This equally unrealistic view of capital markets is crucial to the EU-Canada joint study's treatment of "dynamic" gains from free trade.
- **Uniform factor pricing:** Competitive market forces also enforce complete equality in factor pricing. In this sense, there is never an issue of attempting to attract (or protect) a larger share of "good" jobs — since all jobs pay the same, anyway.
- **Demand and macroeconomics do not matter:** Competitive market-clearing pressures ensure that all of a country's economic resources will always be fully occupied. Therefore, a country can never experience aggregate job loss or macroeconomic downturn (such as a recession) from *any* economic change.
- **Society can be described by a single "representative" household:** The EU-Canada model summarizes all the economic behaviour of a country's citizens through equations describing the tastes, purchasing habits, and factor supply decisions (including labour supply decisions) of a single "representative household." No explicit consideration is given to the impact of trade liberalization on income distribution between different groups of households: every family is assumed to share equally in all the income,

wealth, and consumption of the whole nation.

- **No capital mobility:** The EU-Canada model describes the process of investment in a very odd manner. There is a national stockpile of "capital" (described as if it is fully malleable "putty") that can move seamlessly and costlessly between industries. The decision of the representative household to save out of personal income (thus generating additional putty-like capital for the national economy) is also modeled. But no capital mobility is allowed between countries. Combined with the assumption that all factor markets clear, this means that all savings are invested at home. In this case, again, one potential cost of free trade agreements — whereby liberalization allows profit-maximizing companies to shift capital to alternative jurisdictions — is simply assumed away.
- **Balanced trade:** A corollary of the capital mobility assumption is that each country's overall trade will remain balanced (or, if it was unbalanced in the base-case, then that imbalance does not change in the counterfactual simulation). With full equilibrium in the model between income and expenditures, the model enforces that a country's "representative household" can only buy in international markets exactly what its earnings in international markets will allow it to. Thus, free trade can never undermine an economy's balance of payments or its overall competitive position — no matter how inexpensive may be the products imported from competing jurisdictions. In the EU-Canada report, this implies that the substantial increase in Canada's bilateral trade deficit with the EU (which the report itself predicts) must be offset by improvements in trade balances with other regions.
- **Products are differentiated by place of origin:** Contrary to the predictions of orthodox trade theory, there is a great deal of *two-way* trade between countries within broad classes of commodities. To allow CGE models to capture this two-way trade pattern, the models allow for each product to be inherently defined or distinguished by the nation where it is produced. A car produced in one country is inherently different from a car produced in another (even if it is produced by the same company); the consumer will be willing to try the car from the other country, but somewhat unwillingly (because they sense that it is different, and hence an "imperfect substitute" for their home-grown car). This assumption ensures that each country's share of any industry is, to some extent, inherently protected, since it is the only place in the world that can produce that *precise variety* of the product in question. But once again, this approach misportrays the true issues at stake under free trade. Most products are differentiated not by the country where they are produced, but by the company which produces them. When multinational corporations are able to shift location of *their* variety of a product to whatever jurisdiction offers them the highest profits, then this assumption is obviously violated.[20]

If we reject these idealized assumptions of how the real-world economy actually operates (as most sensible observers would readily do), then the findings of a computer model incorporating those assumptions (regardless of the numerical specification of its equations) cannot be accepted. Only if those assumptions are accepted (including full employment, full and automatic investment of available savings, balanced trade,

and a lack of capital mobility between countries), can the model's expectation that Canadian GDP will grow despite a marked deterioration in its trade with the EU be received with any confidence whatsoever.

2.4 Further Critique of the Specific Modeling Methodology Utilized in the Joint Report

In addition to the general weaknesses of the CGE methodology considered above, the EU-Canada joint report ventures much further into the realm of untestable hypothesis with a series of extreme and one-sided modeling choices. Indeed, these choices seem calculated to maximize the predicted gains from free trade (perhaps reflecting the predisposition of the two governments which commissioned the study). We will consider and critique the aggressive optimism of the joint report modellers in more detail.

Consider that the gains projected by the joint report can be categorized into four types, as follows:

i) *Static gains from tariff elimination*. This is the most common and concrete type of gain expected from trade liberalization. Tariff elimination leads to a reallocation of productive factors according (in theory) to a country's relative cost advantage, leading to an increase in productivity, total output, and welfare. These gains are typically expected to be incurred over several years, as tariffs are phased out and as productive capacity is gradually re-allocated across sectors. Standard CGE assumptions (such as full employment and international capital immobility) are crucial for these results.

ii) *Static gains from elimination of non-tariff barriers on goods*. The EU-Canada joint report hypothesizes that goods trade between the EU and Canada is also inhibited by a broad spectrum of supposed non-tariff barriers, ranging from regulatory differences to agricultural quotas. The report does not attempt to specify or quantify these non-tariff barriers, in order to more reliably estimate the impact of their removal. Instead, the report simply asserts (p. 41, on the basis of "anecdotal evidence") that non-tariff barriers impose an equivalent 2% increase in production cost, which is assumed to be removed (for processed goods only, not for unprocessed resource commodities) as a result of the free trade agreement. In other words, the modellers simply assume that all costs in processed goods industries decline by 2 percent — almost matching the impact of tariff elimination in the policy simulation. Given that the authors cannot specify or measure these trade barriers, let alone describe how they would be removed or how their removal would impact trade flows, this assumption is highly optimistic and unreasonable.

iii) *Static gains from removal of barriers to services trade*. Even more unfounded is the report's treatment of the removal of barriers to trade in services sectors. Here, too, the report makes no effort to specify or measure concrete barriers to services trade between the EU and Canada. Instead, on the basis of "gravity models" of services trade, they assume that those barriers must exist — otherwise there would be much more services trade between the two parties than there is. They then impose the dramatic and incredible assertion that as a result of a free trade agreement, it would become as easy to trade services between the EU and Canada, as it is within the EU itself. In other words, the authors assume that, effectively, Canada would become part of Europe: not just economically, but linguistically and geographically (since those non-policy factors are clearly part of the reason why there is less services trade between Canada and the EU than there is within Europe). In essence, the authors have assumed away the Atlantic Ocean![21] The resulting steep reduction in barriers to services trade (which, again, the authors do not identify or measure, let alone specify how they would be removed or how their removal would affect

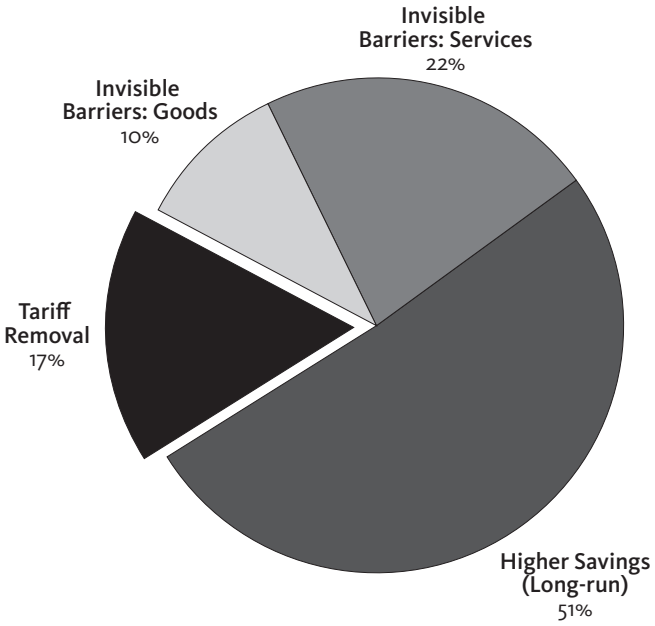
services trade patterns) leads to significant increases in services trade between the two parties.

iv) *"Dynamic" gains from higher savings and investment.* The most unfounded and optimistic of the joint report's methodological choices is the assumption that free trade between the EU and Canada will lead to significant and sustained increases in national savings and investment in both parties. By hence expanding the stock of capital in both countries, free trade leads to long-run "dynamic" expansion of GDP and income. (The parallel assumption that all saved capital is both retained within each country, due to the absence of international capital flows, and then productively invested in its respective home country, is also key to this result.) The model assumes a fixed saving rate, so any increase in income automatically translates into an increase in saving; and then, thanks to the assumptions that all factor markets automatically clear and capital is immobile internationally, all new saving is automatically translated into increased domestic investment. Second-order dynamic gains are predicted to result from each of the three first-order sources of static gains described above: tariff elimination, non-tariff barrier elimination, and reduction of barriers to services trade. Since each of those static gains produces increases in income, they may also generate ongoing increases in savings, investment, and capacity.[22] This approach seems especially arbitrary. In this case, the gains are not generated by trade at all; they are generated by the blanket assumption that a share of higher incomes will always be saved, and that all of those savings will be productively invested in the home country. Given the perverse experience of the global economy and global financial markets in recent years (whereby the links between savings, finance, and productive real investment were swamped by speculative pressures, rampant debt, and crises of confidence), this assumption is incredible.

Of these four distinct sources of predicted gains from a free trade agreement, only the first (static gains from tariff elimination) is remotely rooted in a quantifiable analysis of the scale of existing trade barriers and the likely impacts of their elimination. And even in that case, the predicted gains from tariff elimination are entirely dependent on the CGE assumptions (discussed above) which ensure continued full employment of all factors of production, full income-expenditure equilibrium, an absence of macroeconomic and currency fluctuations, and other harmonious outcomes. The other three sources of gain are entirely conjectural, dependent fully on the *ad hoc* and highly optimistic assumptions of the modellers that invisible trade barriers can be identified and dismantled (for both goods and services sectors), and that a share of resulting income gains will be successfully channelled into new capital formation in each region. National savings and investment rates in Canada have declined notably in recent years, even as income levels grew. Business capital investment has declined as a share of available cash flow and as a share of GDP. On a net basis, considerable investment expenditure has left Canada (as the outflow of FDI usually exceeds the inflow). Therefore, the assumption that higher income (even if it occurred) would result in higher national savings, and that those savings would be fully and productively invested within Canada, is not remotely justified by real-world experience.

Figure 4 illustrates the composition of the total predicted equivalent national income gains for Canada from free trade with the EU (totalling 8.4 billion euros), disaggregated into those four major sources of gain.[23] Over half of the total gains are derived from the assumed "dynamic" effect of higher national savings and investment; in other words, most of the gains reported by the joint study derive not from trade, but from the *assumption* of faster savings and investment! One third of the gains are derived from the elimination of unmeasured, unspecified

FIGURE 4 **Sources of Predicted Economic Gains: EU-Canada Joint Study**



SOURCE European Commission and Government of Canada (2008).
Total predicted gain in equivalent national income: 8.4 billion euros.

non-tariff barriers in goods and services trade. Only 17% of the total gains (1.4 billion euros, or about 0.1 percent of Canadian GDP) come from the most concrete source of predicted gains: the elimination of observable tariffs on goods trade. In sum, while all of the predictions of the joint report are contingent on the extreme assumptions made regarding the perfect operation of private markets (assumptions discussed critically above), the vast majority of those predicted gains are doubly conjectural. They depend on the authors' assumption of the removal of invisible, unmeasurable trade barriers, and increases in national saving and investment.

2.5 Anomalies in Data

One final set of question marks hangs over the results of the EU-Canada joint study, as a result of anomalies and inconsistencies in the benchmark data set which was used to calibrate the model, and then estimate the supposed effects of policy changes. The model assumes that EU-Canada free trade is implemented in 2007, and then measures the effects of the policy change against a hypothetical non-free-trade base-case in 2014; that base-case is itself attained by projecting current variables (including GDP, output, and trade flows) forward 7 years.

However, that hypothetical 2014 benchmark reflects a bilateral trade position that is considerably more favourable for Canada (relative to the EU) than is the current trade position that actually prevails today. Thus, the model is measuring the impacts of bilateral free trade against a starting point in which Canada's exports to the EU are greater, and its bilateral trade deficit with the EU smaller, than actually prevails today. This difference might reflect the impact of the model's 7-year forecast, or differences between EU and Canadian statistical sources (the joint report relies mostly on the former, while the present report uses Canadian sources).[24]

Table 10 provides a detailed sector-by-sector comparison of the joint report's assumed 2014

TABLE 10 **Data Anomalies in Joint Study Baseline**

	EU-Canada Joint Study Assumed Baseline (2014)			*Actual 2009 Data*		
Sector	Canadian Exports	Trade Balance (mil.$Cdn)	Import/ Export Ratio	Canadian Exports	Trade Balance (mil.$Cdn)	Import/ Export Ratio
Agriculture	$2,580	$2,083	0.19	$1,724	$1,467	0.15
Fishing	$199	$106	0.47	$77	$69	0.10
Coal	$1,103	$1,086	0.02	$568	$546	0.04
Oil & Gas	$3,988	$1,450	0.64	$9	-$2,791	296.11
Minerals nec	$5,005	$4,821	0.04	$8,943	$8,599	0.04
Processed Foods	$1,313	-$1,016	1.77	$719	-$731	2.02
Beverages & Tobacco	$90	-$1,403	16.59	$26	-$1,741	66.89
Textiles	$213	-$513	3.41	$53	-$247	5.68
Wearing Apparel	$215	-$371	2.72	$101	-$249	3.46
Leather Products	$22	-$611	29.00	$27	-$283	11.31
Wood Products	$591	-$451	1.76	$437	$194	0.56
Paper Products, Publishing	$2,257	$1,045	0.54	$1,059	$519	0.51
Petroleum & Coal Products	$1,371	$706	0.48	$1,002	-$981	1.98
Chemical, Rubbber & Plastic Products	$2,196	-$7,246	4.30	$3,127	-$7,846	3.51
Mineral Products nec	$162	-$690	5.25	$93	-$455	5.88
Ferrous Metals	$330	-$917	3.78	$227	-$567	3.50
Metals nec	$4,003	$3,610	0.10	$1,306	$894	0.32
Metal Products	$311	-$857	3.75	$544	-$1,087	3.00
Motor Vehicles & Parts	$1,207	-$3,502	3.90	$174	-$3,524	21.27
Transportation Equipment nec	$3,496	$315	0.91	$3,669	$267	0.93
Electronic Equipment	$1,270	$409	0.68	$2,431	-$1,501	1.62
Machinery & Equipment nec	$3,489	-$7,147	3.05	$2,332	-$4,297	2.84
Manufactures nec	$349	-$783	3.24	$793	-$1,081	2.36
TOTAL GOODS	**$35,761**	**-$9,876**	**1.28**	**$29,443**	**-$14,825**	**1.50**

	Difference (Study-Actual)		
Sector	Canadian Exports	Trade Balance (mil.$Cdn)	Import/Export Ratio
Agriculture	$856	$616	0.04
Fishing	$122	$37	0.36
Coal	$535	$539	-0.02
Oil & Gas	$3,979	$4,241	-295.47
Minerals nec	-$3,938	-$3,777	0.00
Processed Foods	$594	-$285	-0.24
Beverages & Tobacco	$64	$337	-50.30
Textiles	$160	-$266	-2.27
Wearing Apparel	$114	-$122	-0.74
Leather Products	-$6	-$328	17.69
Wood Products	$154	-$645	1.21
Paper Products, Publishing	$1,198	$526	0.03
Petroleum & Coal Products	$369	$1,687	-1.49
Chemical, Rubbber & Plastic Products	-$931	$599	0.79
Mineral Products nec	$69	-$235	-0.62
Ferrous Metals	$103	-$350	0.28
Metals nec	$2,697	$2,716	-0.22
Metal Products	-$233	$231	0.76
Motor Vehicles & Parts	$1,033	$22	-17.37
Transportation Equipment nec	-$173	$48	-0.02
Electronic Equipment	-$1,161	$1,910	-0.94
Machinery & Equipment nec	$1,156	-$2,850	0.21
Manufactures nec	-$443	$298	0.88
TOTAL GOODS	**$6,318**	**$4,949**	**-0.23**

SOURCE Author's calculations from Industry Canada Strategis Trade Data Online by Industry; European Commission and Government of Canada (2008), p.59. Joint Study data converted from euros to dollars using 9-month average exchange rate Jan.-Sept. 2010 (1.364).

starting point, with actual data on trade flows for 2009. Aggregate Canadian imports from the EU are roughly equal in the 2014 benchmark to actual 2009 data (at around $45 billion). But Canadian exports to the EU are some $6.3 billion smaller in 2009 actual data than assumed in the joint report's 2014 database. This means that the study overestimates the impact of EU tariff elimination and other trade policy measures on Canadian exports to the EU — since those exports are substantially smaller in real life than the study assumes. The joint report also underestimates the extent of the imbalance in goods trade flows in the two directions. It assumes that Canada imports $1.28 from Europe for each dollar it exports there, whereas in reality that ratio is more than $1.50 to $1. And the benchmark data set pegs Canada's bilateral goods trade deficit with the EU as being at least one-third smaller than it actually was in 2009. The biggest individual sectors in which the joint report most dramatically overestimates Canadian exports include non-ferrous metals, automotive products, paper products, and agriculture.[25] By assuming that base-case Canadian exports are higher, and the bilateral trade deficit smaller, than actually prevails, the model further underestimates the potential costs to Canada of a free trade agreement.

There are also anomalies in the benchmark data utilized by the joint study regarding services trade between Canada and the EU. The services trade deficit reported in Table 6 above (derived from Statistics Canada sources) differs from corresponding data on Canada-EU services trade in the same year as reported in the EU-Canada joint economic report (European Commission and Government of Canada, 2008, p. 25). The joint report pegged the bilateral services deficit at 1.8 billion euros (or $2.7 billion Canadian at 2007 average exchange rates). This is approximately one-quarter smaller than the services trade deficit reported by Statistics Canada for the same year; and the implied ratio of services trade imbalance (Canadian imports from EU relative to Canadian exports to the EU) is more than one-third smaller than for the Statistics Canada data. In services trade, too, therefore, the joint report assumes that the initial pre-free trade staring point is more favourable for Canada than it actually is — and hence is likely to overestimate the gains and underestimate the costs of the proposed agreement for Canada.

3. The Real-World Experience of Canada's Other Free Trade Agreements

We have seen that Canada's existing trade relationships with the EU are unsatisfactory on several grounds: Canada incurs a large bilateral deficit (in both goods and services), and exports a disproportionate share of raw or basically processed resources, in return for an import inflow composed almost entirely of sophisticated value-added goods. The quantitative and qualitative imbalance of these trade flows is associated with the loss of some 70,000 direct jobs (in goods and services sectors), in a macroeconomic context in which the traditional CGE assumptions regarding full employment and capacity-constrained output (essential to the neoclassical conclusion that even unbalanced bilateral trade can be beneficial if it leads to an efficiency-enhancing reallocation of labour and other resources to other sectors) are clearly not applicable.

Given this unsatisfactory starting point, is it likely that a free trade agreement will improve or resolve those existing imbalances and employment losses? As discussed above, Canadian tariffs and other regulations on trade and investment are significantly larger, on average, than in the EU. This implies that EU exports have *more* to gain from the relaxation or elimination of those barriers than Canadian exporters, and hence that a free trade agreement would likely exacerbate the existing imbalances.

The real-world experience of Canada's other free trade agreements further reinforces the

TABLE 11 **Impact of FTAs On Bilateral Trade Balances**

Impact on Export and Import Flows

Country and Year	Annual Growth in Exports (pre-FTA to 2009)	Annual Growth in Imports (pre-FTA to 2009)
U.S. (1989)	4.61%	4.57%
Mexico (1994)	11.64%	9.79%
Israel (1997)	3.01%	10.22%
Chile (1997)	3.43%	13.28%
Costa Rica (2003)	1.19%	5.48%
5 FTAs	4.77%	8.67%
All Other Countries*	5.11%	7.25%

Impact on Bilateral Trade Balances

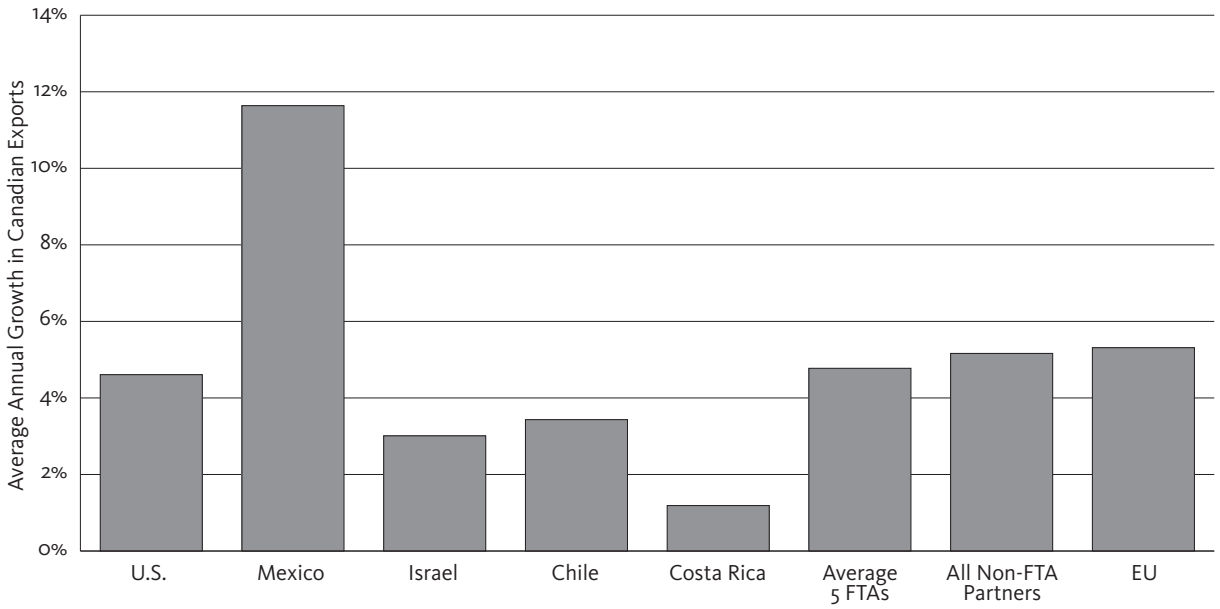
Country and Year	*Bilateral Trade Balance as % Canadian GDP*			
	Year Before FTA	2009	Direction of Change	Change
U.S. (1989)	2.09%	2.28%	✔	0.20%
Mexico (1994)	-0.40%	-0.77%	✖	-0.37%
Israel (1997)	0.00%	-0.04%	✖	-0.04%
Chile (1997)	0.01%	-0.07%	✖	-0.08%
Costa Rica (2003)	-0.01%	-0.02%	✖	-0.01%
5 FTAs			✖	-0.30%

SOURCE Author's calculations from Industry Canada Strategis Trade Data Online, Statistics Canada CANSIM Table 380-0017.
Year of FTA refers to first year in which majority of year covered by FTA.
* Annual growth from 1992 through 2009.

conclusion that free trade agreements do not enhance Canada's bilateral trade balances — in fact, they actually tend to worsen those balances. Here we consider the real-world experience of the five FTAs which have been in place between Canada and other trading partners for sustained periods of time: agreements with the U.S., Mexico, Israel, Chile, and Costa Rica.[26] Table 11 summarizes the performance of Canada's bilateral exports, imports, and trade balances since the implementation of each of those FTAs. On average, Canada's exports to the free trade partner grew by 4.77 percent per year following the FTA (up to and including 2009).[27] The best export growth was experienced with Mexico — although in that case, Canada's initial exports to Mexico were so small (and the initial trade deficit with Mexico so large) that the bilateral deficit has continued to widen despite the relatively faster growth of Canadian exports to Mexico. Ironically, Canada's exports to countries with which it does *not* have a free trade agreement have tended to grow *faster* (by 5.1 percent per year, using 1992 as the base year) than did exports to its free trade partners. As illustrated in Figure 5, Canada's exports to the EU (in the absence of free trade) grew even faster (by 5.3 percent a year since 1992) than did its exports to FTA partners, or its average exports to other non-FTA partners. The notion that a free trade agreement will significantly improve Canada's exports to the EU (relative to what would occur in the absence of a free trade agreement, given that international trade tends to expand even without trade liberalization) does not seem supported by the historical evidence.

Similarly, Table 11 indicates that Canada's imports grew faster from FTA partner countries, than did both Canada's exports to those FTA partners, and did Canada's imports from non-FTA partners. Imports from FTA partners grew on average 8.67 percent per year following

FIGURE 5 **Canadian Export Performance**



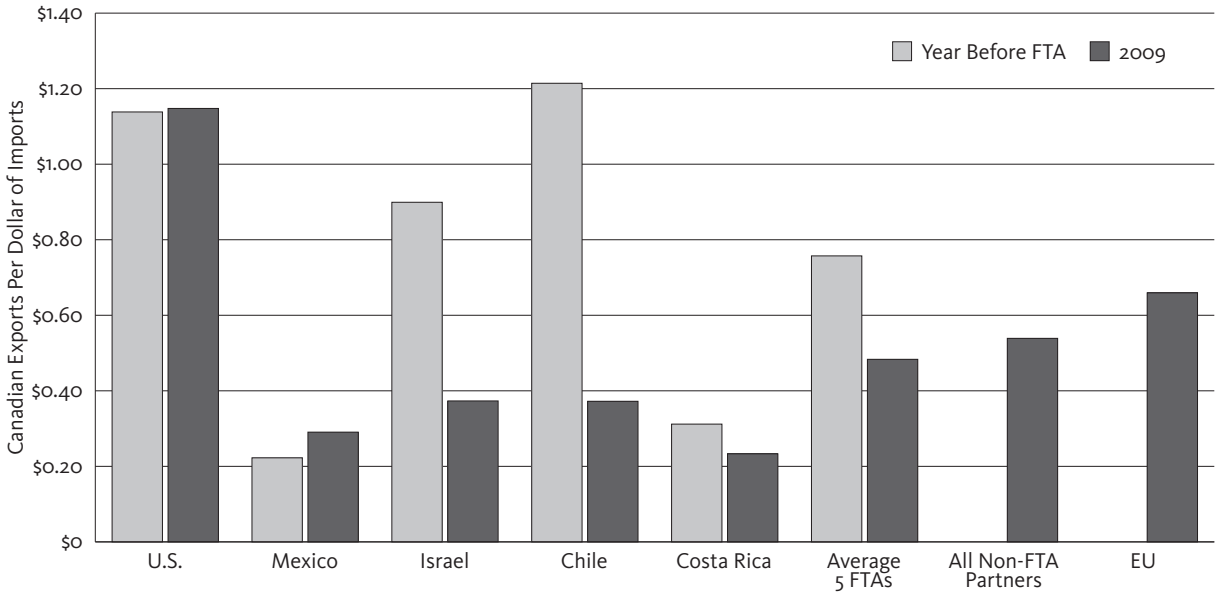
SOURCE Industry Canada Strategis Trade Data Online.
Export growth measured since year before each FTA to 2009. For non-FTA partners (incl. EU) growth measured from 1992 (beginning of Strategis data).

the implementation of an FTA. That is close to twice as fast as Canadian exports to those partners. It is also faster than the annual growth of Canadian imports from non-FTA partners (which expanded 7.25 percent per year on average, using 1992 as the base).

The fact that imports from FTA partners, on average, grew faster than exports to those same partners, implies a deterioration of bilateral trade balances. This is borne out by the lower half of Table 11, which reports bilateral goods trade balances between Canada and the five FTA partners, both in the year before each FTA was implemented and in 2009. In only one case did the bilateral balance (measured as a share of Canadian GDP) grow slightly: with the U.S. In all other cases, it declined: most substantially with Mexico.[28]

Another measure of the impact of FTAs in exacerbating trade imbalances (not reducing them) is provided in Figure 6. This figure indicates the scale of Canadian exports to each partner, relative to the scale of imports from that partner, and it is thus an aggregate measure of the imbalance of trade flows. (If trade were perfectly balanced, then this ratio would equal 1.) The ratio is calculated for the year prior to each FTA's implementation, and again in 2009. For the U.S., the ratio stayed roughly constant (with Canada maintaining a modest proportional trade surplus). For Mexico, it improved somewhat (since Canadian exports to Mexico grew faster, in percentage terms, than Canadian imports from Mexico); nevertheless, trade with Mexico has remained precariously unbalanced (with Canada exporting just 29 cents to Mexico in 2009 for each dollar imported from Mexico). For the other three FTA partners, the ratio of trade balance fell substantially. In Chile's case, Canada went from a modest net export position before the FTA ($1.21 in exports for each dollar of imports), to a dramatic net import position by 2009 (with only 37 cents in exports for each dollar of imports). On average across the five FTAs, trade became considerably less balanced, with Canada exporting less than 50 cents for each dollar of FTA imports. In fact,

FIGURE 6 **Measures of Trade Imbalance**



SOURCE Industry Canada Strategis Trade Data Online.

again perversely, average trade flows are less balanced with the five FTA partners than they are with other (non-FTA) trading partners. Indeed, Canada does better in its proportional exports to the EU (where it exports 66 cents for each dollar of imports, despite the absence of an FTA), despite the large bilateral trade deficit, than it does with the (unweighted) average of its five FTA partners.

In terms of the composition of trade flows (rather than their aggregate values), there is likewise no indication that free trade agreements have enhanced Canada's ability to break out of its traditional pigeon-hole as an exporter of raw or barely processed resources. Since the turn of the century, the overall composition of Canada's exports has shifted back strongly toward resource-based commodities, reversing much of the progress towards a more diversified, technology-intensive export portfolio that had been made in earlier postwar decades (see Stanford, 2008, for further evidence and discussion). As Canada has implemented more free trade agreements (and with several more now being negotiated), the sectoral composition of our trade has come to increasingly resemble that of a developing country: exports of resource-based commodities, the proceeds from which are used to pay for imports of more sophisticated products and services.

In summary, based on Canada's real-world experience with free trade agreements (as opposed to the idealized CGE simulations of those agreements[29]), there is no reason to expect that entering a free trade agreement with the EU will resolve the quantitative and qualitative imbalances that already mark our bilateral trade with Europe. Indeed, to the contrary, it seems clear that by liberalizing trade and investment flows, and weakening the influence of pro-active policy over investment and production decisions, free trade agreements seem to reinforce and exacerbate the imbalances that presently characterize Canada's economic interchange with Europe and other trading partners.

4. Alternative Simulations of the Impacts of EU-Canada Free Trade

In this section, we will relax the stringent assumptions of the neoclassical CGE modeling approach, in order to perform a series of more grounded simulations regarding the likely impact of a EU-Canada free trade agreement on actual trade flows between the two regions — and hence on employment and production in tradeable industries. We focus our analysis on goods trade between the two regions, given the lack of verifiable data regarding the scale of services trade barriers. We abandon the neoclassical assumption that trade, production, or employment losses resulting from unfavourable shifts in trade must automatically be offset by gains somewhere else within a self-adjusting general equilibrium system. Indeed, a cursory examination of recession-wracked economic conditions in both the EU and Canada (with the persistence of mass unemployment, unused capacity, stagnant investment, and — in Canada's case — massive current account imbalances) should confirm the unrealism of the CGE approach, and the validity of this alternative.

We consider three scenarios, in order to provide a range of estimates regarding the likely impacts of EU-Canada free trade:

A. Simple tariff elimination in goods trade, where trade flows respond to tariff elimination mediated by assumed elasticities of consumer demand.

B. Extrapolation of the results of Canada's previous free trade agreements, in terms of the likely historical evolution of both exports and imports.

C. A combination of tariff elimination (Scenario A above) with the appreciation of the Canadian dollar relative to European currencies, in order to incorporate the impact of recent currency fluctuations.

A summary of the results of each scenario is provided in Table 12. For each scenario, Table 12 lists the expected change in Canadian exports and imports with the EU, in each of the 23 goods sectors identified above.[30] On the basis of the resulting change in the bilateral sectoral trade balance, the table then reports the corresponding change in Canadian employment in that sector, mediated by the prevailing employment intensity of production in each sector. Results are aggregated across the 23 sectors, to estimate the overall impact on goods trade, shipments, and employment.

In the tariff elimination scenario, the same parameters describing both the existing level of bilateral tariffs in each sector, and the responsiveness of consumer demand to changes in prices (captured via the so-called "substitution elasticities") are utilized as in the EU-Canada joint report (2008, pp. 37 and 54, and listed again here in Table 1). Assuming complete elimination of bilateral tariffs, and with the response of consumer demand determined according to the identified elasticities, bilateral trade flows adjust accordingly. In four sectors, Canadian exports to the EU grow more than Canadian imports from the EU as a result of tariff elimination, and hence the bilateral trade balance improves in Canada's favour and net jobs are created in Canada; by far the largest of these net gains is experienced in agriculture, with smaller gains in fisheries,[31] nonferrous metals, and non-automotive transportation equipment. About 4000 jobs are created in these sectors (3500 of them in agriculture). In other sectors, however, imports from the EU grow faster than exports to the EU, as a result of two factors: Canada started with a bilateral deficit in most of those sectors, and Canadian tariffs were higher in most of those sectors. For both reasons, imports from the EU grow more than exports to the EU. In aggregate, Canadian exports to the EU grow by 12 percent (or $3.5 billion), but Canadian imports from the EU grow by 27 percent (or $12 billion). On an overall basis, Canada's bilateral trade deficit with the EU in goods trade deteriorates by $8.5 billion as a

TABLE 12 **Trade Balance and Employment Implications of Canada-EU Trade Liberalization**

	A. Tariff Elimination				*B. Experience of Other FTAs*			
	Change Canadian Export	Change Canadian Import	Change Bilateral Balance	Change Employment	Change Canadian Export	Change Canadian Import	Change Bilateral Balance	Change Employment
Agriculture	$566	$29	$536	3528	$2,749	$591	$2,158	14200
Fishing	$17	$0	$17	184	$77	$8	$69	745
Coal	$0	$0	$0	0	$935	$45	$891	993
Oil & Gas	$0	$0	$0	0	$9	$2,801	-$2,791	-1049
Minerals nec	$0	$1	-$1	-1	$8,943	$344	$8,599	17054
Processed Foods	$991	$4,161	-$3,170	-8807	$719	$1,450	-$731	-2030
Beverages & Tobacco	$21	$925	-$904	-2402	$26	$1,767	-$1,741	-4625
Textiles	$28	$202	-$174	-1027	$53	$299	-$247	-1460
Wearing Apparel	$74	$420	-$346	-4320	$101	$350	-$249	-3111
Leather Products	$18	$223	-$206	-1965	$27	$310	-$283	-2697
Wood Products	$21	$58	-$37	-199	$437	$243	$194	1038
Paper Products, Publishing	$0	$0	$0	0	$1,059	$540	$519	1985
Petroleum & Coal Products	$135	$308	-$173	-46	$1,002	$1,982	-$981	-262
Chemical, Rubbber & Plastic Products	$433	$1,376	-$943	-2663	$3,127	$10,972	-$7,846	-22169
Mineral Products nec	$19	$146	-$128	-532	$93	$548	-$455	-1894
Ferrous Metals	$6	$16	-$10	-24	$227	$794	-$567	-1352
Metals nec	$77	$28	$49	72	$1,306	$412	$894	1314
Metal Products	$110	$416	-$306	-1540	$544	$1,631	-$1,087	-5475
Motor Vehicles & Parts	$116	$1,931	-$1,814	-3437	$174	$3,698	-$3,524	-6678
Transportation Equip. nec	$361	$302	$60	173	$3,669	$3,401	$267	774
Electronic Equipment	$96	$116	-$20	-87	$2,431	$3,932	-$1,501	-6415
Machinery & Equipment nec	$321	$698	-$377	-1673	$2,332	$6,630	-$4,297	-19075
Manufactures nec	$96	$647	-$551	-3276	$793	$1,874	-$1,081	-6431
TOTAL	$3,506	$12,003	-$8,497	-28043	$30,834	$44,624	-$13,790	-46620

	C. $C Appreciation + Tariff Elimination			
	Change Canadian Export	Change Canadian Import	Change Bilateral Balance	Change Employment
Agriculture	$155	-$23	$178	3528
Fishing	$0	-$1	$2	184
Coal	-$106	-$4	-$102	0
Oil & Gas	-$2	-$523	$521	0
Minerals nec	-$1,669	-$64	-$1,605	-1
Processed Foods	$517	$5,117	-$4,600	-12778
Beverages & Tobacco	$0	$2,365	-$2,365	-6283
Textiles	-$1	$370	-$371	-2194
Wearing Apparel	$18	$613	-$595	-7437
Leather Products	$1	$411	-$410	-3912
Wood Products	-$201	$181	-$382	-2048
Paper Products, Publishing	-$466	$238	-$704	-2695
Petroleum & Coal Products	-$179	$930	-$1,109	-296
Chemical, Rubbber & Plastic Products	-$1,107	$6,781	-$7,888	-22290
Mineral Products nec	-$29	$427	-$456	-1898
Ferrous Metals	-$110	$422	-$532	-1268
Metals nec	-$742	$286	-$1,028	-1510
Metal Products	-$194	$1,329	-$1,524	-7673
Motor Vehicles & Parts	-$11	$4,650	-$4,661	-8832
Transportation Equip. nec	-$2,336	$2,802	-$5,138	-14877
Electronic Equipment	-$1,692	$3,007	-$4,699	-20081
Machinery & Equipment nec	-$1,089	$4,706	-$5,795	-25726
Manufactures nec	-$456	$1,952	-$2,408	-14323
TOTAL	-$9,700	$35,971	-$45,672	-152409

SOURCE Author's calculations as described in text.

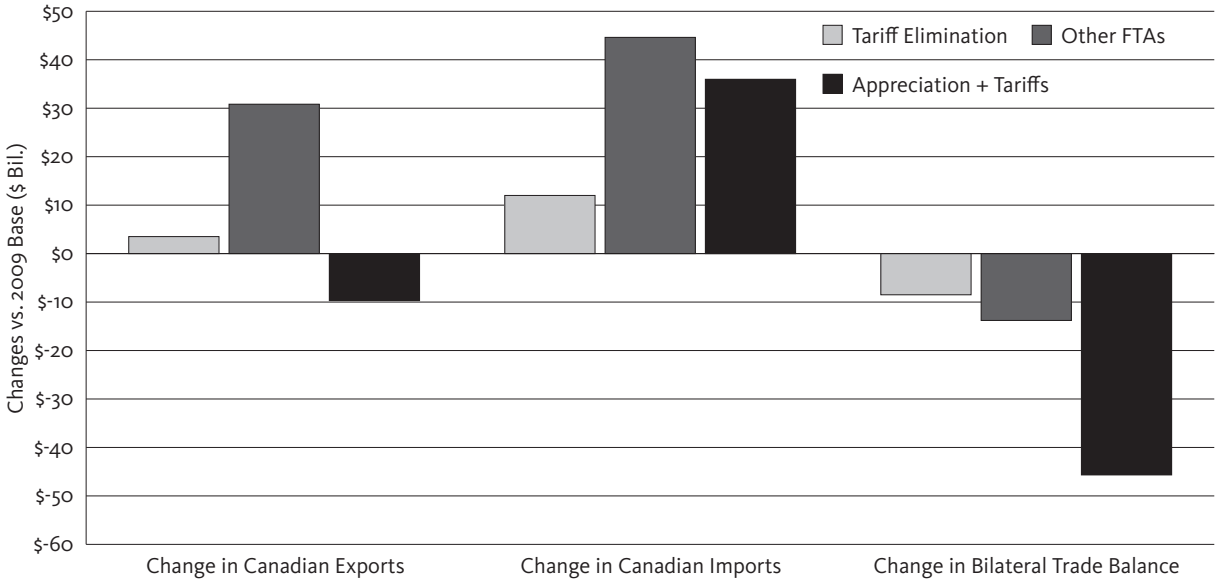
result of simple tariff elimination.[32] Based on sector-by-sector employment intensity ratios, this results in the loss of a combined total of over 28,000 Canadian jobs. The most negatively affected sectors include processed foods (8807 jobs lost), wearing apparel (4320 jobs lost), automotive products (3437 jobs lost), chemical products (2663 jobs lost), and beverages and tobacco (2402 jobs lost).

Instead of relying on assumed consumer elasticities of demand to simulate the response of trade flows to tariff elimination, Scenario B applies the observed experience of Canada's other free trade agreements. In practice, trade flows tend to expand more vibrantly in the wake of free trade agreements than would be implied by the traditional application of demand elasticities to (relatively modest) tariff changes. This experience seems to imply the influence of structural shifts in business and consumer behaviour in the wake of free trade agreements (structural shifts which cannot be simulated by the application of elasticities and incremental price changes to existing trade volumes). As noted above, in Canada's existing free trade arrangements, Canadian exports to its free trade partners grew by an average of 4.77 percent per annum after the FTA, while Canadian imports from its partners grew by an average of 8.67 percent per year. Applying those growth rates to a ten-year time horizon (as is typically assumed to be required to reflect the full adjustment of industries to a free trade agreement) implies cumulative compound growth in exports of about 60 percent, and cumulative growth in imports of about 130 percent. These escalation factors are then applied to all 23 of the goods sectors considered by the analysis (since no sector-specific disaggregation of post-FTA trade growth patterns is available).[33] If an EU-Canada trade deal has similar impacts on overall trade flows as did Canada's previous free trade agreements, therefore, Canada's bilateral trade deficit with the EU is likely to deteriorate by a larger amount than predicted in Scenario A. Scenario B projects an increase in the bilateral goods trade deficit of $13.8 billion (almost doubling the starting 2009 bilateral deficit of $14.8 billion). This results in the loss of 46,620 jobs across the 23 goods-producing sectors. In this case, eight sectors experience trade balance and employment gains (the same four winning sectors from Scenario A, plus coal, minerals, and wood and paper products). The remaining 15 sectors experience deteriorating trade balances and employment losses — and those employment losses are much larger than the gains in the eight "winning" sectors. In sum, Scenario B results in an aggregate employment loss in Canada of 46,620 positions.

In the final simulation, we combine the impact of tariff elimination (from Scenario A) with consideration of the recent strong appreciation of the Canadian dollar versus its EU counterparts. As noted above, the average value of the Canadian dollar in euros during the first 9 months of 2010 was 18.7 percent higher than it was in March 2009 when the two parties first issued their joint declaration on the desirability of a comprehensive free trade agreement. Against other EU currencies (such as the U.K. pound), the dollar's appreciation has been even higher. Given the persistence of sovereign debt and financial instability concerns in Europe, and the likelihood of recovering world commodity and energy prices (which tend to boost the Canadian currency), the appreciation of the loonie versus its European counterparts is likely to widen in coming years. But even if the existing appreciation is merely sustained, the damage to the competitiveness of Canadian products (in both EU and domestic markets) will be serious.

We model the impact of the appreciation in the following manner. In addition to incorporating the impact of mutual tariff elimination (as in Scenario A), for manufactured goods we also assume that exchange rate fluctuations pass through imperfectly into final prices, with 40 percent of currency changes being ultimately

FIGURE 7 **Trade Impacts of EU-Canada Free Trade**



SOURCE Author's calculations as explained in text.

reflected in final prices.[34] That change in price competitiveness will also induce a change in export and import volumes (as consumers in both Canada and Europe respond to the higher relative price of Canadian products, and the lower relative price of EU varieties). For natural resource products, however (which are more homogenous commodities), uniform prices tend to be set in world markets; the impact of an appreciating Canadian currency is merely to reduce (in Canadian dollar terms) the revenue flow associated with a certain volume of trade (both exports and imports). In the case of exports, this also reduces the incomes of Canadian resource exporters. The main impact is felt on (Canadian dollar) prices, not on quantities.[35] In Scenario C, the impact of the recent 18.7 percent appreciation of the Canadian dollar (even with imperfect pass-through applied in non-resource sectors only) outweighs the benefit of EU tariff reduction (given that EU tariffs on Canadian imports average only 2.2 percent), and hence total Canadian exports to the EU actually fall. The surge in imports from the EU, in contrast, is two-fold: spurred by both Canadian tariff reduction and by the lower relative EU currency. The result is a dramatic expansion in the bilateral trade deficit (which quadruples, growing by $45 billion), and a massive dislocation of employment from non-resource goods industries sectors (totalling over 150,000 jobs across all 23 goods-producing sectors).[36] Every manufacturing sector loses substantial employment in this scenario, since every sector is negatively affected by the strong appreciation of the Canadian currency which damages their competitive position in both Canadian and European markets.

Figure 7 summarizes the trade impacts of the three scenarios, including changes in Canadian exports to the EU, Canadian imports from the EU, and the resulting change in the bilateral goods trade balance. Bilateral trade flows (both exports and imports) are seen to expand the most in Scenario B, and most modestly in Scenario A. The deterioration in the trade bal-

ance is the most severe in Scenario C (since it combines surging imports with falling exports).

In a macroeconomic scenario in which output is constrained by aggregate demand (as is clearly the case at present), the deterioration in Canada's bilateral trade deficit with the EU translates directly into a loss in Canadian GDP. (Remember, we have abandoned the traditional CGE assumption that any displaced worker automatically finds a new job in another sector, and that the current account balance of the nation as a whole must remain balanced by virtue of full income-expenditure equilibrium and the absence of international capital flows.) Relative to benchmark GDP (in 2009) of $1.527 trillion, Canadian GDP would decline in each scenario: by 0.56 percent in Scenario A, by 0.90 percent in Scenario B, and by 2.99 percent in Scenario C.

In reality, final changes in GDP are likely to be even worse than this, because of the impact of changes in international trade performance on domestic production and employment in non-tradeable industries.[37] Through multiplier impacts on both supply industries and on final consumer demand, the deterioration in the bilateral trade balance results in a larger final negative impact on GDP.[38] Alternatively, we could also apply the same sort of logic as was utilized by the EU-Canada joint economic study in its hypothesis of "dynamic" gains from free trade. In that case, static gains from trade were amplified (by a full 1-to-1 ratio) by the assumption that higher income would result in higher national savings and investment. Applying the same logic to the alternative simulations noted above, lower national income would result in lower national saving and investment, and hence an even larger decline in GDP: of over a full percentage point in Scenario A, close to 2 percentage points in Scenario B, and nearly 6 percentage points in Scenario C. By any measure, then, the *contraction* in Canadian GDP resulting from a widening of the bilateral trade deficit with the EU (which even free trade proponents acknowledge will occur under free trade) will be *larger* than the oft-reported economic gains expected by the authors of the EU-Canada joint study (on the strength of strong but unrealistic assumptions regarding full employment, balanced overall trade, and other economic features).

Bibliography

Bouakez, Hafedh, and Nooman Rebei (2008). "Has Exchange Rate Pass-Through Really Declined? Evidence from Canada," *Journal of International Economics* 75(2), pp. 249–267.

Cameron, Richard A., and Konstantin Loukine (2001). "Canada-European Union Trade and Investment Relations: The Impact of Tariff Elimination" (Ottawa: Department of Foreign Affairs and International Trade).

Copenhagen Economics and Joseph Francois (2007). "Economic Impact of a Potential Free Trade Agreement (FTA) Between the European Union and South Korea" (Copenhagen: Copenhagen Economics), March.

Cross, Philip, and Ziad Ghanen (2008). "Tracking Value-Added Trade: Examining Global Inputs to Exports," *Canadian Economic Observer* 21(2), February, pp. 3.1–3.12.

European Commission and Government of Canada (2008). "Assessing the Costs and Benefits of a Closer EU-Canada Economic Partnership" (Ottawa: Department of Foreign Affairs and International Trade).

Francois, Joseph, Hans van Miejl, and Frank van Tongeren (2005). "Trade Liberalization in the Doha Development Round," *Economic Policy* 42(4), pp. 349–391.

Kalinova, Blanka, Angel Palerm, and Stephen Thomsen (2010). "OECD's FDI Restrictiveness Index: 2010 Update" (Paris: Organization for Economic Cooperation and Development), Working Paper on International Investment 2010/3.

Lemaire, Dan, and Wenguo Cai (2006). "Lost Over the Atlantic? The Canada-EU Trade and Investment Relationship" (Ottawa: Conference Board of Canada).

McCombie, J.S.L., and Anthony P. Thirlwall, eds. (2004). *Essays on Balance of Payments Constrained Growth: Theory and Evidence* (London: Routledge).

Stanford, Jim (2003). "Economic Models and Economic Reality: North American Free Trade and the Predictions of Economists," *International Journal of Political Economy* 33(3), pp. 28–49.

Stanford, Jim (2008). "Staples, Deindustrialization, and Foreign Investment: Canada's Economic Journey Back to the Future," *Studies in Political Economy* 82, pp. 7–34.

Notes

1 These are the same sectors which are detailed in the Canada-EU joint study of the economic effects of bilateral free trade: European Commission and Government of Canada (2008). The oil and gas sectors are reported separately in that study, but are amalgamated into one sector here because of lack of disaggregated data on shipments and employment.

2 Tariff rates and substitution elasticities are as reported in the joint economic study published by the European Commission and the Government of Canada (2008). Tariff rates prevailed as of 2004, and do not incorporate any assumed reductions from Doha round negotiations at the WTO. (In contrast, the simulation results reported in the EU-Canada joint study assumes that Doha tariff reductions have already been implemented by the time the Canada-EU free trade agreement is implemented.

3 Table 1 excludes a small amount of unclassified trade, and hence these totals are slightly smaller (by less than 2%) than data on total bilateral trade.

4 This point has been made by other analysts, including Lemaire and Cai (2006), p.17.

5 Predicted modest gains in fisheries exports need to be interpreted very carefully. EU negotiators have demanded that, in return for eliminating import tariffs on fish products, that Canada abolish its restrictions on the export of unprocessed fish, provide port privileges to European fishing vessels, and eliminate foreign ownership restrictions (49% limit) in the fish processing industry. These non-tariff measures would have significant negative impacts on the value-added in Canadian fish exports, that are not captured in this simulation.

6 This weighted average is calculated by estimating the number of jobs supported by exports and displaced by imports in each sector, on the basis of trade shipments and average job intensity ratios. Summing those totals across sectors allows the calculation of weighted average job intensity measures separately for exports and imports.

7 Utilizing a broad Statistics Canada measure of agricultural employment (as reported in Statistics Canada CANSIM Table 282-0008, and agricultural sales data reported in CANSIM Table 20004), it is estimated that each billion dollars of agricultural sales supports 6581 jobs — making it one of the more labour-intensive goods-producing sectors in Canada's economy.

8 For EU members other than Germany, Canada imported $1.32 in 2009 for every $1 of Canadian exports.

9 Statistics Canada reports total income from sales of services for services businesses of $1.497 trillion in 2009 (from CANSIM Table 187-0001), and total employment in private services industries of 7.867 million, for an average job intensity of gross output of 5254 services jobs per billion dollars of sales — approximately twice as high as the average job intensity of sales in goods production in Canada.

10 Foreign investment regulations are still set on a country-by-country basis in the EU. The score reported in Table 7, based on the OECD's FDI Restrictiveness Index (Kalinova et al., 2010), is an unweighted average across 23 EU member countries; none of those 23 countries retained regulations over foreign investment that were nearly as significant (in the OECD's judgment) as Canada's.

11 The report refers to the full adjustment to tariff elimination and the reduction of trading costs as the "short-run" or static effects of the free trade agreement, even though those adjustments would take several years (indeed, in most free trade agreements, the tariffs themselves are phased out only over several years). The report then defines the hypothesized benefits of higher national savings and investment (which would also take many years of adjustment) as the "long-run" (or dynamic) gains. The terms short-run and long-run in this context should not be interpreted as referring to time frame *per se*, but rather to the nature of the adjustment being hypothesized.

12 "Sensitive round of Canada-EU trade talks kick off," by Stefania Moretti, *Toronto Sun*, October 19, 2010.

13 It should be noted that the joint report itself contains only a broad summary of the model's methodology and results. Details regarding equation specification, model closure, and detailed results (including sectoral changes, changes in trade patterns with other trading partners, and the nature of savings-investment adjustments) are not reported. Some broad additional information on the underlying model (although not its application to the EU-Canada simulation) is available in Francois, van Meijl, and van Tongeren (2005), and in Copenhagen Economics and Francois (2007). The author of the present study has inquired with the Department of Foreign Affairs and International Trade Canada for more detail regarding the model and the EU-Canada simulation results; as yet those details have not been forthcoming.

14 The expectation that EU-Canada free trade should worsen the existing bilateral trade deficit is not surprising in light of the existing structure of trade (the EU exports far more to Canada, than vice versa) and the existing structure of tariffs and trade barriers (Canadian barriers are significantly higher than the EU's, and hence the mutual elimination of barriers will assist EU exports more than Canadian exports). The finding that EU-Canada free trade would worsen Canada's existing bilateral deficit is consistent with the present study (see Section 4 below), and with other analyses as well (for example, Cameron and Loukine 2001, and Leblond and Strachinescu, 2007).

15 Two of these "winning" sectors (agriculture and petroleum and coal products) are traditional resource-based industries, while the other three are labour-intensive manufacturing sectors.

16 The exceptions to this counter-intuitive trend are the processed food and leather product industries, which the joint report acknowledges will suffer contracting output in Canada coincident with deteriorating trade performance.

17 See Stanford (2003) for more discussion of CGE models and their weaknesses.

18 In this regard, CGE models are fundamentally different from econometric models of the economy, whose parameters are determined by analysis of real statistical data. In CGE models, in contrast, numerical parameters are attached *a priori* by the modeller to replicate an existing benchmark dataset; but there is no presumption of empirical evidence to support any one of the infinite different sets of parameters which could also be constructed to replicate that same benchmark dataset.

19 As the model's creators themselves acknowledge in another context (Francois, van Meijl, and van Tongeren, 2005, p. 353), "Given the necessarily speculative nature of the scenarios we evaluate, and the simplifi-

cations that are obviously necessary in modelling the entire world economy, our results should not be taken as precise predictions." Needless to say, this caveat is lost in non-specialist coverage and commentary regarding the model's optimistic findings.

20 The CGE model used for the EU-Canada joint report allows products in manufacturing industries to be differentiated by firm (not by nation); however, the parallel assumption that capital is immobile between countries, ensures that each firm is limited to production only in its home country. This has the same aggregate effect as assuming products are differentiated by nation.

21 There is an old joke about an engineer, an aeronautical engineer, and an economist huddled together on one side of a deep ravine, trying to figure out how to cross. The engineer proposes to build a crossing. The aeronautical engineer proposes to build a flying craft to ferry them across. The economist, glibly, says: "Assume a bridge." In essence, the joint EU-Canada report assumes a costless bridge across the Atlantic Ocean!

22 The joint report does not disaggregate the relative importance of static and dynamic gains within each of the three policy areas (tariffs, NTBs, and services trade barriers). It separately reports total static and dynamic gains, and then the sum of static and dynamic gains within each of the three areas.

23 Because the joint report does not disaggregate static gains into their respective three sources (tariff elimination, NTBs in goods, and barriers to services trade), we have allocated them proportionately across the three sources according to their share of total (static plus dynamic) gains.

24 These data anomalies could not result from changes in EU-Canada trade patterns between 2007 and 2009; Canada's bilateral trade deficit with the EU in 2007 was almost identical in size to the deficit in 2009.

25 Additional errors in the benchmark data set seem to be the result of classification problems, with an overestimation of Canadian exports in one sector offset by a broadly equal underestimation in another related sector: this is evident in the oil and gas and minerals sectors, and the electronic machinery and other machinery sectors.

26 Two additional FTAs were implemented in 2009, with Peru and the European Free Trade Association, but that was too recently to be able to ascertain their impact on trade flows. Additional agreements pending with Colombia, Jordan, and Panama have been signed but not yet implemented.

27 All five-FTA averages in this section of the report are calculated on an unweighted basis; otherwise, the U.S. trade flows would dominate the analysis since they are much larger than with the other four FTA partners.

28 Canada's exports to Mexico grew faster than its imports from Mexico in percentage terms, but not in absolute values — due to the large initial trade deficit which Canada experienced when the FTA was implemented. Thus the trade deficit with Mexico grew substantially.

29 CGE simulations of each of those existing FTAs also uniformly predicted — just as does the EU-Canada joint study — significant economic gains to Canada.

30 It should be noted that in all of these alternative simulations, the likely effects of a free trade agreement are estimated relative to the existing scale and direction of trade flows. This approach does not lend itself well to estimating the impact of sharp structural policy changes, which could cause major changes in trade flows even in sectors where those flows are presently modest. An example of this might be the EU demand for Canadian provinces and municipalities to liberalize their procurement practices, which could spark major shifts in trade flows in transportation equipment, infrastructure equipment, and other products. In this regard, the alternative simulations reported here may understate the full extent of the effects of an EU-Canada free trade agreement.

31 Predicted modest gains in fisheries exports need to be interpreted very carefully. EU negotiators have demanded that, in return for eliminating import tariffs on fish products, that Canada abolish its restrictions on the export of unprocessed fish, provide port

privileges to European fishing vessels, and eliminate foreign ownership restrictions (49% limit) in the fish processing industry. These non-tariff measures would have significant negative impacts on the value-added in Canadian fish exports, that are not captured in this simulation.

32 This result is broadly consistent with the EU-Canada joint report's prediction that the bilateral trade deficit will widen by 6.4 billion euros, or around $9 billion.

33 For that reason, the results of Scenario B are more robust with respect to aggregate trade flows, trade balances, and employment patterns; sector-specific projections must be interpreted with caution.

34 This is consistent with recent research on exchange rate pass-through in Canada and other industrialized countries, such as recent research at the Bank of Canada; see Bouakez and Rebei (2008), p. 258-9, and lower right quadrant of their Fig. 1.

35 For this reason, we assume that export quantities from these resource sectors (agriculture, fisheries, oil and gas, coal, and minerals) are unaffected by the exchange rate fluctuation; hence, employment changes in these sectors are identical to the changes predicted in Scenario A (tariff elimination only). Dollar-denominated export, import, and trade balance values, however, are affected fully by the exchange rate fluctuation.

36 A trade deficit and resulting employment displacement of this size would inevitably entail adjustments in other sectoral or macroeconomic variables — such as a decline in domestic consumer spending (reducing import flows), a depreciation of the Canadian currency (depending on the strength of countervailing influences on the loonie), trade policy interventions to limit the size of the resulting deficit, or other factors. The results reported here, therefore, should be interpreted as first-order effects.

37 In a demand-constrained macroeconomic system, changes in any "autonomous" or "leading" source of expenditure (such as business investment, exports, government spending, or autonomous consumer demand) induce multiplied changes in total output and employment by virtue of the dependence of most consumer spending on income levels. With respect to the multiplier which is consequently generated by net exports, this phenomenon is often termed "balance of payments-constrained growth" (McCombie and Thirlwall, 2004).

38 One factor which would slightly reduce the impact of the deteriorating trade balance on GDP is the import content embodied in Canadian exports to Europe; a small share of the value of Canadian net exports to Europe consists of imported inputs. Most recent Statistics Canada analysis indicates that the import content of Canadian exports is falling over time, reaching an average of 27% in 2004 (Cross and Ghanen, 2008). Moreover, the import content of Canada's exports to the EU is lower than the average import content in overall Canadian exports, by virtue of the heavier-than-average concentration of primary resource products in Canada's exports to the EU. Therefore, this factor would only modestly impact the relationship between the bilateral trade balance and Canadian GDP, and would be more than offset by the multiplier and savings-investment relationships discussed above.

> ABOUT THE CENTRE

The Canadian Centre for Policy Alternatives is an independent, non-profit research institute funded primarily through organizational and individual membership. It was founded in 1980 to promote research on economic and social issues from a progressive point of view. The Centre produces reports, books and other publications, including a monthly magazine. It also sponsors lectures and conferences.

> AU SUJET DU CENTRE

Le Centre canadien de politiques alternatives est un institut de recherche indépendant et sans but lucratif, financé en majeure partie par ses membres individuels et institutionnels. Fondé en 1980, son objectif est de promouvoir les recherches progressistes dans le domaine de la politique économique et sociale. Le Centre publie des rapports et des livres, ainsi qu'une revue mensuelle. Il organise aussi des conférences et des colloques.

CCPA
CANADIAN CENTRE for POLICY ALTERNATIVES
CENTRE CANADIEN de POLITIQUES ALTERNATIVES

www.policyalternatives.ca

> NATIONAL OFFICE

205-75 Albert Street, Ottawa, ON K1P 5E7
TEL 613-563-1341 FAX 613-233-1458
ccpa@policyalternatives.ca

BC OFFICE

1400-207 West Hastings Street, Vancouver, BC V6B 1H7
TEL 604-801-5121 FAX 604-801-5122
ccpabc@policyalternatives.ca

MANITOBA OFFICE

309-323 Portage Avenue, Winnipeg, MB R3B 2C1
TEL 204-927-3200 FAX 204-927-3201
ccpamb@policyalternatives.ca

NOVA SCOTIA OFFICE

P.O. Box 8355, Halifax, NS B3K 5M1
TEL 902-477-1252 FAX 902-484-6344
ccpans@policyalternatives.ca

SASKATCHEWAN OFFICE

Suite B 2835 13th Avenue, Regina, SK S4T 1N6
TEL 306-924-3372 FAX 306-586-5177
ccpasask@sasktel.net

> BUREAU NATIONAL

205-75 rue Albert, Ottawa, ON K1P 5E7
TÉLÉPHONE 613-563-1341 TÉLÉCOPIER 613-233-1458
ccpa@policyalternatives.ca

BUREAU DE LA C.-B.

1400-207 rue West Hastings, Vancouver, C.-B. V6B 1H7
TÉLÉPHONE 604-801-5121 TÉLÉCOPIER 604-801-5122
ccpabc@policyalternatives.ca

BUREAU DE MANITOBA

309-323 avenue Portage, Winnipeg, MB R3B 2C1
TÉLÉPHONE 204-927-3200 TÉLÉCOPIER 204-927-3201
ccpamb@policyalternatives.ca

BUREAU DE NOUVELLE-ÉCOSSE

P.O. Box 8355, Halifax, NS B3K 5M1
TÉLÉPHONE 902-477-1252 TÉLÉCOPIER 902-484-6344
ccpans@policyalternatives.ca

BUREAU DE SASKATCHEWAN

Pièce B 2835 13e avenue, Regina, SK S4T 1N6
TÉLÉPHONE 306-924-3372 TÉLÉCOPIER 306-586-5177
ccpasask@sasktel.net