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## Trade Diversification Away from the U.S. or North American Customs Union? A Review of Canada's Trade Policy Options<sup>\*</sup>

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## **Abstract**

*This study examines Canada's key strategic trade policy options – whether pushing for further economic integration with the U.S., or diversifying to non-U.S. markets and reducing the degree to which Canada's economy depends on the U.S. In particular, this study compares the economic benefits of implementing a North American customs union with the benefits of increasing Canada's trade with either emerging countries (e.g., India, China, Brazil) or with advanced partners such as Europe and Japan. The main conclusion is that there may be considerable benefit to Canada of diversifying some of its trade away from the United States provided that countries with more youthful populations and rapid growth, such as India, are targeted. Diversification to older countries such as Europe and Japan would not be beneficial. The analysis is based on a series of recent policy-modeling studies by the authors examining the economic impacts of diverse trade policies options in global economy models, taking also into consideration an important feature of the 21st century, the demographic changes around the world that accompany the globalization process for goods and services, capital and labor.*

**Key words:** *Canadian Trade Policy; Geographical Trade Diversification; Population Ageing; Globalization.*

**JEL Classification:** F14, F15, J11, D58.

## **Résumé**

*Cette étude examine certaines options de politique commerciale pour le Canada, en particulier la question de savoir si le Canada devrait poursuivre encore plus son stade d'intégration économique avec les États-Unis, ou s'il devrait diversifier son commerce et réduire son degré de dépendance face aux États-Unis. En particulier, l'étude compare les bénéfices d'une éventuelle Union Douanière avec les États-Unis par rapport à ceux d'un commerce croissant avec certains pays émergents (Inde, Chine, Brésil) ou avec l'Europe et le Japon, et conclue qu'il existe des bénéfices pour le Canada de diversifier une partie de son commerce en faveur de pays démographiquement plus jeunes et à croissance plus rapide – par exemple, l'Inde ou le Brésil, mais non en faveur de l'Europe ou du Japon. Cette étude se base sur les résultats d'études précédentes menées par les auteurs et qui examinent les impacts économiques de différentes options commerciales à l'aide de modèles d'équilibre général prenant en compte une caractéristique importante du 21<sup>ème</sup> siècle, les changements démographiques mondiaux qui accompagnent le processus de globalisation des biens et services, du capital, et du travail.*

**Mots clés:** *Politique commerciale canadienne; Diversification géographique du commerce; Vieillesse de la population; Mondialisation.*

**Classification JEL:** F14, F15, J11, D58.

## 1. Introduction

As observed by Head (2007), Canada's debate on trade policy is typically centered on two questions, one strategic and one tactical. The strategic question is whether Canada should diversify its trade pattern away from the U.S., or whether it should pursue deeper integration with the U.S. The tactical question is how we should do so. Strategic and tactical questions are clearly nested. For example, Canada could engage more with the rest of the world through multilateral trade negotiations (the Doha Round), through formal free trade and investment agreements with selected countries, through ad hoc bilateral trade and investment promotion (Team Canada missions) or through a unilateral decision to free-trade regardless of what other countries do (Helliwell 2002; Dobson 2006; Head 2007). Canada could pursue deeper integration with the U.S. by reducing the burden of the border, through harmonization of regulatory procedures, common external tariff, customs union, liberalization of NAFTA rules of origin, liberalization of the remaining restrictions on U.S. direct investment in Canada, free movement of labor, and negotiations to curb U.S. trade remedy laws (*e.g.*, Dobson 2002; Harris 2003; Goldfarb 2003; Hart 2007; Mandel-Campbell 2008; Georges 2010).

Figure 1 provides a convenient starting point to the strategic trade policy debate in Canada by illustrating trade with the U.S. as a share of total Canadian trade. The U.S. is Canada's major trading partner both as an export market and also as a supplier. The strategic positions on Canadian trade policy are easily foreseen from this Figure. On the one hand, some advocate an almost exclusive focus of trade policy on the U.S. For example, Hart (2007) claims that: "more than ever, the two-way movement of goods and services across the Canada-U.S. border is Canada's economic lifeline...Engagement with our Southern neighbour is the indispensable foundation of any Canadian policy to maximise benefits from international trade

and investments.” On the other hand, some politicians and commentators argue, often during recession times in the U.S., that the Canadian economy is too much exposed to the U.S., that there is risk involved in having so many eggs in the American basket, and that alternative markets must be developed in order to diversify away from the U.S. economy. This position, which, unsurprisingly, resurged at the start of the 2008 U.S. recession, is far from being new; there are indeed well-known historical attempts to reduce Canada’s vulnerability to the U.S. by seeking closer economic links elsewhere. For example, in 1957, Diefenbaker the –then– Prime Minister of Canada announced that Canada would switch 15 percent of its trade from the United States to Great Britain. In the 1970s, under Prime Minister Trudeau, the government searched for closer economic link with the European Community.

Many participants in this debate typically dismiss, even mock, the proposals of others while they trumpet “huge” potential gains resulting from their favoured option without providing much estimate of these gains. Indeed, empirical evidence is rare and when it exists, does not necessarily corroborate these claims. Pastor (2008) ironically refers to the ‘North American game of Scrabble’ which, since 2001, leads political leaders of Canada, Mexico and the US to devise intergovernmental committees, meeting periodically to “spell new acronyms that purport to be initiatives”, and then, to promptly discard them with great abandon. See Table 1 for a few of these acronymic initiatives (including the triple-acronym score for SPP, the Security and Prosperity Partnership of North America) in NAGOS<sup>®</sup>, the North American Game of Scrabble. Meanwhile, Pastor claims that if one measures progress by examining the growth in trade, the reduction in wait times at the borders, and the public support for integration, all of these initiatives have failed miserably. For Pastor (2008), what is lacking is a North American vision “based on the simple premise that each country benefits from its neighbours’ success and each is

diminished by their problems or setbacks”. Such a vision stimulates “a new consciousness, a new way of thinking about one’s neighbours and about the continental agenda [so that] Americans, Canadians, and Mexicans can be nationals and North American at the same time”. This vision of North America, according to Pastor, could evolve starting with a customs union (CU) and a common team of customs and border guards at the continental perimeters, thereby eliminating the costly and cumbersome rules of origin (ROO) regulations and allowing all legitimate goods to move seamlessly across the borders. To do this the three governments would need to negotiate a common external tariff (CET). The exchange on who dislikes NAFTA more, between (now) President Barack Obama and Senator Hillary Clinton, during the 2008 U.S. Presidential campaign, has left a bitter taste in the mouths of both Canadians and Mexicans, and having a constructive view from an American on the future of North America and the need to replace a bad U.S. neighbour policy is refreshing. But what’s in there for Canadians or Mexicans? Section 3 of this study will examine the economic benefits of moving to a North American CU that also liberalizes NAFTA ROO. It suggests that this option is indeed an alternative that should not be dismissed too quickly in a renewed agenda of North American cooperation.

Given the size and location of Canada and the U.S., bilateral issues will often be at the top of the Canadian policy agenda. However, the true issue with respect to the strategic question and the best allocation of trade “negotiation resources”, as pointed out by Head (2007), is about our effort on the margin: “Would the allocation of more resources to deeper integration with the U.S. generate larger marginal net benefits than a similar resource allocation directed at broader integration with the rest of the world?” In his opinion, Canada cannot maximise its benefits from international trade by disengaging from the three-quarters of the global economy that resides outside the U.S. Helliwell (2002) also believes that if faced with a choice between a globally

oriented policy and one that has its primary focus on continuing efforts to harmonize policies with those in the U.S., the decision is obvious given that North America is destined to be a smaller and smaller share of the global pie. Partly as a reflect of this type of position, trade “negotiation resources” in the 2000s have also been spread between multilateral trade negotiations at the WTO, non-US bilateral or regional trade negotiations, and Team Canada missions to promote trade and investment across the world. However, Hart (2007) ironically notes that “teams up to 85 individuals representing 20 or more federal agencies routinely travel back and forth between Canada and South Korea in pursuit of a trade agreement that may never see the light of the day”. Furthermore, claims related to significant gains from diversifying trade away from the U.S. are little substantiated by empirical evidence and Section 4 of this study will shed some light on their possible magnitude by considering an important feature of the 21st century, the demographic changes around the world that accompany the globalization process for goods and services, capital and labour.

## **2. Overview of the Main Argument and Policy Recommendations**

The objective of this section is to provide a general overview of the policy implications ensuing from the discussion and simulation results presented in the more “technical” Sections 3 and 4. We first start by reviewing whether a multilateral approach to trade liberalisation at the WTO is a viable and feasible tactic that serves Canada’s strategic trade policy options.

### *2.1 WTO trade negotiations: One way for Canada to diversify trade partners*

WTO negotiations towards free trade remain in theory the best way for Canada to maximize its gains from trade and, although typically not cast in these terms, a good tactic to diversify its trade partners.<sup>1</sup> Indeed, these negotiations can be viewed as a way to unfold the trade

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<sup>1</sup> Since Adam Smith, the argument in favour of free trade lies in specialisation and the international division of labour. The case for free trade has often been questioned by non-economists but also by great economists such as

diverting effects created by preferential trade agreements (PTAs), including NAFTA. However, given the structural impasse at the Doha Round, this tactic may prove difficult, even unfeasible.

The views on the roles of PTAs such as free trade agreements (FTAs), (e.g., NAFTA), and customs unions (CUs), (e.g., the first “incarnation” of the EU in the 1960s), have evolved throughout the 20<sup>th</sup> century. Informed observers knew that such “preferences” given in the 1930s by nations trying to increase their power by foreign trade were aimed at rendering it difficult for other countries to dispense with foreign trade. Hirschman (1945) gives the following example. “Country B may have a comparative advantage in the production of a certain commodity with respect to country A, but not with respect to countries C, D, E, etc. If by some preferential treatment, country A induced B to produce this commodity for export, A becomes B’s only market, and the dependence of B upon A thus created may well be worth to A the economic cost involved in not buying in the cheapest market.” The establishment of the most favored nation (MFN) clause in the GATT, and then the WTO, (which automatically extends to every member country the lowest tariff extended to any member) was meant to curb the ability of the more powerful market to create political dependence on trade concessions. As mentioned by Heidrich and Tussie (2010), the GATT system, by adopting non-discrimination as a pillar was viewed as a means of eroding imperial preferences, while at the same time protecting the interest of smaller and weaker territories by curbing the ability of the more powerful countries to threaten the suspension of concessions.

According to Bhagwati (2008), PTAs after World War II are not based on these sordid views of the past but instead reflect a deep misunderstanding of the critical difference between

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John Stuart Mill, Keynes, Haberler, Krugman, and Bhagwati himself. However, as clearly established by Bhagwati and Ramaswami (1963), the origin of these criticisms are based on the presence of distortions. In the small open economy context, the case for the optimality of free trade is restored once an appropriate policy is adopted to neutralize the existing domestic distortion.

PTAs and genuine nondiscriminatory trade liberalization at the WTO. For him, “the current tide of [PTAs] has been the result of politicians mistakenly, and in an uncoordinated fashion, pursuing free trade agreements because they think (erroneously) that they are pursuing a free trade agenda”. When a PTA is formed and trade barriers are eliminated among members, that is, of course, freer trade. But if the external barriers by the member countries are left unchanged, then the handicap suffered by non-members in the markets of the member countries increases.<sup>2</sup> So PTAs automatically increase protection against non-members and are thus fundamentally discriminatory, which makes Bhagwati (2008) to suggest that in the current pandemic of PTAs, we should more appropriately call the MFN tariff at the WTO the “least favored nation” tariff!

Bhagwati (2008) believes that the cure to the PTA pandemic is to progressively reduce the MFN tariffs to zero, which would *de facto* eliminate the preferences in PTAs and make them worthless. Independently of the current tensions in the Doha round of multilateral trade negotiations, we can gauge the impact for Canada of living in such a free trade world where all countries would set MFN tariffs to zero. Georges (2010) shows that this would permanently increase Canada’s real GDP by roughly 1% (arguably a lower bound estimate), and this would be more than the gains occurring to Canada from switching to a CU with the U.S. (as assessed in Section 3).<sup>3</sup> Furthermore, the current North-South tensions at the WTO could somewhat be alleviated if, as shown in Section 4 and in Mérette and Georges (2010), there are indeed mutual gains to further “North-South” trade. If this is the case, then, continued MFN liberalization would *de facto* increase trade between the North and the South, given that developed countries

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<sup>2</sup> This of course contrasts the “trade creation” versus “trade diversion” effects underlined by Viner (1950). Since Viner, the development of the literature can be seen as an attempt to identify particular circumstances in which the formation of PTAs will necessarily increase welfare, that is, when trade creation effects dominates trade diversion effects.

<sup>3</sup> Note that this result also includes the benefits of eliminating NAFTA ROO because such a free trade world would be free of ROO. The result is a lower bound estimate for several reasons, including the fact that the model does not include, in its benchmark, ROO from other FTAs across the world, and therefore, does not account for the potential benefits accruing to Canada from the elimination of these non-NAFTA ROO.

have generally much lower MFN tariffs than South countries. Therefore, diversification and increased trade between Canada and some of these countries does not necessarily need to be induced by “North-South” FTAs.

All this suggests that Canada should not neglect the importance of multilateral rounds of negotiation at the WTO. In fact, the need to have multilateral negotiations succeed is the greater with the proliferation of the PTAs. The problem, however, is that little political willingness and even less lobbying pressures exist to have the Doha Round negotiations succeed. As Bhagwati (2008) puts it, “[l]obbies provide the foot soldiers in the battles to open trade”, and to paraphrase him, a dollar’s worth of lobbying on opening up the Indian market under a FTA will, if negotiations succeeded, get the Indian market opened to you. But if you spend the same dollar in Geneva, opening up the Indian market on an MFN basis, your benefit will be diluted by the “free riders” from other countries who have not spent any money to open the Indian market. So you will spend the dollar on FTAs, not on multilateral trade negotiations. Furthermore, as aptly pointed out by Hart (2007), Canada has found itself largely on the sidelines of the WTO negotiations, unable to contribute constructively in part because Canadian politicians of all stripes, “[c]onvinced of the political weight of Canada’s farm lobby, [...] insisted that Canada make every effort to bring down trade barriers and subsidies on Canada’s exports, but not at the expense of supply management and the monopoly marketing of wheat and barley”.

Gao and Lim (2010) review three options to save the WTO from irrelevance in a world of proliferating PTAs. First, the WTO might become the PTAs “*terminator*”, by heightening the level of ambition in global trade negotiations to reduce all trade barriers to zero so that the discriminatory effect created by PTAs could be eliminated. This, of course, is the preferred solution of Bhagwati, as mentioned above. Second, the WTO might become the PTAs

“*confessor*”. If preferential treatment is the cardinal sin of free trade, countries could alleviate their guilt of the committed sin by, say, using the WTO to harmonize rules of origin across diverse FTAs, or to draft best practices or models for FTAs. Finally, the WTO could become the “*enforcer*”, “by using the WTO dispute settlement mechanism as a venue for resolving some disputes among PTAs parties, and possibly even disputes between PTAs and non-PTAs WTO Members.” Actually, Gao and Lim (2010) argue that by using the WTO dispute settlement system for some PTA disputes, the Members will be able to develop gradually a body of common law on PTAs, which could eventually minimize the harmful effect of PTAs. In this perspective, Canada should continue to encourage the use of WTO dispute settlement mechanism as a venue to defend the trading right of Canadians and to curb U.S. trade remedy laws (Dobson 2002).<sup>4</sup> However, the current impasse at the WTO raises serious doubt on a multilateral approach as a viable tactic which could serve Canada’s strategic trade policy options.

## *2.2 A Canada-U.S. customs union – Another way for Canada to diversity trade partners!*

Proposals for a North American customs union (CU) are typically dismissed on the basis that establishing a common external tariff (CET) would marginally benefit Canada while the negotiation process with the U.S. would be long and difficult. However, we argue in Section 3, as in Georges (2008b), that the main benefit of such a CU would be the elimination of NAFTA rules of origin (ROO). The project is politically difficult, but feasible, the benefit is not insignificant, and, surprising as it might be, it can even generate trade diversification for Canada.

A Free Trade Agreement (such as NAFTA) is made up of a number of countries that agree to eliminate all customs duties (i.e., tariffs) among themselves or at least, to grant themselves a preferential tariff treatment. Members of a FTA generally retain their individual

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<sup>4</sup> Trade remedy law refers mainly to the use of antidumping and countervailing duties. Although these are of concern in multilateral trade negotiations, the U.S. designed its own laws to protect its producers against imports deemed to be subsidized or unfairly priced.

trade and external tariff policies with respect to non-member states. This gives an opportunity for a non-member that plans to export a good to the high external tariff country, to first transit through the low-external tariff one and then transship, with preferential treatment, to the final destination. Such redirection of trade to take advantage of the differential in the external tariff of members of a FTA is called trade deflection. All FTAs have rules of origin (ROO) which are designed to confine the benefits of the preferential tariff treatment to products originating in the member countries, that is, to products manufactured wholly or substantially within the FTA. Therefore, ROO eliminate trade deflection because goods that are simply being transshipped or undergoing only minor transformations in a member country will not be deemed originating and will not receive preferential treatment when re-exported to another member country.

Whereas a FTA requires preferential ROO to prevent trade deflection, a “full” CU does not. In fact, a CU requires the negotiation of a common external tariff (CET) with respect to non-members; a revenue sharing agreement for the customs duties collected at the external border; and harmonized external trade policies. By getting rid of the differential in the external tariff with respect to non-members, the CET eliminates *de facto* trade deflection and thus removes the economic rationale for ROO. Thus, preferential ROO are typically absent from a CU arrangement and movements of goods within a CU are not based on their ‘originating status’ but on the principle of ‘free circulation’.<sup>5</sup>

ROO are costly and Section 3 will evaluate numerically the effects and potential gains occurring from switching to a CU with the U.S. that would also liberalize NAFTA ROO (see for example Figures 3 and 4). But is the option technically or politically feasible? A first important technical challenge with the negotiation of a North American CU involves harmonizing trade

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<sup>5</sup> The European Union (EU), in principle, does not impose preferential ROO among its members (as it is also a CU). Of course, it does have ROO regimes with countries external to the union and which have signed FTAs with the EU.

policy. This is not only about selecting a CET or liberalising NAFTA ROO, however. As claimed by Meilke, Rude and Zahniser (2008), one of the thornier issues would be the many different FTAs that North American countries have negotiated separately (see Figure 2). A full North American CU could require the eventual reconciliation of the ROO used in each FTA in Figure 2 (excluding NAFTA, of course, as NAFTA preferential ROO would, in theory, no longer exist) in a process similar to the 1997 pan-European “diagonal cumulation” system implemented by the EU with respect to its numerous FTAs. Research along the lines of Augier, Gasiorek, and Lai-Tong (2005) on cumulating ROO, and of Cornejo and Harris (2007) on a General Origin Regime as an indispensable minimum to effectively interconnect existing FTAs should therefore be pursued and encouraged to better gauge the technical challenge of doing this ROO reconciliation.

Second, moving to a CU would make ROO redundant only if their objective was truly to eliminate trade deflection. But that interpretation, however common, is somewhat inconsistent with the observation that the “Northern” partner (e.g., the U.S. or the E.U.) in “North-South” FTAs is often (but not always) the side that insists on strict ROO whereas it is also typically the partner with the lowest MFN tariffs (so that trade deflection would actually benefit the North, not the South – for NAFTA, it would benefit U.S., not Mexico nor Canada, in terms of tariff revenues). This suggests that the real reason for having ROO in a FTA might be rent-seeking activities by interest groups instead of a genuine concern with trade deflection. Section 3 explains that ROO have helped cement cross-border and within nations coalitions into backing FTAs. The logical implication seems that these groups will inevitably lobby against ROO liberalisation, and therefore, against any agenda for a North America CU that would make ROO redundant. This argument against the political feasibility of a CU may be overstated however, as

the political economy supporting strict ROO has and will continue to erode because of the new realities of international supply chains. For example, according to Baldwin (2009) “[i]t may be the case that ROOs are saving industry jobs, but whose? As unbundling and spatial dispersion of upstream manufacturing proceeds, the nationalistic argument for ROOs tends to get blurred. Moreover, if unbundling results in a multiplication of firms, it will make political organization more difficult.”

This leads us to conclude that a North American CU brings benefits essentially through the elimination of ROO, and is potentially feasible. Furthermore, as shown in Georges (2008b), a CU that also liberalises ROO should not exacerbate the fears of some observers that this might be done at the expense of Canada’s trade relationships with other countries. Indeed, Canada’s shares of non-NAFTA import and export would actually increase. In other words, in a CU that also liberalises ROO, Canadian firms could purchase intermediaries where they are the cheapest, lowering their unit cost of production and enhancing their competitiveness, which would induce further exports towards all countries in the world. If Canada is in search of a policy measure that might reconcile opponents and proponents of increased regionalism, then this might be the one – a CU with the U.S. that also liberalises NAFTA ROO. Therefore, some Canadian trade negotiation resources should be re-allocated away from the acronymic initiatives given in Table 1 in order to seriously discuss this strategic option both in Canada and with the U.S.

### *2.3 Any additional role for FTAs with respect to geographical trade diversification?*

According to Helliwell (2002), “North America is destined, through the joint forces of demography and catch-up, to be a smaller and smaller share of the world economy. To focus emphasis on the smaller part of the global pie may seem attractive during booming times in the United States economy, but would be a short-sighted strategy”. Although Helliwell’s focus is

far-reaching and not limited to trade relations, we will use this quotation here to illustrate the discourse that this “type” of quote typically generates when the focus is on trade. We will finally use it to argue that there exists a case in favor of FTAs with selected Southern countries and an argument against FTAs with some Northern partners such as EU.

First, Helliwell’s quotation should not be understood in terms of additional jobs that Canada’s trade with new partners might generate. Businessmen and politicians tend to think that the more Canada exports the more people will be employed. However, what might seem common sense for a company is often not true for a country as a whole (Krugman 1994), in this case because there is an eventual limit to how low the unemployment rate can be without creating unacceptable inflation. Indeed, if Canada’s economy were to experience a large surge in exports to, say, China and India, the Bank of Canada would need to offset the expansionary effect of the exports by raising interest rates, and an increase in export-related jobs would be more or less matched by a loss of jobs in interest-rate sensitive sectors of the economy.

Second, the quotation might seem to suggest that trade diversification away from the U.S. is an insurance policy for Canada and Canadian exporters against recession times in the U.S. In other words, trade diversification would reduce the risk of having all of one’s eggs in the same basket and therefore reduce the volatility of the incomes of Canadian exporters. Clearly this view requires that recessions in the rest of the world are unsynchronized with those in the U.S. – if all markets are subject to the same business cycles, then, there may be little scope for diversification. More fundamentally, welfare gains in standard trade models are derived from specialization in production and trade flows, not from diversification. So, the cost of greater income risk must be set against the benefit of specialization. In other words, there might be a trade-off between the gains from specialization derived from deep integration with the U.S. and

the income volatility that the lack of market diversification affords. Goldfarb (2006) has analyzed this portfolio-type argument that the status quo delivers volatility. She argues that “over the past decade, Canadian exports to the U.S. have been less volatile on average than have exports to most other regions. Where they have been more volatile, they have been accompanied by significant trade growth. Shifting exports away from the U.S. over the past decade would have increased volatility and decreased trade growth, making Canada worse off, assuming all else the same.” In the same vein, Beaulieu and Emery (2006) argue that “[i]ncomes from trade can be expected to be high and low depending on demand for Canada’s exports, but total income over time will presumably be maximized by Canada specializing in its comparative advantage and exporting to the highest price buyer. (...) This will mean that we remain highly dependent on the U.S. market and subject to considerable income risk and income volatility”. For them, income smoothing policies (employment insurance, personal savings) and institutions (Canadian Wheat Board and other price and revenues stabilization funds) are the proper instruments for addressing these issues of volatility in economic markets as a practical alternative to a strategy of diversifying export markets.

The export diversification argument is often dismissed from another angle, by questioning the efficacy of governments to change trade patterns. For example, Goldfarb (2006) claims that “individuals, not governments, determine economy-wide trade patterns”, which would in part explain why past efforts by governments to change trade patterns have failed. Taken at face value, this argument seems to dispose, in a slightly cavalier way, of sixty years of research on trade creation and diversion effects due to (government-negotiated) FTAs, and maybe, underestimate the current Canadian concerns with respect to (government-imposed) border security measures post 9/11. However, as rightly pointed out by Goldfarb (2006), “[f]or

now, businesses continue to solidify their economic links in the U.S., while growing them at a faster rate outside of the U.S. as opportunities arise and relative risks fall.” And indeed, businesses take advantage of these opportunities. For example, Cadot et al. (2010) have shown that since the early 2000s OECD markets have been diversifying (geographically) their sources of supplies and that this recent trend of *import* diversification is broadly consistent with a quality search model where buyers screen foreign suppliers (and hence countries) for quality before deciding which suppliers should be included in cross-country supply chains. Figure (1) also shows for Canada a clear trend towards an increased import diversification since 1998.

This might suggest that import – rather than export – diversification, is a relevant, even if neglected, issue and that the Canadian government should lean with the wind of market-based import diversification.<sup>6</sup> Consistent with the wording of Beaulieu and Emery (2006), the natural policy approach seems to let Canada specializing in its comparative advantage while freely *importing* from the “lowest costs/price producers”. This of course is also consistent with our viewpoint that further multilateral negotiations at the WTO remain important as well as further

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<sup>6</sup> The emphasis on *import* trade shares instead of *export* shares or export diversification might be more relevant to the case of trade diversification at least in a long run perspective. As argued by Hirschman (1945), “For a country cut off from foreign trade the most urgent problem is to produce at home or to find substitutes for goods which were formerly imported and to find new employment for the factors of production formerly employed in export industries. The first problem is definitely connected with the ultimate loss from the interruption of trade, whereas the second is a short-run problem.” Of course, this reflects the classical trade theory view that export is not an end in itself (at the macro level of the economy, of course, not necessarily at the micro-level of the individual firm) and that the main objective of international trade and the ensuing gains from trade for a country as a whole comes from the possibility to import some goods at a relatively lower price than the opportunity cost to produce them with domestic resources. This view has best been described by Krugman (1993) when he says that “the need to export is a burden that a country must bear because its import suppliers are crass enough to demand payments”. Of course, this view is debatable, especially in the short run. In a situation of incomplete use of resources, one can consider export as an incentive to employment and national income, and imports as “leakages” which to a certain degree prevent the working of this incentive. In this case, the real benefit arising from trade lies in exports rather than imports, and the danger of losing a market if political or economic conditions deteriorate makes for as much concern as the danger of losing supplies. As argued by Hirschman (1945), “the difficulties arising out of a cessation of exports will be greater the greater the exports (and consequently the imports); and the short-run problem is thus intimately connected with the extent of the long-run gain from trade. But with a given quantity of exports the problem created by an interruption of trade will be the more difficult, (1) the smaller the mobility of resources within the country, (2) the more the economic activities leading to exports have been concentrated in certain lines of production or in certain regions.”

liberalization of (NAFTA) rules of origin, with the aim to give Canadian firms full advantage of global supply chains. This also is consistent with a government-based intensification of North-South trade flows, implemented through selected FTAs, which would enable Canada to import more intensively from low cost sources. We will be more precise in Section 4, but suppose that there is a long-term trend towards a relative decline in (free market) prices of Brazilian and Indian goods with respect to goods produced in Europe. If Canadians value each of these goods and believe that they are substitutable to some degree, then they should rather import more from Brazil and India, and less from Europe, and a trade agreement to import duty-free from Brazil and India would be less trade-distorting in the coming decades than a trade agreement with EU.

We argue that the joint forces of demography and catch-up in technical progress referred to by Helliwell (2002) might well trigger this long term relative price change. The demographic shock facing most OECD countries can be thought of as a negative supply shock, reducing their output and leading to higher prices relative to the South whose enlarged working age population and technical catch up process might induce sustainable growth (a positive supply shock). This might cause a decrease in the relative price that Northern countries would have to pay for their import from the South due to the higher ability of South countries to produce their export goods. Thus Canada would rather buy more from countries that are expanding production and lowering price due to their relative youth and technical process catch up.

Our simulation results in Section 4 suggest that a North-South trade diversification policy might prop up real consumption per capita in Canada, partly alleviating the impact of a slower-growing population ageing (see for example Figures 8 and 9). However, current FTA negotiations of the Canadian government with some countries seem out of tune with our analysis in Section 4. Canada has embarked on a series of bilateral negotiations as documented in Tables

5-6. Three new FTAs have been signed (but not yet ratified) in 2008: two of these are with South-American countries (Peru and Colombia), and one with European countries forming the European Free Trade Association (EFTA). Pending bilateral trade negotiations are currently conducted with other Central and South American countries (Panama, Dominican Republic, Central America CA-4, the Caribbean Community), with some Asian countries (Korea, Singapore), one Arab country (Jordan), and, most recently, with the E.U.

We share the opinions of Head (2007) and Hart (2007) that agreements with countries like Israel, Costa Rica and Chile are unlikely to bring high benefits *per se*, and devoting major resources to an agreement with other small Central and South-American countries also seems of dubious value. Moreover, our demographic argument for North-South trade diversification raises serious concerns about the relevance and economic impacts of the recently concluded free-trade agreement between Canada and the EFTA as well as the negotiations between Canada and the E.U. (the CETA or Canada-E.U. Comprehensive Economic and Trade Agreement) which have been officially launched in Prague in May 2009. In the absence of strong support from the business community as a whole, such negotiations are easily derailed by import-competing interests. It took ten years to successfully negotiate a FTA between Canada and the EFTA even if this is a “first-generation” type of agreement with an emphasis on tariff elimination and which does not include substantial new obligations in areas such as services, investment, and intellectual property. Some news already suggest that officials from both sides of the Canada-E.U. negotiations appear to be strides apart about what exactly is on the table. Incidentally, this might be a good opportunity for Canadian trade policy makers to reflect on the wisdom of this negotiation’s resource allocation while taking stock of a recent study commissioned and financed by the European Commission (2010) on the impact assessment of the Canada-EU CETA.

However, Section 4 of this study shows that there is room for a deeper investigation of the potential benefits of a bilateral trade negotiation with Southern countries. This includes Brazil (or Mercosur), China, and India. Although the growth potential of China has attracted much attention worldwide, an analysis that takes into account the global demographic context shows that India is also a key promising developing country of the 21<sup>st</sup> century if it pursues its effort to integrate the world economy through both trade and capital flows liberalization while accelerating the movement of its workforce out of agriculture into the unskilled-labor intensive industry of the “organized” sector (Panagariya 2006). As also suggested by Dobson (2006), India’s demography and evident economic momentum argues for greater Canadian policy ambition and that “an FTA negotiation would send a powerful signal of commitment to Canadian business interested in penetrating the Indian market and using India as a platform for Asian operations”. The key point, here, is that the “positive” influence of export lobbying would offset the negative lobbying influence of the import-competing interests, which could accelerate negotiations. Of course, bilaterally, the United States is India’s obvious strategic priority in the Western hemisphere, but, as Dobson (2006) mentions, recent analyses of the feasibility of a comprehensive U.S.-India bilateral FTA concluded that it was a radical idea for both countries whose time has not yet come.<sup>7</sup> Therefore, a negotiation with Canada would be a significant strategic signal of India’s potential importance to the North American economies and would serve Indian interests beyond the Canadian market.

A key result from Section 4, however, is that the specific demographic trends of the U.S. among OECD countries imply that Canada’s trade relationship with the U.S. remains highly desirable and preferable to trade diversification in favor of the E.U. This again reinforces our

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<sup>7</sup> Bery et al. (2005).

results in Section 3 that evaluates the gains occurring from deeper integration with the U.S. through a CU, and which we now turn for additional details.

### **3. Potential Benefits of a North American Customs Union**

#### *3.1 Rules of origin in FTAs—the gatekeepers of preferential trade and their byzantine complexity*

As mentioned in Section 2, all FTAs have rules of origin (ROO) which are designed to confine the benefits of the preferential tariff treatment to products originating in the member countries, that is, to products manufactured wholly or substantially within the FTA. Being the gatekeepers of preferential trade, ROO also eliminate trade deflection because goods that are simply being transshipped through or undergoing only minor transformations in a member country will not be deemed originating and will not receive preferential treatment when re-exported to another member country.

The principle for determining originating status is that substantial transformation has taken place in the exporting country. In NAFTA, this can be assessed using one of three tests or a combination of them. These are known as the change in tariff classification (CTC), the value content (VC) or the specific production process (SPP). The CTC criterion is the most commonly used of all NAFTA's ROO criteria for goods.<sup>8</sup> These ROO are inevitably complex and can amount to hundreds of pages in an FTA agreement. Chapter 4 and Annex 401 of the NAFTA agreement contains about 200 pages dealing with ROO and the interpretation of these rules as they apply to particular products. Beyond the administrative and paper work costs due to these

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<sup>8</sup> According to the CTC test, goods produced in one or more of the three countries with non-originating materials may be “freely traded” (i.e., exempted from tariff) when, after the manufacturing process, all such materials (excepting a *de minimis* amount) undergo a change in tariff classification based upon the Harmonized Tariff System (HTS). According to the VC test, some goods must also contain a minimum regional value content – defined as the difference between the transaction value of a good minus the value of non-originating materials – which, when expressed as a percentage must be at least 60 percent in order to “free trade” the goods under NAFTA. Alternatively, there is also a net cost value method because manipulation of prices in transfers among corporate affiliates might otherwise take advantage of NAFTA's transaction value method. In this case, the relevant percentage is 50%. Finally, the SPP criterion specifies that for some goods there might be a particular production process that must be employed.

ROO, academic literature has shown that ROO, while they eliminate trade deflection, also distort trade flows and reduce efficiencies in the production process. For example, preferential ROO have a distortionary impact when they induce firms to substitute cheaper non-originating materials for intermediary goods originating from the zone in order to obtain the preferential tariff when exporting to the other member. Many studies have shown that ROO lead to trade diversion, substitution among inputs, differential effects on intermediaries versus final goods, implicit export subsidies from highly protective FTA members to other FTA members, rent shifting to FTA member firms from non-member firms, implicit tax on foreign intermediaries and implicit subsidies to capital, labor and intermediaries purchased within the FTA zone.<sup>9</sup>

Also, it is often argued that the real reason for having ROO in a FTA is not a genuine concern with trade deflection but reflects a capture by interest groups. Trade negotiators have consistently looked for particularized benefits they could offer important industries in exchange for their support. Industries looked for ways to gain advantage within the new accepted paradigm of freer trade. ROO might have appeared to be the ideal instrument to meet the needs of both. Cross-border or within nations coalitions backing duty-free access in exchange for strict ROO might have been the leading factor behind the success of the extensive FTAs negotiations during the 1980s and the 1990s.<sup>10</sup> However, as aptly pointed out by Destler (2006), “ROO represent a sort of pact with the devil. The backing of their supporters is often needed for a FTA to become

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<sup>9</sup> See for example, among others, Krueger (1993); Lloyd (1993); Krueger (1995); Krishna and Krueger (1995); Lopez-de Silanes et al. (1996); Falvey and Reed (2002); Carrère and de Melo (2004); Krishna (2005); Thoening and Verdier (2006); Cadot, et al. (2006); Georges (2008a; 2008b; and 2010).

<sup>10</sup> Coalitions can be cross-border or within nations coalitions and typically between intermediary sectors and final good producers. For example, Mexican tomato paste producers may lobby for tomato ketchup to be included in the Mexican list of duty-free goods if this gives a tariff preference to U.S. ketchup producers that is sufficiently large to induce them to fulfill the ROO by switching from cheaper Chilean to Mexican tomato paste. The gain for Mexicans is a new export market for their tomato paste, while the U.S. ketchup producers can export duty free to Mexico. Even Mexican ketchup producers who have traditionally used (protected) Mexican tomato paste (and therefore who are already satisfying ROO), might tolerate the inclusion of ketchup in the Mexican duty free list even if they are likely to lose from tariff removal, because a strict ROO will raise the costs of their U.S. rivals more than their own.

law, but if ROO seem politically necessary in the short run, they are pernicious in the longer run. So, the question for pragmatic trade-expanders is the ancient one: Can one dicker with the devil without joining him in Hell?”

If it is not Hell yet, things have reached byzantine complexity for at least two reasons. First, with the increase in the number of FTAs in recent years and as the web of criss-crossing FTAs gets more tangled – a phenomenon known as the spaghetti bowl of overlapping and intersecting FTAs – ROO, the gatekeepers of preferential trade, have become a much more important aspect of world trade (Baldwin and Thornton 2008). They have, however, also become somewhat of a nightmare, especially when a single nation faces inconsistent ROO in its various FTAs, a situation that Canadian firms/exporters would face if Canada and the EU eventually signed the CETA. In many instances, firms seem to have decided to pay the MFN tariff rather than attempt to incur the cost of complying with diverse ROO, which automatically cancels the potential trade creating benefits of FTAs (Estevadeordal and Suominen 2008). Second, the problem of assigning origin to only one country has become much more difficult as some goods are produced in stages with different stages located in different countries (a phenomenon that has become known under different names such as “fragmentation”, “outsourcing”, “unbundling”, or “international supply chains”), and some goods use primary factors owned by residents of countries other than that in which the good or stage is produced (a phenomenon largely associated to foreign direct investment and, to a lesser extent, the international movement of labour). In such a case, the origin of traded goods becomes ambiguous as the value added is split between factors owned by residents of a series of countries (Lloyd 1993). This new reality implies that ROO, as they are currently designed, may now prevent FTAs firms from taking advantage of the global production chains, a phenomenon that might have been unanticipated by

interest groups in the early stages of FTAs and ROO negotiations. This new reality might also generate ROO-jumping investment decisions with perverse impacts on the distribution of inward foreign direct investment between smaller and larger members of a FTA.

It is now generally acknowledged that the diversity of ROO across FTAs strongly limits inter-regional trade flows, and that the restrictiveness of some ROO is beyond the levels that would be justified to prevent trade deflection. Some calls exist with regard to simplification or harmonization of ROO between sectors or across FTAs.<sup>11</sup> Some economists have proposed to “tame” ROO, by, for example, binding or capping their restrictiveness, and then by progressively reducing their restrictiveness to the appropriate level required for ROO to continue their essential role of gatekeepers of preferential commerce (Estevadeordal, Harris, and Suominen 2008). To help in this process, there are proposals to harmonize the methods that determine the origin of goods by converting tariff shift and technical tests into a local content percentage rate, a technique somewhat equivalent to the process of “tariffication” of non tariff barriers at the WTO (Hirsch 2002). Other authors (e.g., Gasiorek, Augier, and Lai-Tong 2007; Cornejo and Harris 2007) advocate some variants of a ROO cumulation process across FTAs, first at a regional level through “diagonal” and “triangular” cumulation (in a process similar to the 1997 pan-European cumulation system), and then at a more global level through “multilateralising cumulation”. Although these research efforts are certainly valuable, it remains to be seen whether trade negotiators will be able to pursue this route in a significant manner. In fact, it is difficult not to

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<sup>11</sup> It seems reasonable enough to suggest an across the board standard instead of the current heterogeneous rules across sectors (e.g., NAFTA triple transformation test in the textile/apparel sectors or the 62.5% test in the automobile sector). In practice, however, as argued by Destler (2006), harmonization across sectors would be difficult to achieve on a large scale simply because these rules resulted from hardly-disputed sector-specific negotiations and that their current settings matter a great deal to producers. ROO should not be viewed as a deal between nations but instead as a deal between private business interests and governments that needed to obtain their support in the legislative battle.

sense unease among these authors for their own proposals and that, eventually, very little is likely to emerge due to technical and political difficulties (Bhagwati 2008).

One of the most interesting proposals, however, has been advanced by Lloyd (1993, 2002). Traditional ROO assign origin to only one country, that is, origin is treated as an all-or-nothing concept. However, as argued above, multiple countries typically contribute to the value added of the traded goods. Hence, instead of searching for a single-originating country we need a criterion which allows for multiple-originating countries. This led Lloyd to recommend eliminating existing ROO in FTAs and substitute them for a tariff rate that would be a weighted average of preferential and MFN tariff rates with the weights given by the value added originating from the preferential and the MFN sources. Therefore, the actual tariff rate levied would increase with the proportion of the value which was added outside the area, and would shrink to zero if value added was entirely from the FTA.<sup>12</sup> According to Lloyd (2002), “compared to the value-added tariff, any ROO which classifies a commodity as wholly produced within the area or outside the area will wrongly exclude some output (= value added) of one member from being freely traded with other members when the area content is less than specified by the VC criterion of the ROO. It will also wrongly admit with no tariff into a member country commodities which satisfy the arbitrary ROO but contain significant components and other value added in third countries”. The main disadvantage of the method is the difficulty for most people of accepting an entirely new concept and a new way of doing things, so that the time has not yet come for a system of “multi-country” ROO (i.e., a value added tariff) to replace the current system of “single country” ROO.

### *3.2 Moving from a FTA to a customs union*

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<sup>12</sup> Typically, when preferential tariffs are zero, the actual tariff would reduce to a proportion of the value added outside the FTA (instead of a conventional tariff whose base is the price of the imported good).

Other observers (Kunimoto and Sawchuk 2005; Ghosh and Rao 2005; Pastor 2008; Georges 2008b and 2010) have suggested that one option to dispense with ROO is to transform FTAs into CUs. Indeed, whereas a FTA requires preferential ROO to prevent trade deflection, a CU does not, as shown in Section 2, and gauging the impact of moving from NAFTA to a CU requires estimating the joint effect of adopting a CET and eliminating ROO, which can (roughly) be decomposed into two effects: (1) the pure effect derived from the adoption of a CET, and (2) the pure effect derived from the elimination of ROO – which requires estimating their costs.

Since the work of Estevadeordal (2000), the econometric literature on ROO has typically coded an index of *ex ante* ROO restrictiveness as an independent variable in order to estimate the economic impact of these rules on bilateral trade flows, tariff preference utilization rates, and on investment flows.<sup>13</sup> However, ROO imply complex interconnections between the use of primary factors of production, intermediaries and final goods, and current econometric studies do not seem to be able to deal appropriately with these complexities, nor to gauge the impact that these rules, or their liberalization under specific trade scenarios, might have on economic welfare or GDP.<sup>14</sup> Georges (2008b), therefore, proposes to use a general equilibrium framework to gauge the impact of moving from NAFTA to a CU that also liberalizes ROO. The model itself is a multi-country multi sector dynamic general equilibrium model in which the world economy consists of seven countries/regions composing two blocks, NAFTA countries (Canada, U.S., and Mexico) and non-NAFTA countries (Latin America, Mercosur, Europe, and the Rest of the World). Each country has eight sectors of production (agriculture, resource sector, food

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<sup>13</sup> See for example, Estevadeordal and Suominen (2008); Cadot, Estevadeordal and Suwa-Eisenmann (2006); Carrère and de Melo (2004); Kunimoto and Sawchuk (2005); Esteavadeordal, Lopez-Cordova and Suominen (2008).

<sup>14</sup> Furthermore, there is the complexity that the use of preferential access in a FTA (and the concomitant ROO compliance) is an option, not an obligation, so that Estevadeordal's index of *ex ante* ROO restriction is less relevant than the *ex post* restrictiveness, or efficiency cost, of these rules.

processing, textiles and clothing, manufactures excluding machinery and equipment, machinery and equipment, automotives, and services). In terms of modelling, the two key issues are related to the CET to be adopted among members and to gauge the cost of ROO. First, the CET has been set equal to the U.S. MFN tariff in order to avoid protracted negotiations with the U.S. on the CET.<sup>15</sup> As for ROO, the modelling approach is based on the fact that a ROO acts as an implicit tax to NAFTA firms for the use of non-originating intermediaries but an implicit subsidy for the use of capital, labour and intermediaries purchased within NAFTA (see Georges 2008a, for a mathematical approach to this problem and Georges 2010, for a graphical presentation). Therefore, the main impact of removing ROO is the elimination of the implicit subsidies and taxes. This shock reallocates efficiently the demand for factors of production in each sector of NAFTA countries, lowering NAFTA firms' demand for capital, labour, and NAFTA intermediary goods, but increasing the demand for non-NAFTA intermediary goods. The efficient reallocation of factors of production within NAFTA will also lower the unit cost of production in every sector of NAFTA countries.<sup>16</sup>

Using this modelling approach Georges (2010) compares two counterfactual scenarios:

- (1) The benefit that Canada and Mexico would have obtained if they had moved to a CU with the U.S. in the 1990s (instead of NAFTA);
  - (2) The impact of moving to a CU in the 2000s.
- Figures (1) and (2) provide results estimated in the study for both cases and decomposes the sources of

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<sup>15</sup> Even a CET set equal to the U.S. MFN is likely to generate much lobbying, negotiation, and opposition. Industries where Canadian or Mexican MFN tariffs have to be reduced to U.S. levels are likely to oppose such a move. Furthermore, foreigners are likely to oppose the (less common) cases of upward adjustment of Canadian or Mexican external tariffs to U.S. levels, which would violate article 24 of the WTO (in cases *actual* external tariffs are at their WTO *bound* levels) and trigger retaliation or require compensation.

<sup>16</sup> Note that moving from NAFTA to a CU is not necessarily welfare improving according to the general principle known as the theory of the second best which states that, in a system with several distortions, the removal of any one of them cannot be presumed to be welfare-improving. Indeed, Georges (2008a) shows that NAFTA countries might potentially suffer from a terms of trade deterioration because the additional demand for non-NAFTA intermediaries will increase the international price of these goods. This suggests an analogy with the theory on optimal tariff and reflects that North American firms altogether constitute a significant share of the world demand for intermediary goods and hence have the potential to affect world prices. Thus the net effect of the removal of NAFTA ROO on welfare is ambiguous and is an empirical issue.

the gains into CET and ROO effects of adopting a CU.<sup>17</sup> Figure 3 illustrates that the gain for Canada of a CU in the 2000s would have amounted to a (permanent) 0.5% increase in real Canadian GDP, most of it originating in the elimination of ROO. The figure also shows that ROO liberalization matters more than a CET for Canada – the main economic reason for advocating a North American CU should be ROO liberalization, not the establishment of a CET, and proposals for a CU should not be dismissed solely on the basis that a CET would marginally affect Canada. When comparing with Figure 4, we see that the gains resulting from a potential CU have been falling over time: the gain for Canada of a CU in the 1990s would have amounted to a (permanent) 1% increase in real Canadian GDP. Furthermore, the gains resulting from the prospect to remove ROO have fallen from 0.7% of GDP in the 1990s to 0.4% of GDP in the 2000s. As argued in Georges (2010), one likely reason is that NAFTA tariff preferences have been eroded since the phasing in of the Uruguay Round measures and the reduction of MFN tariffs.<sup>18</sup> Therefore, NAFTA utilization rates (i.e., the percentage of firms that effectively ask for tariff preference when exporting to another NAFTA country) have also fallen because NAFTA margin of preference might no more be sufficiently attractive to offset the cost of complying with ROO requirements. But if firms apply less often for preferential treatment, then this implies two things: 1. the beneficial trade creation effect of NAFTA has been shrinking; 2. exporters comply less with ROO so that the trade diversion effect of ROO has also fallen, even with unchanged *ex ante* restrictiveness of these rules. Therefore moving to a CU, whose main benefit is the elimination of ROO, should also appear less appealing in the 2000s, in a world where MFN tariffs have been reduced relative to the 1990s. As argued by Bhagwati (2008), preferences

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<sup>17</sup> The full impact of adopting a CU also includes “cross effects”. The removal of NAFTA ROO *per se* modifies trade patterns between NAFTA and non-NAFTA countries. Therefore, second-order effects measure the impact that the adoption of a CET might also have on the new pattern of trade due to ROO removal, with repercussions on all variables in the model. As these cross effects are relatively small, we will not discuss them further.

<sup>18</sup> See Kunimoto and Sawchuk (2005) for a similar argument on NAFTA tariff preference erosion.

are relative to MFN tariffs. So, if countries cannot do much about existing FTAs directly, they can virtually eliminate FTAs by reducing MFN tariffs to zero so that preferences also fall to zero. In this case, any ‘preferential’ arrangement (FTAs or CUs) becomes, by definition, a wasting asset, and the economic gain (essentially due to ROO elimination) for moving away from a (worthless) FTA to a (worthless) CU is also equal to zero. To a less dramatic extent, the reduced gain from moving to a North American CU, as is illustrated when comparing Figures 3 and 4, reflects this phenomenon.

For a sectoral analysis of the impact of moving away from NAFTA into a CU, Georges (2010) illustrates that ROO have had strong dominant impacts on the Canadian natural resources, automobile and machinery and equipment sectors. In conclusion, moving to a CU that also eliminates ROO does bring some significant although not “huge”, net benefits to Canada. For Mexico, however, the economic impact of moving away from NAFTA into a North American CU remains an impressive permanent increase in real GDP by 2.9% (Figure 3).<sup>19</sup> We now turn to the potential benefits of trade diversification away from the U.S.

#### **4. Potential Benefits of Trade Diversification Away from the U.S.**

##### *4.1 Population ageing – Any role for trade policy?*

We will show in this section that although population ageing in Canada is expected to have a negative impact on GDP, international trade should prop up real consumption per capita through terms of trade improvements during the first half of the 21<sup>st</sup> century. This reflects a population ageing gap between Canada and many of its trading partners (including the U.S.) with ‘younger’ populations whose demographic projections entail relatively smaller negative supply shocks and lesser relative price increases. However, the gains resulting from the globalization of

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<sup>19</sup> See Georges (2010) for possible factors that may explain the strong and sustained economic impact on Mexico, of a potential CU.

trade flows might be intensified through a strategic pattern of North-South trade diversification that takes into account the extent and timing of population ageing in diverse regions of the world. The main policy implication of this analysis is that a diversification of Canada's trade away from the U.S. in favor of faster-ageing countries or regions such as Japan or E.U. (a North-North trade diversification scheme) is not necessarily desirable. In section 2, we argued that both forces of demographics and technical catch up reinforce themselves to lead to this conclusion. However, unlike demographics, the catch up process and long term growth of south countries is not a new argument in favour of trade diversification. Hence, here, we focus on the demographic transition as the only factor of investigation in order to establish the case for trade diversification and North-South FTAs.

A typical framework (see for example Foot 2007) that is used to organize discussions on the channels of transmission of population ageing on GDP is the decomposition of GDP per capita into 5 terms – productivity, effort, employment rate, labour force participation, and the ratio of adult to total population:

$$\text{---} \quad \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \quad .$$

The literature generally suggests that population ageing might tend to reduce the first four ratios if older workers are less productive, if they chose to work less hours, if there is discrimination against older workers (ageism) on the job market resulting in a lower employment rate or incentives to retire and exit the labour force. Major policy reforms aimed at mitigating the impact of population ageing also follow from this decomposition and include policies focusing on increasing productivity and effort, employment policies including policies that discourage ageism, and policies targeting labour force participation by delaying the normal age of retirement

or by favouring higher immigration (see for example Banerjee and Robson 2009). This framework, however, obscures any direct role for trade policy, or suggests, at best, an indirect link if we are willing to accept that international trade tends to enhance productivity and growth.<sup>20,21</sup> On the other hand, a more direct role for trade and trade policy may be suggested if we look at the ratio of real consumption per capita, and its relation to GDP per capita:

(1) 
$$\frac{C}{Y} = \frac{C}{Y} = \frac{C}{Y} = \frac{C}{Y}$$

Real consumption is defined as real disposable income minus real private saving. The basis for calculating real income is of course real production  $Q$ , while the nominal value of this income is  $P_Q \times Q$  where  $P_Q$  is the price of the domestically produced good. To get the real spending value of this income, we divide by the average price of the goods purchased by domestic residents,  $P_{CON}$ . This consumer price is defined as an average of the price of the domestically produced good and the foreign produced goods with weights given by the average propensity to spend on the domestically produced good and the imported good. In a closed economy,  $P_Q = P_{CON}$  when

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<sup>20</sup> For such a link, see for example Romer (1990), Grossman and Helpman (1990), Rivera-Batiz and Romer (1991), Rivera-Batiz and Xie (1993). For a relatively recent survey, see López (2005).

<sup>21</sup> By only focusing on GDP per capita this framework also obscures many other dimensions of the economic and fiscal consequences of ageing such as the impacts on sectors (e.g., sectoral shifts in demand and thus in job opportunities in all major occupational groups—see Guest 2007; Fougère et al. 2007; Lürhrmann, 2005), on factor markets and remunerations (e.g., relative scarcity of labour versus capital—see Cutler et al. 1990; Poterba 2001), and on the social security systems and reforms (e.g., placing more of the pension responsibility on individuals by converting to defined-contribution approaches—see De Nardi et al. 1999). Furthermore, country-specific analyses neglect the aspects of globalization. Ignoring the rest of the world can be misleading in terms of implications for growth in living standards, labour market flows, and international capital flows, for a number of reasons. First, globalization and the rise of a huge, but relatively unskilled labour force in China and India may have significant implications for incomes in North America and Europe (Feenstra 2000; and Feenstra and Hanson 2004). Second, country-by-country demographic analysis might lead to the conclusion that greater immigration is a valuable option to offset declining fertility rates. This may not be true in a global context, where immigration is a zero-sum game. Third, there is empirical evidence that the difference in pace and magnitude of demographic changes across countries may lead to international capital flows between faster and slower ageing regions of the world. The international capital market would be able to offer better returns to saving to faster ageing countries, which other things equal, would tend to export their excess saving and run a current account surplus, while also stimulating capital-deepening and therefore growth in younger countries (see Börsch-Supan, et al. 2001; 2006; Krueger and Ludwig 2007; Fehr et al. 2004; 2005; Équipe Ingénue/Ingenu Team 2007; and Feroli 2006).

taxes are ignored. This is not true for an open economy, and this relative price ratio may be viewed as a terms of trade.

Variations in terms of trade have led to famous debates, including Bhagwati (1958)'s immiserizing growth and the Laursen-Metzler (1950) debates.<sup>22</sup> First, we argue that an “enriching decay”, the symmetric concept of “immiserizing growth”, cannot be ruled out for ageing countries (the North) and reflects the possibility that the improvement in the terms of trade (a relative increase in  $P_Q/P_{CON}$ ) of some open-oriented Northern countries might be sufficiently strong that it might outweigh the loss (or part of the loss) due to the lower ability to produce their goods, and sustain consumption per capita in the North (in terms of equation 1, the increase in the price ratio might offset (partly or totally) the fall in real output per capita resulting from population ageing). Second, and this is the Laursen-Metzler debate, any terms of trade improvement *per se* might have different effects on real consumption depending on whether the effect is perceived as transitory or permanent. If the improvement is transitory, then real consumption could remain constant while saving would increase (see equation 1), which would eventually affect the current account of the country (the Laursen-Metzler effect). In case of a permanent improvement in the terms of trade, however, real consumption would increase (the “reverse” Laursen-Metzler effect as identified by Obstfeld, 1982). Population ageing is a structural shock involving the possibility of a long-lasting improvement in the terms of trade so that most of its effect should be reflected on real consumption rather than on saving.

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<sup>22</sup> Bhagwati (1958)'s concept of “immiserizing growth” is the possibility of a decline in a country's well-being in response to its own ability to produce more of its export good. By expanding its ability to produce this good the country increases its supply of exports. This drives down the relative price of this good in the world markets. Look the other way, this causes an increase of the relative price that it must pay for its import, which lowers well-being. The *immiserizing growth* scenario reflects the possibility that the decline in the country's terms of trade is so bad that it outweighs the benefit of the extra ability to produce.

Trade policy may then play a role in the population ageing debate insofar as it might affect the magnitude of the terms of trade change. Clearly a relatively closed economy could not benefit from terms of trade improvement. But an open economy with some market power could possibly mitigate the impact of ageing by selecting younger (and fast growing) trade partners, which could result in stronger downward pressures in the consumer price index (as consumers and firms would buy more from countries whose producer price falls relatively) and thus a stronger increase in its terms of trade. The rest of the section explores the demographic argument in favour of North-South trade diversification schemes while questioning the benefits of North-North diversification schemes away from the U.S. It draws on the study by Georges, Mérette and Seçkin (2009) which uses the multi-country overlapping-generations model fully described in Mérette and Georges (2010). The model economy is made up of seven regions: North-America is disaggregated into U.S. and Canada to distinguish the impacts of ageing on a relatively closed versus an open economy. Europe is aggregated into one region (E.U.-15). Asia is disaggregated into three countries: Japan, as it represents a developed country with an already ageing population, and China and India as they are emergent countries with very different demographic projections. Remaining countries are aggregated into one region – the ROW, to close the model. The model formally introduces trade in goods between countries by using the Armington assumption of imperfectly substitutable goods. Each region in the model produces one single good which is an imperfect substitute to the good produced in any other regions. Therefore, households in each region consume a basket of all the imperfectly substitute goods produced in all regions of the world.

#### *4.2 Population ageing: Demographic projections and simulation results*

Population ageing is typically explained by a combination of factors such as declining mortality (rising life expectancy) and fertility rates. Table 2 provides the assumptions behind the “medium variant scenario” of the United Nations (UN) demographic projections in each region of the world including migrations flows. The demographic assumptions behind Table 2 can be used to project the impact on the old age dependency ratio (population 65+ as a ratio of the population 15-64) as given in Figure 5, by regions of the world, over the period 2000 to 2060. As can be seen, Japan is by far the fastest ageing country, with the elderly dependency ratio rising from 28% in 2000 to 70% by 2040. The E.U. has the second highest ratio, followed by Canada, whose elderly dependency ratio is expected to rise from 19% in 2000 to about 43% in 2040. In contrast, the U.S. has a more moderate increase in the elderly dependency ratio, which is projected to move from 19% in 2000 to 32% in 2040 in part because the U.S. has a much higher total fertility rate than in most industrialized countries. The Chinese ratio follows a quite different pattern than in the other regions of the world. In 2000, China had one of the lowest ratios (about 10%). However, the drastic fall in the fertility rate combined with net out-migration will lead to a sharp increase in the dependency ratio over the next several decades, reaching 30% in 2040 and continuing to rise. Finally, India has a relatively young population and its elderly dependency ratio is expected to rise modestly from 10% in 2000 to less than 20% in 2040.

Population ageing will lead to a reduction in labor force growth. Thus, it can be interpreted as a negative labor supply shock which reduces output. Figure 6 presents the impact of population ageing in our multi-country model on real GDP per capita over the period 2000–2060 once technological progress is factored out and therefore not included. The objective is to show the impact of population ageing, *ceteris paribus*, and not to provide forecast for GDP per capita. For ease of comparison across countries, variables will typically be normalized to 100 in

the first period (year 2000). As expected, among all regions, Japan and E.U. are the most negatively affected by population ageing, with an earlier and sharper decline in real GDP per capita. Real GDP per capita in both Japan and E.U. begins to fall at the start of the 21<sup>st</sup> century, while it continues to increase for a while in the other regions. The fall in the Japanese and E.U. GDP per capita (due to ageing) is about 15% between 2000 and 2050. Soon, North America will also be negatively affected by ageing. Indeed, real GDP per capita for Canada and the U.S. peaks in 2010 and declines thereafter. The impact of ageing on Canada is however much more pronounced with a fall of 13% between 2010 and 2050 versus 8% for the U.S. during the same period. Looking at the other side of the ageing spectrum, India has a relatively young population and strongly benefits from the demographic changes as its real GDP per capita increases until 2030 and then stabilizes thereafter at that level. Finally, the impact of ageing in China is stunning. The Chinese economy has an abundant workforce at the turn of the 21<sup>st</sup> century, and this contributes to raise real GDP per capita until 2010. Eventually however, as the demographic shock in China due to the one-child policy starts to kick off, the supply of labor falls and contributes to lower real GDP per capita. By 2050, the fall in real GDP per capita (of close to 18% with respect to 2010) is even stronger than the one Japan is likely to experience. Recall that technological progress has been factored out so that these paths should not be viewed as a forecast of GDP per capita. However, in policy terms, these paths mirror the efforts that some countries will have to pursue in terms of, say, technological progress and catch up, if they want to offset the negative impacts of population ageing on their economy.

Although the fall in GDP per capita should contribute to lower consumption per capita, globalization through international trade should help sustaining consumption in most OECD countries through favorable terms of trade effects. If, for demographic reasons, the relative

supply of a country's good shrinks with respect to the other countries' supply, then the relative price of its good should increase and older (younger) than average countries should see an improvement (deterioration) in their terms of trade (see Table 3 which gives the ratio of the world price of a country's exports over a trade weighted price of its imports). An improvement in the terms of trade means that countries can import more than before, for unchanged real export, so that *ceteris paribus*, their real consumption can increase. Thus, in an open economy context where households consume a diversified basket of goods originating from several regions of the world and which are considered imperfect substitutes, real consumption per capita is not likely to fall as much as it would in either a closed-economy or a one-good world-economy context.<sup>23</sup>

Globalization permits consumers of all countries to access a geographically more diversified basket of goods and to increase the foreign component of their basket. Figure 7 illustrates that older and more "open" countries benefit from consuming a larger share of those goods produced by younger countries and whose price did fall relatively. Real consumption per capita in Japan tends to fall because of the strong fall in GDP per capita (Figure 6). Although Japan could potentially benefit from a strong appreciation in its terms of trade, it does not materialize because it is a relatively "closed" economy. In contrast, the much more open economies of E.U. and Canada strongly benefit from the terms of trade appreciation. Indeed, this effect more than offsets the GDP per capita effect of Figure 6 and real consumption per capita continues to increase up to 2020, after which it declines until 2050 by roughly 3% for Canada. Notice that in North-America, the relative performance between the economies of the U.S. and Canada is reversed. While in terms of GDP per capita, the U.S. is doing better, Canada's per capita consumption, thanks to its more open economy, does not fall below its 2010

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<sup>23</sup> Most of the multi-country OLG literature discusses a "one-good" world and therefore cannot capture this terms of trade effect. However, in our model, the goods produced are assumed to be imperfectly substitutable across countries (the Armington assumption) and the price-elasticity of demand for a country's good is not infinite.

level for most of the 21<sup>st</sup> century, whereas the U.S. will be below its 2010 level for most of the century.

India gets a strong boost in real consumption per capita, despite terms of trade deterioration, due to a strong positive GDP per capita effect. This effect is itself stimulated by capital deepening in India through foreign borrowing and current account deficits.<sup>24</sup> The case of China is again striking, especially when observing the diametrically opposite directions taken by China and India's real consumption paths from 2000 on. For China, both GDP and terms of trade effects contribute to reinforce the negative impact on real consumption per capita. Indeed, the timing of the one-child policy makes the Chinese economy both a (still) relatively young country with respect to OECD countries but an old one with respect to India and other parts of the world. Being caught between younger and older countries, the Chinese economy does not benefit from terms of trade appreciation occurring to the older, more open, OECD countries, nor does it strongly benefit from capital deepening through net foreign capital inflows.<sup>25</sup>

#### *4.3 Trade diversification away from the U.S.*

Figure 8 shows how Canada would gain or lose in terms of real consumption per capita if it was diversifying its trade away from the U.S. in favour of specific trade partners. For these experiments, we reduce the U.S. share in total Canadian import by 10% points while successively increasing the share of other partners as shown in Table 4. The change in shares is implemented permanently, but incrementally, by 2.5% points every ten-year over a forty-year period, starting in 2020 until the full change is achieved in 2050.<sup>26</sup>

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<sup>24</sup> See Mérette and Georges (2010) for further details.

<sup>25</sup> This analysis is pursued further in Mérette and Georges (2010).

<sup>26</sup> From a modeling perspective this shock is implemented by exogenously changing the share parameters in the Armington-based import demand functions. The 10 % point change in the U.S. share of total Canadian import appears quite realistic given the pattern shown in Figure 1.

Our results indicate that relative to the benchmark case of strong dependence of Canada's trade on the U.S. economy, Canadians would benefit from a diversification scheme with India, and to a lower degree with China, but would lose from a diversification scheme with E.U. or with Japan ("overlapping" paths for real consumption per capita in Figure 8). For example, if Canadian firms and consumers were increasing the share of Indian goods in their import by 10 % points, this would be enough to offset the negative impact of ageing by propping-up the real consumption per capita along a slowly upward-sloping path above its 2020 level. Therefore, between 2020 and 2050, real consumption per capita in Canada would increase by about 1.9% instead of falling by 2.8%. Hence, real consumption per capita would be roughly 4.7% above its benchmark level in 2050 if this diversification scheme was introduced. Other diversification schemes do not provide such benefits. In particular, diversification with E.U. or Japan would accentuate the loss of welfare that is expected due to population ageing. Diversifying to E.U. instead of India would cost Canadians roughly 6% of real consumption by 2050.

Figure 9 shows the results for both North-North and North-South diversification schemes. In the North-North diversification away from the U.S., the share of Japanese and E.U. goods increases each by 5% points in total Canadian import (while the U.S. share falls by 10% points). The North-South diversification scheme represents a weighted average of the previous diversification schemes to China, India, and the ROW – the 10% points share increase is spread equally between China, India, and the ROW. The ROW is a composite of all remaining countries/regions of the world, such as Russia, Africa, Brazil and South-America, Oceania, Arabic countries, Turkey and Turkic countries. Figure 9 illustrates that, according to our simulations, North-South diversification schemes may improve Canadian welfare by propping up real consumption per capita, whereas North-North diversification schemes away from the U.S.

would amplify the expected burden associated with population ageing in Canada. The choice of diversifying to the North (Europe and Japan) instead of the South (China, India, and ROW) would cost Canadians roughly 5% of real consumption by 2050.

#### 4.4 Caveats

For our first caveat, much related to the tactical issue of *how* to diversify trade away, we need to be very explicit about what our modeling exercise does and does not do. In this section, our focus is on the welfare impact of an exogenous change in trade shares that would diversify our trade pattern away from the U.S., and not on the mechanism that might lead to a change in these shares. However, the size, composition, and direction of trade flows result from the decisions of millions of private producers and consumers. These decisions may be influenced by government policy, but large and rapid shift of trade shares might require draconian policy measures.<sup>27</sup> As mentioned in the Introduction, Diefenbaker announced in 1957 that Canada would switch 15 percent of its trade from the United States to Great Britain. At the time, as stated by Hart (2002), it would have required a doubling of U.K. exports to Canada, a willingness by Canadians to shun the many desirable goods they were buying from the U.S. while substituting less desirable goods from the U.K., and a capacity by U.K. customers to absorb twice the value of Canadian shipments they were purchasing. Of course, this policy was rather naïve and blurred by nostalgia of Canada's historic ties to Britain and by a lack of appreciation of the extent to which commercial ties with U.K. customers and suppliers had been severed and new ones with the United States put in place. Fearing that our study be compared to

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<sup>27</sup> It is clear that there is and will always be an asymmetry in a regional agreement between Canada and the U.S. Transposing Hirschman's case study (1945) of Germany and Bulgaria to the U.S. and Canada, for the U.S., trade with Canada represents roughly 16% of its total trade for both import and export while it represent about 61% and 75% of Canada's total imports and exports, respectively. It would be much more difficult for Canada to shift trade with the U.S. to other countries than it would be for the U.S. to replace Canada as a selling market and a source of supplies.

that naïve policy impromptu, we stress the importance of supplementing our analysis by (CGE) studies of policies and institutions that might cause endogenous changes in trade shares, whether multilateral or bilateral trade negotiations, or less formal trade missions (although, as pointed out by Head and Ries 2007, Canada’s trade missions appear to have no significant effect on bilateral trade with the visited country).

There is a related but more subtle issue as to whether we should even consider changing exogenously the benchmark shares of the model. Indeed, those shares are presumably already optimally chosen based on the exogenous variables and parameters in the model and if we change those shares we change the utility function parameters so that we cannot make meaningful welfare comparison.<sup>28</sup> However, initial shares might not be optimal at all (i.e., the economy is not necessarily at a “tangency point”). Existing trade shares reflect all sort of distortions in the economy and social capital (trust, networks) or lack thereof may still prevent Canada from establishing deep economic ties with India, China, or Brazil, which is another reason why building international social capital by establishing closer “non-economic” relationships with these countries is so relevant, even prior to developing further trade.

Another caveat is the reliance of our model on the Armington (1969) trade structure which assumes imperfect substitution between goods of different geographical origins, so that the law of one price does not hold in the form given by the Heckscher-Ohlin (H-O) model. This assumption, typically used in large scale computable models to generate the observed intra-sectoral trade flows between countries, implies that each country has market power and faces a downward-sloping (foreign) demand curve for its product (i.e., its price elasticity is not

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<sup>28</sup> As a referee nicely puts it, “if people could be made to like water better than wine, then welfare would go up since water is cheaper to produce than wine. But if the utility function can be changed at will, then any level of welfare is attainable”. Note however, that we report pre and post real aggregate consumption levels, not a welfare level per se (which, in an OLG model, is cohort-based).

infinite).<sup>29</sup> Compared to the H-O model where small shocks can cause production of goods in a country to appear or disappear through comparative advantage adjustment, here quantity adjustment by producers to diverse shocks is somewhat muted by the lack of direct competition between regional producers, while terms of trade effects are greater as larger price changes are necessary to clear markets.<sup>30</sup> Multi-sectoral analyses are however needed, where the Armington assumption could be relaxed depending on the nature of the goods (i.e., differentiated manufactured goods versus homogenous primary goods that would follow the law of one price).

Strictly speaking, there is no small country in a global model in the sense that all countries influence international prices to some extent, and the Armington assumption amplifies this phenomenon by giving some market power to small countries such as Canada. However, before throwing the baby out with the bath water, we should also reflect on the idea that Canada often “shadows” the U.S. policies. In this perspective a North-South trade diversification scheme might be a continental strategy (with market power) where Canada seeks FTAs with South countries that also seek FTAs with the U.S. Nevertheless, if Northern countries might benefit from North-South trade diversification, Southern countries might also want to consider the alternative of South-South trade diversification which would neutralize the terms of trade deterioration that the South may experienced with the North. South countries might theoretically benefit from the net foreign capital flows resulting from the saving of prime savers (in expectation of retirement) in the North, which can finance capital formation and develop further growth in the South.<sup>31</sup> How much of this extra growth may lead to stronger terms of trade

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<sup>29</sup> See Lloyd and Zhang (2006) and Zhang (2006) for papers on the effects of the Armington assumption.

<sup>30</sup> In a sense this assumption also puts us in the ideal position to simulate effects tending towards “enriching decay”/ “immiserising growth” and this is further reinforced by the assumption that each country in our model produces only one good so that variation in population growth will always affect (i.e., be biased toward) the production of the only good we export.

<sup>31</sup> See Mérette and Georges for such an analysis.

deterioration, partly offsetting South's well-being, remains to be analyzed in details. However, recent declines in terms of trade due to growth have been observed by Acemoglu and Ventura (2002) and others.

## **5. Conclusion**

We believe that free (or more correctly, preferential) trade agreements and their proliferation – a phenomenon referred to as the “spaghetti bowl” of FTAs, are termites in the trading system that undermine free trade (Bhagwati 2008), and have also become a way for the U.S. and the E.U. to impose all sorts of trade unrelated issues, cynically called “trade-related” issues in trade treaties, and often presented as if they were made for altruistic reasons aimed at benefiting foreign workers, even if they mask self-interest and a new form of protectionism. Multilateral negotiations at the WTO, because they avoid quests for preferential access, remain the best trade strategy for countries to take advantage of the international division of labor.<sup>32</sup> By eliminating or mitigating trade preferences and their distortions, the WTO trade liberalization scenario is a strategy that permits to diversify trade partners and as such should be embraced by those who advocate trade diversification away from the U.S. Given the political impasse at the WTO, however, our study examines and provides new evidence for potential gains of switching from NAFTA to a Customs Union with the U.S. The main benefit of a North American CU would be the elimination of NAFTA rules of origin. The project is politically and technically complex – liberalizing ROO is not unlike removing the sauce from the “FTA spaghetti bowl”, an arguably difficult task – but it is feasible. The benefit, although not necessarily huge, is not insignificant, and, surprising as it might be, it can even generate some diversification in trade partners for Canada.

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<sup>32</sup> Furthermore, despite TRIPs precedent at the WTO, weaker countries could better resist the pressures of the U.S. and E.U. by the sheer force of their numbers.

Although trade preferences can be obtained through costly and lengthy FTAs negotiations, they vanish when other countries eventually receive the same preferences. In the current FTA race embraced by most countries, however, there may be pro-competitive reasons for Canada to keep pace because major Canadian exporters stand to lose sales otherwise (Fried 2007). It is in this sole context that we suggest Canada to also consider a North-South trade diversification scheme. In determining which countries to engage in bilateral trade promotion, Canada should embrace relatively youthful and faster-growing trade partners (e.g., India, Brazil, China, and of course the U.S. and Mexico) and avoid ageing and slower-growing countries (E.U. and Japan).

Many relevant dimensions of trade policy are not treated in this paper, including security issues post 9/11 and their effects on trade and foreign direct investment flows between Canada and the U.S. For this debate, see Georges, Mérette, and Zhang (2011).

## References

- Acemoglu, D., and J. Ventura. 2002. "The World Income Distribution." *Quarterly Journal of Economics* 117: 659-94.
- Armington, P.S. 1969. "A Theory of Demand for Products Distinguished by Place of Production." *IMF Staff Papers* 16: 159-76.
- Auerbach, A., and L. Kotlikoff. 1987. *Dynamic Fiscal Policy*. Cambridge, England: Cambridge University Press.
- Augier, P., Gasiorek, M., and C. Lai-Tong. 2005. "The Impact of Rules of Origin on Trade Flows?" *Economic Policy*: 567-624.
- Baldwin, R. 2009. "Integration of the North American Economy and New-Paradigm Globalization." Policy Research Initiative, WP series 049.
- Baldwin, R., and P. Thornton. 2008. *Multilateralising Regionalism. Ideas for a WTO Action Plan on Regionalism*. NCCR, The Graduate Institute, Geneva, and CEPR.
- Banerjee, R., and W.B.P. Robson. 2009. "Faster, Younger, Richer? The Fond Hope and Sobering Reality of Immigration's Impact on Canada's Demographic and Economic Future." C.D. Howe Institute Commentary, No. 291.
- Beaulieu, E., and H. Emery. 2006. "Stay the Course or Find a New Path? Canada's Reliance on the U.S. as an Export Market." In *Nafta @10*, edited by J. Curtis and A. Sydor. DFAIT, Ottawa.

- Bery, S., B. Bosworth, and A. Panagariya. 2005. (Eds.), *The India Policy Forum 2004*. Washington, D.C.: The Brookings Institution.
- Bhagwati, J. 1958. "Immiserizing Growth: A Geometrical Note", *Review of Economic Studies* 25 (3): 201-05.
- Bhagwati, J. 2008. *Termites in the Trading Systems – How Preferential Agreements Undermine Free Trade*. (Oxford: Oxford University Press).
- Bhagwati, J., and V.K. Ramaswami. 1963. "Domestic Distortions, Tariffs, and the Theory of Optimum Subsidy." *Journal of Political Economy* 71 (1): 44–50.
- Börsch-Supan, A., A. Ludwig, and J. Winter. 2006. "Aging, Pension Reform and Capital Flows: A Multi-Country Simulation Model." *Economica* 73: 625-58.
- Cadot, O., A. Estevadeordal, and A. Suwa-Eisenmann. 2006. "Rules of Origin as Export Subsidies." In *The Origin of Goods: Rules of Origin in Regional Trade Agreements*, edited by O. Cadot, A. Estevadeordal, A. Suwa-Eisenmann and T. Verdier. Oxford: Oxford University Press.
- Cadot, O., C. Carrère, M. Kukenova, and V. Stauss-Kahn. 2010. "OECD Imports – Diversification and Quality Search." World Bank Policy Research Working Paper WPS5285.
- Carrère, C., and J. de Melo. 2004. "Are Differential Rules of Origin Equally Costly? Estimates from NAFTA." CEPR Discussion Paper Series No. 4437 (London).
- Cornejo, R., and J. Harris. 2007. "Convergence in the Rules of Origin Spaghetti Bowl: A Methodological Proposal." INTAL-INT Working Paper No. 34 (Inter-American Development Bank).
- Cutler, D.M., J.M. Poterba, L.M. Sheiner, and L.H. Summers. 1990. "An Ageing Society: Opportunity or Challenge?" *Brookings Papers on Economic Activity* 1: 1-73.
- De Nardi, M., S. Imrohorglu, and T.J. Sargent. 1999. "Projected U.S. Demographics and Social Security." *Review of Economic Dynamics* 2 (3): 575-615.
- Destler, I.M. 2006. "Rules of Origin and US Trade Policy." In *The Origin of Goods: Rules of Origin in Regional Trade Agreements*, edited by O. Cadot, A. Estevadeordal, A. Suwa-Eisenmann and T. Verdier. Oxford: Oxford University Press.
- Dimaranan, B., and R. McDougall. 2005. (Editors), *Global Trade, Assistance, and Production: The GTAP-6 Data base*. Center for Global Trade Analysis, Purdue University, West Lafayette, Indiana.
- Dobson, W. 2002. "Shaping the Future of the North American Economic Space." C.D. Howe Institute Commentary No. 162.
- Dobson, W. 2006. "The Indian Elephant Sheds its Past." C.D. Howe Institute Commentary No. 235.
- Équipe Ingénue/Ingénue Team. 2007. "Asian Catch Up, World Growth and International Capital Flows in the XXI<sup>st</sup> Century: A Prospective Analysis with the INGENUE 2 Model." CEPII Working Paper no. 2007-01.
- Estevadeordal, A. 2000. "Negotiating Preferential Market Access – The Case of the North American Free Trade Agreement." *Journal of World Trade* 34 (1): 141-66.
- Estevadeordal, A., J. Harris, and K. Suominen. 2008. "Multilateralizing Preferential Rules of Origin." In *Gatekeepers of Global Commerce: Rules of Origin and International Economic Integration*, edited by A. Estevadeordal and K. Suominen. Washington, DC: Inter-American Development Bank.

- Estevadeordal, A., J.E. López-Córdova, and K. Suominen. 2008. "How do Rules of Origin Affect Investment Flows? Some Hypotheses and the Case of Mexico." In *Gatekeepers of Global Commerce: Rules of Origin and International Economic Integration*, edited by A. Estevadeordal and K. Suominen. Washington, DC: Inter-American Development Bank.
- Estevadeordal, A., and K. Suominen. 2006. "Mapping and Measuring Rules of Origin Around the World." In *The Origin of Goods: Rules of Origin in Regional Trade Agreements*, edited by O. Cadot, A. Estevadeordal, A. Suwa-Eisenmann and T. Verdier. Oxford: Oxford University Press.
- Estevadeordal, A., and K. Suominen. 2008. "What are the Trade Effects of Rules of Origin?" In *Gatekeepers of Global Commerce: Rules of Origin and International Economic Integration*, edited by A. Estevadeordal and K. Suominen. Washington, DC: Inter-American Development Bank.
- European Commission. 2010. "A Trade Sustainability Impact Assessment (SIA) relating to the Negotiation of a Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada." Draft Inception Report, commissioned and financed by the European Commission. <http://www.eucanada-sia.org/>.
- Falvey, R., and G. Reed. 2002 "Rules of Origin as Commercial Policy Instruments." *International Economic Review* 43 (2): 393-407.
- Feenstra, R.C. 2000. (Editor), *The Impact of International Trade and Wages*. University of Chicago Press/NBER.
- Feenstra, R.C., and G.H. Hanson. 2004. "Global Production Sharing and Rising Inequality: A Survey of Trade and Wages." In *Handbook of International Trade*, volume I, edited by E.K. Choi and J. Harrigan. Oxford, England: Blackwell.
- Fehr, H., S. Jokisch, and L. Kotlikoff. 2005. "Will China Eat our Lunch or Take us out to Dinner? Simulating the Transition Paths of the U.S., EU, Japan and China." NBER Working Paper No. 11668.
- Feroli, M. 2003. "Capital Flows Among the G-7 Nations: A Demographic Perspective." Mimeo, Federal Reserve Board, Division of Research and Statistics.
- Feroli, M. 2006. "Demography and the U.S. Current Account Deficit." *The North American Journal of Economics and Finance* 17: 1-16.
- Foot, D.K. 2007. "Some Economic and Social Consequences of Population Ageing." In *A Canadian Priorities Agenda*, edited by J. Leonard, C. Ragan, and F. St-Hilaire. Montreal: The Institute for Research on Public Policy.
- Fougère, M., S. Harvey, M. Mérette, and F. Poitras. 2005. "Ageing Population and Immigration in Canada: Economic, Labour Market and Regional Implications." Industry Canada Working Paper no: 2005 A-05., [http://www.ic.gc.ca/epic/site/eas-aes.nsf/en/h\\_ra01877e.html](http://www.ic.gc.ca/epic/site/eas-aes.nsf/en/h_ra01877e.html).
- Fougère, M., J. Mercenier, and M. Mérette. 2007. "A Sectoral and Occupational Analysis of Population Ageing in Canada Using a Dynamic CGE Overlapping Generations Model." *Economic Modelling* 24 (2): 690-711.
- Fried, J. 2007. "Constructing Constructive Engagement." In *A Canadian Priorities Agenda*, edited by J. Leonard, C. Ragan, and F. St-Hilaire. Montreal: The Institute for Research on Public Policy.
- Gao, H., and L. Chin Leng. 2010. "Saving the WTO from the Risk of Irrelevance: The WTO Dispute Settlement Mechanism as a "Common Good" for RTA Disputes." In *Redesigning*

- the World Trade Organization for the Twenty-First Century*, edited by D.P. Steger. Waterloo and Ottawa: CIGI, IDRC and Wilfrid Laurier University Press.
- Gasiorek, M., P. Augier, and C. Lai-Tong. 2007. "Multilateralising Regionalism: Relaxing Rules of Origin or Can Those PECS be Flexed?" Paper presented at the Conference on Multilateralising Regionalism, 10-12 September, Geneva, Switzerland.
- Georges, P. 2008a. "Liberalizing NAFTA Rules of Origin: A Dynamic CGE Analysis." *Review of International Economics* 16 (4): 672-86.
- Georges, P. 2008b. "Toward a North American Customs Union: Rules of Origin Liberalization Matters More than a Common External Tariff for Canada." *North American Journal of Economics and Finance* 19: 304-18.
- Georges, P. 2010. "Dispensing with NAFTA Rules of Origin? – Some Policy Options." Forthcoming, *The World Economy*.
- Georges, P., M. Mérette, and A. Seçkin. 2009. "Should Canada Diversify its Trade Pattern? An Overlapping-Generations CGE Analysis of Trade and Ageing." Working paper 2009-06, University of Ottawa.
- Georges, P and M. Mérette, 2010. "Canada's Strategic Trade Policy Options. Deeper Continental Integration or Diversification?" IRPP study No11.
- Georges, P, M. Mérette, and Q. Zhang (2011). "Toward a North American Security Perimeter? Assessing the Trade and FDI Impacts of Liberalizing 9/11 Security Measures, mimeo, University of Ottawa.
- Ghosh, M., and S. Rao. 2005. "A Canada-U.S. Customs Union: Potential Economic Impacts in NAFTA countries." *Journal of Policy Modeling* 27: 805-27.
- Goldfarb, D. 2003. "The Road to a Canada-U.S. Customs Union: Step-by-Step or in a Single Bound?" C.D. Howe Institute Commentary No. 184.
- Goldfarb, D. 2006. "Too Many Eggs in One Basket?" C.D. Howe Institute Commentary No. 236.
- Grossman, G.M., and Helpman, E. 1990. "Comparative Advantage and Long-Run Growth." *American Economic Review* 80: 796-815.
- Guest, R. 2007. "Innovations in the Macroeconomic Modelling of Population Ageing." *Economic Modelling* 24: 101-119.
- Harris, R. 2003. *North American Linkage: Opportunities and Challenges for Canada*. Calgary, AB: Calgary University Press.
- Hart, M. 2002. *A Trading Nation – Canadian Trade Policy from Colonialism to Globalization*. UBC Press, Vancouver.
- Hart, M. 2007. "Canadian Engagement in the Global Economy." In *A Canadian Priorities Agenda*, edited by J. Leonard, C. Ragan, and F. St-Hilaire. Montreal: The Institute for Research on Public Policy.
- Head, K. 2007. "Engage the United States, Forget the Rest?" In *A Canadian Priorities Agenda*, edited by J. Leonard, C. Ragan, and F. St-Hilaire. Montreal: The Institute for Research on Public Policy.
- Head, K., and J. Ries. 2007. "Do Trade Missions Increase Trade?" Sauder School of Business Working Paper, University of British Columbia, Vancouver.
- Heidrich, P., and D. Tussie. 2010. "Regional Trade Agreements and the WTO: The Gyrating Wheels of Interdependence." In *Redesigning the World Trade Organization for the Twenty-First Century*, edited by D.P. Steger. Waterloo and Ottawa: CIGI, IDRC and Wilfrid Laurier University Press.

- Helliwell, J. 2002. *Globalisation and Well-Being*. UBC Press, Vancouver, British Columbia.
- Higgins, M. 1998. "Demography, National Savings, and International Capital Flows." *International Economic Review* 39 (2): 343-69.
- Hirsch, M. 2002. "International Trade Law, Political Economy and Rules of Origin: A Plea for a Reform of the WTO Regime on Rules of Origin." *Journal of World Trade* 36 (2): 171-88.
- Hirschman, A.O. 1945. *National Power and the Structure of Foreign Trade*. University of California Press, Berkeley and Los Angeles, second printing 1969.
- Krishna, K. 2005. "Understanding Rules of Origin." NBER Working Paper No. 11150.
- Krishna, K., and A. Krueger. 1995. "Implementing Free Trade Areas: Rules of Origin and Hidden Protection." NBER Working Paper No. 4983.
- Krueger, A. 1993. "Free Trade Agreements as Protectionist Devices: Rules of Origin." NBER Working Paper No. 4352.
- Krueger, A. 1995. "Free Trade Agreements versus Customs Unions." NBER Working Paper No. 5084.
- Krueger, D., and A. Ludwig. 2007. "On the Consequences of Demographic Change for Rates of Returns to Capital, and the Distribution of Wealth and Welfare." *Journal of Monetary Economics* 54: 49-87.
- Krugman, P.R. 1993. "What Do Undergrads Need to Know About Trade." AEA Papers and Proceedings, *American Economic Review*: 23-26.
- Krugman, P.R. 1996. "A Country is not a Company." *Harvard Business Review*, January-February: pp. 40-50.
- Krugman, P.R. 1997. "What Should Trade Negotiators Negotiate About?" *Journal of Economic Literature* 35: 113-120.
- Kunimoto, R., and G. Sawchuk. 2005. "NAFTA Rules of Origin." Discussion Paper, Policy Research Initiative, Ottawa.
- Laursen, S., and L.A. Metzler. 1950. "Flexible Exchange Rates and the Theory of Employment." *The Review of Economics and Statistics* 32: 281-99.
- Lloyd, P.J. 1993. "A Tariff Substitute for Rules of Origin in Free Trade Areas." *The World Economy* 16: 699-712.
- Lloyd, P.J. 2002. "Country of Origin in the Global Economy." *World Trade Review*, 1 (2): 171-185.
- Lloyd P.J., and X.G. Zhang. 2006. "The Armington Model." *Staff Working Paper*, Productivity Commission, Melbourne.
- López, R.A. 2005. "Trade and Growth: Reconciling the Macroeconomic and Microeconomic Evidence." *Journal of Economic Surveys* 19 (4): 623-648.
- Lopez-de Silanes, F., J.R. Markusen, and T. Rutherford. 1996. "Trade Policy Subtleties with Multinational Firms." *European Economic Review*, 40: 1605-27.
- Lührmann, M. 2005. "Population Ageing and the Demand for Goods and Services." MEA discussion paper, series 05095, University of Mannheim.
- Mandel-Campbell, A. 2008. "Foreign Investment Review Regimes: How Canada Stacks Up." The Conference Board of Canada Report on Trade, Investment Policy and International Cooperation, April.
- Meilke, K., J. Rude and S. Zahniser. 2008. "Is 'NAFTA Plus' an Option in the North American Agrifood Sector?" *The World Economy*: 925-46.

- Mérette, M. and P. Georges. 2010. "Demographic Changes and the Gains from Globalisation: An Analysis of Ageing, Capital flows, and International Trade." *Global Economy Journal*, forthcoming.
- Obstfeld, M. 1982. "Aggregate Spending and The Terms of Trade: Is There a Laursen-Metzler Effect?" *Quarterly Journal of Economics* 97 (2): 251-70.
- Panagariya, A. 2006. "Transforming India." Paper presented at the conference "India: An Emerging Giant", October 13-15, Columbia University.
- Pastor, R. 2008. "The Future of North America. Replacing a Bad Neighbour Policy." *Foreign Affairs* 87 (4): 84-98.
- Poterba, J.M. 2001. "Demographic Structure and Assets Returns." *Review of Economics and Statistics* 83: 565-84.
- Rivera-Batiz, L.A., and P.M. Romer. 1991. "Economic Integration and Endogenous Growth." *Quarterly Journal of Economics* 106 (2): 531-555.
- Rivera-Batiz, L.A., and D. Xie. 1993. "GATT, Trade and Growth." *American Economic Review papers and proceedings* 82 (2): 422-427.
- Robson, W. 2007. "Stuck on a Spoke: Proliferating Bilateral Trade Deals are a Dangerous Game for Canada." C.D. Howe Institute e-Brief.
- Romer, P.M. 1990. "Endogenous Technological Change." *Journal of Political Economy* 98 (5) Part II: S71-102.
- Thoening, M., and T. Verdier. 2006. "Rules of Origin: IO Perspectives." In *The Origin of Goods: Rules of Origin in Regional Trade Agreements*, edited by O. Cadot, A. Estevadeordal, A. Suwa-Eisenmann and T. Verdier. Oxford: Oxford University Press.
- United Nations Population Division. 2008. World Population Prospects: The 2006 Revision. <http://esa.un.org/unpp>.
- Viner, J. 1950. *The Customs Union Issue*. New York: The Carnegie Endowment for International Peace.
- Zhang X.G. 2006. "Armington Elasticities and Terms of Trade Effects in Global CGE models." Staff Working Paper, Productivity Commission, Melbourne.

**Table 1. NAGOS®: The North American game of Scrabble – “Spelling new acronyms that purport to be initiatives”\***

					N				
			F		A				
		N	A	E	C				
			S		C	T	P	A	T
I	B	E	T	S				C	
				P	4	P		E	
		P	I	P					

\*Note on Acronyms:

*SPP* (Security and Prosperity Partnership of North America),

*NAEC* (North American Economic Community),

*PAP* (Partnership for Prosperity),

*FAST* (Free and Secure Trade),

*PIP* (Partners in Protection),

*C-TPAT* (Customs-Trade Partnerships against Terrorism),

*IBETS* (Integrated Border Enforcement Teams),

*ACE* (Automated Commercial Environment),

*NACC* (North American Competitiveness Council).

**Table 2. Total fertility rate, life-expectancy at birth and net migration by regions**

Countries/Regions	2005- 2010	2015-2020	2025-2030	2035-2040	2045-2050
Canada					
Total fertility rate	1.53	1.55	1.65	1.75	1.85
Life-expectancy at birth	80.7	82.0	83.2	84.2	85.3
Net Migration (thousands)	200	200	200	200	200
USA					
Total fertility rate	2.05	1.94	1.85	1.85	1.85
Life-expectancy at birth	78.2	79.5	80.7	81.8	83.1
Net Migration (thousands)	1199	1100	1100	1100	1100
EU					
Total fertility rate	1.45	1.52	1.61	1.69	1.76
Life-expectancy at birth	74.6	76.4	78.2	79.7	81
Net Migration (thousands)	951	792	808	808	808
Japan					
Total fertility rate	1.27	1.30	1.40	1.50	1.60
Life-expectancy at birth	82.6	84.2	85.2	86.1	87.1
Net Migration (thousands)	54	54	54	54	54
China					
Total fertility rate	1.73	1.83	1.85	1.85	1.85
Life-expectancy at birth	73	74.9	76.6	78.1	79.3
Net Migration (thousands)	-350	-345	-320	-320	-320
India					
Total fertility rate	2.81	2.32	1.97	1.85	1.85
Life-expectancy at birth	64.7	68.4	71.4	73.7	75.6
Net Migration (thousands)	-250	-240	-240	-240	-240

Source: UN Population Division, World Population Prospects: The 2006 Revision, Medium Variant Scenario.

**Table 3. Terms of trade (TOT) and ratio  $P_Q/P_{CON}$  (Year 2000 = 100)**

	TOT*							$P_Q/P_{CON}$ *					
	2010	2020	2030	2040	2050	2060		2010	2020	2030	2040	2050	2060
<b>CAN</b>	102.1	105.3	109.5	113.9	117.3	118.9	<b>CAN</b>	100.4	101.1	101.9	102.9	103.6	103.9
<b>USA</b>	103.1	106.5	109.6	111.9	113.3	113.9	<b>USA</b>	100.3	100.5	100.8	101.0	101.1	101.1
<b>EUR</b>	109.1	119.6	130.5	140.4	148.6	153.7	<b>EUR</b>	101.1	102.5	104.0	105.3	106.5	107.2
<b>JPN</b>	109.3	119.1	129.6	139.9	148.3	155.1	<b>JPN</b>	100.8	101.6	102.5	103.5	104.3	104.9
<b>CHN</b>	101.4	104.2	108.5	114.0	120.0	125.0	<b>CHN</b>	100.1	100.3	100.7	101.2	101.7	102.2
<b>IND</b>	95.1	90.6	86.7	83.8	81.8	80.6	<b>IND</b>	99.7	99.5	99.3	99.1	99.0	98.9
<b>ROW</b>	91.7	84.0	77.4	72.3	68.6	66.4	<b>ROW</b>	99.4	98.9	98.4	98.1	97.9	97.7

Source: Georges and Mérette (2010).

\*Note: TOT is the terms of trade defined as the (international) price of the domestically produced (and exported) good divided by an average of the price of imports.  $P_Q/P_{CON}$  is the (international) price of the domestically produced (and exported) good divided by the consumer price index (an average of the price of goods purchased by domestic residents, i.e., domestically produced goods and imports).

**Table 4. Current and counterfactual country shares in Canada's import**

	Benchmark import shares*	Diversifying to EU	Diversifying to Japan	Diversifying to China	Diversifying to India	Diversifying to ROW
<b>CAN</b>	0.0	0.0	0.0	0.0	0.0	0.0
<b>USA</b>	60.8	50.8	50.8	50.8	50.8	50.8
<b>EU</b>	15.3	25.3	15.3	15.3	15.3	15.3
<b>JPN</b>	3.9	3.9	13.9	3.9	3.9	3.9
<b>CHN</b>	3.7	3.7	3.7	13.7	3.7	3.7
<b>IND</b>	0.5	0.5	0.5	0.5	10.5	0.5
<b>ROW</b>	15.8	15.8	15.8	15.8	15.8	25.8
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0

Source: Georges, Mérette and Seçkin (2009).

\*Note: Benchmark based on the GTAP 6 database (Dimaranan, B. and R. McDougall, 2005).

**Table 5. Free trade agreements**

Agreements Partners	Announced and "In force" dates
Canada-US FTA	12-Oct-1987 ( <i>superseded by NAFTA, which includes Mexico</i> )
North American FTA	01-Jan-1994
Canada-Israel	01-Jan-1997
Canada-Chile	05-Jul-1997
Canada-Costa Rica	Announced: August 2001; 01-Nov-2002
Canada-EFTA (European FTA)	Announced: October 9, 1998; 26-Jan-2008
Canada-Peru	Announced: June 7, 2007; 29-May-2008
Canada-Columbia FTA	Announced: June 7, 2007; 21-Nov-2008

Source: Foreign Affairs and International Trade Canada.

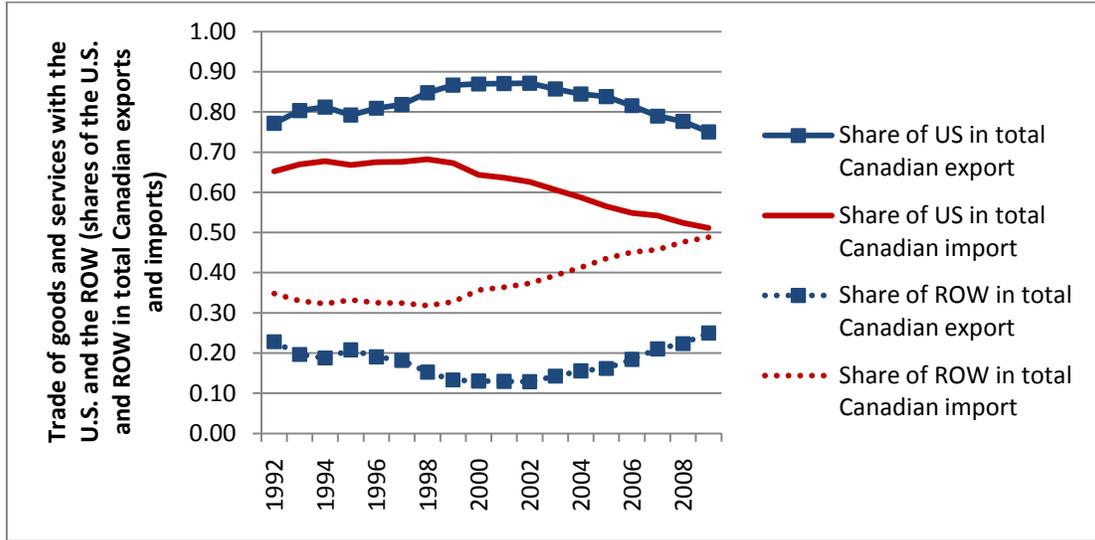
**Table 6. FTA bilateral trade negotiations**

Canada-Panama	Announced: May 6-7, 2008; Inaugural trade negotiations: October 27-31, 2008
Canada-Dominican Republic	Announced: June 7, 2007; Inaugural trade negotiations: December 10-14, 2007
Canada-Central America-4 (El Salvador, Guatemala, Honduras and Nicaragua – the CA-4)	Inaugural trade negotiations: November 21, 2001; Renewed formal negotiations: February 23-27, 2009
Canada-Caribbean Community (CARICOM*)	Announced: July 19, 2007; Inaugural meeting of trade negotiators: October 18, 2007
FTAA: Free Trade Area of the Americas	Call for early resumption of FTAA negotiations: November 4-5, 2005
Canada-EU Comprehensive Economic and Trade Agreement (CETA)	Announced: October 17, 2008; Inaugural trade negotiations: May 6, 2009
Korea	Announced: November 19, 2004; Inaugural trade negotiations: July 15, 2005
Singapore	Announced: October 21, 2001; Inaugural trade negotiations: January 2002
Jordan	Negotiation concluded: August 25, 2008

Source: Foreign Affairs and International Trade Canada.

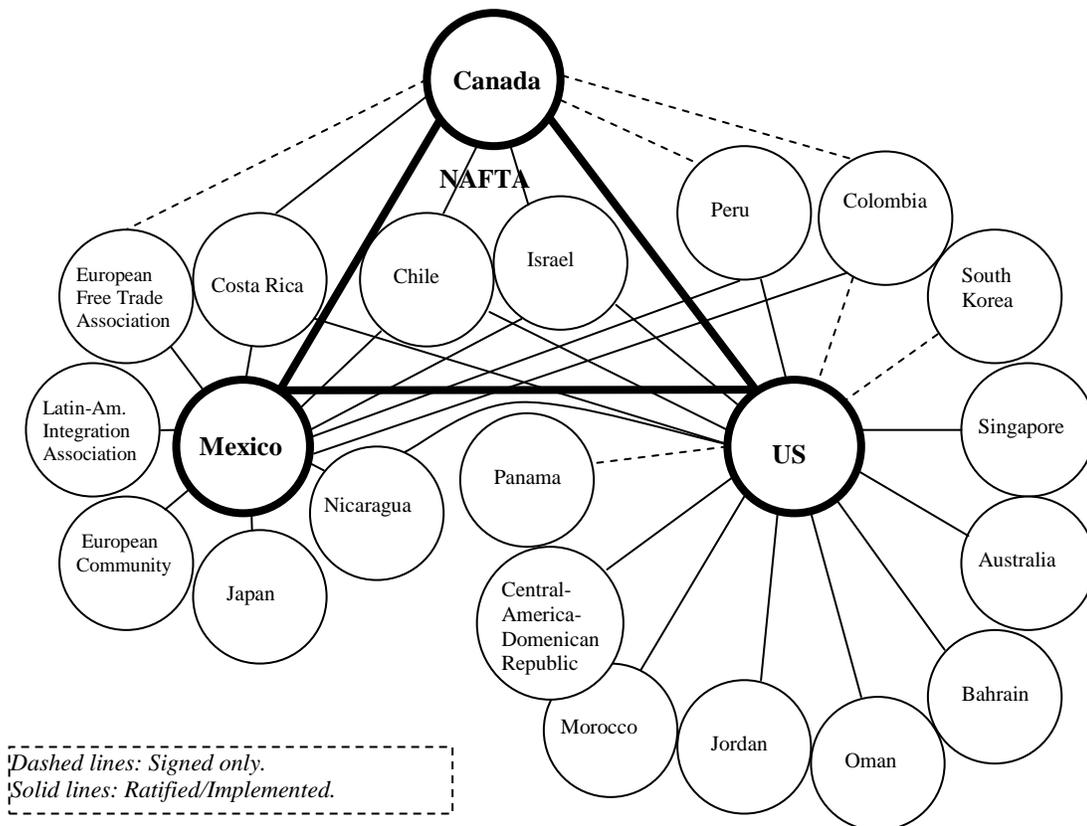
\*Note: CARICOM Members are: Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago.

**Figure 1. Trade with the U.S. and “rest of the world” as shares of total Canadian trade**



Source: Industry Canada – Trade Data Online.

**Figure 2. North America’s hub and spoke trade system\***



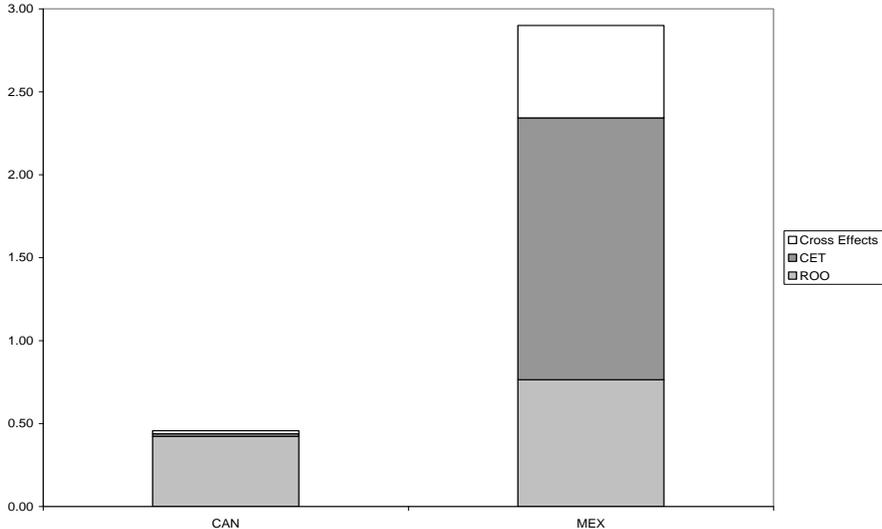
Sources: Georges (2010), based on Robson (2007) and updated on the basis of: World Trade Law.Net, Office of US Trade Representative, and Department of Foreign Affairs and International Trade Canada.

\*Note: **Central-America** includes: Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.

**Latin-American Integration Association** includes: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela.

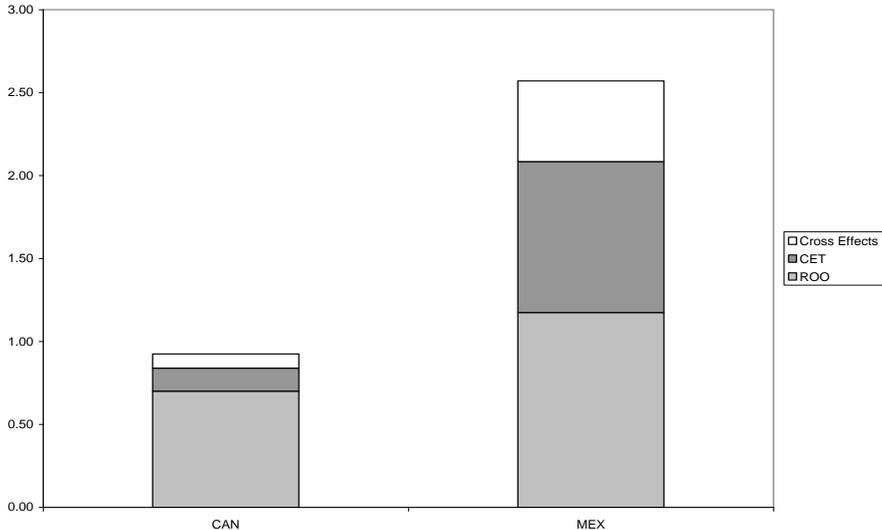
**European Free Trade Association** includes: Iceland, Liechtenstein, Norway, and Switzerland.

**Figure 3. % increase in real GDP if North America had negotiated a CU in the 2000s**



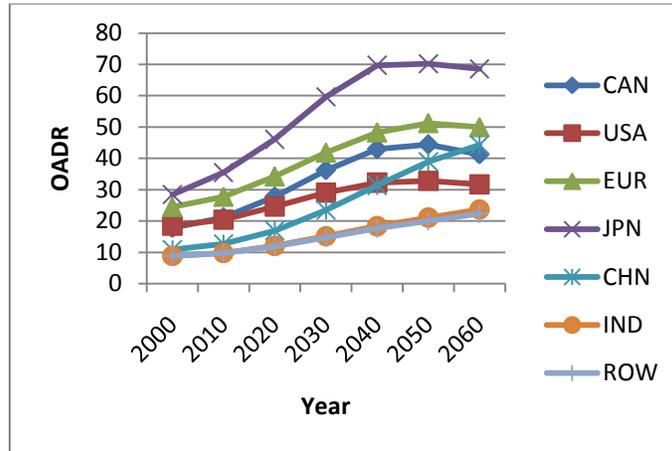
Source: Georges (2010).

**Figure 4. % increase in real GDP if North America had negotiated a CU (instead of NAFTA) in the 1990s**



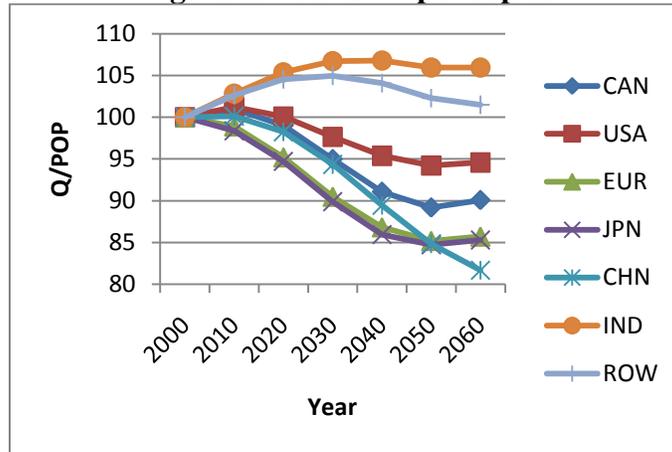
Source: Georges (2010).

**Figure 5. Simulated old age (elderly) dependency ratio (OADR) by regions of the world**



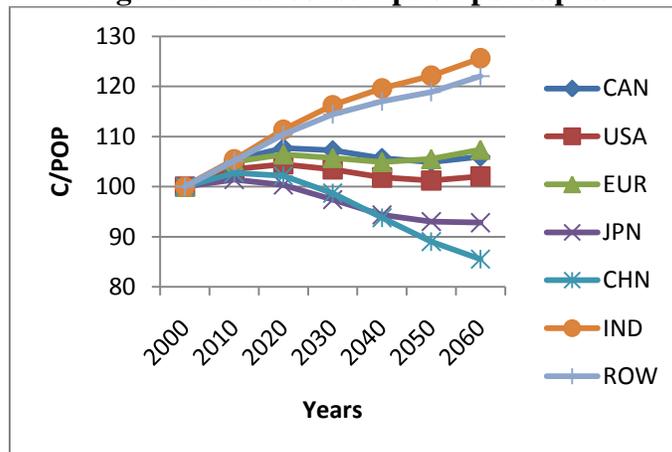
Source: Mérette and Georges (2010).

**Figure 6. Real GDP per capita**



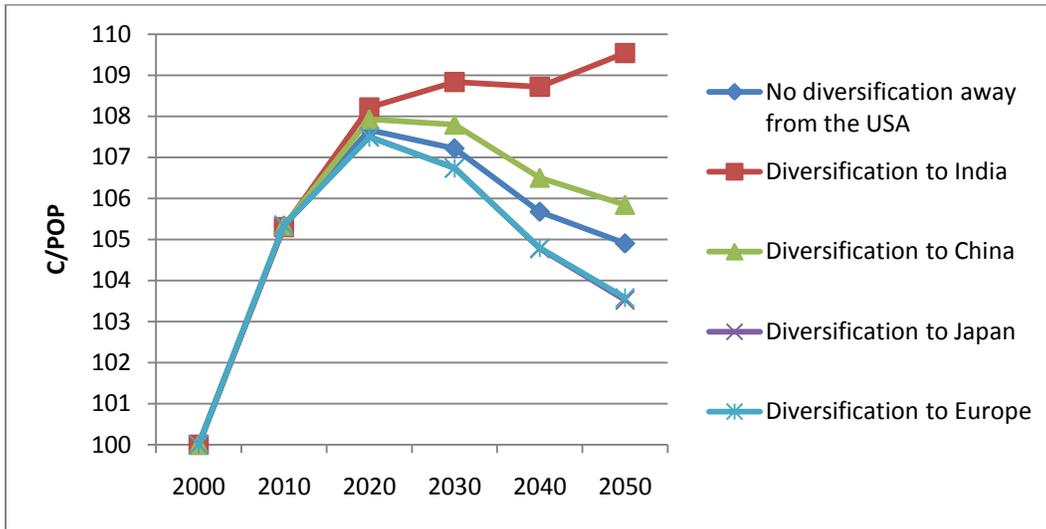
Source: Mérette and Georges (2010).

**Figure 7. Real consumption per capita**



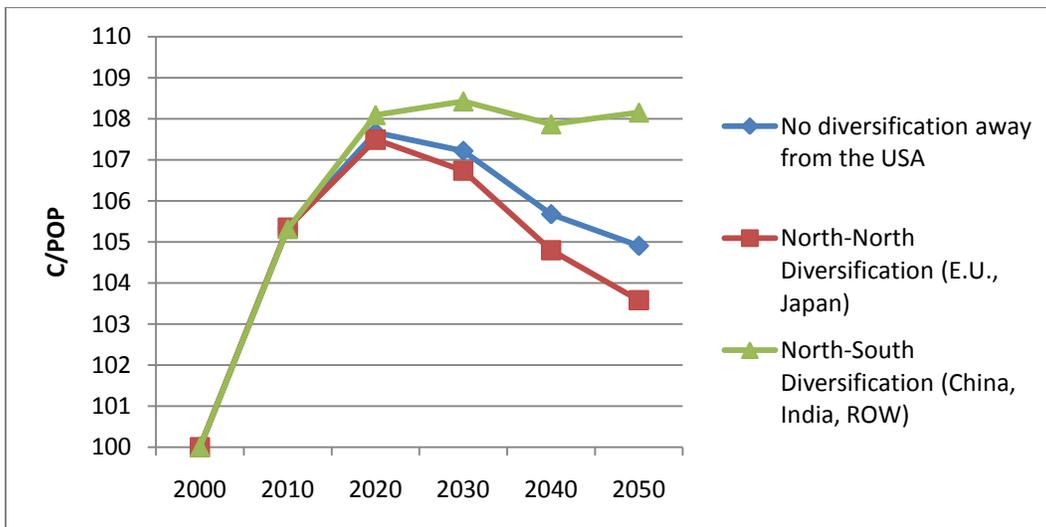
Source: Mérette and Georges (2010).

**Figure 8. Diversifying Canada's import away from the U.S. : Impact on real consumption per capita**



Source: Georges, Mérette and Seçkin (2009).

**Figure 9. North-North and North-South diversification schemes: Impact on real consumption per capita**



Source: Georges, Mérette and Seçkin (2009).