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Changes in Canada's Preferential Trade Network and the Welfare Effects in Agricultural Markets¹

Pascal L. Ghazalian²

*Associate Professor, Department of Economics, University of Lethbridge,
Lethbridge, Alberta, Canada*

Bahareh Mosadegh Sedghy

*Assistant Professor, Dhillon School of Business, University of Lethbridge,
Lethbridge, Alberta, Canada*

Abstract

There have been some important changes in Canada's preferential trade network over the last few years. At the regional level, the renegotiations over the NAFTA produced the generally similar USMCA. At the inter-regional level, the CETA and the CPTPP marked significant steps toward promoting Canada's trade with distant countries. This article overviews the corresponding regional and inter-regional trade preferences for agricultural products. It examines the welfare effects of the USMCA and more pronounced regional preferential schemes, and those of the CETA and the CPTPP for Canada in the agricultural markets. It assesses the welfare outcomes from different scenarios involving various combinations of presence and absence of regional and inter-regional trade preferences. The analysis underlines that the deepening of North American market integration would lead to increases in Canada's welfare. It shows that inter-regional trade preferences could exceed the USMCA/NAFTA in promoting imports in some cases, resulting in increases in Canada's welfare. However, inter-regional trade preferences may not entirely substitute for the welfare losses resulting from the absence/elimination of regional trade preferences in some other cases. This article suggests that Canada would generally benefit from

higher welfare levels across agricultural markets through a simultaneous network of regional and inter-regional trade preferences.

Keywords: agricultural trade, CETA, CPTPP, NAFTA, preferential trade agreement, trade barriers, USMCA, welfare

Introduction

There have been some important changes in Canada's preferential trade network over the last few years. The Comprehensive Economic and Trade Agreement (CETA) between Canada and the European Union, which was provisionally implemented on September 21, 2017, marked a significant step toward inter-regional preferential trade ties.³ In parallel, another inter-regional trade agreement, the Trans-Pacific Partnership (TPP), was signed on February 4, 2016, including Canada and 11 countries in the Asia-Pacific region.⁴ The implementation of this inter-regional trade agreement was halted due to the withdrawal of the United States from the TPP. Canada and the remaining countries moved ahead and signed a matching agreement on March 8, 2018 – the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). This time period was also characterized by a renegotiated regional trade agreement between Canada, the United States, and Mexico, replacing the original North American Free Trade Agreement (NAFTA), which initially came into effect on January 1, 1994.^{5,6} The new-NAFTA agreement, which is commonly termed the United States–Mexico–Canada Agreement (USMCA), was agreed among the negotiating trading partners on October 1, 2018. It still awaits ratification by member countries, and there could be some modifications along the way.⁷ The CETA, the CPTPP, and the USMCA represent the first major shifts in Canada's trade relations since the NAFTA,⁸ and they generate discussions over the potential effects on consumers, producers, and welfare in general. Some sectors, particularly those that would benefit from promoted accessibility to export markets, hailed these preferential trade agreements, while other sectors expressed concerns associated with increases in imports and rises in competition in the domestic market.

The seminal analysis of Viner (1950) highlights that preferential trade agreements normally lead to trade creation that emerges through increases in trade flows between member countries, and they could also lead to trade diversion as expressed through decreases in trade flows from non-member countries to member countries. The latter occurs when imports from lower-cost non-member countries are replaced by preferential imports from relatively higher-cost member countries.⁹ The corresponding analysis indicates that trade creation has an increasing effect on welfare, whereas trade

diversion has a negative implication for welfare. Thus, the net outcome depends on the relative magnitude of these countering effects.¹⁰ It is often argued that preferential trade agreements tend to have net positive effects on overall welfare when implemented between regional countries that are deemed to be natural trading partners (such as Canada and the United States). In contrast, the trade diversion effect would outweigh the trade creation effect when, for instance, preferences are conferred on higher-cost distant countries at the expense of neighbouring lower-cost countries. In several cases, preferential trade agreements (particularly regional ones involving natural trading partners) tend to bring about increases in overall welfare. However, there are domestic producers in import-competing markets that could be negatively affected due to increases in competition (Rodrik, 2018). In this context, Barichello (2001) argues that the distributional effects of preferential trade agreements could be managed by using the net positive increases in overall welfare to compensate producers that are negatively impacted.

Before and through the USMCA negotiations, many observers and Canadian producers feared that a deal may not be reached, and some of them echoed concerns of moving back to a pre-NAFTA/pre-CUSFTA status with many preferential access schemes being dismantled.¹¹ In such a case, the NAFTA-generated welfare gains would be largely reversed.¹² Meanwhile, the engagement of Canada in inter-regional trade agreements has been often favourably viewed by many producers for conferring access to distant markets, to the extent of considering these inter-regional trade agreements as viable alternatives to (or substitutes for) the NAFTA/USMCA in the unlikely event of failing negotiations between Canada, the United States, and Mexico. The current situation is that the aforementioned inter-regional trade agreements are in place, and an agreement has been reached over the USMCA. However, these changes point out that the continuous and rapid changes in global and regional political and economic landscapes could affect the structure, depth, and relevance of Canada's network and characteristics of trade preferences in the future.¹³ Therefore, it becomes imperative to understand the interactive effects of different types of preferential trade agreements on Canada's welfare when developing policies, carrying out future negotiations over existing and new trade agreements, and positioning Canada's trade system in regional and inter-regional trade agreements.

There are several studies in the empirical trade literature that examine the effects of preferential trade agreements on international trade in agricultural and food products (e.g., Baylis et al., 2011; Ghazalian, 2013; Lambert & McKoy, 2009; Sarker & Jayasinghe, 2007; Sun & Reed, 2010).¹⁴ Ghazalian (2017) shows that the NAFTA has led to positive effects on regional trade in agricultural and food products among member

countries. Also, he finds that there remain significant unexploited trade opportunities between Canada and its NAFTA trading partners. For instance, the NAFTA had a positive effect on bilateral trade in cereals and cereal products, but the bilateral trade threshold is relatively low, implying that the magnitude of trade between Canada and its NAFTA trading partners remains below the potential. The trade-promoting effects of the NAFTA/USMCA for member countries may not rest at the positive effects of current preferences. Many empirical studies have revealed significant border effects between member countries of regional trading blocs, where the results indicate that intranational trade (within country) is significantly larger than trade between member countries (e.g., Head & Mayer, 2000; Anderson & Van Wincoop, 2003; Furtan & Van Melle, 2004; Olper & Raimondi, 2008; Ghazalian, 2012, 2019). These findings suggest that there remains a significant unexploited margin of trade between member countries of preferential trade agreements relative to the intranational trade benchmark. The wedge in border effects could be made a little narrower by increasing the depth and breadth of regional trade agreements. While eliminating tariffs on imports coming from regional trading partners is important in the context of preferential trade, the reduction of explicit and covert non-tariff barriers, and the lessening of regulatory and administrative barriers are critical in realizing higher levels of regional trade. Also, the adoption of regional policies that lower transaction costs and promote business and industrial networks would also tend to increase trade between member countries in primary, intermediate, and final products.¹⁵

This article overviews the trade preferences that are covered by the regional USMCA/NAFTA, and by the inter-regional CETA and CPTPP for agricultural products. It examines the welfare effects of the USMCA/NAFTA and those of the CETA and the CPTPP for Canada through the agricultural markets. Moreover, it assesses the welfare outcomes from different scenarios involving various combinations of presence and absence of regional and inter-regional trade preferences. The analysis underlines that the deepening of North American market integration would lead to increases in Canada's welfare, and it suggests that Canada would generally attain higher welfare levels across agricultural markets through a simultaneous network of regional and inter-regional trade agreements.

The Preference for Agricultural Trade

The new-NAFTA (i.e., the USMCA) is generally viewed to be similar overall to the original NAFTA in terms of preferences for most agricultural and food products.¹⁶ Regional agricultural exports that enjoyed tariff-free access under the NAFTA will continue to benefit from zero tariff rates under the USMCA. However, the USMCA

entails some changes that moderately increase the accessibility of some agricultural and food products into each other's markets. Some agricultural sectors in Canada (e.g., dairy, eggs, and poultry) fall into the supply management system, which organizes the supply of goods through production control to determine the production level and through a two-tier tariff-rate quota (TRQ) system to determine the level of imports. Under the USMCA, the supply management system will remain in place, but with some concessions as expressed through moderate increases in market access.

Under the USMCA, restrictions on the imports of ultra-filtered milk from the United States into Canada will be removed. The United States will now benefit from an increase in exports to the Canadian market, from 1.0 percent of Canada's dairy market under the NAFTA to 3.6 percent of Canada's dairy market under the USMCA.¹⁷ Thus, Canada's imports of milk will increase to 50,000 metric tonnes (MT) under the USMCA, where 85 percent of this quantity is for milk in bulk to be processed into dairy products used as ingredients for further processing.¹⁸ The United States will also benefit from six-year gradual increases in the accessibility of other dairy products into the Canadian market, such as skim milk powder (7,500 MT), cream (10,500 MT, with 85 percent to be used in further processing), cheese for industrial use (6,250 MT), cheese of all types (6,250 MT), and butter and cream powder (4,500 MT, with 50 percent to be used in further processing). Canada's chicken imports from the United States will follow a modified TRQ regime, increasing over six years from 47,000 MT under the original NAFTA to 57,000 MT under the USMCA, and they will continue to increase at a rate of 1 percent afterwards over a period of ten years.¹⁹ Also, under the USMCA, Canada will grant further market access to imports of turkey from the United States and other countries that are members of the WTO of no less than 3.5 percent of the previous year's total Canadian turkey production. With these increases in market access, the United States will be able to raise its exports of turkey products by up to 1,000 MT each year over the next ten years. Canada's imports of eggs from the United States will increase from 1.67 million dozen eggs to 10 million dozen eggs in the sixth year of the USMCA, and they will continue to increase at a rate of 1 percent afterwards over a period of ten years.^{20, 21}

The inter-regional CETA encompasses gradual removal of tariffs on agricultural and processed food products, covering around 94 percent of tariff lines.^{22, 23} The wide range of duty-free access is significantly higher than the pre-CETA duty-free coverage, which, for instance, only involved around 25 percent of tariff lines in the case of Canada's exports to the EU. Tariffs on the remaining items will be phased out over time (up to seven years for most sensitive goods). Some agricultural goods (e.g., cheese, dairy, beef, and pork) will be subjected to origin quotas or TRQs. The CETA's

preferences are expected to promote Canada's exports of many agricultural and food products to the EU, such as beef, pork, oilseeds, and processed food.²⁴ Furthermore, Canada will meet the rules of origin for agricultural and food products under the CETA,²⁵ and will benefit from the ability of Canadian companies to test and certify their products before exporting to the EU. Nevertheless, Canada's exports will still encounter strict non-tariff requirements by the EU, which will tend to lessen the positive impacts of the elimination of tariff barriers. For instance, the EU upholds its safety regulations, labelling requirements for genetically modified products, and restrictions on hormone-treated beef and ractopamine-treated pork.^{26, 27} In this context, Kerr & Hobbs (2015) indicate that the move toward liberalization of trade in agricultural products tends to be limited through the CETA, and that protectionism is generally preserved, particularly for important and sensitive agricultural products. The EU's agricultural and food products with geographical indications will be recognized and granted protection in Canada. Also, under the CETA, Canada will establish a wider TRQ system of an additional 17,700 MT imports of EU cheeses, where 16,000 MT will cover all types of cheese (primarily high-quality cheese) and 1,700 MT will be destined for food processing. The access quantities for the EU's high-quality cheese and processing cheese will be phased out over five years, in six instalments. Also, among the 16,000 MT, 50 percent will be allocated to cheese manufacturers, and the other 50 percent will be allocated to distributors and retailers.^{28, 29}

The CPTPP is another ambitious inter-regional preferential trade agreement that is characterized by the removal of tariffs on a wide range of agricultural and food imports from member countries. Upon full implementation of the CPTPP, there will be around 99 percent of tariff lines that will be associated with duty-free access. The CPTPP also embodies provisions on export subsidies and credits, export restrictions, and Genetically Modified Organisms (GMOs), *inter alia*.^{30, 31} The CPTPP opens new markets for Canada's agricultural and food exports, and it helps diversify the export destinations and reduce the heavy dependence on the United States market (Gervais, 2018). Canada's exports of many agricultural and food products are expected to increase to the CPTPP trading partners, particularly to Japan.³² For instance, tariffs of 38.5 percent applied by Japan on imports of beef from Canada will be reduced within 15 years to 9.0 percent. In parallel, tariffs on higher-priced pork will be eliminated within 10 years, and on lower-priced pork will be reduced over 10 years.³³ Also, tariffs applied by Japan and Vietnam on imports of canola oil from Canada will be phased out over a period of 5 years. Some Canadian agricultural products will immediately benefit from duty-free access to the Japanese market (e.g., canola seeds, cranberry, and blueberry). With the CPTPP agreement entering into force, tariffs on seafood imports

will be mostly removed, while remaining tariffs on some seafood products will be phased out over a period of 15 years. Furthermore, Canada's exports of processed food products (e.g., maple syrup, confectionery products, and processed grain and pulse products) would benefit from the elimination/reduction of tariffs, and from the creation of TRQ systems. Under the CPTPP, there will be an increase in market access of supply-managed products into Canada.³⁴ For instance, the CPTPP encompasses an increase in imports of dairy products produced in the CPTPP member countries. Also, the within-access tariffs will be eliminated immediately whereas the over-quota tariffs will be maintained (with few exceptions). In the case of Canada, the increase in milk imports, which is set at 3.24 percent of Canada's annual milk production, is expected to cause some losses to Canadian dairy producers. The CPTPP agreement has many annexes on non-tariff measures and harmonization of regulations and standards across member countries, which could have significant impacts on trade between the CPTPP partners (Gervais, 2018).

The NAFTA, the USMCA and Beyond

The effects of the USMCA and its predecessor, the NAFTA (henceforth, the NAFTA/USMCA) can be illustrated using the partial equilibrium framework of Viner (1950), which covers a representative agricultural product's market.³⁵ In figure 1, let S_{CA} depict a representative domestic supply curve of Canada in a given agricultural market, and let D_{CA} represent the domestic demand curve in Canada. Also, let the supply curve of the United States in the absence of trade preferences (such as in a pre-NAFTA/USMCA situation) be represented by $S_{US}(\tau_0)$ with a corresponding price P_0 , where τ_0 encompasses the myriad of trade barriers facing exports from the United States to Canada over and above the cost of production, including policy trade barriers, transaction costs, and other trade costs (e.g., transportation costs). Also, let the supply curve of an outsider country Z (i.e., a country that is not a member of the NAFTA/USMCA) be represented by $S_Z(\theta_0)$ with a corresponding price P_1 , where θ_0 covers all types of trade barriers facing exports from country Z to Canada over and above the cost of production. The extents of trade barriers facing exports from country Z to Canada are naturally set to differ from those facing exports from the United States to Canada (i.e., $\tau_0 \neq \theta_0$). This case holds even when the United States and country Z are both subjected to an equivalent Most-Favoured Nation (MFN) tariff rate. This is because the extents of other types of trade costs and impediments facing the exports of these two countries to Canada (including non-tariff barriers, transaction costs, and transportation costs) are essentially different.

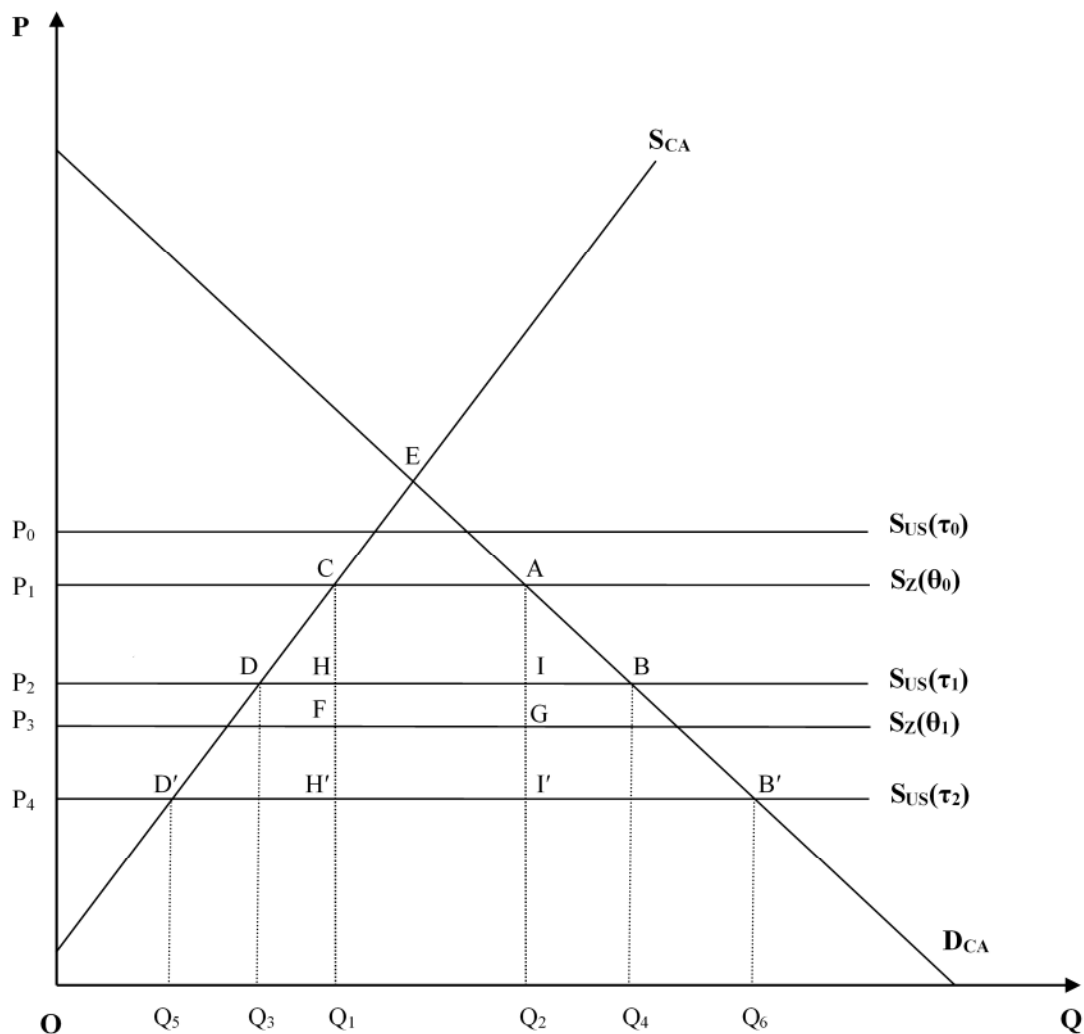


Figure 1 The NAFTA, the USMCA, and beyond.

The implementation of the NAFTA/USMCA confers preferential access to the exports of the United States to the Canadian market. This preferential access is expressed through lower trade barriers with $\tau_1 < \tau_0$, where the corresponding wedge reflects the ad valorem–equivalence of trade barriers that are eliminated through the NAFTA/USMCA trade preferences.³⁶ Then, the implementation of the NAFTA/USMCA can be expressed through a downward shift in the supply curve of the United States, from $S_{US}(\tau_0)$ to $S_{US}(\tau_1)$, with a corresponding product price in the

Canadian market decreasing from P_0 to P_2 , respectively. These preferences do not imply that all trade impediments facing exports from the United States to Canada are eliminated, but rather they reflect decreases in trade barriers.

Prior to the implementation of the NAFTA/USMCA, Canada would import a quantity of Q_1Q_2 from country Z. Following the implementation of the NAFTA/USMCA, the supply curve of the United States shifts to a lower position [i.e., from $S_{US}(\tau_0)$ to $S_{US}(\tau_1)$] vis-à-vis the supply curve of country Z [i.e., $S_Z(\theta_0)$]. Then, Canada substitutes imports from country Z by a larger imported quantity from the United States, amounting to Q_3Q_4 . Through the welfare analysis, figure 1 indicates that the implementation of the NAFTA/USMCA has led to an increase in consumer surplus in Canada by the area P_1ABP_2 , and to a reduction in domestic producer surplus by the area P_1CDP_2 . Now, let the tariff-free supply curve of country Z be represented by $S_Z(\theta_1)$ with a corresponding price P_3 , where the wedge between $S_Z(\theta_0)$ and $S_Z(\theta_1)$ is equivalent to the tariff rate imposed on imports from country Z. Then, following the implementation of the NAFTA/USMCA, the government loses tariff revenues equivalent to the area CAGF, which were initially collected by taxing imports originating from country Z. The net effect of the NAFTA/USMCA on Canada's welfare in this market covers the positive triangles $CHD+AIB$, which reflect the effect of trade creation with the preferential trading partner (i.e., the United States), and the negative component HIGF, which signifies the effect of trade diversion from the lower-cost country Z to the higher-cost preferential trading partner.³⁷ Given that the United States and Canada are considered to be natural trading partners that are characterized by geographic proximity and relatively developed business and industrial networks, the wedge between $S_Z(\theta_1)$ and $S_{US}(\tau_1)$ can be assumed to be fairly narrow, implying a higher likelihood of an increase in Canada's welfare with a relatively larger trade creation effect.

As previously noted, the newly signed USMCA generally maintains the *status quo* for market access in most agricultural and food products, with a few modest exceptions such as trade in dairy products. Thus, the welfare analysis for the USMCA is generally equivalent to the one carried out for the NAFTA. For agricultural products that were granted modest increases in access into the Canadian market, the $S_{US}(\tau_1)$ will experience a further downward shift (in *ad valorem*-equivalent terms), leading to a slight increase in Canada's welfare, since the trade diversion effect is more compressed and the trade creation effect is augmented. Naturally, lowering $S_{US}(\tau_1)$ is associated with decreases in the magnitude of protection, and will lead to larger reductions in Canada's producer surplus.³⁸

The decrease in trade barriers, for instance through the elimination of tariffs, may not be sufficient to fulfill the trade potentials that could be realized through a deeper market integration between the regional trading partners. For instance, technical barriers to trade, administrative and regulatory trade barriers, and higher transaction costs may restrain the significance of trade preferences that are expressed through tariff-free access or reduced tariff rates on imports from member countries. While the NAFTA has led to decreases in trade barriers and the USMCA has generally maintained this status quo, the empirical evidence indicates that there remain significant unexploited opportunities in agricultural and food trade between Canada and its NAFTA/USMCA trading partners (Ghazalian, 2017). Accordingly, we examine next a hypothetical case of a super-NAFTA/USMCA, which characterizes a deeper regional market integration between member countries through reductions in transaction costs and non-tariff barriers, and through regional preferential policies that stimulate more developed business and industrial networks between member countries. In this case, the supply curve of the United States would experience a more pronounced downward shift from $S_{US}(\tau_1)$ to $S_{US}(\tau_2)$, which could be placed below $S_Z(\theta_1)$ with significant decreases in border effects between the NAFTA/USMCA member countries. Letting the initial NAFTA/USMCA status be the baseline, the super-NAFTA/USMCA will increase consumer surplus by the area $P_2BB'P_4$, and would decrease domestic producer surplus by the area $P_2DD'P_4$, for a net gain in Canada's welfare equivalent to the area $DBB'D'$. Alternatively, letting the pre-NAFTA/USMCA status be the baseline, the super-NAFTA/USMCA would lead to an increase in consumer surplus by the area $P_1AB'P_4$, a decrease in domestic producer surplus by the area $P_1CD'P_4$, and a decrease in government's tariff revenues by the area $CAGF$. The corresponding net effect on Canada's welfare is clearly positive in this case, being equivalent to the area $CD'H'+AI'B'+FGI'H'$.

This graphical analysis suggests that Canada's welfare tends to increase through deeper preferential market access schemes and more pronounced market integration policies with the natural trading partner (i.e., the United States). The negative effects on producers of protected agricultural products should be compensated along the way through proper distributional policies to secure a smooth transition when moving in this direction. It is worth noting that this graphical illustration does not take into account some important factors, such as differences/variations in quality and in product characteristics, limiting factors that restrain market integration, and competition-driven adoption of new technology and innovation. Nevertheless, this analysis provides a general depiction of the benefits accrued through a pronounced North American market integration policy. The increase in market competition level would compel producers in

member countries to introduce new technologies and processes, leading to a rightward shift in Canada's domestic supply curve S_{CA} and, perhaps, to a modest downward shift in the supply curve of the regional trading partner.³⁹ Also, increases in the extent of regional market integration could impact consumers' preferences that are more inclined toward domestically produced goods vis-à-vis imported goods from regional trading partners.⁴⁰

The NAFTA/USMCA and the Inter-regional Trade Agreements

As noted earlier, the new-NAFTA (i.e., the USMCA) was signed in a time period characterized by Canada's involvement in inter-regional trade agreements, namely the CETA and the CPTPP. Also, there were concerns that the renegotiations between Canada, the United States, and Mexico might collapse, and that the initial NAFTA agreement would be revoked (at least partly). In this case, the North American market could experience a phase of re-introduction of protectionist policies that would eventually lead to reductions in trade flows between Canada and its regional trading partners. Some observers underlined that the CETA and the CPTPP would open new international markets for Canadian products, and would lessen the dependency of Canada on the United States' market. There were also some public comments that the CPTPP and the CETA could serve (to some extent) as substitutes for the NAFTA, and that a termination of the NAFTA would be compensated by inter-regional trade agreements in terms of trade flows and overall welfare.

We examine next the changes in Canada's welfare across different scenarios through figure 2. Let country Z now designate a representative country of the CETA or the CPTPP (henceforth, the CETA/CPTPP). In this section, $S_{US}(\tau_0)$ and $S_Z(\theta_0)$ represent the supply curves of the United States and country Z in the absence of preferential access, respectively (i.e., the pre-NAFTA/USMCA and the pre-CETA/CPTPP curves, respectively) with corresponding prices P_0 and P_1 . Also, as in the previous section, $S_{US}(\tau_1)$ depicts the supply curve of the United States following the implementation of the NAFTA/USMCA, and it is associated with a price P_2 . We consider two situations regarding the supply curve of country Z following the implementation of the CETA/CPTPP: $S_Z(\theta_1)^b$, which is situated below $S_{US}(\tau_1)$ and associated with a price $P_3^b < P_2$, and $S_Z(\theta_1)^a$, which is situated above $S_{US}(\tau_1)$ and associated with a price $P_3^a > P_2$.⁴¹

We depart from an initial situation where the NAFTA/USMCA is in place and the CETA/CPTPP preferences are not implemented, with supply curves $S_{US}(\tau_1)$ and $S_Z(\theta_0)$, respectively. Now, consider a hypothetical scenario characterizing failure of the NAFTA/USMCA renegotiations and, consequently, the re-introduction of protectionist measures on regional trade flows between the North American trading partners. In this

case, the supply curve of the United States facing Canada will shift upward to $SUS(\tau_0)$. This will reverse the initial welfare effects of the NAFTA preferences. Then, Canada will stop importing from the United States, and will instead import a smaller quantity from country Z. Consumer surplus would decrease by the area P_1ABP_2 , domestic producer surplus would increase by the area P_1CDP_2 , and the government would gain collection of tariff revenues equivalent to the area $CAGF$ in the case of $S_Z(\theta_1)^b$ and to the area $CAG'F'$ in the case of $S_Z(\theta_1)^a$. In the case of $S_Z(\theta_1)^b$, there will be a reversal of the positive trade creation effect (i.e., $CDH+AIB$) and a reversal of the negative trade diversion effect (i.e., $HIGF$). Given that the United States is considered a natural trading partner of Canada, this situation would likely lead to decreases in Canada's welfare (since the trade creation effect is expected to be larger than the trade diversion effect). In the case of $S_Z(\theta_1)^a$, Canada will unambiguously experience a decrease in welfare by the areas $CDH+AIB+F'G'IH$.⁴²

Now consider a hypothetical scenario where we move from an initial situation without trade preferences to a new situation with the CETA/CPTPP trade preferences but without the NAFTA/USMCA trade preferences (i.e., a situation that corresponds to inter-regional trade preferences accompanying regional protectionist policies that could stem from a hypothetical failure in the NAFTA/USMCA negotiations). In the case of $S_Z(\theta_1)^b$, consumer surplus in Canada would increase by the area $P_1ASP_3^b$, domestic producer surplus would decrease by the area $P_1CRP_3^b$, and government would lose tariff revenues equivalent to the area $CAGF$. Thus, there will be an increase in Canada's welfare by the triangles $CFR+AGS$. The increase in Canada's welfare is unambiguously larger than the corresponding move from a situation without preferences to a new situation with the NAFTA/USMCA preferences but without the CETA/CPTPP preferences. In the latter case, the increase in welfare is equivalent to the areas $CHD+AIB-HIGF$. This outcome stems from the fact that, with trade preferences, the price of country Z's product is lower than the corresponding price of the United States' product (i.e., $P_3^b < P_2$).

In the case of $S_Z(\theta_1)^a$, consumer surplus in Canada would increase by the area $P_1AS'P_3^a$, domestic producer surplus would decrease by the area $P_1CR'P_3^a$, and government would lose tariff revenues equivalent to the area $CAG'F'$. Thus, there will be an increase in Canada's welfare by the triangles $CF'R'+AG'S'$. This increase is unambiguously smaller than the corresponding move from a situation without trade preferences to a new situation with the NAFTA/USMCA trade preferences but without the CETA/CPTPP trade preferences. In the latter case, the increase in Canada's welfare is equivalent to the areas $CHD+AIB+F'G'IH$. This outcome is derived from the fact

that, with trade preferences, the price of country Z's product is higher than the corresponding price of the United States' product (*i.e.*, $P_3^a > P_2$).⁴³

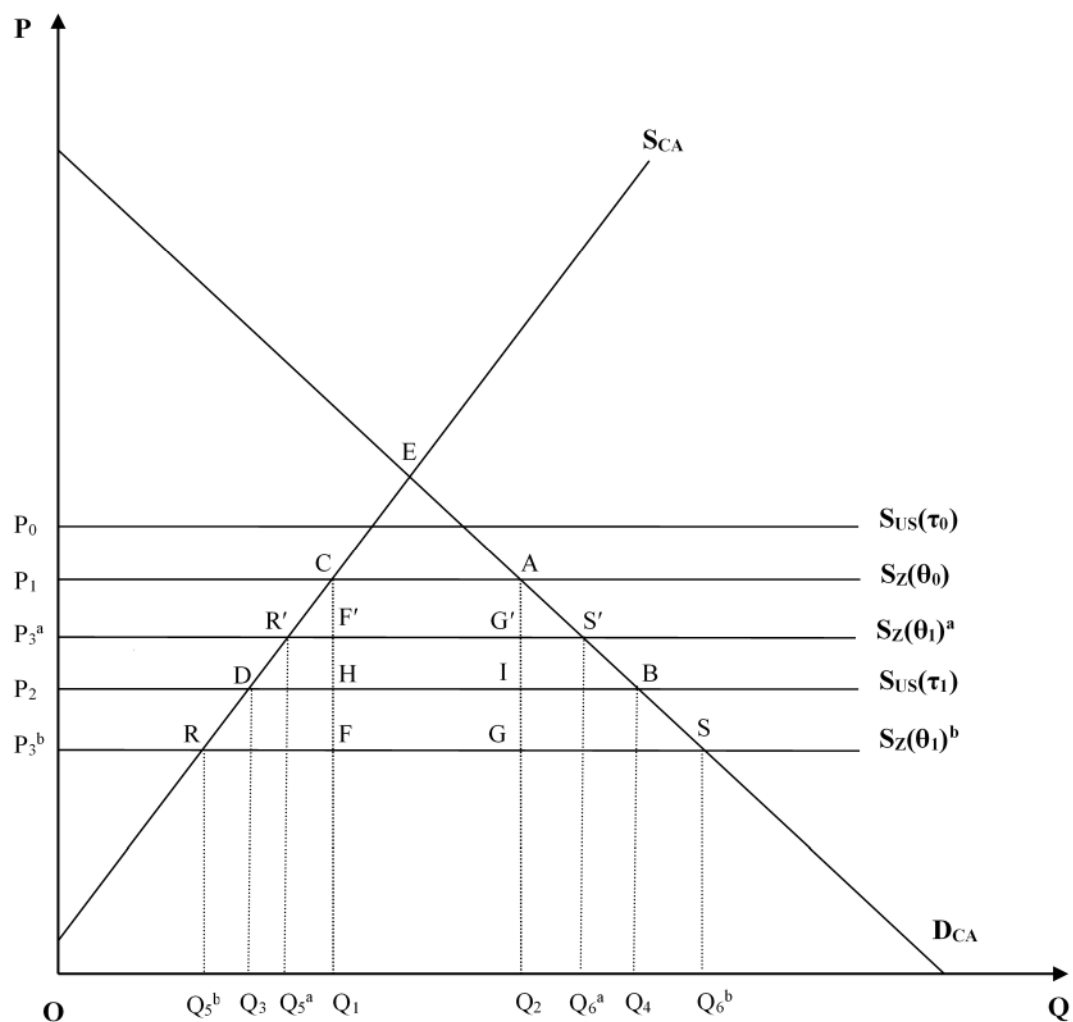


Figure 2 The NAFTA/USMCA and the inter-regional trade agreements

Situations that correspond to $S_Z(\theta_1)^b$ would prevail in some markets, whereas situations that correspond to $S_Z(\theta_1)^a$ would be consistent with the configurations of other markets. Conferring preferences to the regional NAFTA/USMCA trading partners and not to the inter-regional CETA/CPTPP trading partners in the case of $S_Z(\theta_1)^b$ would

yield a lower welfare level for Canada compared to an alternative situation where trade preferences are granted to both regional and inter-regional trading partners. In this case, inter-regional trade preferences would super-complement regional trade preferences in increasing Canada's welfare. On the other hand, implementing trade preferences on imports from the inter-regional (the CETA/CPTPP) trading partners but not on imports from the regional (the NAFTA/USMCA) trading partners in the case of $S_Z(\theta_1)^a$ would likely lead to lower welfare levels for Canada vis-à-vis an alternative situation where trade preferences are granted to both the NAFTA/USMCA and the CETA/CPTPP trading partners. Hence, in this case, the CETA/CPTPP trade preferences would not lead to full substitution in welfare terms vis-à-vis the NAFTA/USMCA trade preferences.

This analysis implies that higher welfare levels across markets would be attained when a wider network of trade preferences are set in place. Canada would benefit from a range of lower-cost agricultural and food products imported from the CETA/CPTPP countries when $S_Z(\theta_1)^b$ prevails, and from another range of lower-cost agricultural and food products imported from the NAFTA/USMCA countries when $S_Z(\theta_1)^a$ occurs. The concurrent provisions of regional and inter-regional trade preferences would likely situate Canada closer to a free trade status, where the network of trade preferences could form a building block toward more liberalized markets. As a result, they would eventually contribute by promoting efficiency and reducing deadweight losses in agricultural and food markets. As in the previous section, we note that this analysis does not encompass many important effects, including impacts on demand and supply schedules of domestic, regional, and inter-regional trading partners.

Concluding Remarks

There have been some important changes in Canada's preferential trade network over the last few years. At the regional level, the renegotiations between Canada, the United States, and Mexico over the NAFTA produced the similar USMCA, which generally maintains the status quo for agricultural and food trade with few exceptions. At the inter-regional level, the formation of the CETA with the EU and of the CPTPP, which includes 11 countries in the Asia-Pacific region, opened geographically remote markets to Canada's agricultural and food exports, and promoted the import of many products from distant agricultural and food producers into the Canadian market. These events created a new landscape of preferences for Canada, and they generated discussions over the potential effects of these preferential trade agreements for consumers, producers, and welfare in general. This article overviews the trade preferences that are covered by the regional USMCA/NAFTA and by the inter-regional CETA and CPTPP for agricultural products. It examines the welfare effects of the USMCA and those of a

more pronounced North American preferential scheme for Canada, and the welfare effects of the CETA and the CPTPP for Canada, using Viner's (1950) partial equilibrium framework. It assesses the welfare outcomes from different scenarios involving various combinations of presence and absence of regional and inter-regional trade preferences.

This article underlines that the deepening of North American market integration through, for instance, decreases in the remaining trade policy barriers and transaction costs and promotion of industrial and business networks would lead to increases in Canada's welfare. Also, in some cases, inter-regional trade preferences could exceed established trade preferences between Canada and its regional trading partners in promoting imports of agricultural products, generating increases in Canada's welfare. Such cases would occur when inter-regional trading partners are characterized by considerably lower production costs compared to regional trading partners. However, in some other cases, inter-regional trade agreements may not entirely substitute for the welfare losses resulting from the absence or elimination of trade preferences with the regional trading partners. Then, the arguments that the CETA and the CPTPP could serve as effective substitutes for the NAFTA, and that a termination of the NAFTA preferences would be highly compensated by inter-regional trade agreements, may not be well founded in welfare terms. This analysis suggests that Canada would benefit from higher overall welfare levels across agricultural markets through a simultaneous network of regional and inter-regional trade preferences.

References

- Anderson, J. E., & Van Wincoop, E. (2003). Gravity with Gravitas: A Solution to the Border Puzzle. *American Economic Review* 93(1): 170-192.
- Barichello, R. (2001). Broadening the NAFTA: Key Issues on the Free Trade Area of the Americas from a Canadian Perspective. *Canadian Journal of Agricultural Economics* 49(4): 623-631.
- Baylis, K., Nogueira, L., & Pace, K. (2011). Food Import Refusals: Evidence from the European Union. *American Journal of Agricultural Economics* 93(2): 566-572.
- Biden, S., & Ker, A. P. (2019). Impacts of Trade Liberalization in Canada's Supply Managed Dairy Industry. Working Paper, Department of Food, Agricultural and Resource Economics, University of Guelph, Canada.
- Burfisher, M. E., Robinson, S., & Thierfelder, K. (2001). The Impact of NAFTA on the United States. *Journal of Economic Perspectives* 15(1): 125-144.
- Caliendo, L., & Parro, F. (2015). Estimates of the Trade and Welfare Effects of NAFTA. *The Review of Economic Studies* 82(1): 1-44.
- Cipollina, M., & Salvatici, L. (2010). The Trade Impact of European Union Agricultural Preferences. *Journal of Economic Policy Reform* 13(1): 87-106.

- Eberhardt, P., Redlin, B., & Toubeau, C. (2014). Trading away Democracy: How CETA's Investor Protection Rules Threaten the Public Good in Canada and the EU. Ottawa, ON: Canadian Centre for Policy Alternatives.
- Furtan, W. H., & Van Melle, B. M. (2004). Canada's Agricultural Trade in North America: Do National Borders Matter? *Review of Agricultural Economics* 26(3): 317-331.
- Gervais, J. P. (2018). CPTPP: A New Chapter for Canadian Agriculture and Food Exports. Regina, SK: Farm Credit Canada.
- Ghazalian, P. L. (2012). Home Bias in Primary Agricultural and Processed Food Trade: Assessing the Effects of National Degree of Uncertainty Aversion. *Journal of Agricultural Economics* 63(2): 265-290.
- Ghazalian, P. L. (2013). Mercosur Enlargement: Predicting the Effects on Trade in Primary Agricultural Commodities. *Economic Change and Restructuring* 46(3): 277-297.
- Ghazalian, P. L. (2013). On the Relationship between Regional Trade Agreements and Agricultural Technology and Productivity. *Agricultural and Food Economics* 1(1): 7.
- Ghazalian, P. L. (2017). The Effects of NAFTA/CUSFTA on Agricultural Trade Flows: An Empirical Investigation. *Canadian Journal of Agricultural Economics* 65(2): 219-248.
- Ghazalian, P. L. (2019). Canada's Beef Exports: Border Effects and Prospects for Market Access. *Canadian Journal of Agricultural Economics* 67(1): 53-74.
- Ghazalian, P. L., & Furtan, W. H. (2008). The Effects of Multinational Activities on the Measurement of Home Bias. *Journal of the Japanese and International Economies* 22(3): 401-416.
- Ghazalian, P. L., & Furtan, W. H. (2009). CUSFTA Effects: A Joint Consideration of Trade and Multinational Activities. *The Journal of International Trade & Economic Development* 18(4): 487-504.
- Ghazalian, P. L., Larue, B., & Gervais, J. P. (2009). Exporting to New Destinations and the Effects of Tariffs: The Case of Meat Commodities. *Agricultural Economics* 40(6): 701-714.
- Ghazalian, P. L., Tamini, L. D., Larue, B., & Gervais, J. P. (2012). A Gravity Model to Account for Vertical Linkages between Markets with an Application to the Cattle/Beef Sector. *The Journal of International Trade & Economic Development* 21(4): 579-601.
- Global Affairs Canada. (2018). Economic Impact of Canada's Participation in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. Ottawa, ON: Global Affairs Canada.
- Head, K., & Mayer, T. (2000). Non-Europe: The Magnitude and Causes of Market Fragmentation in the EU. *Review of World Economics* 136(2): 284-314.

- Johnson, P. M., Muzzi, P., & Bastien, V. (2013). The Voice of Quebec in the CETA Negotiations. *International Journal* 68(4): 560-567.
- Kerr, W. A. (2018). Dismantling Trade Agreements: Why Is It so Difficult? *The Estey Centre Journal of International Law and Trade Policy* 19(1): 1-12.
- Kerr, W. A., & Hobbs, J. E. (2015). A Protectionist Bargain?: Agriculture in the European Union—Canada Trade Agreement. *Journal of World Trade* 49(3): 437-456.
- Krugman, P., Obstfeld, M., & Melitz, M. (2014). *International Economics: Theory and Policy*. 10th edition. Boston, MA: Pearson.
- Lambert, D., & McKoy, S. (2009). Trade Creation and Diversion Effects of Preferential Trade Associations on Agricultural and Food Trade. *Journal of Agricultural Economics* 60(1): 17-39.
- Olper, A., & Raimondi, V. (2008). Explaining National Border Effects in the QUAD Food Trade. *Journal of Agricultural Economics* 59(3): 436-462.
- Pomfret, R. (1986). The Theory of Preferential Trading Arrangements. *Review of World Economics* 122(3): 439-465.
- Rodrik, D. (2018). Populism and the Economics of Globalization. *Journal of International Business Policy* 1(1-2): 12-33.
- Romalis, J. (2007). NAFTA's and CUSFTA's Impact on International Trade. *The Review of Economics and Statistics* 89(3): 416-435.
- Sarker, R., & Jayasinghe, S. (2007). Regional Trade Agreements and Trade in Agri-Food Products: Evidence for the European Union from Gravity Modeling Using Disaggregated Data. *Agricultural Economics* 37(1): 93-104.
- Scoppola, M., Raimondi, V., & Olper, A. (2018). The Impact of EU Trade Preferences on the Extensive and Intensive Margins of Agricultural and Food Products. *Agricultural Economics* 49(2): 251-263.
- Sun, L., & Reed, M. R. (2010). Impacts of Free Trade Agreements on Agricultural Trade Creation and Trade Diversion. *American Journal of Agricultural Economics* 92(5): 1351-1363.
- Tamini, L., Ghazalian, P., Gervais, J. P., & Larue, B. (2012). Trade Liberalization in Primary and Processed Agricultural Products: Should Developing Countries Favour Tariff or Domestic Support Reductions? *International Economic Journal* 26(1): 85-107.
- Villarreal, M. A., & Fergusson, I. F. (2017). The North American Free Trade Agreement (NAFTA). Congressional Research Service (CRS) Report. Washington, DC: CRS.
- Viner, J. (1950). *The Customs Union Issue*. New York, NY: Carnegie Endowment.
- Viju, C., & Kerr, W. A. (2011). Agriculture in the Canada-EU Economic and Trade Agreement. *International Journal* 66(3): 677-694.

Endnotes

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² Corresponding author.

³ The CETA was signed by the Canadian government on October 30, 2016, and approved by the EU Parliament on February 15, 2017. However, this agreement still requires ratification by the EU and national legislatures to be fully implemented. Significant sections of the agreement have been provisionally applied since September 21, 2017.

⁴ The original TPP countries are Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and Vietnam.

⁵ The NAFTA, in turn, superseded the Canada–United States Free Trade Agreement (CUSFTA), which was implemented in 1989.

⁶ The main objectives of the NAFTA include reducing/eliminating trade barriers, increasing investment in the free trade area from member countries, raising competition levels within the free trade area, and protecting intellectual property rights, *inter alia*. The NAFTA was set as a benchmark for future negotiations and cooperation among member countries, and between member countries and other countries.

⁷ The USMCA is not perpetual, in the sense that it will expire after 16 years from implementation unless it is renewed by member countries.

⁸ Also, there are recent bilateral trade agreements (e.g., between Canada and South Korea) and potential bilateral trade agreements (e.g., between Canada and India).

⁹ Also, see Pomfret (1986) for an alternative theoretical representation of the effects of preferential trade agreements.

¹⁰ The Viner model is carried out in a partial equilibrium framework depicting the market of one product. Every market would naturally have different configurations, and the magnitude of the corresponding results would depend on the size of individual markets and their characteristics.

¹¹ Kerr (2018) underlines the complexity of the process of dismantling existing regional trade agreements, and the implications of a renegotiated NAFTA and those of Brexit for the economies of the corresponding member countries.

¹² See, for example, Burfisher et al. (2001), Romalis (2007), Caliendo & Parro (2015), and Villarreal & Fergusson (2017) for discussions on the effects of the NAFTA.

¹³ Biden & Ker (2019) examine the individual and collective effects of the USMCA, the CETA, and the CPTPP on Canada's welfare in the fresh and processed dairy markets.

¹⁴ Reductions in tariff and non-tariff barriers could also establish new trading routes for agricultural products by promoting the extensive margin of trade (Cipollina & Salvatici, 2010; Ghazalian et al., 2009; Scoppola et al., 2018).

¹⁵ Foreign Direct Investment (FDI) may also attenuate the significance of border effects between member countries (Ghazalian & Furtan, 2008, 2009). Thus, regional trade agreements that favour FDI between member countries would further stimulate market integration.

¹⁶ Under the original CUSFTA, tariffs were set to be eliminated over a ten-year phase-out period, which was completed in 1998 for most agricultural products (excluding

sensitive agricultural products). Under the NAFTA, tariffs between Mexico and its regional trading partners were set to be eliminated over a ten-year phase-out period, which was fulfilled in 2004 for most agricultural products (Ghazalian, 2017).

¹⁷ The 3.6 percent market share is higher than the 3.25 percent market share that Canada would have given the United States under the initial TPP agreement.

¹⁸ Under the USMCA, Canada will eliminate milk price classes 6 and 7 after six months from the implementation of the agreement, and will set the prices for skim milk solids used to produce nonfat dry milk, milk protein concentrates, and infant formula to be no lower than the corresponding price bases in the United States for nonfat dry milk.

¹⁹ The United States will still be eligible to export chicken up to 39,844 MT under Canada's World Trade Organization's TRQ system.

²⁰ Under the USMCA, Canada will also grant new entrants 30 percent of licenses for shell egg imports.

²¹ See <https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2018/october/united-states-mexico-canada-trade-fact> (Accessed on February 27, 2019).

²² The remaining tariff lines mainly cover agricultural and food products that are deemed to be sensitive.

²³ www.agr.gc.ca/eng/industry-markets-and-trade/international-agri-food-market-intelligence/europe/canada-european-union-comprehensive-economic-and-trade-agreement-ceta-for-agri-food-exporters (Accessed on February 27, 2019).

²⁴ For instance, Canada will be allowed to export 50,000 MT of beef and 80,000 MT of pork per year. Also, the pre-CETA 20 percent tariff rate on high-quality beef will be eliminated.

²⁵ Rules of origin determine whether a product is considered to be "Canadian" by the EU, or "European" by Canada. However, given the significant level of market integration in North America, particularly between Canada and the United States, it will be often difficult to determine the origin of some products, since many of them incorporate significant shares of inputs produced by the United States (Johnson et al., 2013).

²⁶ There are concerns on the part of many groups in the EU that the CETA will weaken consumer rights, particularly in the context of food safety standards, and that the CETA will favour Multinational Enterprises (MNEs) in the EU market, particularly through the CETA's investor-state dispute mechanism (Eberhardt et al., 2017). Also, there are concerns that the CETA will have negative impacts on the environment and on employment in the EU (Eberhardt et al., 2017).

²⁷ See Viju & Kerr (2011) for an earlier discussion on the characteristics and effects of the preferential trade agreement between Canada and the EU.

²⁸ The EU initially benefited from tariff-free access for 13,608 MT of cheese into the Canadian market.

²⁹ Other agricultural products that are covered by the supply management system (e.g., chicken, eggs) are generally unaffected by the CETA.

³⁰ https://international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/chapter_summaries-sommaires_chapitres.aspx?lang=eng (Accessed on March 8, 2019).

³¹ The CPTPP restricts member countries from using export subsidies for agricultural products that are exported to other member countries. The CPTPP embodies commitments by member countries to work on developing disciplines on export credits, and to address issues related to state trading enterprises through the WTO. Also, the CPTPP includes a provision that allows member countries to impose restrictions in the case of food shortages, and another provision that manages trade in the case of unintended occurrence of low levels of GMOs.

³² <https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp> (Accessed on February 27, 2019).

³³ An analysis by Global Affairs Canada (2018) finds that beef and pork exports from Canada to Japan are projected to increase by around 378 and 639 million dollars under the CPTPP, respectively. These figures are noticeably higher than those projected through a corresponding TPP scenario characterized by membership of the United States.

³⁴ The elimination of the within-access tariffs, *ceteris paribus*, will not necessarily lead to an increase in market access, but it would transfer the rent from the government to importers.

³⁵ In this framework, foreign suppliers are portrayed through perfectly elastic supply curves, implying that Canada is depicted as a small country. This assumption may not be perfectly applicable in some agricultural markets. Also, the upward sloping domestic supply curve does not accurately represent Canada's supply management industries with production quotas. Nevertheless, we follow the literature in using this framework to illustrate the impacts of preferential trade agreements through the trade creation and trade diversion effects. We note that our analysis could be alternatively implemented through the more intricate partial equilibrium framework of Pomfret (1986), which encompasses foreign suppliers with upward sloping supply curves. Also, the welfare analysis could be carried out for specific agricultural markets with the corresponding supply and demand characteristics.

³⁶ It is customary in the international trade literature to carry out the graphical analysis by illustrating trade barriers through *ad valorem*-equivalent tariffs, where the removal of tariffs is often interpreted through the attainment of trade potentials between trading partners.

³⁷ It is often indicated that parts of tariff revenues are dissipated as a deadweight loss associated with rent-seeking activities, and managing and administering tariff policies (Krugman et al., 2014). This factor implies a higher positive net effect of the NAFTA/USMCA on welfare.

³⁸ For the supply-managed products, this graphical illustration can be coarsely perceived to depict the corresponding level of protection in *ad valorem*-equivalent terms.

³⁹ The competition-driven downward shift in the supply curve of the United States may not be significant given the relatively smaller Canadian market relative to the United States market. See Ghazalian (2013) for an analysis of the relationship between preferential trade agreements and technology in agricultural markets. Also, reductions in trade barriers (for instance, through trade preferences) in primary agricultural markets would impact supply schedules in vertically related processed food markets (Ghazalian et al., 2012; Tamini et al., 2012).

⁴⁰ For instance, domestic products and imported regional products may not be perceived to be perfectly equivalent or vertically substitutable by consumers.

⁴¹ In the case of $S_Z(\theta_1)^a$, $S_Z(\theta_0)$ could be alternatively placed above $S_{US}(\tau_0)$. This case also will be discussed through the welfare analysis.

⁴² Alternatively, consider a situation where $S_Z(\theta_0)$ associated with $S_Z(\theta_1)^a$ is situated above $S_{US}(\tau_0)$. Then, following the elimination of the NAFTA preferences, Canada will keep importing from the United States (though a smaller quantity). This situation would certainly generate deadweight losses.

⁴³ Consider once again a situation where $S_Z(\theta_0)$ associated with $S_Z(\theta_1)^a$ is situated above $S_{US}(\tau_0)$. Then, with no trade preferences in place, Canada would import from the United States. With the CETA/CPTPP trade preferences exclusively in place, Canada would import a larger quantity from the CETA/CPTPP partner. The change in Canada's welfare is ambiguous, as it includes positive triangles and a negative component. This is compared to a larger positive change in Canada's welfare that is generated by the shift from a situation without trade preferences to a new situation with the NAFTA/USMCA trade preferences.