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## Gains from Trade but to Whom? Canola and the Trans-Pacific Partnership<sup>1</sup>

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### Introduction

The Trans-Pacific Partnership (TPP) agreement is the most significant free-trade agreement to Canadians since the North American Free Trade Agreement (NAFTA). The TPP agreement is the world's largest free-trade initiative to date with 12 partnering countries.<sup>3</sup> The TPP has the potential to benefit a number of sectors in the Canadian economy, including agriculture. Specifically, much of the dialogue in support of the TPP agreement from the agriculture sector centers on the benefits that would accrue to Canadian canola producers (Canola Council of Canada 2015). Canola is the most economically important crop grown in Canada, contributing 25% of all farm cash receipts and over \$19 billion CAD<sup>4</sup> to the national economy annually (Canola Council of Canada 2016a). Canada is one of the leading producers of canola worldwide, and is also the world's largest exporter of canola with approximately 90% of domestic production exported each year as seed, oil, or meal (Canola Council of Canada 2016a). The vast majority of the production is concentrated in the Prairie Provinces of Alberta, Saskatchewan and Manitoba located in central and western Canada. Over 43,000 farmers in Canada cultivate canola, so changes that benefit the canola sector have the potential to benefit a large number of Canadian farmers, particularly in the Prairies.

The Canola Council of Canada has declared that the terms of the TPP will benefit the industry by up to \$780 million per year (Canola Council of Canada 2015). The primary source of benefits is expected to be from greater export access in Asian markets. Canada already has something akin to free trade with many of the TPP participants including Mexico, Australia, and the United States; however, the TPP agreement could increase the extent of canola trade with participating Asian countries like Japan, Vietnam, and Malaysia. In general, free trade with Japan is expected to yield significant benefits to the Canadian (and American) agricultural sectors. Japan is already being described as the "crown jewel" of the TPP agreement for Canadian agri-food commodities (Innes 2015).

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<sup>3</sup> The 12 countries that are currently part of the agreement are: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam. All participating countries signed the agreement in February of 2016; however, the agreement does not come into force until it is officially ratified by at least six member countries, two of which must be Japan and the United States.

<sup>4</sup> All dollar figures are in Canadian currency unless noted otherwise. On September 1, 2016 \$1 CAD = \$0.77 USD.

Although the benefits of the TPP to the canola sector have been touted frequently in recent discussions on the agreement and its overall benefit for agriculture, little has been mentioned regarding how these benefits might be distributed throughout the canola supply chain. The current market structure of the Canadian canola industry is characterised by a large number of producers who sell a homogeneous commodity to a small number of processors who use the canola seed to produce oil and meal. There are 14 canola crushing plants in Canada that are owned by 6 firms; the facilities in Western Canada (Alberta, Saskatchewan and Manitoba) only crush canola, while the facilities in Eastern Canada (Ontario and Quebec) crush canola and soybeans.<sup>5</sup> Given the terms of the TPP agreement and the nature of the canola sector, it is likely that the benefits to the industry will not be equally distributed along the supply chain.

The objective of this study is to examine the implications of the TPP agreement for the Canadian canola industry, with a specific focus on how the benefits – if any – will be shared among the various groups in the Canadian canola sector. We employ a simple economic analysis to evaluate various scenarios in which the TPP agreement can benefit the Canadian canola sector, exclusively considering the benefits stemming from increased market access for canola oil in Japan. The following section provides a brief background on Canada's canola trade relationship with Japan and the potential implications of the TPP agreement for the sector. Section 3 provides a description of our empirical approach and discusses our results, and we provide some concluding comments in Section 4.

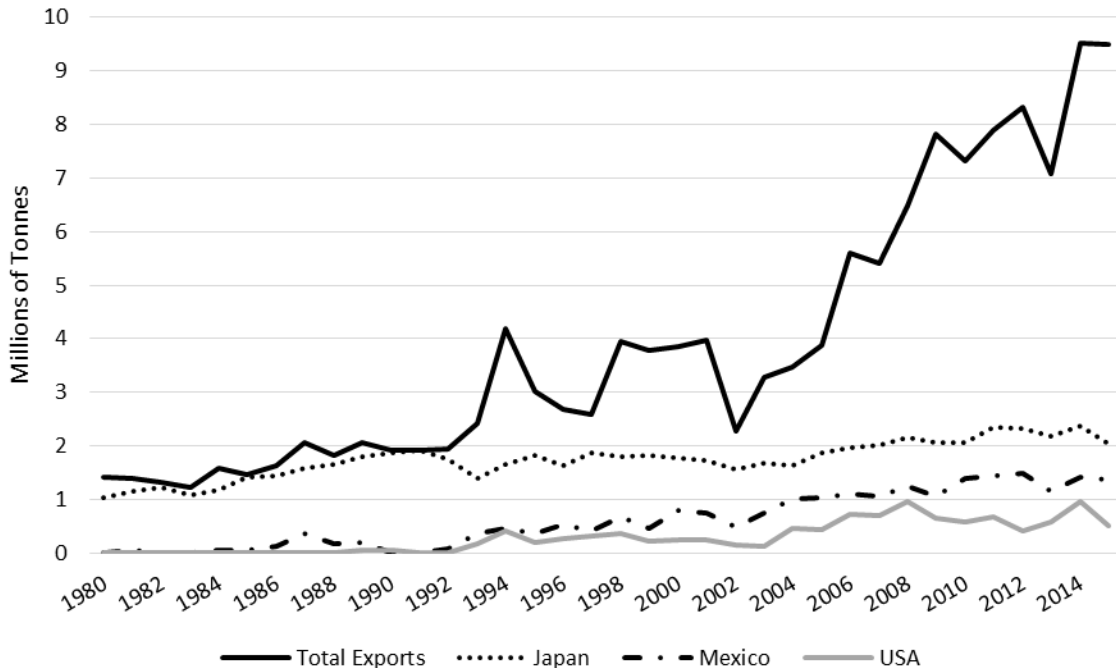
## **Background**

China, Japan, Mexico, and the United States are the most important export markets for Canadian canola seed (Canola Council of Canada 2016a). Japan has been one of the highest valued and most consistent export markets for Canadian canola seed over the past four decades (Pratt 2015). As illustrated in Figure 1, Japan is also the largest export market for Canada among participating TPP countries. Canola seed exports from Canada to Japan have increased steadily since 1980; specifically, seed exports increased by over 46% in volume and by 75% in value between 2004 and 2014. In 2014, Canadian canola seed exports to Japan totalled approximately 2.4 million tons valued at over \$1 billion.

While Canada has a large amount of domestic processing capacity available to crush canola seed into oil and meal, exports to Japan have been almost entirely restricted to seed due to prohibitive import tariffs on Canadian canola oil. Currently, Canada faces import tariffs of 13.2 yen/kg for refined canola oil and 10.9 yen/kg for crude canola oil (Customs Tariff Schedules of Japan 2014). Using an exchange rate of \$1 = 80 yen and the average price of canola oil in 2014, the tariff on a metric ton of refined canola oil is approximately \$165/ton or just over 17%. Given the high exports of canola seed to Japan, it is expected that the elimination of import tariffs through the TPP agreement will result in greater Canadian exports of higher valued canola oil. Moving from seed to oil exports to Japan is anticipated to result in processing gains to Canada, and it is this substitution from seed to oil that is expected to generate the bulk of the benefits to the industry.

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<sup>5</sup> The six firms and the number of crushing plants they own (in parentheses) are: Archer Daniels Midland (2), Bunge Ltd. (5), Cargill (2), Louis Dreyfus (1), Richardson (2) and Viterra (2).



**Figure 1. Canadian Canola Seed Exports by TPP Country (1980-2014)**

Source: Statistics Canada 2016

In general, Japanese imports of canola oil have been limited, with just over 25 thousand tons imported in 2014. Import tariffs on oil have been used as a means to protect domestic Japanese canola processors. There are currently 13 large-scale crushing facilities in Japan that have had a steady processing capacity for the last 5 years (Hayashi 2015). Many of these large plants were built in the 1960s, and the costs to maintain and upgrade these facilities are becoming increasingly prohibitive (Hayashi 2015). By removing its border protection on Canadian canola oil, Japan will be able to retire its aging and inefficient processing facilities and buy the oil from a lower-cost producer. Indeed, Japan has already indicated its interest in importing canola oil. Under the 2015 Japan-Australia Economic Partnership Agreement (JAEPA), Japan lifted import tariffs on Australian canola oil (Department of Foreign Affairs and Trade 2016). Given this and the current TPP negotiations involving Canadian canola oil, it is clear that Japan is ready to open its borders to foreign canola oil.

Existing studies published by the Canola Council of Canada (Ciuriak and Xiao 2016) and the United States Department of Agriculture (USDA) (Burfisher et al. 2014) have found conflicting estimates of Canadian canola benefits from the TPP agreement. Both studies use the Global Trade Analysis Project (GTAP) Computable General Equilibrium (CGE) model, to evaluate the direct and indirect benefits to Canadian canola from Canada's participation in the TPP agreement. Ciuriak and Xiao (2016) suggest that annual benefits from the processing of all oilseeds could be up to \$780 million by 2035, with the large majority due to increased sales of processed oil to Japan (Canola Council of Canada 2015). The report also finds that domestic oilseed production would decrease slightly under the TPP, leading to increased imports of oilseeds to Canada from the United States. Thus, the benefits of the TPP agreement to Canadian canola would accrue exclusively to the processors at the expense of domestic producers. Burfisher et al. (2014) find much smaller benefits of only \$23.4 million (\$18 million USD) in annual gains to the entire Canadian oilseeds sector.

We do not think a CGE model is necessary or appropriate to estimate the potential direct benefits of the TPP agreement to the canola sector for two reasons. First, GTAP does not treat canola separately from other oilseeds. Consequently, Burfisher et al. (2014) are only able to report the effects of TPP on the entire oilseeds sector while Ciuriak and Xiao (2016) have to disaggregate their results and make additional assumptions about how the benefits are distributed to the canola sector through the use of partial equilibrium models. Exactly how they do this is unclear, and their estimates of the benefits are substantially larger than those obtained by Burfisher et al. (2014) using essentially the same CGE framework. Second, we believe that the most likely source of gains would be due to value-added processing. Calculating these benefits is fairly straightforward; therefore, we use a simpler and more transparent approach of calculating the potential direct benefits to the canola sector.

### **Empirical Approach and Results**

We limit the scope of our analysis to direct benefits accruing along the canola supply chain. We believe there are 3 main ways in which the TPP agreement can benefit the Canadian canola sector: (1) switching current canola seed exports to Japan as oil and meal, (2) increasing seed production and exporting to Japan as oil and meal, and (3) increasing processing capacity to accommodate the substitution of canola seed exports to oil and meal exports. We model these three scenarios using 2014 export and price data, and calculate the potential (discounted) economic benefits that may arise from each. We assume that all benefits to the canola sector arising from the TPP agreement are due to increased exports to Japan as a result of the removal of import tariffs on Canadian canola oil. Second, all benefits we estimate are with respect to the current situation and not with respect to the counterfactual situation in which Canada does not participate in the TPP.

We calculate the anticipated benefits from greater canola oil exports to Japan due to the TPP agreement in the following manner. In scenario (1), the benefit is due to the difference in the average value between seed and oil using 2014 prices. We assume that processing costs are negligible and that there are no capacity constraints. In scenario (2), the benefit is due to a greater demand for canola, in general, and the value-added from processing. Under this scenario, there is additional production but it is small as a share of total canola production.<sup>6</sup> In scenario (3), we treat the construction of a processing facility as a benefit – in accordance with how the Canola Council of Canada treats such investments – and combine this with the benefit calculated in scenario (1).<sup>7</sup>

Bilateral trade data for Canadian canola seed exported to Japan in 2014 are from Statistics Canada (2016); 2014 price data for Canadian canola seed, oil, and meal are from the Canola Council of Canada (2016b). We assume that all benefits from access to Vietnam and Malaysia

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<sup>6</sup> The total increase in production – with respect to the 2010-2014 average – ranges from 2.18% (for a 20% increase in exports) to 4.36% (for a 35% increase in exports). We acknowledge that even a 2% increase in production will require the displacement of other crops, which has an opportunity cost, but we ignore this for the purposes of simplicity as well as to provide an upper bound on the potential benefits of the TPP.

<sup>7</sup> We thank an anonymous reviewer for pointing out that it may be more realistic to assume an expansion of an existing facility. We chose to look at the construction of a new facility because we are interested in calculating the highest possible direct economic benefits.

are of second-order importance and negligible compared with those generated by Japan.<sup>8</sup> We further assume that oil comprises 44% of the canola seed content, while meal comprises 56% and that oil and meal content is homogeneous across provinces. These figures represent the average oil content in the Prairie Provinces between 2000 and 2015 (Canadian Grain Commission 2016).

**Table 1. Value gained from switching Canadian seed exports to Japan to oil and meal (millions \$)**

<i>Price (\$/t)</i>	<i>Export value of seed<sup>a</sup></i>	<i>Export value of oil + meal<sup>b</sup></i>	<i>Difference</i>
<b>Mean prices</b>			
<b>Seed = 533</b>			
<b>Oil = 944</b>	<b>1,270</b>	<b>1,524</b>	<b>256</b>
<b>Meal = 403</b>			
<b>Low prices</b>			
<b>Seed = 533</b>			
<b>Oil = 944</b>	<b>1,195</b>	<b>1,354</b>	<b>159</b>
<b>Meal = 403</b>			
<b>High prices</b>			
<b>Seed = 533</b>			
<b>Oil = 944</b>	<b>1,332</b>	<b>1,703</b>	<b>371</b>
<b>Meal = 403</b>			

Notes: <sup>a</sup>Calculated by multiplying total Canadian exports of canola seed to Japan (Statistics Canada 2016) by the price of canola (Canola Council of Canada 2016b), all in 2014 data.

<sup>b</sup>Calculated by taking 44% of total Canadian exports of canola seed to Japan and multiplying by the price of canola oil (Canola Council of Canada 2016b), all in 2014 data.

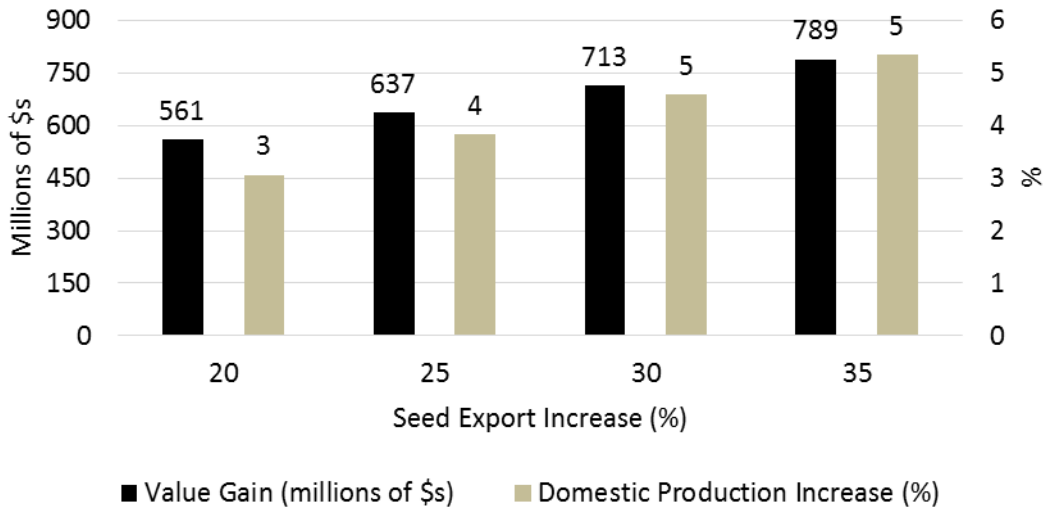
In Scenario 1, which we believe to be the most likely scenario, current Canadian seed exports to Japan would instead be processed in Canada, and then exported to Japan as higher valued oil and meal. In this case, there would be no change in domestic production of canola seed and the source of the benefit to the industry would accrue through the higher value of oil and meal exports compared with seed. In this case, we find that annual gains to the Canadian canola sector from the TPP agreement would be approximately \$256 million using 2014 prices (Table 1). These benefits are certainly significant to the industry, but they are much less than the commonly reported \$780 million per year. Furthermore, these benefits will accrue almost entirely to canola processors, with little to no benefits directly going to canola producers.

Scenario 2 considers the case where exports (and thus domestic Canadian canola production) increase due to increased demand from Japan. In this scenario we find that it is possible for Canada to realize annual gains of approximately \$780 million through increased seed production and subsequent oil and meal exports to Japan (Figure 2).

However, achieving \$780 million in annual benefits would require a 35% increase in exports to Japan, which we believe is unlikely to occur within a short period of the TPP's ratification. The main reason we consider this scenario unlikely is the current state of Japan's demographic situation. Population growth has been virtually stagnant in Japan with a growth rate of -0.2%

<sup>8</sup> In 2015, Canada exported canola meal valued at \$12.6 million to Vietnam and canola oil valued at \$31.8 million to Malaysia. These are the two main canola products exported to Vietnam and Malaysia. In comparison, Canada exported over \$1 billion worth of canola seed to Japan in 2015.

over the last five years, so an increasing population is unlikely to contribute to increased demand. In addition, Japan has a current median age of over 46 years, and older populations tend to consume less than younger populations (Wakimoto and Block 2001). Lastly, although canola oil is a popular choice in Japan, approximately 60% of vegetable oil consumption comes from other oils such as soya, olive, and palm oil (Agriculture and Agri-Food Canada 2013), and it is unlikely that tastes would change significantly in the near future.



**Figure 2. Value gained from increasing seed exports**

Finally, in Scenario 3 we expand upon our first scenario and consider a case where Canadian canola seed exports to Japan are converted to oil and meal, while also accounting for benefits from the necessary capital expenditures to increase domestic processing capacity. We set one-time gains from capital investment to be equal to \$494 million following Richardson (2016). With annual gains of approximately \$256 million from switching from seed to oil and meal exports, direct gains of up to \$750 million could accrue to the canola industry (Table 2).

**Table 2. Value gained from switching Canadian seed exports to Japan to oil and meal, plus capital investment in domestic processing**

2014 Export Value of Canola Seed (millions of \$)	Gain from Seed to Oil and Meal (millions of \$)	Capital Investment (millions of \$)	Total Gain (millions of \$)
1,270 <sup>a</sup>	256	494 <sup>b</sup>	750

Notes: <sup>a</sup>Calculated by multiplying total Canadian exports of canola seed to Japan (Statistics Canada 2016) by the price of canola (Canola Council of Canada 2016b), all in 2014 data.

<sup>b</sup>Based on an estimated \$170 million processing plant with a 2,400 tonne per day capacity (Richardson 2016)

Keep in mind, however, that this \$750 million benefit would only occur in the year of implementation, as the gains from capital investment are one-time only. The annual benefits thereafter would be approximately \$256 million. So even when we account for potential benefits from investment in additional processing, annual benefits to the Canadian canola industry, although large, are not quite as large as current claims.

## **Discussion and Conclusion**

Canada's participation in the TPP agreement will certainly provide significant benefits to the domestic canola industry through increased access to the Japanese canola oil market. We find, however, that these benefits are likely to be much smaller than what is currently being reported, and that the distribution of these benefits will be highly concentrated on the processing sector. If, in fact, the benefits from the TPP agreement to the Canadian canola industry are substantially smaller than what is now being publicized, the misleading information could have negative implications on future international trade agreements.

We acknowledge that there may be additional benefits through at least two other possible channels: (1) an increase in the demand for canola and canola products by Vietnam and Malaysia; and (2) an increase in the demand for canola oil in Japan as consumers move away from other cooking oils. However, we feel that these effects will be minor given that current Canadian canola trade with Vietnam and Malaysia is very small and it is unlikely for preferences in Japan (and other TPP countries) to change significantly in the near future. We also acknowledge that our results very likely underestimate the potential benefits if you consider the true counterfactual to be the case where Canada does not participate in the TPP and loses market share due to trade diversion. In this interpretation, being a part of this agreement simply allows Canada to maintain the status quo and remain competitive with other exporters.

Public perceptions around international trade negotiations are typically mixed. Even NAFTA, one of the largest and arguably most successful free-trade agreements that has provided economic benefits for all participating countries (United States Trade Representative 2003), has since had mixed support in North American polls (English 2008). The TPP agreement appears to be no different. In both Canada and the United States, public opinions around the TPP have been highly mixed. A recent Canadian poll suggests that over 30% of Canadians have concerns as to how the TPP agreement will impact their jobs and communities (Heck 2016). Polling in the United States also shows mixed opinions on the TPP agreement; public support for the agreement as it currently stands is less than 20% (Ipsos 2015). Given the existing public skepticism around the TPP agreement, if populations feel they are being misled about the benefits of the agreement to specific industries, we could see even less public trust in future international treaties in both Canada and the United States.

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