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DOES INTERNATIONAL TRUMP DOMESTIC TRADE? THE SEED POTATO MARKET IN CANADA

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1. Background

Agricultural commodities and products are an important part of Canadian trade, and this trade is always threatened by protectionist interests. Given the potential failure of the Doha Development Agenda of multilateral trade negotiations, Canada will likely turn increasingly to bilateral trade agreements. However, the US is and will remain Canada's largest trading partner. The recent BSE disease outbreak in Canada and the 9/11 terrorist attack in the US highlight the increased focus paid to food health and safety issues, terrorism and their relationship to agricultural trade. This has led to increased demand by the US for country of origin labelling and increased health and safety testing on food and other raw materials entering the US. There seems to be an assumption that the preservation of an international market is always in the interests of Canada. This may not be true, especially if the requirements of the international market will raise the cost of domestic trade. The purpose of this study is to address this issue with reference to the Canadian seed potato market.

The Canadian seed potato market has come under increasing scrutiny by the US and is an example of an industry that is facing greater attention in the US market. This increased focus results from three disease outbreaks in the last twenty years: 1) the Potato Virus Y Necrosis (PVYn) outbreak in Prince Edward Island (PEI) between 1989-92); the potato wart outbreak in PEI in 2000; and 3) the golden nematode outbreak in Quebec in 2006. All of these disease outbreaks resulted in a temporary ban on seed product entering the US and a strengthening of import requirements for seed potatoes after the bans were lifted. These import requirements were relaxed when the disease outbreaks were contained, but the US seems to be leaning towards making them permanent. These increased requirements include: 1) province of origin labelling (POOL) that will require more costly tracing systems than those currently in place; and 2) a ban on bulk shipments with a maximum package weight of fifty pounds.

The increased costs of compliance with the US requirements will impose additional tracing and packaging (T&P) costs on seed potato producers in Canada. This will not only affect bilateral trade with the US but also domestic trade within Canada. Because effective traceability systems must be in place for the sale of seed potatoes to all buyers, additional requirements will result in more T&P costs for all seed producers in Canada. Therefore, it is not clear if the preservation of the US market for seed potatoes justifies the increased cost of trading within Canada. This brief presents the results of analysis designed measure the costs and benefits associated with compliance to the additional US restrictions and compares these with the non-compliance case which would result in the loss of the US market.

2. Model

The market impacts of increased T&P costs on the Canadian seed potato industry are estimated using a single commodity, partial equilibrium trade model for the North American seed potato market. The model consists of three Canadian regions; Atlantic (New Brunswick and PEI), Central (Quebec and Ontario), and Western (Manitoba, Saskatchewan, Alberta and British Columbia). Seed potatoes in any region can be sold on the local market, to other domestic markets, to the US, or to the rest of the world (ROW). Import demand functions for the US and ROW markets are estimated. Supply and demand relationships are calculated from elasticity estimates. The data and sources used are described in our Commissioned Paper.

3. Methods

Increased T&P costs are included in the model through a shift in Canadian supply curves. To be effective, traceability systems must be in place for the sale of seed potatoes to local, domestic and international buyers and sellers. Therefore, additional traceability requirements will result in more costly T&P systems for all producers in Canada, not just those producing seed potatoes in any particular Province. Shifting the domestic supply curves reflects the added costs of traceability systems which will be incurred on all transactions of seed potatoes. Two increased T&P costs are used: 1) a low cost estimate of \$0.04/cwt; and 2) a high cost estimate of \$0.76/cwt. From 2000 to 2006 the average price received for seed potatoes in Canada was approximately \$12.00/cwt. The two traceability systems therefore account for about 0.7% and 6.3% of the average market price, respectively.

The low cost estimate refers to an increased tracing cost of \$0.04/cwt to account for a rubber stamp that would need to be added to the package that identifies the Province of origin. Under this estimate, the one-step forward, one-step back paper tracing system currently in place would be maintained.

The high cost estimate of \$0.76/cwt includes the increased packaging cost plus the implementation of a bar code tracing system. This system requires producers to implement an electronically based tracing system with additional scanning equipment and software. Excluded from this estimate is the radio frequency identification RFID tracing technology, which would add an additional \$4.00/cwt to the T&P costs.

Of the two estimates, the high cost estimate seems most plausible. The one step forward one step back paper based system has been questioned as a system that does not respond quickly to disease outbreaks. The bar code method is becoming the new standard for tracing systems.

4. Results

Table 1 presents the results from the trade model. Three T&P cost estimates are examined; 1) the low cost estimate of \$0.04/cwt (column 1); 2) the high cost estimate of \$0.76/cwt (column 3), and 3) an estimate of the traceability cost that would result in the same loss to the domestic market as the US seed potato market is worth to Canadian seed potato producers and consumers (column 2). Consequently, column 2 is an estimate of maximum Canadian seed potato producers and consumers would be willing to pay to preserve the US seed potato market, assuming the distribution of benefits and costs among Canadian seed potato producers and consumers does not matter in such considerations. These results are compared against the case where there is a ban on US trade in seed potatoes (column 4). Welfare measures include changes in consumer surplus, producer surplus, and total welfare resulting from the three T&P cost estimates, and from a ban on US trade. The welfare changes are relative to the baseline situation of no additional traceability requirements for Canadian producers.

Table 1. Estimated Impacts of Increased Tracing and Packaging Costs in the Canadian and US Seed Potato Markets (Millions of Canadian Dollars)

Welfare Changes	Estimated Compliance Cost			Ban of US Trade
	\$0.04/cwt	\$0.37/cwt	\$0.76/cwt	
Canada				
Consumer Surplus	-0.22	-2.07	-4.27	13.10
Producer Surplus	-0.15	-1.33	-2.73	-16.50
Net Social Welfare	-0.37	-3.40	-6.99	-3.40
US				
Net Social Welfare	-0.07	-0.66	-1.34	-9.61

Notes: cwt = hundredweight (100 lbs, = 45.45 kgs) . Baseline model prices and quantities are an average of crop years 1997 to 2001. All figures are expressed in millions of \$CDN.

The analysis of this summary presents results of welfare changes associated with the US and Canada only, since the focus is on bilateral trade issues between the US and Canada. A more comprehensive analysis that includes welfare changes in the ROW and an interregional comparison within Canada is provided in our commissioned paper.

The last column of Table 1 estimates the change in welfare resulting from a ban on imports into the US if Canada does not comply with the US requirements. This would result in the loss of \$3.40 million to Canada and \$9.61 million to the US. This welfare change provides the benchmark case to compare against various estimates of increased tracing costs.

The third column estimates the change in welfare resulting from the high compliance cost of \$0.76/cwt. This would result in a loss of \$6.99 million to Canada and \$1.34 million to the US. Therefore, the findings indicate that the

high compliance cost scenario results in approximately twice the loss in Canadian welfare over the non-compliance case. Therefore, the costs to the domestic market do not justify the compliance costs.

The first column of Table 1 estimates the impacts of low T&P costs on seed potato market welfare. In this case, preservation of the seed potato market into the US is justified, since the loss is only \$0.37 million. This figure is approximately one-tenth of the \$3.4 million Canada would lose if imports of seed potatoes into the US were banned due to non-compliance.

The second column estimates the maximum compliance cost that Canada would be willing to pay to preserve the US seed potato market. This is estimated to be \$0.37/cwt. From a distribution perspective, this scenario may be preferable to the case of a ban, since the losses are spread more equally across consumers (\$2.07 million) and producers (\$1.33 million) rather than comparatively large consumer gains of \$13.10 million and producer losses of \$16.50 million resulting from a US ban or non-compliance.

Finally, a ban on seed potatoes entering the US results in a net loss to the US of \$9.61 million. This loss is incurred by US non-seed potato producers who will no longer be able to buy high quality Canadian seed potatoes. It may not be in the US potato producers' interest to force compliance on Canadian seed potato producers; and hence the US position may not be a credible threat. However, the interests of US potato producers may be outweighed by those of US seed potato producers, who would gain as a result of an import ban.

5. Conclusions

The results indicate that it may not be in Canada's interest to comply with potential increased import requirements by the US because these requirements will affect both domestic and international sales. This conclusion is dependent upon the cost scenario faced by producers. Under low cost import requirements of \$0.04/cwt, the results support preserving the access to the U.S. market. On the other hand, the loss of domestic production and trade resulting from increased tracing and packaging costs of \$0.76/cwt is almost twice the loss that would result if the US market was lost due to non-compliance. Hence, with high additional costs for tracing and packaging it may be in Canada's interest to abandon the US market in order to preserve domestic trade.

Furthermore, the results indicate that the US would also suffer to greater extent from a ban on imports than Canada, so that the US position may not be a credible threat. Canada produces a high quality seed potato that is not easily produced elsewhere. US producers will suffer losses if they are no longer able to buy these high quality Canadian seed potatoes.