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The Government of Canada commissioned an independent study regarding the impact of changes in Canada's trade policy on the automotive sector.

To read the full report (pdf)

This report is also available in Microsoft Word. Should you wish to receive a copy please send a request to GATS@international.gc.ca

The Canadian Automotive Market

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Note: The views expressed in this report are those of the author only. They do not necessarily reflect those of the Government of Canada and may not be attributed to it.

Executive Summary

Introduction

The automotive sector is Canada's largest manufacturing sector, accounting for 12% of its manufacturing GDP and 25% of its manufacturing trade. The principal objective of this study is to calculate the impact of changes in Canada's trade policy on the automotive sector. The study is organized in five sections: the first identifies current and future trends in the industry; the second contains an econometric model to analyse the market effects of four trade policy scenarios on automobile production; the third identifies the impact of trade policy on foreign direct investment; the fourth contains an analysis of the market effects of trade policy changes on the aftermarket auto parts sector; and the last section of the study discusses the future direction of the automotive industry.

Current and Future Trends in the Industry

Despite record sales in North America over the past few years, the long-term trend for the automotive industry is weighted towards higher

growth rates in lesser developed economies, particularly China, Korea, Mexico, Brazil, India and Thailand. While global production increased by a factor of six between 1950 and 2004, combined production in Canada and the United States less than doubled over the same time period. Even though Canadian exports of finished vehicles remain very strong, there is a significant reliance on the U.S. market. From a policy perspective, there is little Canada can do about this. The export potential for vehicles produced in Canada is effectively driven by the type of vehicles foreign-owned manufacturers decide to produce in their Canadian assembly plants.

The larger growth area for the Canadian automotive industry in recent decades has been in parts and components which, by 2002, had reached 66% of total automotive employment, up from 55% in 1991. Exports of automotive parts, while also very concentrated in the United States, are slightly more diversified than is the case for vehicles.

Market Analysis: Automobile Production

The Model

The econometric analysis of the impact of trade policy on the vehicle assembly sector was conducted in three steps. First, a nested logit model was used to estimate demand at the vehicle level based on seven nests. This model selection results in higher elasticities of substitution between models in the same segment than across segments. Second, the demand model was used to calculate a number of quantities that influence the effect of policy changes in particular: (i) own and cross-price elasticities for each model with respect to all other models in the market, and (ii) the marginal costs for each vehicle that are consistent with the estimated price elasticities of demand and the observed prices. To calculate the elasticities and marginal costs, it is assumed that firms are playing a price-setting game (i.e., firms compete by setting prices strategically) in differentiated products. Third, using the estimated demand parameters, price-elasticities and marginal costs, simulations of market equilibria that would have taken place in 2005 if the alternative trade regime had been in place, are conducted to examine the impact of elimination of Canada's 6.1% import tariff on non-NAFTA vehicles.

There are four trade policy changes simulated using this model: (i) an FTA with South Korea; (ii) an FTA with Japan; (iii) an FTA with the European Union (EU); and (iv) unilateral abolition of the Canadian tariff on imported vehicles. An FTA is assumed to include the elimination of tariffs on imports from the partner country. Note that throughout, it is assumed that Canadian exports (predominantly to the U.S., and which account for approximately 84% of Canadian production) are not affected by any of the four alternative trade regimes.

An FTA With Korea

The results of the model's application to elimination of tariffs with Korea is a decrease in average prices, an increase in average markups for Korean firms and a slight decrease for foreign firms, and an increase in aggregate vehicle sales. Korean imports are estimated to increase by 9.72%, while all other foreign suppliers lose. As well, production in Canada for the domestic market declines by 0.53% (2,137 vehicles).

An FTA With Japan

While the analysis of an FTA with Japan is similar to that of an FTA with Korea, one notable difference is that due to compositional effects, i.e. Canadian consumers purchase more upmarket Japanese models as their prices decline, the average sales weighted Japanese price ends up higher with an FTA. Another is that the largest effect of this FTA would be a 3.14% decrease in imports from the EU because they compete with Japan-made cars in all luxury segments. In the end, Japanese imports are estimated to increase by 15.11%, while production in Canada falls by 0.94%.

An FTA With The EU

Due to the higher demand elasticities of the median European car in every segment, an FTA with the EU brings even stronger compositional effects than an FTA with Japan. In this scenario, the average price is estimated to increase as the generally expensive European vehicles gain market share. The increase in imports from the EU is estimated at 28.32%, while Canadian production is estimated to decrease by 0.74%.

Unilateral Tariff Elimination

Under unilateral tariff elimination by Canada, Canadian production is estimated to decline by 8,668 units annually (2.16%). While this is not nearly enough to noticeably impact assembly plant capacity decisions, employment would be affected, including in supplier plants. In addition, while Korea, Japan and the EU all benefit under this scenario, the import gains go disproportionately to the EU, which sees its imports increase by almost 24.53% versus only 7.68% for Korea.

As demonstrated in the following table, there are increases in consumer surplus that would accrue in each of the above scenarios. However, overall domestic welfare is estimated to decrease marginally in each case. This is mainly due to the large decreases in government tariff revenues.

	FTA with:			Unilateral Tariff Elimination
	Korea	Japan	EU	
Aggregate effects on:				
Price (average)	-0.35%	-0.27%	0.95%	0.30%
Demand	0.25%	0.53%	0.45%	1.22%
Canadian production[1]	-0.53%	-0.94%	-0.74%	-2.16%
Imports	0.52%	1.04%	0.86%	2.37%
Consumer surplus	0.28%	0.60%	0.51%	1.37%
Tariff revenue	-21.83%	-44.84%	-36.62%	-100.00%
Domestic welfare	-0.04%	-0.04%	-0.02%	-0.08%

1. refers only to Canadian production of vehicles sold in Canada

Foreign Direct Investment

While a tariff on final vehicle imports provides incentives for foreign firms to establish local production capacity to avoid the tariff, current tariff levels are sufficiently low and the overcapacity in the market sufficiently large such that no significant investment impact would be expected from any of the scenarios analysed in section two. In addition, the probability that any firm will expand assembly capacity in North America beyond the currently announced plans is relatively small. A future expansion of Canadian exports of finished vehicles to the rest of the world also seems an unlikely proposition, in part due to likely increases in exports from low wage countries, only a marginal

phenomenon for the moment.

Market Analysis: Aftermarket Auto Parts

In order to assess the impact of trade policy changes on the more diverse parts and components sector, a number of methodologies are used to estimate demand and supply elasticities. Simulations are then conducted to examine the impact on Canadian exports in the event of FTAs with China, South Korea and the EU. The estimated changes in Canadian exports of automotive parts range from 10.4% to 22.2% for an FTA with China; 8.4% to 11.6% for an FTA with South Korea; and 3.4% to 7.9% for an FTA with the EU in view of the fact that current trade protection for the parts sector in Canada is very low. If giving up the limited protection that exists would result in lower overseas trade barriers (which tend to be higher), the net effect would likely be positive.

Future Directions and Concluding Comments

There are many factors that are likely to affect the future direction of the automotive industry in Canada, including: the types of fuels that cars will be using; whether current trends towards keeping manufacturing close to the location of the final customer remain constant; future sales volumes in North America; the location of research and development; and government policy. However, among the limited areas where government intervention may have an effect on the automotive sector, intervention in the area of trade policy is likely to have a more limited net effect on welfare than alternatives such as investment, research and development, and infrastructure support.

The study concludes that changes to Canada's trade policy would have a minimal net impact on Canada as a whole. In particular, while elimination of Canada's automotive tariff may have a modest impact on Canadian production, these losses are expected to be offset by consumer gains.

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