Over all, the terms of trade change may be positive or negative.

The sectoral detail can be used to derive regional impacts based on the current trade patterns of each region and assuming no change in the distribution of activity across regions within each industry. Changes in the level of activity in an industry are allocated to the various regions on the basis of the current distribution of activity of that industry across regions.

2. Particular Features of the Model

A particular feature of the Department of Finance's general equilibrium trade model is the explicit modelling of "imperfect competition" and plant-level scale economies in manufacturing industries. These two features permit analysis of the rationalization effects that are likely to occur as a result of freer trade. The combination of increased import competition and enhanced access to the large U.S. market should cause Canadian firms to become more efficient by lengthening production runs and/or increasing plant size. In the model, these rationalization effects are captured by spreading fixed costs of production per plant over a larger volume of output. This generally involves a reduction in the number of plants.

Traditional general equilibrium models based on perfect competition and constant returns to scale do not capture these effects. In these models, the impacts of freer trade on real income result primarily from the output gain due to comparative advantage specialization and from terms of trade effects, which may be positive or negative. As a result, such models generally indicate

smaller real income gains from trade liberalization than when rationalization effects are explicitly allowed for.

3. Key Parameters

The key parameters in the Finance model are plant-level scale economies, pricing rules for manufacturing firms, and the sensitivity of imports and exports to changes in relative prices.

The scale economy estimates used in the Finance general equilibrium trade model were developed from an econometric analysis of cost-scale relationships in 148 Canadian manufacturing industries using plant-level data for 1979.[23] Based on this analysis, the maximum cost savings achievable through elimination of scale-related inefficiencies in the import-competing manufacturing sector were estimated at 3.3 per cent of manufacturing production costs in 1981. This maximum cost saving achievable by rationalizing production in import-competing manufacturing industries is never realized in simulations of trade liberalization. Indeed, the actual gain resulting from Canada-U.S. free trade as estimated with the Department of Finance model is just over three-quarters the potential gain. The explanation is that not all scale-related inefficiencies are caused by trade barriers. For example, transportation costs may prevent firms from building plants that minimize production costs.

The pricing strategy adopted by firms in response to free trade influences the extent

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[23] For more details, see the forthcoming Department of Finance Working Paper: Econometric Estimates of Scale Economies.