AGRICULTURE IN THE URUGUAY ROUND OF GATT NEGOTIATIONS:

IMPLICATIONS FOR CANADA'S AND ONTARIO'S AGRIFOOD SYSTEMS

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A Quantitative Assessment of the Impacts of Trade Liberalization on Canadian Agriculture

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Introduction

The Punta del Este declaration which opened the Uruguay Round states in part: "Negotiations shall aim to achieve greater liberalization of trade in agriculture and bring all measures affecting import access and export competition under strengthened and more operationally effective GATT rules and disciplines ... by:

(i) ... the reduction of import barriers;

(ii) ... increasing disciplines on the use of all direct and indirect subsidies ...; and

(iii) minimizing the adverse effects that sanitary and phytosanitary regulations ... can have on trade ..."

This was a remarkable declaration because in it Ministers conceded for the first time that the domestic agricultural policies which distort agricultural trade by encouraging production and discouraging consumption were on the table for negotiation. It also implies that the special treatment accorded to agriculture under GATT rules has not served the sector well, and that traditional agricultural commodity policies have failed to meet any reasonable set of policy objectives.

It is tempting for an economist to argue that politicians have finally learned what economists have known all along - that trade barriers decrease global welfare, and domestic policy distortions inflict unnecessary costs on domestic economies. Unfortunately, this argument is, at best, only partially correct. Ministers were more likely influenced by the rapid escalation in the budgetary costs of their domestic farm programs than by the abstract theoretical arguments of economists. They were undoubtedly aware, however, that a significant portion of the increase in

their agricultural spending was necessary simply to "offset" the price depressing effects of their own and other nations' policies. Ministers were in some sense caught in a typical "prisoner's dilemma" in which no country was willing to incur the adjustment costs of unilateral disarmament but all countries could benefit from multilateral action.

That global agricultural budget costs were out of control at the time of the Punta del Este declaration is beyond dispute. The OECD (1988) estimates that between 1979-81 and 1984-86 taxpayer costs of agricultural policy in only seven major industrial countries increased from $68 billion (US) to $97 billion, and if the additional burden on consumers is included total costs had increased from $148 to $195 billion. In Canada, which has been in the forefront in pushing for agricultural trade reform, direct payments to producers more than quadrupled from $0.8 billion (Canadian) in 1983 to $3.4 billion in 1987.

Ministers may have been willing to live with this increased spending if it had brought stability, prosperity and votes in their farm sectors, but again it is clear that this wasn't the case. In the United States and Canada farmers in the 1980s have been under severe financial stress and asset values in the farm sector fell by $423 billion US (37.4%) and $60 billion Canadian (36.4%) in real terms (1987 dollars) between 1982 and 1987. Even in the EC there are problems in the farm sector where (a) cereal support prices have been fixed in nominal terms since 1986 and intervention mechanisms have been tightened; (b) real farm family net income fell by 19 percent between 1982 and 1985; (c) a "stabilizer" package was adopted which requires price cuts if production exceeds a given level; (d) over 50 percent of farmers state that declining farm income is the most serious problem facing farming; and (e) only 41 percent of EC farmers would be sorry to see the CAP scrapped (Green Europe, 1986; Commission of the European Communities, 1988).

Given the above, and the recent agreement in Geneva on the agricultural negotiations, it seems reasonable to ask what we know about the possible effects of agricultural trade liberalization. It is to this topic that the remainder of the paper is addressed.[1]

What We Know About Agricultural Trade Liberalization

The Empirical Studies

Since the mid-1980s there have been several major research efforts aimed at evaluating agricultural trade liberalization within a multiple-commodity multiple-region framework. The major studies were undertaken by the OECD (1987), Parikh et al. (1986), the USDA (Roningen and Dixit, 1988), World Bank sponsored research by Tyers and Anderson (1986, 1988) and Valdes and Zietz (1980). Agriculture Canada has also been involved in trade liberalization work but most of its analyses have not been published (Cahill, 1988).

The various studies of trade liberalization differ with respect to commodity and country coverage, base periods, parameter estimates and the measures of agricultural protection used. Consequently, the results of the various studies differ on many details. But taken as a package they tend to tell a reasonably consistent story with respect to the most significant expected outcomes of multilateral agricultural trade liberalization. It is these broad themes that are highlighted in the next section. Later, we will identify a set of important issues about which current research tells us little.

Subsidy Levels

All countries in the industrial world provide trade distorting subsidies to their farmers. The producer subsidy equivalent (PSE) is a method of comparing subsidy levels across countries and commodities. The PSE (in percentage terms) purports to measure the total policy transfers

to the agricultural sector divided by producer value (production times price plus direct payments). It should be noted that in calculating the PSE (a) no attempt has been made by the OECD (1988) or the USDA (1988) to separate trade distorting subsidies from trade neutral transfers, so the PSE is an imperfect measure of the trade effects of domestic policies; (b) not all of the measured policy transfers are received by farmers (and are therefore excluded from the denominator of the PSE), hence a PSE can be greater than 100 percent; and (c) since the percentage PSE is measured relative to policy distorted domestic farm values, instead of world market values, the comparison of percentage PSEs across countries creates an illusion that tends to favour heavy subsidizers.

However, even with all these caveats the estimated PSEs have proven to be useful summary measures of protection. In addition, it is clear from Table 1 that the level of subsidization increased markedly between 1982 and 1986 when it reached more than $200 per person in the six industrial countries considered. It is also interesting to note that on a per capita basis Canada's policy transfers to agriculture were larger than those in the EC and the United States in both 1982 and 1986.

Table 2 which shows subsidies on a per tonne basis provides a somewhat different perspective of agricultural subsidies across countries and commodities. Even though Canada's percentage PSE for wheat is only 15% lower than that of the EC, on a per tonne basis, its subsidies are about one-half as large as those in the EC and the United States. Canada's subsidies for corn production are minuscule on a per tonne basis in comparison with the EC and US; but in dairy we are in the front ranks of subsidizers.

In order to make significant progress towards agricultural trade liberalization, countries will have to address commodity sectors which are important in value terms and which receive relatively high levels of support. Other speakers at this conference will address the issue of how Canada

Table 1: Income Transferred to Agriculture, Selected Countries 1982 and 1986*

Country	1982			1986		
	Total (b.dol.)	As a Percentage of Farm Value	$/Capita	Total (b.dol.)	As a Percentage of Farm Value	$/Capita
Australia	827	13.3	54	642	13.3	40
Canada	2,776	20.4	113	5,653	43.1	221
EC-10	29,472	29.0	108	54,488	49.8	195
Japan	18,636	66.6	157	34,850	78.6	287
New Zealand	812	35.3	257	237	13.1	73
USA.	19,202	17.3	83	36,864	36.8	153
Total	71,725	35.2	115	132,734	52.9	208

* All amounts are in US Dollars

Source: USDA, 1988/

Table 2: Producer Subsidy Equivalents, US Dollars per Tonne of Output, 1986

Country	Commodity			
	Wheat	Corn	Dairy	Beef and Veal
Argentina	10	NA	NA	NA
Australia	4	NA	183	59
Canada	59	16	265	222
EC-10	106	114	168	1116
Japan	1303	NA	593	6533
New Zealand	NA	NA	12	105
USA.	102	48	159	221

Source: USDA, 1988.

Table 3: Commodity Distribution of Producer Values and PSE, Canada, 1986

Commodity	Percent of Total Producer Value	Percentage PSE	Contribution to Total PSE	
			Value	Percent
	(a)	(b)	(c) = (a) x (b)	
Wheat	28.3	49.9	14.1	32.7
Coarse Grains	12.3	49.6	6.1	14.2
Oilseeds	9.1	48.4	4.4	10.2
Sugar	0.2	48.7	Neg.	Neg.
Crops	49.9	49.3	24.6	57.1
Dairy	18.9	81.3	15.4	35.7
Beef & Veal	16.7	10.5	1.8	4.2
Pork	9.3	11.8	1.1	2.5
Poultry	5.2	3.7	.2	.5
Livestock	50.1	36.9	18.5	42.9
Total	100.0	43.1	43.1	100.0

Source: USDA, 1988; Meilke and Warley, 1988.

can reduce its trade distorting subsidies, but it is clear from Table 3 that this discussion must be focused upon grains, oilseeds and dairy policies which accounted for 68.6 percent of Canada's farm value and nearly 93 percent of its aggregate PSE in 1986 (Meilke and Warley, 1988).

Unilateral Liberalization

There would be welfare gains to Canada from unilateral liberalization (eliminating all subsidies) but the adjustment costs in the farm sector would be substantial. Roningen and Dixit (1988) have estimated that unilateral liberalization by Canada, in 1986, would have cost Canadian

farmers 4.9 billion (US) dollars while saving taxpayers $4.1 billion and consumers $1.8 billion. The net economic benefit is $1 billion dollars or $37 per capita.

Liberalization by Canada alone would increase world prices only marginally (1 percent in aggregate) because of our small size in world markets (Table 4). The largest effects would be in the wheat, dairy and coarse grains markets where world prices would increase around 2 percent following Canada's unilateral liberalization.

In fact, of the industrial market economies (IMEs) modeled by the USDA only the US and the EC are large enough, and have high enough levels of support, to significantly influence world prices if they alone were to liberalize. The world price effects of unilateral liberalization by Canada, the EC and the US are shown in Table 4. These figures can be compared to the price increasing effects of multilateral IME liberalization, also shown in Table 4.

The results show that world prices for agricultural commodities would be 19 percent higher if all IMEs liberalized their agricultural trade, with nearly one-half of the increase resulting from liberalization in the EC and another one-quarter from liberalization in the United States. These results highlight the key economic roles that the EC and the US must play in the current trade negotiations.

While unilateral liberalization has generally been considered outside the realm of political possibility, there are a few examples of unilateral movement in the international community. New Zealand has unilaterally cut most forms of support for its farmers, and Japan and South Korea have made small steps towards trade liberalization for a few selected products. The EC has made significant changes in its support programs for agriculture (see the paper by Christensen in this volume). Nonetheless, there is no question that multilateral trade liberalization, particularly for small countries, would be much easier for producers to accommodate than would unilateral

Table 4: World Price Impacts of Unilateral Trade Liberalization By Canada, the EC and the United States, and Multilateral Trade Liberalization by all Industrial Market Economies, 1986

Commodities	Liberalization by: Canada	EC	US	All IMEs
	(percent change)			
Ruminant Meats	0.4	9.4	4.0	18.1
Non-ruminant Meats	0.6	4.7	3.2	11.9
Dairy Products	2.4	28.1	12.6	49.8
Wheat	2.6	16.4	7.5	29.5
Coarse Grains	1.6	9.0	10.5	22.8
Rice	0.3	2.4	2.6	24.0
Oilseed Products	1.0	5.2	0.9	6.9
Sugar	0.3	11.6	19.0	38.9
Other Products	0.3	2.5	3.8	7.0
Aggregate	1.0	8.5	5.1	19.0

Source: Roningen and Dixit, 1988.

liberalization. This is because world price increases would compensate for some, or all, of the reduction in farmers' incomes resulting from the loss of policy transfers.

Multilateral Liberalization: Industrial Market Economies

The distinguishing feature of multilateral as opposed to unilateral liberalization is the substantial increase in world prices that would accompany the dismantling of support measures. As shown in Table 4, Roningen and Dixit (1988) project the largest price increases for dairy products (49.8%) and sugar (38.9%) followed by wheat (29.5%), coarse grains (22.8%) and rice (24.0%). Smaller price increases are expected for ruminant meats (18.1%), non-ruminant meats (11.9%) and oilseed products (6.9%).

Although world market prices increase with agricultural trade liberalization, in some cases substantially so, in many cases the price increases are insufficient to completely offset the loss of present support in the farm sector.

The impacts of multilateral trade liberalization on Canadian producer prices and production quantities are shown in Table 5. In aggregate, Canada's producer prices are projected to be 8 percent lower and production 3 percent lower with liberalized trade than under the status quo. The largest producer price declines would be for wheat, coarse grains and oilseeds. Because of the importance of these commodities in Canada it is useful to explore the sources of the price changes in more detail [Table 6]. Roningen and Dixit's world reference price for wheat in 1986 was $160/mt, and their estimate of farm gate returns in Canada was $164, consisting of a $117 farm gate market price plus direct payments of $47. However, the $117 market price includes $35 of indirect transfers (primarily transportation subsidies) leaving an unsubsidized return of only $82. Under trade liberalization the world reference price of wheat increases to $207 and Canada's unsubsidized farm gate price rises from $82 to $130 (a 58 percent increase). However, compared to the subsidized level of $164, returns fall by 21 percent.

A similar story can be told for corn but the results are more encouraging. With trade liberalization world corn prices are projected to increase by $29/mt. This is nearly enough to compensate corn producers for the loss of $25 in direct payments and $8 in indirect payments. Hence, returns under free trade are 108 totally unsubsidized dollars versus $87 from the market and $35 in subsidies under the status quo.

In analyzing the figures in Tables 5 and 6 it is also important to understand what happens to the price of grain used by producers of livestock products. In the status quo situation livestock producers are paying $117, $65 and $87 for wheat, barley and corn, respectively. With trade

Table 5: Estimated Producer Price and Supply Changes Following Multilateral Trade Liberalization, Canada, 1986

Commodity	Producer Price	Production
	-- percentage change --	
Ruminant Meats	8	2
Non-ruminant Meats	6	-4
Dairy Products	-5	3
Wheat	-21	-1
Coarse Grains	-20	-7
Rice	NA	NA
Oilseeds and Products	-16	-8
Sugar	6	2
Other Crops	-12	-2
Aggregate	-8	-3

Source: Roningen and Dixit, 1988.

Table 6: Canadian Producer Price Impacts of Multilateral Trade Liberalization, 1986

	World (US$/mt)			Canada (C$/mt)							
	Base Price	Free Trade Price	% Change	Producer Price Net of all Subsidies	Indirect Payments	Farm Gate Price	Direct Payments	Total Farm Gate Return	Free Trade Farm Gate Price	% Change from Unsubsidized Return	% Change from Subsidized Return
Commodity											
Wheat	160	207	29	82	35	117	47	164	130	58	-21
Barley	114	137	20	42	23	65	27	92	66	57	-28
Corn	121	150	24	79	8	87	25	112	108	37	-4
Soybeans	289	297	3	211	23	234	51	285	219	4	-23
Beef	2905	3428	18	2566	234	2800	74	2874	3087	20	7
Pork	3235	3611	11	1601	192	1793	28	1821	1967	23	8
Poultry	1505	1744	18	1451	56	1507	0	1507	1720	19	14
Eggs	2980	3125	5	2980	491	3471	0	3471	3125	5	-10
Butter	2048	3500	71	NA	NA	NA	NA	4700	4625	NA	-2
Skim Milk Powder	1948	3070	55	NA	NA	NA	NA	2790	3683	NA	32
Cheese[a]	2744	3831	40	NA	NA	NA	NA	4650	4650	NA	0

Source: Roningen and Dixit (1988), Graham (1989).

[a] Roningen and Dixit report a free trade cheese price for Canada of $2848 while Graham uses $4650.

Table 7: The Costs and Benefits of Trade Liberalization to Producers, Consumers, and Taxpayers in Canada and the Industrial Market Economies[a/]

	Canada		IMEs
	Unilateral Liberalization	Multilateral Liberalization	Multilateral Liberalization
Producer Welfare (b. dol.)	-4.9	-2.5	-65.6
Consumer Welfare (b. dol.)	1.8	-0.4	33.4
Taxpayer Benefits (b. dol.)	4.1	4.1	58.4
Net Economic Benefits			
. Total (bil. dol.)	1.0	1.2	26.1
. Per Capita (dol.)	37	47	34

a/ All figures are in US dollars.

Source: Roningen and Dixit, 1988.

liberalization the prices paid by livestock producers for wheat, barley and corn increase by 11.1, 1.5 and 24.1 percent, respectively even though grain producers' returns decline with the loss of direct financial support.

The costs to Canadian producers ($2.5 billion) from multilateral trade liberalization are much smaller than the $4.9 billion loss with unilateral liberalization and the net benefits to Canadian society are larger at $1.2 billion or $47/capita (Table 7).

As a result of multilateral trade liberalization Canadian consumers and taxpayers gain $1.20 for every dollar lost by producers. In addition, because of market price increases, Canada's

agricultural gross domestic product (excluding subsidies) is forecast to increase by 16 percent and its agricultural trade balance by 0.9 billion dollars. It is important to emphasize that in Roningen and Dixit's analysis all forms of policy transfers to agriculture are eliminated and because of this the losses to producers are likely overstated.

The data in Table 7 show that the industrial market economies are estimated to gain $26.1 billion overall from multilateral liberalization, even though producer welfare declines by $65.6 billion. Only in Australia and New Zealand do world prices increase enough to more than offset the loss of policy transfers.

The net benefits to the industrial market economies from liberalization, while substantial, are small in comparison to the transfers of income within countries. The estimated income gains to consumers and taxpayers in the US and Japan are over five times the calculated increases in national incomes while the comparable figures for Canada and the EC are four to one. As a result, the income redistributional consequences of liberalization may outweigh the efficiency considerations. This raises the perennial question of why industrial economies transfer income from their consumers and taxpayers to farmers? Is it because they (a) are poor; (b) are subjected to the vagaries of markets and climate; (c) are unable to compete in a grossly distorted market place; (d) provide rural amenities; or (e) are a politically powerful lobby group capable of extracting economic rents from the rest of society. Whatever the reason, the intent of the Uruguay Round is to impose international discipline on domestic policies so that when a country provides income support to agriculture it does so in ways that do not distort trade and impose costs on other nations. This highlights the importance of arriving at a clear and concise definition of a trade distorting subsidy, backed up by GATT rules and disciplines, and of identifying acceptable ways of providing income transfers to producers.

There are four other results regarding multilateral trade liberalization that are worthy of mention.

First, for most agricultural products the global supply of agricultural products under multilateral liberalization is essentially the same as in the status quo, with supply increasing in the developing countries by about the same amount as it declines in the industrial market economies. Said another way, the world is not producing too much agricultural output but it is producing it in the wrong places.

Second, it follows from the above proposition that the agricultural trade problem, which is often viewed as a supply-side problem, is more properly viewed as a demand side problem. This is illustrated in Table 8 where the price increases under multilateral free trade are compared to the price increases that would result if total supply was held constant at the 1986 level but all border protection was eliminated. The figures show that world prices would rise, on average, to 89.6 percent of the free trade price level if only demand-side distortions were eliminated (IATRC, 1988a). Even in the most distorted markets, such as wheat, corn, rice and sugar, world prices increase more than 80 percent of the way towards the free trade level. For other commodities the proportions are even larger. These figures highlight the importance of making progress in the trade negotiations on access issues as well as on export subsidies and domestic production subsidies.

Third, one of the major justifications for domestic policy intervention is to stabilize the prices received by farmers. Unfortunately, one of the major effects of domestic price support and stabilization policy is to destabilize world market prices. Under free trade world prices would be much more stable than they have been in the past. Tyers and Anderson (1988) estimate that wheat, coarse grain and dairy product prices were 75, 13 and 136 percent more volatile in the

Table 8: World Price Effects of Demand Side Distortions, 1986

Commodity	(1) Price Change With Output Fixed at 1986 Level But Border Protection Removed (Percent Increase)	(2) Free Trade Price Change (Percent Increase)	(1)/(2) Percent Adjustment to Free Trade Price
Beef	17	18	92.6
Pork	10	11	93.0
Poultry Meat	17	18	93.0
Butter	66	71	93.5
Wheat	24	29	83.1
Corn	20	24	82.4
Rice	20	24	84.5
Soybeans	3	3	94.4
Cotton	8	9	92.0
Sugar	34	39	87.4
Average	17	19	89.6

Source: IATRC (1988a), Roningen and Dixit (1988), Graham (1989).

1980-82 time period than they would have been under free trade. A large proportion of the increased volatility of world prices was due to the nearly complete insulation of EC farmers and consumers from changing conditions in world markets. Under free trade EC producers and consumers would face greater price instability than under present policies, but many other nations, including Canada, would face a more stable environment making safety-net programs less important than under current conditions. In addition, Tyers and Anderson (1988) project that if current policies were continued into the future, by 1995 variation in world agricultural commodity prices will increase by a further 18 percent (in comparison with 1980-82), including increases in instability of 31 percent for wheat, 28 percent for coarse grains and 20-25 percent for ruminant and non-ruminant meats.

Finally, to a certain extent farmers have been getting a "bum rap" in the current trade negotiations. There is a tendency, even among those of us who know better, to assume that all of the policy expenditures included in the various subsidy calculations end up in farmers' pockets. This is generally not the case. For Canada, about ten percent of the total direct and indirect policy expenditures used in the subsidy calculations are for research, inspection services and other public goods that are not paid to producers. More importantly, over one-half of the benefits Canadian producers receive from domestic agricultural policies are necessary to offset the price depressing effects of other countries' policies. Hence, there is some merit in the argument that we must subsidize because others do, at least on equity grounds, even though there is a welfare cost of doing so. In addition, about 20 percent of the total transfers from Canadian consumers and taxpayers are lost because of inefficiencies created by distorted production and consumption and through "leakages" to input suppliers and foreign consumers.

Globally, farmers only receive about 40 percent of the total expenditures by taxpayers and consumers on agriculture (IATRC, 1988a, p. 10). Hence, the recent emphasis, in Canada and elsewhere, on finding more efficient and less distorting methods of providing support to producers is very well placed.

Multilateral Trade Liberalization: Developing Countries

The impact of trade liberalization on developing countries (DCs) is difficult to assess because of (a) the heterogeneity of the DCs; (b) the paucity of reliable data for many countries; and (c) the limited and aggregate nature of available empirical work.

Even though individual DCs are likely to be affected differently by trade liberalization they have been relatively quiet about what they want from the negotiations except for their continual call for "special and differential" treatment. This also applies to the developing country members

of the Cairns group of medium sized exporters. This may be indicative of the DC's conflicting desires. On the one hand, they want improved market access while, on the other, they strongly believe in the infant industry argument and are not inclined to relinquish their right to impose protective measures against foreign competitors.

One could argue that the limited participation of the DCs in the debate over agricultural trade liberalization parallels their position on environmental issues. Developing countries often excuse themselves from any responsibility for the environmental and trade malaises facing the world. After all, they have not taken part in the escalation of agricultural subsidies, and their non-tariff barriers are often used to tax rather than to subsidize agriculture.[2] Traditionally, DCs have not had enough bargaining power to play an active role in the GATT negotiations. However, the stalemate which occurred in the mid-term review in Montreal may indicate a willingness by at least some DCs to take a more active role (Meilke and Warley, 1989).

Food security is an important issue in most food importing developing countries. It is crucial for developing countries to have access to low-priced and reliable food supplies to satisfy the nutritional needs of their growing populations. Self-sufficiency in food production is a political goal in many developing countries and, given their history of famines, violent conflicts and debt problems, this is certainly a more legitimate policy goal in developing countries than in, say, Japan or the Community. Under current IME agricultural policies, food production in developing countries is discouraged by world commodity prices being lower than they should be and by surplus disposal programs disguised as food aid. In addition, developing countries often exacerbate their food supply problem by taxing agriculture, both directly and indirectly through overvalued exchange rates. Consequently, in the short-run, food importing developing countries have a great deal to lose if trade liberalization by the IMEs raises world food prices and reduces the availability of concessional food aid. In the longer-run, trade liberalization may contribute to greater self-

sufficiency in DCs if they are willing to allow prices to their domestic producers and consumers to rise. However, given the political power of urban consumer groups in many food importing DCs, it is unlikely that many tears would be shed in these countries if no progress is made in agricultural trade liberalization.

The main concern of food exporting developing countries is market access, and trade liberalization should improve overall market access. However, the cost of this improved access for developing countries may be the loss of the preferential market access they now enjoy for some products in some markets through arrangements such as the US-Caribbean Basin Initiative, the EC's Lome Convention and various countries' General System of Preference programs. Consequently, the gains to food exporting DCs from greater market access achieved through trade liberalization needs to be weighed against the losses they may face in some markets because of greater competition.

Loo and Tower (1988) claim that agricultural trade liberalization should redistribute income to labour in the agricultural sector of developing countries and thus narrow the gap between urban and rural wages. These authors also argue that trade liberalization should facilitate the DC's servicing of international debt. Whalley (1986) shows that developing countries would benefit from overall trade liberalization in primary products, manufacturing and services in the industrial countries only, but would lose from global trade liberalization (Table 9).

It is clear that, in aggregate, developing countries benefit the most from a reduction in protection in developed countries. In this scenario, their terms of trade appreciate significantly and the lowering of non-tariff barriers enables them to penetrate export markets more effectively. These results are interesting but they are highly aggregated and represent long-run equilibrium changes. As mentioned earlier, some developing countries will be affected differently than others

Table 9: Impacts of Alternative Trade Liberalization Scenarios on Developing Countries Annual Welfare and Terms of Trade

	50% Tariff Cut in All Regions	50% Tariff Cut in IMEs	50% Cut in Protection in IMEs[a/]
	(percentage change)		
Welfare Change	-0.8	2.8	10.7
Terms of Trade	-8.6	1.4	5.3

a/ Includes non-tariff barriers.
Source: Whalley, 1986.

by trade liberalization whether it be restricted to developed economies or not. Also, some developing countries will adjust more rapidly than others to the new market conditions. The short-run effects and the dynamics of trade liberalization cannot be evaluated with the Whalley model. It can be expected that the factors of production (labour, capital, land) will not move smoothly from one sector to another and that the ease of transition will therefore also vary from one DC to another.

The Michigan model (Deardorff and Stern, 1986), which was developed to analyze the consequences of multilateral trade liberalization, was used to investigate the issue of labour transfer in developing countries (by country and by sector) in the case of a 50% multilateral across-the-board pre-Tokyo Round tariff reduction in developed countries. It was shown that employment in agriculture would increase, especially in Brazil, Chile and Mexico and that employment in textiles would be reduced (especially in India), mostly because of the existence of non-tariff barriers. The percentage change in the index of import to home prices resulting from trade liberalization for developing countries was 0.86% but had a wide range (-0.58% for Taiwan

and 77.5% for Chile). The average change in welfare for DCs was 0.04% of GDP but varied from 0.24% for Singapore to 4.06% for Columbia. The smallness of the numbers indicates that negotiations about non-tariff barriers are of a greater concern for DCs than are tariffs.

Martin's study (1989) supports the results cited above. He grouped DCs into five regions and ran five different trade liberalization scenarios. According to his computations, DCs benefit the most from developed country global trade liberalization and the least from worldwide global trade liberalization. It is interesting to note that Africa benefits more from world wide agricultural liberalization than from developed country agricultural liberalization. This is indicative of the high level of trade affected by protection between African countries and other DCs.

What We Should Know More About Multilateral Trade Liberalization

Although the various studies of multilateral agricultural deregulation and trade liberalization provide a tremendous amount of information about the consequences of global agricultural reform there are a number of important areas in which we know relatively little.

Asset Values and Farm Structure

Trade liberalization will have impacts on the value of assets employed in farming, on farm structure, on the number of farms and farmers, on input suppliers, on the processing sector and on rural communities. On most of these matters little research has been done and what is available is fragmented. Analysis by Frohberg (1989), which in turn is based on Roningen and Dixit's trade liberalization analysis, indicates that Canada's total agricultural output would expand by 7 percent in the long-run with trade liberalization. The annual rate at which labour migrates from agriculture to other sectors of the economy would decline by about 50 percent, but the

agricultural labour force would continue to shrink. The accumulation of capital in agriculture would increase modestly by about one percent per year.

The major impact predicted by Frohberg for Canada is a sharp decline in land rental rates amounting to 24 percent in the short-run and 11 percent in the long-run. Total land use changes little, even with the sharp decline in rental rates, indicating a lack of alternative uses for much of Canada's agricultural land. In the simulation, dairy, whose output expands with the removal of production quotas, becomes a competitor for land, and land removed from grain production is shifted to roughage production to provide feed for the dairy herd. Even so, the value of milk quotas would presumably go to zero with liberalized trade and domestic deregulation.

Impact of Domestic Policies That Restrict Output Response

In theory, the influence of most agricultural commodity policies on domestic production, consumption and trade is straightforward. This is not the case, however, when policies have both supply inducing and supply restricting effects.

Internationally, the most important policy of this type is the United States grain program which provides incentive prices (target prices) above world market levels but which requires producers to remove land from production in order to be eligible for income support (deficiency payments). The net effect of this program on total US grain production remains an important unresolved issue (Gardner, 1988). In the Roningen and Dixit model, the results of which have been reported in this paper, the removal of protection results in a reduction of US grain output (3 percent for wheat and 5 percent for coarse grains) even under multilateral free trade. This is opposite to the results obtained by the OECD (1987) and Parikh et. al. (1986) who projected small increases in US grain output following liberalization. Tyers and Anderson (1986) predicted

that US wheat production would decline (3 percent) but US coarse grain production would rise (6 percent) with liberalization.

Clearly, the results of these studies are sensitive to the time period chosen and the assumptions made with respect to the efficacy of US supply controls and the incentives to increase program acreage. Given the importance of the grains sector to Canadian agriculture it is unfortunate that the confidence interval around the potential impact of liberalization on the US grain sector, and hence estimated world grain price impacts, is so large. It seems unlikely that further econometric work will do much to resolve this issue and only actual liberalization will reveal the "true" net effect of US programs.

Canada's supply management programs are another example of a policy instrument that combines both a supply inducing feature (high domestic prices) with a supply constraint (production and marketing quotas).

Recent provisional analysis by Graham (1989) using Roningen and Dixit's world price projections but different assumptions with respect to Canada's supply response and world/Canadian price transmission effects, suggests that Canada's dairy production would increase by 32 percent with free trade and net earnings (gross income less cash and feed costs) by 38 percent.[3] If the world dairy product price increases predicted by Roningen and Dixit following free trade are anywhere near correct (butter, cheese and skim milk powder prices increase by 71, 39 and 55 percent, respectively), it appears that Canada's dairy industry has less to fear from trade liberalization than is commonly assumed.

In Graham's analysis, Canadian broiler, turkey and egg production are also forecast to increase by 14, 46 and 15 percent respectively, and net earnings in the poultry sector increase marginally (3 percent).

If the results of Graham's preliminary analysis prove correct it appears that the major impacts of trade liberalization in dairy and poultry would be on quota values, provincial production shares, institutional arrangements and most likely on the structure of these industries. Even if these figures prove to be overly optimistic, the possibility that Canadian dairy and poultry producers could compete at undistorted world market prices for these commodities should not be rejected out of hand. Certainly, the economic Armageddon projected by some is not supported by the empirical analyses presently available.

Other Issues

There are a number of other shortcomings of the current generation of trade liberalization models which impedes our understanding of the implications of trade liberalization. In particular, all of the current models suffer from limited commodity and country coverage. The models are biased in their commodity and country coverage towards temperate zone products and industrial market economies. This makes it nearly impossible to analyze the impact of liberalization on the tropical products of most interest to the developing countries.

Current liberalization studies are also focused on primary commodities and yet a significant share of world agricultural trade is in further-processed products. Given the interest in value-added processing and a general tendency towards tariff escalation for processed products this is a serious shortcoming. Likewise, current studies assume that traded agricultural products are homogeneous goods when in fact many agricultural products are better treated as differentiated products (de Gorter and Meilke, 1987). As a result, the trade impacts of liberalization may be overstated.

Finally, the trade policies of the centrally planned economies have been largely ignored in the discussion of trade liberalization. And yet the CPEs have been one of the major

beneficiaries of the competitive subsidization of agricultural products engaged in by the IMEs over the past decade. How the CPEs' domestic agricultural policies and trade volumes would change if faced with undistorted world agricultural products is open to wide speculation.

Summary and Conclusions

- All IMEs use trade distorting subsidies to support their domestic agricultural sectors. Between 1982 and 1986 there was a dramatic increase in subsidization which contributed to the sectoral decline in real (inflation adjusted) agricultural prices and gave impetus to the Uruguay Round of trade negotiations (Warley, 1987; Larue and Meilke, 1988).

- Unilateral liberalization of Canadian agriculture would increase the welfare of Canada's consumers and taxpayers by 5.9 billion (US) dollars but producers would lose $4.9 billion. Only the EC and the US have enough market power and high enough agricultural support levels to have a major influence on world market prices as a result of unilateral liberalization. While unilateral liberalization is welfare improving only New Zealand has done so, and Carter, McCalla and Schmitz (p. 38) have observed that "the queue to follow New Zealand's experiment is extremely short, if it exists at all."

- The adjustment costs to Canadian producers resulting from multilateral trade liberalization would be considerably smaller than those from unilateral liberalization. Producer welfare would decline by $2.5 billion while consumers and taxpayers would gain $3.7 billion.

- World agricultural prices would increase, on average, by 19 percent with multilateral trade liberalization. The largest price increases would be for dairy products and sugar, followed by food and feed grains.

- The rise in world grain and oilseed prices following multilateral trade liberalization would be insufficient to cover the loss in the 1986 level of government support for Canada's grain and oilseed producers, particularly those in Western Canada. Canadian producer returns for meat animals would increase under trade liberalization, but so would their feed costs.

- World agricultural prices would be far more stable under a free trade regime than with current price-insulating trade policies.

- World agricultural output would change relatively little under trade liberalization, with production declining in the IMEs and expanding in developing countries. Consequently, in order to achieve the price enhancing benefits of trade liberalization border protection and import access barriers must be reduced.

- If world dairy and poultry product prices increase under liberalized trade by as much as suggested by Roningen and Dixit, the indications from initial analyses by Graham et al are

that Canadian production of these products will expand and net revenues in these sectors may be greater than under supply management.

- While social welfare in IMEs increases with trade liberalization these efficiency gains are one-fourth to one-fifth the size of income transfers to the agricultural sector. This focuses attention on the question of why IMEs transfer income to agriculture and on the search for ways to transfer income in a less trade-distorting fashion.

- About one-half of current income transfers to the agricultural sectors of IMEs are necessary to offset the price depressing effects of the IMEs own agricultural policies. More generally, the size of the income losses that would be experienced by Canadian agriculture as a result of global agricultural and trade policy reform (or of the assistance to be provided under substitute "decoupled" income support schemes) is only a fraction of the present level of direct and indirect expenditures by Canada's taxpayers and consumers on support for the national agricultural sector.

Endnotes

1. There are several other surveys of the models used for agricultural trade liberalization studies and the results of the analyses (Abbott, 1988; Blandford, 1988; Carter, et al., 1989; IATRC, 1988c; Larue and Meilke, 1988; Magiera and Herlihy, 1988; Meilke, 1987).

2. It is generally assumed that in aggregate developing countries tax agriculture (Krueger, Schiff and Valdes, 1988). However, for a conflicting view see Byerlee and Sain (1986).

3. Graham's analysis is dependent on estimates of the position and shape of the supply functions for Canada's supply managed industries. The information base for these estimates is admittedly weak.

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