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Trade Liberalization and the U.S. and Canadian Dairy Industries

by
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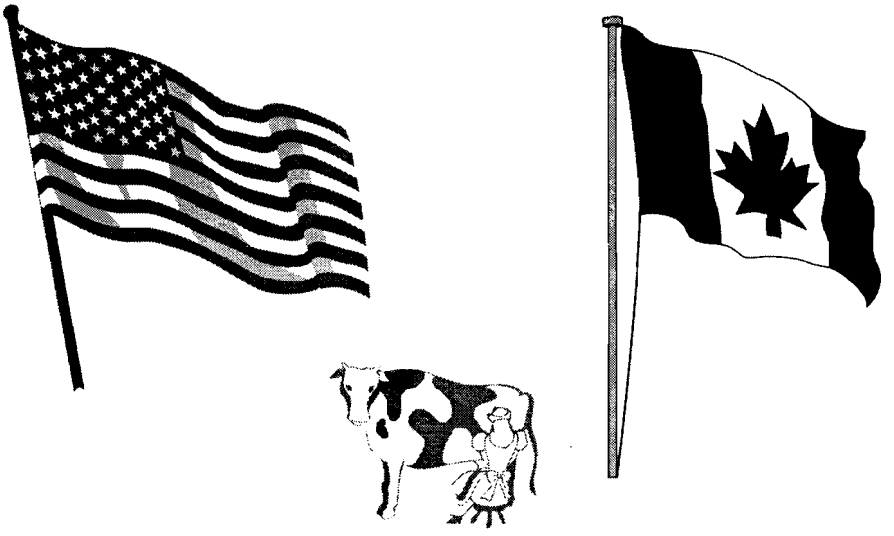

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PREFACE

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ABSTRACT

The Canadian and American dairy policies and structures are briefly compared. An explanation of the Canadian and American dispute on dairy trade followed. Finally, the possible trade prospects are assessed. It was found that if Canada was to win the dairy trade dispute the level of trade between the two countries is not expected to grow much over the next five years. In the event that the United States wins the trade dispute, Canada will have to open its domestic market and still pay prohibitively high tariffs when exporting to the United States. Trade distortion, and much lower price at the farm level in Canada would result, as suggested by a previous study.

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by Maurice A. Doyon and Andrew M. Novakovic

Relations between the U.S. and Canada are characterized by their peacefulness and enormous economic and social linkages. Nevertheless, the two countries have been arguing over dairy trade for more than six years. Despite the recent conclusion of three major trade agreements, the Canadian-U.S. Free Trade Agreement (CUSTA), the North American Free Trade Agreement (NAFTA) and the General Agreement on Tariffs and Trade (GATT), dairy trade is still a contentious point between the two countries. This paper surveys the policy and structure of the Canadian and American dairy sectors. It also discusses the short-term disputes and long-term opportunities presented by the recent trade agreements.

1.0 Dairy Policies

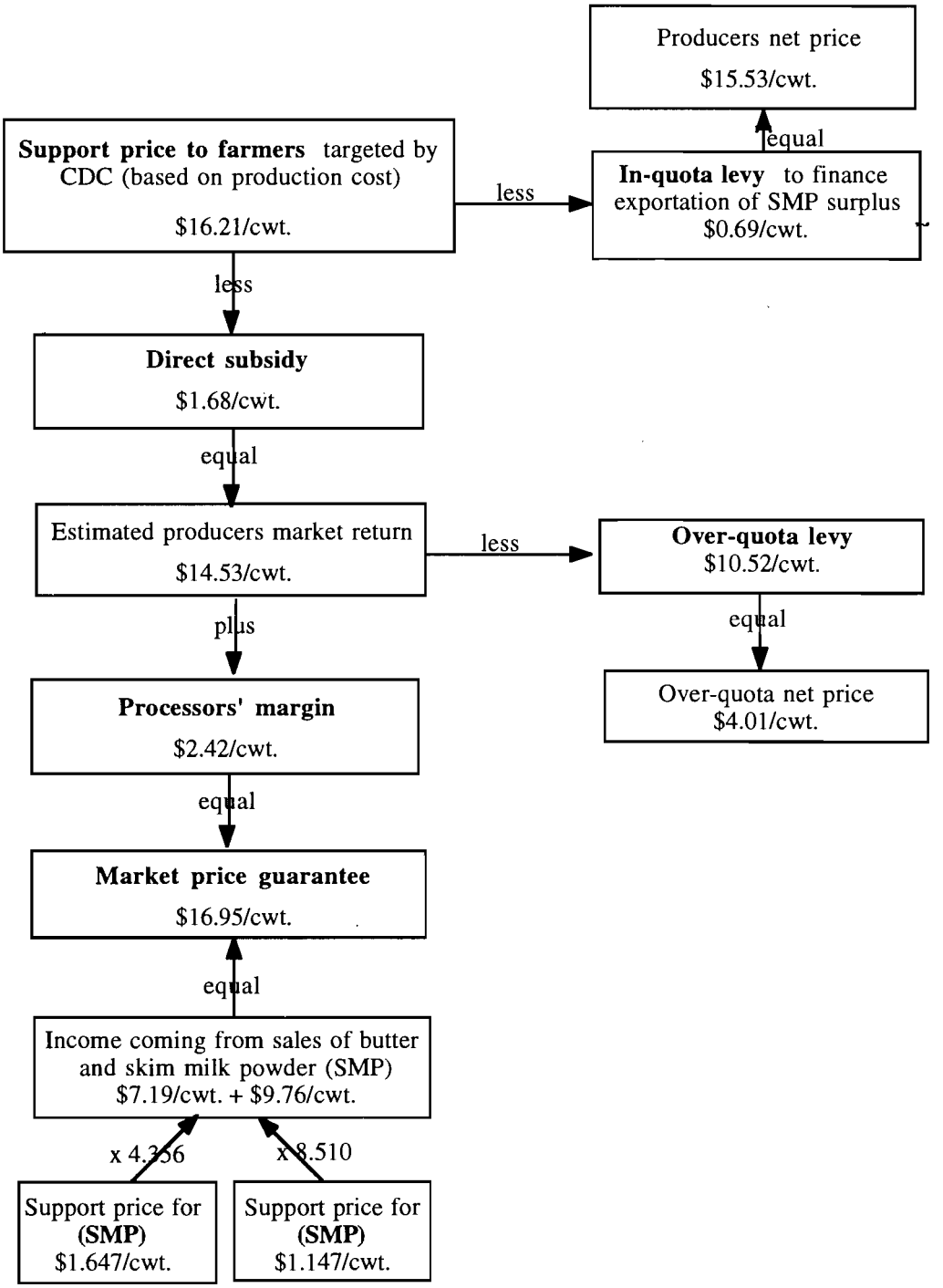
1.1 Canadian Dairy Policy

Canadian dairy policy is composed of a target price, production quotas, import quotas, and a producer levy for over-quota production and exports. These elements are integrated in a complex set of federal and provincial jurisdictions. In a simplified way, the federal government has power over international and interprovincial trade and tends to focus on manufactured product markets. Meanwhile, provincial governments have jurisdiction at the level of individual production and focus on fluid product markets.

Because the production quota is set to meet the domestic demand in butterfat, a surplus of skim milk powder, which must be sold at a loss on the domestic or international market, results Dairy producers incur entirely the loss resulting from the skim milk powder surplus through an in -quota levy. In addition, to discourage production over the individual quota of each producer, a over-quota levy exists. This levy works so that the producer assumes all the cost related to exporting butter and skim milk powder produced from over-quota production

Two other important characteristics of the national dairy policy in Canada are a target pric based on a computed production cost and the payment of a subsidy on the production of industria milk (milk used in manufacturing). The goal of the subsidy is to transfer part of the consume burden to the taxpayer. Figure 1 shows how the target price is fixed in relation to levies and subsidies

The Canadian Dairy Commission (CDC) is a federally organized agency in charge of implementing federal dairy policy. Like USDA's Commodity Credit Corporation, its supports for butte and skim milk powder are a key element of the target price for farmers, as shown in Figure 1. Th producer's net price is not necessarily what the producer receives. This price is rather a base t negotiate sales with processors. Through these conventions, processors pay for milk received base



Exchange rate: $1.00 CAN = $0.70 US

Sources: GREPA, Annuaire stataistiqiue laitier du Québec, 1994.
Gouin, D-M. L'organisation de la mise en marché du lait au Québec, 1991.

Figure 1. Support Price Structure Canada, in U.S. Dollars, August 1994

on its use.[1] The producer receives a blend price less some deductions, such as the cost of transportation and promotion.

The national dairy policy applies only to industrial or manufacturing milk. Fluid milk is entirely under provincial jurisdiction and receives a premium. For fluid milk, a governmental institution fixes the price at the production, processing, and retail levels based on production cost. Public hearings, where each group can give its point of view, (including consumer groups) are part of the price setting process.[2]

1.2 United States Dairy Policy

The key components of the United States dairy program are the support price, maintained by the Commodity Credit Corporation (CCC), and trade barriers which provide protection from imports. The government, through the CCC, does not directly support dairy farmers. Instead the CCC sets purchase prices for butter, nonfat dry milk, and cheese. These prices include a margin to cover the cost of processing milk, so that, on average, dairy farmers should receive the support price.

In the United States there are two grades of milk: grade A which may be used for fluid milk and grade B which is used exclusively as manufacturing milk. Grade B milk is used to set the minimum price of all milk through the Basic Formula Price (BFP).[3] At one time, manufactured dairy products were principally made with grade B. Today however, 70% of the milk produced in the U.S. is regulated under Federal Milk Marketing Orders (FMMO), which means that a large part of grade A milk is now used to make manufactured products. FMMOs regulate only grade A milk (Figure 2).

Historically, FMMOs were created to assure a sufficient supply of fluid milk to large cities. Producers in an FMMO benefit from more stable milk prices, because plants regulated under an FMMO pay for milk received based on its use, and farmers receive a blend price.

The support program, the BFP and FMMOs are interrelated. Figure 3 shows that the BFP is the link between the Price Support Program and the FMMOs.

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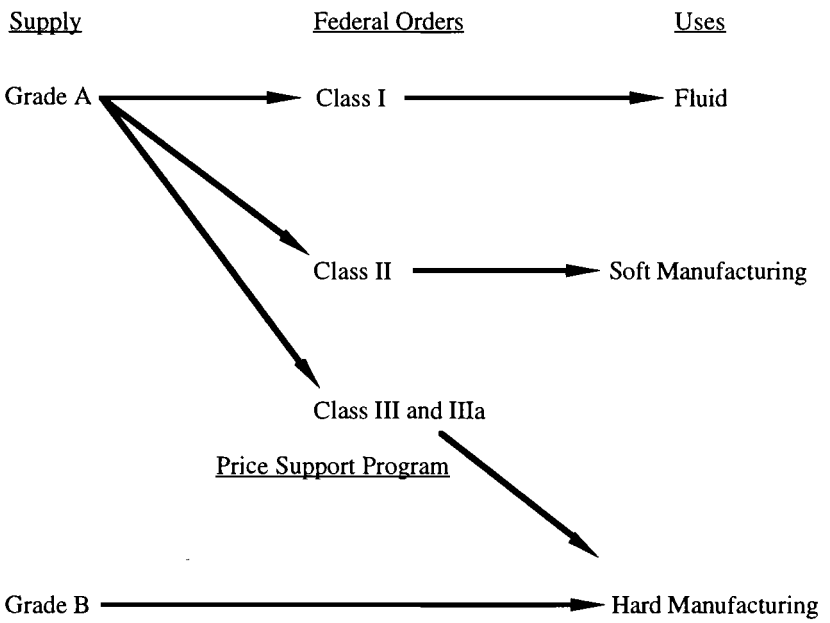
[1] The more a dairy product is perishable, the more it is valued. So, milk used for yogurt is paid more than milk used for butter. In addition, the producers control the milk allocation, giving priority to the most valuable production in order to maximize their profits.

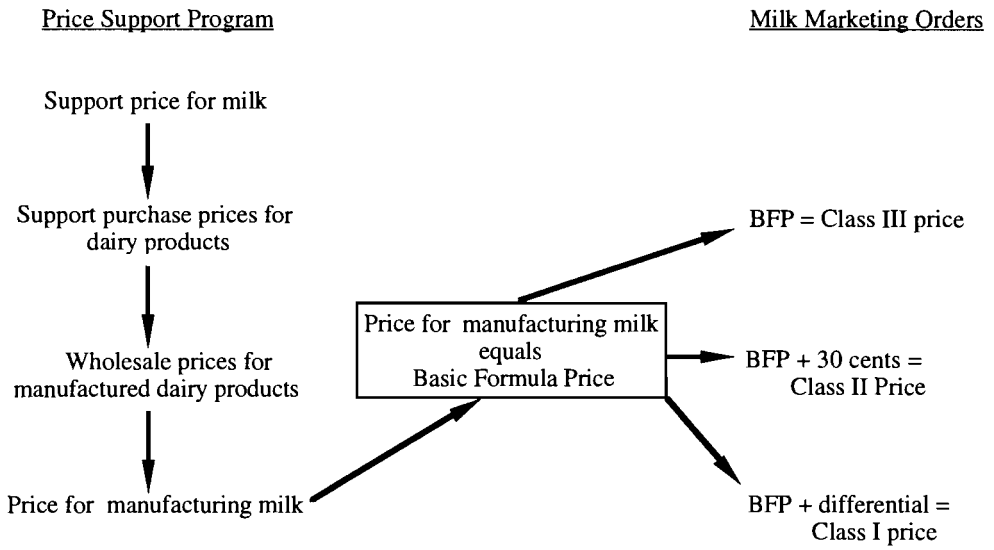
[2] For more details on the Canadian dairy policy consult Gouin, D-M. and M. Morisset, 1988.

[3] The BFP replaced the M-W price series in 1995. The new price formula is similar to the M-W. As before, the average pay prices of plants purchasing grade B milk for the base month is determined by a survey. However, to assess the expected change in pay prices from the base to the following month, a product price formula (for products made of grade B milk) is used for the new price series, instead of surveying a subset of grade B milk plants as for the M-W.



Extracted from Fallert and Blayney, U.S. Dairy Programs, 1990

Figure 2. Federal Marketing Orders Categorize Milk According to Use



Modification of Fallert and Blayney, U.S. Dairy Programs, 1990

Figure 3. The Basic Formula Price Links the Price Support Program and Marketing Orders

2.0 Regional Structure of the Sector

2.1 Production

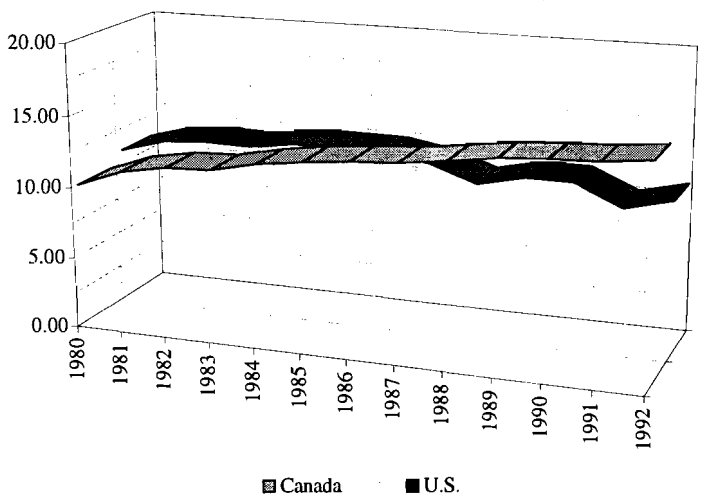
The average herd size of American dairy farms is 57 cows, compared to 43 cows in Canada. American dairy farmers also surpass their Canadian counterparts in the average milk production per cow. In the U.S., an average cow produces 15,554 lbs of milk. In Canada the average is 13,101 lbs. Thus, U.S. dairy farms produce, on average, 323,255 lbs more milk each year than Canadian dairy farms. If we compare the relative size of the dairy industry of the two countries, we can see that the U.S. sells 10.5 times more milk than Canada.

Table I. Dairy Characteristics, Canada and the U.S., 1993

	Canada	U.S.
Herd size	43 cows	57 cows
Milk per cow	13,101 lbs.	15,554 lbs.
Total milk sold	14.46 billion lbs.	150.95 billion lbs.

Sources: NMPF, Dairy Producer Highlights, 1995
GREPA, Québec Dairy Facts, 1994

Numerous studies have shown (Nicholson et. all, 1994; Nicholson and Knoblauch, 1993) that U.S. dairy farms, in general, generate lower net farm income than their Canadian counterparts. This occurs despite the fact that they have larger herds and higher yields per cow. This may be explained by lower price variability and a higher milk price at the farm in Canada (Figure 4). The higher Canadian price for milk results from the supply management system.



Source: GREPA, Québec Dairy Facts, 1994

Figure 4. Price Received by Dairy Farmers, $/cwt, 1980-1992

2.2 Processing

According to a study by Price Waterhouse in 1991, the economic performance of the Canadian dairy processing sector is lower than that of its U.S. counterpart. This results from higher processing costs in Canada than in the U.S. for all products

The lower processing costs in the U.S. might be associated with the larger size of American dairy processing plants and their higher rate of capacity utilization. This is reflected in higher sales and productivity growth per employee in the U.S. In contrast, many of Canada's larger processors believe they would be very competitive with their U.S. counterparts if the cost of raw milk were comparable.

2.3 Consumption

Table II: Per Capita Consumption of Different Dairy Products in the U.S. and Canada, 1992.

Dairy Product	Canada	United States
Milk 3.25% B.F. (lbs)	60.3	84.1
Milk 2% B.F. (lbs)	125.4	99.3
Total Milk (lbs)	215.0	225.0
Butter (lbs)	6.2	4.2
Total Cheese (lbs)	29.1	28.2
Yogurt (lbs)	7.3	4.2

Source: GREPA. Québec Dairy Facts, 1994.

Canadians drink less whole milk, but more lowfat milk than Americans. However, in total, Americans drink slightly more milk than their Canadian cousins. Similarly, the consumption of butter in Canada is 50% higher than in the U.S. This may be explained by tougher margarine regulations in Canada, and by the fact that for most of the 1980s butter was cheaper (in terms of purchasing power) in Canada than in the U.S. (Table III). The consumption of cheese is slightly higher in Canada than in the U.S. Finally, Canadians consumed 74% more yogurt than did Americans. In total, Canadians consume about 5-10% more dairy products per capita than Americans.

Table III shows the average amount of work-time a manufacturing worker requires to buy different dairy products. These data have the advantage of reflecting purchasing power, and to be in units comparable among countries. In 1993, all the dairy products listed in table III were cheaper in the U.S. than in Canada. Still, Canadians consume more cheese and butter than Americans. Thus, consumption and price do not seem to be highly correlated across countries. However, the phenomenon of cross-border shopping, discussed in section 8, seems to indicate that Canadians would consume more dairy products if the price was lower.

Table III: Minutes of Work Required to Purchase Dairy Products at Stores in the U.S. and Canada, 1985, 1989, 1993.

	U.S.A			Canada		
Products	1985	1989	1993	1985	1989	1993
Milk (1/2 gallon)	7	7.3	7.7	7.34	7.53	8.12
Butter (1 lb)	13.4	12.2	9.2	10.6	10.91	11.77
Cheese (1/2 lb)	8.7	8.4	8.9	8.58	8.45	10.11

Sources: GREPA, Les faits saillants laitiers québécois, 1994.
Milk Facts, 1994 edition

3.0 NAFTA and the Canadian Dairy Industry

The major players, with regards to NAFTA, in the agrifood sector are the U.S. and Mexico. Under the prior CUSTA, trade in farm and food products was limited between the United States and Canada[4]. The agrifood trade between Canada and Mexico is rather small. As with CUSTA, Canada excluded its dairy sector from NAFTA. Thus, the agrifood sector gets a bilateral treatment under NAFTA, rather than the trilateral structure of the agreement for other sectors. In return for this exception, Canadian exports of dairy products to Mexico face a quantitative restriction, a barrier not faced by United States dairy firms.

4.0 Canadian Position in the Uruguay Round

From its creation to today, eight rounds of negotiations, including the Uruguay Round, were held under the auspices of the GATT. None of the previous rounds were able to successfully address agricultural trade. However, a subsidy war between the U.S. and the European Community (EC), precipitated by structural excess supply, put pressure on agricultural trade in the 1980s.

Reacting to the enormous international tension that ensued from agriculture, the Canadian government took the lead in having the topic of agricultural trade placed on the agenda of the 1986 Tokyo Economic Summit. It also initiated the creation of the Cairns Group of "fair traders in agriculture." These actions, combined with pressure from the United States, resulted in the declaration of the Uruguay Round giving high priority to agricultural trade reform (Meilke and Warley, 1989).

[4] CUSTA which went into effect January 1, 1989, will phase out tariffs and some non-tariffs barriers to agricultural trade between the two countries by January 1, 1998. Non-tariff barriers remaining in effect include U.S. section 22 import quota on dairy products, sugar containing products, cotton and peanuts, and Canada's supply management import quotas on dairy, poultry and egg products.

The principal of tariffication, which is detailed later, is one of the major results of the Uruguay Round impacting dairy. The implication for American dairy farmers is the gradual elimination of the section 22[5] import quota on dairy products, and with it, the end of the dairy support price program in its current form. It also suggests more competition from dairy products produced abroad.

For Canada, there are two issues. First, the gradual elimination of import quotas[6] will force the Canadian dairy industry to face more competition from abroad and endanger, in the long run, the supply management program that provides dairy farmers with a milk price reflecting their production cost. Second, Canada sought a clarification of GATT article XI:2, to avoid the application of the decision of a GATT panel, following an American complaint against the import restrictions on yogurt and ice cream set by Canada. In accordance with article XI, that panel concluded in September 1989 that:

> "Canada's import restrictions on ice cream and yoghurt are inconsistent with Article XI:1 and cannot be justified under the provisions of Article XI:2 (c) (i). In particular, the panel found that ice cream and yoghurt do not meet the requirements of Article XI:2 (c) (i) for 'like products' imported 'in any form', because they do not compete directly with Canadian raw milk nor would their free importation be likely to render ineffective the Canadian measures on raw milk production at this time. The panel found further that the restriction of imports of ice cream and yoghurt is not at present necessary to the enforcement of the Canadian program for raw milk." (Department of External Affairs, Canada, 1989).

With the adoption of the tariffication principal and Canada's failure to obtain clarification of article XI, Canada and the U.S. continue to debate whether or not Canada can put tariffs on yogurt and ice cream. In accordance with section 22, the U.S. will be able to maintain tariffs on yogurt and ice cream, independent of the decision reached in the Canadian case.

5.0 Major Uruguay Round Provision for Dairy

5.1 Market Access

All non-tariff trade barriers are to be converted into tariffs at a level corresponding to the difference between internal and world prices over the 1986-88 base period. All tariffs are then to be reduced by 36 percent for each product area with a minimum reduction of 15 percent for each tariff line over six years. Imports at a reduced rate of duty must account for a minimum of 3 percent of

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[5] In the case of the U.S., the dairy policy was based on section 22, that allows only the U.S. to restrain the importation of grains, dairy products and sugar. Section 22 is seen as a special derogation by the GATT.

[6] The Canadian dairy policy was based on a general exception, article XI:2. This article allows a country to restrict its importation to apply, among other things, supply management on fresh products.

domestic consumption in 1995, rising to 5 percent in 2001. Where imports already exist in significant quantity, access must be maintained on terms at least equivalent to existing arrangement relating to the base period.

5.2 Export Competition

Export subsidies will be reduced by 36 percent and the volume of subsidized exports by 24 percent based on the average of 1986-90. Reductions will be implemented in each of the four commodity groups: cheese, butter and butteroil, skim milk powder and other milk products.

5.3 Domestic Support

Subsidies that affect trade or production are to be reduced by 20 percent from the average level for the period 1986-88. Subsidies that have no effects on production or which are less than 5 percent of the value of production, are excluded.

6.0 The Canadian and American Proposed Tariffs on Dairy Products

Tables IV and V show the Canadian and American proposed market access, tariff rate quota, and over-quota tariffs. The market access that Canada offers represents a larger share of its domestic market, for all dairy products, than what America offers. In addition, the tariff rate quotas in

Table IV: Canada's Proposed Market Access, Tariff Rate Quota and Over-Quota Tariffs.

Products	Market Access/Tariff Rate Quota				Over-Quota Tariffs	
	1995	2000	Base	2000	Base	2000
Fluid	141900 t 2.50%	141900 t 2.50%	17.50%	7.53%	283.80% or $12.59/cwt	241.30% or $10.67/cwt
Butter	4321 t 2.40%	7203 t 4.00%	$0.42/lb	$0.17/lb	351.40% or $7.25/lb	298.70% or $6.16/lb
Total Cheese	44906 t 5.50%	44906 t 5.50%	$0.10/lb- $0.12/lb	$0.043/lb- $0.051/lb	289.00% or $6.39/lb- $9.27/lb	245.60% or $5.44/lb- $7.87/lb
Yogurt	708 t 0.35%	708 t 0.35%	15.00%	6.45%	279.50% or $0.85/lb	237.50% or $0.72/lb
Ice Cream	763 t 0.22%	1065 t 0.31%	15.50%	6.67%	326% or $2.09/lb	277% or $1.79/lb

Source: Dairy Farmers of Canada, Country Comparisons

Note: Tariffs will be applied on the percentage basis, unless the amount perceived at the border goes under the value amount, in which case the latter will be perceived.
Exchange rate: $1 Canadian = $0.70 U.S.

Canada are, in general, lower than the American ones. However, over-quota tariffs are higher in Canada for the base and final period than in the U.S. for most dairy products.

Table V: United States' Proposed Market Access, Tariff Rate Quota and Over-Quota Tariffs.

Products	Market Access/Tariff Rate Quota				Over-Quota Tariffs	
	1995	2000	Base	2000	Base	2000
Fluid	25755 t 0.50%	25755 t 0.50%	$0.21/cwt	$0.19/cwt	$0.72/cwt	$0.63/cwt
Butter	8749 t 0.65%	15349 t 1.10%	$0.26/lb	$0.26/lb	$3.80/lb	$3.23/lb
Total Cheese	252991 t 3.40%	296681 t 4.00%	6.00%- 25.00%	0.00% 25.00%	$5.61/lb- $2.60/lb	$4.77/lb- $2.22/lb
Yogurt	n/a	n/a	20.00%	20.00%	$2.56/lb + 20.00%	$2.17/lb + 17.00%
Ice cream	6057 t 0.09%	10476 t 0.20%	20.00%	20.00%	$1.25/lb + 20.00%	$1.06/lb + 17.00%

Source: Dairy Farmers of Canada, Country Comparisons
Exchange rate: $1 Canadian = $0.70 U.S.

7.0 The Canadian and American Dispute on Dairy Trade

As specified in section 6.0, Canada has set tariffs on dairy products. However, it is in Canada's interest to put these tariffs as high as possible, while the American interest is to see Canadian tariffs as low as possible. In fact, U.S. dairy farmers are aggressively seeking greater access to the Canadian dairy market to compensate for losses resulting from the 2.5 percent of the U.S. domestic market that should be opened to imports according to GATT. American dairy farmers are also lured by optimistic studies that forecast up to a billion dollars worth of new business in Canada for them. However, Canadian dairymen have little sympathy since they must give up 5 to 6 percent of their domestic market under GATT. Thus, the potential for conflict is apparent.

Nevertheless, the major source of conflict stems from a different interpretation of CUSTA and NAFTA in view of the recent GATT agreement. It is specified in CUSTA that all tariffs should be phased out by 1998. Therefore the American position is that if Canada puts tariffs on dairy products, then these tariffs should be equal to zero by 1998. Thus, CUSTA is predominant over GATT, according to the U.S. Moreover, because of the GATT panel decision on yogurt and ice cream, the American negotiators argue that Canada should not be able to put tariffs on yogurt and ice cream at all.

In Canada, the American announcement that CUSTA and NAFTA should be predominant over GATT was not taken too seriously at first. It was seen as a strategy adopted by the Americans

to pressure Canada so it would revise downward its level of tariffs on dairy. In addition, the federal government has indicated that it has received a strong legal opinion that Canada's GATT tariff equivalents are legitimate under NAFTA. That opinion has been challenged by the U.S., and a NAFTA panel decision on the matter is expected in the fall of 1996.

The battle over yogurt and ice cream, however, is considered to be more serious. The Canadian position, which is based on a paragraph (Annex 3, par. Reform Program Modalities) of GATT that states that all legal or illegal border measures should be converted into tariffs, might be more difficult to defend.

8.0 Potential Trade

Table VI shows the actual quantity of dairy trade between the U.S. and Canada. It can be seen that the level of exchange between the two countries is quite limited for dairy products. Canada incurred a trade balance deficit for all dairy products, except nonfat dry milk and specialty cheese. This situation is explained by high tariffs or other non-tariff barriers that both countries have erected over the years to protect their national dairy policy. Despite the recent GATT agreement, the level of trade is not expected to grow much over the next five years because both countries can be expected to implement their proposed tariffs on dairy products (see tables IV and V).

Table VI: Dairy Trade Between the U.S. and Canada, 1993, Thousand of Dollars.

	Canadian import from the U.S.	American import from Canada	Canada trade balance
Butter	1 133	893	- 239
Cheese	8 503	8 478	- 25
Yogurt	948	27	- 921
Ice Cream	3 923	6	- 3 917
Non Fat Dry Milk	719	4 327	3 609
Dry Milk	702	601	- 101
Caseine	184	185	1
Condensed milk	1 532	972	- 560
Other Dairy products	12 014	1 197	- 10 817
Total	29 657	16 685	- 12 972

Exchange rate: $1 Canadian = $0.70 U.S.
Source: TIERS

However, the potential for dairy trade between the U.S. and Canada is important. Most of the 29 million Canadians live close to the U.S.-Canada border. Moreover, the three biggest Canadian cities, Toronto, Montréal and Vancouver are less than a two-hour drive from the U.S.

Part of that potential can be evaluated by the incidence of cross-border shopping for dairy products. As seen in Table VII, throughout 1991, 1992, and 1993, many Canadian consumers went to the U.S. to buy dairy products, attracted by the cheaper prices. In some provinces, the purchase

represented up to 20% of domestic consumption for specific products. Since 1994 that phenomenon has been greatly reduced. The most important reason for the reduction of cross-border shopping is the devaluation of the Canadian dollar (over 20% since 1991). Of lesser importance is an effort by the Canadian dairy industry to reduce the price differential of dairy products between the U.S. and Canada.

There are obviously internal pressures in Canada to reduce that price differential. Cross-border shopping could be seen as a short term pressure, but in the long run it is the recent GATT trade agreement that put the most pressure on the Canadian dairy industry. As a preparation to face American competition, the dairy processing sector has created larger entities through merger and acquisition in the early '90s. The direct producer subsidy has been reduced from $1.87/cwt. to $1.68/cwt. (see figure 1) and will probably be phased out over the next five years. In addition, serious talks are in progress to have one Canadian pool price and a national quota trade exchange instead of provincial pools and quota markets.

Table VII: Cross-Border Shopping, Percent of Retail Sales for Some Dairy Products, 1991-1994

Cheese	Canada	Québec	Ontario	Prairies	BC
1991	2.5%	0.7%	2.5%	1.0%	9.2%
1992	2.5%	1.0%	2.1%	1.0%	9.9%
1993	2.4%	1.0%	2.0%	0.7%	9.7%
1994	1.7%	0.8%	1.0%	0.4%	7.7%
Butter				[1]	
1991	3.8%	1.6%	4.3%	3.9%	11.4%
1992	5.2%	2.4%	5.5%	4.3%	16.1%
1993	6.3%	2.4%	6.4%	5.9%	20.7%
1994	5.7%	1.9%	6.2%	5.3%	18.4%

[1] Manitoba and Saskatchewan

For fluid milk, cross-border shopping represented more than 3% of Canada retail sale in 1991. Most of it was taking place in B.C.

Source: Dairy Farmers of Canada

As the cross-border shopping data shows, proximity from the U.S. and price differential are highly correlated with the level of trade. Vancouver is very close to Washington state and British Columbia is the Canadian province that has the highest price for dairy. It is also Vancouver that has the highest incidence of cross-border shopping.

However, American dairy farmers should not get too excited by this prospect. The cross-border experience shows that the exchange rate is a very efficient constraint to trade, or might even make the Canadian dairy products attractive to American consumers. In addition, American dairy farmers should be critical of studies that promised them 1 billion dollars worth of business in Canada.

It is not likely that, in the eventuality of a total free trade or of freer trade tomorrow, Canadian dairy farmers will stop milking their cows. As it was pointed out by the President of Dairy Farmers of Canada, "Isn't it better to raise returns in the U.S. instead of reducing them for Canada?" (Hoard's Dairymen, April 25, 1995). Thus, it is likely that the price of dairy products in Canada will reach an equilibrium with the American price, plus transportation cost. Americans will than pick up few new businesses in Canada and Canadian dairy farmers will see their returns greatly reduced. A study by Doyon et al. that uses 1989 data seems to confirm that previous assumption in the short run. The study explores two dairy trade scenarios between Quebec, Ontario and the Northeast U.S. In the first simulation the U.S. is allowed to unilaterally export yogurt and frozen desserts to Canada, while the second simulation reflects a total dairy free trade environment. The study results showed that Quebec and Ontario lost more high value net exportation trade under simulation I than under simulation II. Simulation I resulted in greater trade in yogurt and ice cream than simulation II suggested is optimal.

One interesting finding is that fluid milk processing and distribution were minimally affected by either trade scenario. It appears that marketing costs alone are enough to insulate fluid milk from free trade. From the model results and cross-border purchase estimates (Dairy Farmers of Canada), 3% to 5% of national consumption is probably the upper limit on Canadian fluid milk imports.

Another implication is that the Canadian regions consistently fared well with regards to cheese when trade was allowed between U.S. and Canada. Quebec cheese processors shipped cheddar and specialty cheese to New England, while Ontario cheese processors shipped cheese to New York. These trade flows were robust, and resistant to changes in marketing costs. On the other hand, the U.S. Upper Midwest region had a clear competitive advantage for cheese in Western Canada. Despite the loss of the Western Canada market, Quebec and Ontario more than compensated with cheese exports to the Northeast U.S.

Through shadow prices, the study results confirm that any degree of trade liberalization will change the intrinsic value of raw milk, especially in Canada. Although the price effect on raw milk has not been directly estimated, changes in the supply shadow prices still allow for conclusions. Using the average net milk price at the farm for Quebec and New York in May 1995 and the predicted changes in supply shadow price from the base simulation to the two trade scenarios, a price effect can be estimated. In Quebec, dairy farmers received an average of $16.00 per hundredweight in May 1995. After simulation I, milk price would have been reduced to $13.25 per hundredweight and further reduced to $12.25 per hundredweight with the implementation of free trade conditions. New York dairy farmers received an average of $12.75 per hundredweight in May 1995. Simulation I results in a slight increase to $13.00 per hundredweight and, under free trade conditions, average price in New York for raw milk at the farm would rise to $14.50 per hundredweight. These price effects should be viewed as the first step in a price adjustment process following a shock to the market structure. The final equilibrium should imply a smaller price decrease for Quebec, and a smaller price increase for New York.

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