AMERICAN AGRICULTURAL ECONOMICS ASSOCIATION

JOURNAL of STUDENT PAPERS

1993

POTENTIAL EFFECTS OF INTERPROVINCIAL MILK AND QUOTA TRANSFER ON THE CANADIAN MILK PRODUCTION SECTOR

R.A. MUSSELL, University of Guelph

ABSTRACT

This paper presents an examination of the potential effects of interprovincial trade in milk and milk quota on Canadian dairy farmers. A synthetic model of the Canadian dairy supply management system is derived and solved. The two milk markets and quotas are combined into a single pool-single quota system using explicit assumptions to examine the implications on producers. The effects on producers are measured both in terms of quota holdings and total revenue.

Under a system of interprovincially transferable milk and milk quota, quota will flow toward the region in which it has the highest initial value. Trade in quota will cause prices to equilibrate across all regions. Trade in milk allows regions which lose production quota to import milk from regions which gain quota. The empirical results of this study indicate that quota will flow from regions of low quota value to regions of high quota value and that milk will be exported from the regions which gain quota.

INTRODUCTION

The policy instruments which evolved throughout the past twenty-five years in the Canadian dairy sector have left the industry in an awkward competitive position. Along with its relative isolation from the international market, the industry has divided itself along provincial boundaries. Quota allotments
defined on a provincial basis, along with barriers to interprovincial trade in milk and quota have created a balkanization of the Canadian market in which comparative advantage is not recognized. The system has had difficulty responding to changes in market conditions which have occurred since the institution of supply management. Thus, in a world characterized by increasing liberalization in trade, the Canadian dairy industry finds itself in a vulnerable position.

With the goal of improving the Canadian dairy industry's competitive position, a committee of industry stakeholders was formed in July, 1992 to make recommendations for improvement in the system. The committee released the results of its findings in December 1992. It is the purpose of this paper to examine the potential impacts of two of the recommendations for reform made by the committee: that of conversion to a single pool and single milk quota, and that the interprovincial barriers to trade in milk and milk quota be removed.

ACKNOWLEDGEMENTS

The author wishes to thank Dr. Ellen W. Goddard of the Department of Agricultural Economics and Business at the University of Guelph. Dr. Goddard lent her analytical expertise and volunteered much of her time to the completion of this paper. Without her enthusiasm and support, the author would have found it next to impossible to get the study off the ground. Her patience is greatly appreciated. Thanks are also due to Marc Lazenby and Jeromy Ten Hag of the University of Guelph. Their assistance was instrumental in compiling the background section of this paper, and many thanks are deserved for their work on an earlier version. The assistance of Debbie Harkies of the Department of Agricultural Economics and Business at Guelph with the layout of the paper is also greatly appreciated.

BACKGROUND: THE SUPPLY MANAGEMENT SYSTEM

In 1965 the Ontario Milk Marketing Board was established to regulate the provincial supply of milk from the producer to the processor. Other Canadian provinces were quick to follow the lead of Ontario and adopt similar supply management systems for milk. The role of provincial marketing boards in restricting supply was bolstered by binding import quotas on milk products enforced by the federal government. This effectively allowed the Canadian dairy industry to operate under a regulated supply. Figure 1 is a graphical representation of the supply management system. Under supply management, the price paid to producers, called the cost of production price (COP), is set to reflect the cost of production of milk on a provincial basis. When this price is established, provincial marketing boards restrict the supply to the provincial milk demand (Q). The Marginal Cost (MC) is the point of intersection of the producer supply curve and the quantity demanded. The difference between the Marginal Cost and the Cost of Production is equal to the Static Quota Value. This quota value is the freely negotiated purchase price of the right to produce and sell milk in the supply managed market. The Canadian dairy supply management system empowers provincial marketing boards to administer these milk quotas.

QUOTA STRUCTURE

The milk marketing system in each province consists of two quota types: provincially regulated fluid milk quota or Group 1, and a national market share quota (MSQ) which directs milk to the industrial market.

Ontario and Quebec entered into a market sharing quota arrangement in December of 1970, with the remaining provinces, except Newfoundland, joining between December 1971 and April 1974, and thus forming the national milk market sharing agreement. Every province was given a quota allotment upon entry and these amounts have been adjusted over time to reflect processor demand for industrial milk.

QUOTA PRICE TRENDS

Group 1 or fluid quota usage is calculated on a litre per day basis (L/day). This provides the holder with the right to ship 1 L/day for as long as they continue to hold quota. Producers do not actually own quota; provincial marketing boards retain ownership of all quota. A producer may only hold 75% of their total combined quota volume in the form of Group 1 quota. The remainder of the milk the producer ships must be covered by Group 2 quota.

The nationally based Group 2 quota is regulated by the same marketing board in each province that controls the fluid market. Group 2 quota is based on a kilogram (kg) of butterfat per year basis. This allows a producer to ship 1 kg of butterfat each dairy year (Aug. 1 - July 31). On August 1st of any given year a producer will have 100% of his Group 2 quota classified "unused". As this quota is filled throughout the dairy year it moves from the category of "unused" to category of "used". These separate categories of quota may be bought and sold on the quota exchanges in each province. Unused quota may be used by the purchaser in the current dairy year but used quota must be held until the following dairy year. As quotas are property of the marketing boards and not the producers, the amount of quota held by a producer can be increased or decreased to reflect changes in the national domestic market or to balance the provincial share of the national quota.

When supply management was first

implemented quota was granted free of charge to dairy producers in an amount equal to their previous years production. Since its introduction, quota has assumed value. Quota exchanges have been provided to allow dairy producers to increase or decrease their share in the provincial market of both fluid and industrial milk. Industrial and fluid milk quota is pooled into one quota in Manitoba and their exchange is based on this pooled quota. Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario and Alberta have exchanges for used and unused MSQ as well as for fluid quota. The provinces of Newfoundland, Saskatchewan and British Columbia have no official quota exchange. Prices paid for all types of quota (used, unused, fluid) in all province has risen steadily on a nominal basis, and have also increased in real terms. The 1990 average prices of quotas in those provinces that have exchanges are listed in Table 1.

PROPOSED CHANGES

Proposed changes to the current supply management system for milk were tabled in a report released in December 1992. A committee composed of members of the Dairy Farmers of Canada, the National Dairy Council, the Canadian Dairy Commission, and the Dairy Bureau of Canada made its recommendations based on consultations with industry stakeholders. The following section summarizes some of the proposed changes found in the report as they most directly affect the farm production sector.

RECOMMENDATIONS: SINGLE POOL, SINGLE QUOTA

The report recommends that the present system, under which provincially administered fluid milk quotas are held separately from nationally administered industrial milk quotas, be combined into a single quota system. This system would be implemented by August 1, 1995. In addition, the report recommends that the single pool, single quota system be implemented on a gross income neutral basis. To accommodate the proposed changes, component testing would be essential in all provinces by August 1, 1993. Quota administration would be converged into a single, national system.

Gross income neutrality would be accomplished by restructuring production to attain a producer blend price equal to provincial blend prices (initially), and eventually equal to a national blend price. Producers below the provincial average would receive higher prices, but have production cut back to buoy their blend price up to the provincial average. Conversely, producers with a higher blend price would receive a lower price, and be required to increase production. After rationalization at the provincial level, a second round of rationalization would occur at the national blend price.

INTERPROVINCIAL TRANSFERABILITY OF QUOTA

The report recommends that one quota be allocated to producers for both butterfat and solids-non-fat. The recommendation goes further to suggest that while domestic requirements for both butterfat and solids-non-fat ought to be determined for 1993-94, the issuance of the new quota ought to be on a butterfat basis. This quota would be released no later than August 1, 1994. Initially, the new single quota would only be transferable within provinces. After a period of time, quota would be transferable between provinces. The report suggests a national quota exchange system could be set up in the future to facilitate quota transfer.

The new quota would also be

accompanied by more stringent production requirements. Over quota production would be ineligible for any remuneration, and would result in an offsetting reduction in quota in the following year. The report suggests that the export levy currently placed on producers (and considered an export subsidy under GATT) would be dropped, and that the system of uniform classification could handle overproduction. Other levies such as administration, advertising, and research would remain in the supply management system.

NATIONAL DAIRY PRODUCT CLASSIFICATION

The Report recommends that a committee under the Canadian Dairy Commission design a system of national classification for dairy products. Presently, provinces differ in their classifications of dairy products, and in their cost of production formulae. The classification of milk products impacts producers' eligibility for federal direct subsidy. Only products classed as "fluid milk products" are eligible for the $6.03/hl direct subsidy. Provincial classifications have previously determined how much of the subsidy individual producers will receive.

The report suggests that national requirements be calculated and that a national system of classification be used, yielding a national blend price. Implicit in this, although not stated in the report, is a national cost of production formula. Multiple component pricing is recommended for all provinces, testing for which would begin by August 1, 1993. The report recommends that end use pricing be used in calculating the national blend price.

Implementation of the national classification system would begin at the provincial level. The elimination of provincial differences in classification would begin in 1993-94 and 1994-95. The national system would be fully implemented by August 1, 1995. The report recommends that a national classification system be set up by August 1, 1993.

CONCEPTUAL APPROACH

Alterations in market conditions have changed the optimal allocation of resources in milk production from the levels which were used in the determination of supply management policies in the early 1970's. Changes in the structure of the milk market as well as technological advance have resulted in greater efficiency in the dairy industry. This has, to some degree, allowed a comparative advantage to be enjoyed by some regions in milk production. The current system under which milk and milk quotas are constrained against interprovincial transferability has been unable to allow realization of these regional advantages.

The graphs in Figure 2 illustrate the effects of transferability of milk and milk quota. Prior to trade, the COP price is assumed to be defined arbitrarily by the individual region. This COP intersects the demand curve to establish the quantity of milk demanded. The point at which this quantity intersects the supply gives rise to the marginal cost. The difference between the COP and the marginal cost is the static quota value.

The transfer of milk and quota between regions will depend on the static quota values of each region. The region with the higher static quota value will tend to bid quota away from the region with the lower static quota value, since greater economic rents and profitability can be realized from doing so. In the figure this is illustrated in the quota transfer from Region B to Region A at the new cost of production price NCOP, which is equal to a weighted average of the original COP prices across the two regions. This transfer of quota to Region A will result

in increased production for Region A (Q_A to QS_A'), and decreased production in Region B (Q_B to QS_B'). The new regulated price, NCOP, causes the quantity of milk demanded in Region B to expand to QD_B', and the demand in Region A to contract to QD_A'. The domestic quantity produced in Region A increases causing an increase in the marginal cost, while the decrease in production in Region B results in a decrease in marginal cost. The decreased production in Region B is exactly filled by the increase in production in Region A, because the system is constrained from any other trade, and transportation costs are assumed to be zero. In the context of Figure 2, exports from Region A (QS_A'-QD_A') are exactly equal to imports in Region B (QD_B'-QS_B'). Since the price in both regions is equal (NCOP), and the quantity of exports is equal to the quantity of imports, the system equilibrates at a common quota value for both regions.

EMPIRICAL MODEL SPECIFICATION BASE SIMULATION

A synthetic model using annual data from 1990 formed the basis of the analysis. Initial simulations were made for the nine provinces involved in the national milk supply management agreement using data from Chyc (1992), Rude (1992), and Agriculture Canada (1990). All variables were deflated by the Consumer Price Index to impose homogeneity. The six equations representing fluid demand, fluid supply, industrial supply, total milk production, retail price linkage, and industrial blend price linkage used in the initial simulation are shown in Table 3. The elasticities assumed are presented in Table 2.

Since there exists a diversion market for milk with separate quota in the form of the industrial milk market, total milk produced cannot be estimated directly from either the fluid or industrial market supply curve. The total milk which is produced in a province was assumed to be a function of its quota holdings and the extent to which fluid milk is diverted to the industrial market. Thus, the payout percentage will partially determine the total milk production. Since the Canadian Dairy Commission subsidizes the industrial diversion market with support prices for
cheese and butter, it was assumed that the industrial demand was equal to industrial supply at all price levels. The industrial demand function was considered to vertical in the base simulation.

The industrial milk market uses quotas which are sold in kilograms of butterfat per annum. This was converted to litres/day to be compatible with the fluid quota assuming a test concentration of 3.6% butterfat. Some provinces exchange quota at irregular intervals, or in conjunction with livestock. Data was missing in whole or in part for Prince Edward Island, Nova Scotia, Saskatchewan, and British Columbia. Quota values from New Brunswick were used as a proxy for PEI and Nova Scotia. Alberta quota values were used for Saskatchewan, while Ontario quota values were used for British Columbia. Manitoba already has a single pool-single quota system. The value of this quota was used as a proxy for fluid quota, and Alberta industrial quota values were used for the Manitoba industrial market. All quota values were converted to an annual value. This was done by calculating the rental value by multiplying by a deflated interest rate of 8.27% and converting from a litre/day basis to a hectolitre/year basis. This quota value was assumed to be the value of quota on an annual basis.

SIMULATION II - NATIONAL SINGLE POOL-SINGLE QUOTA

The second simulation modelled a national single pool-single quota system. It allowed provincial marginal cost, provincial

milk production, and national static quota value to be determined endogenously. A national blend price was calculated as a weighted average of provincial fluid and industrial milk prices. This served as a single pool price. The identity requiring all provincial milk exports to sum to zero allowed provincial marginal cost, provincial blend price, and national static quota value to be solved endogenously. The equations used in the second simulation are summarized in Table 3.

The following acronyms are used throughout the synthetic model:

RPRICE-Retail price of milk, in $/hectolitre
PPRICE-Cost of production price for fluid milk, in $/hectolitre
ADV-Advertising expenditure, in $
BLENDP-Industrial milk blend price, in $/hectolitre
MC-Marginal cost price of fluid milk, in $/hectolitre
INDMC-Marginal cost price of industrial milk, in $/hectolitre
SALES-Retail sales of fluid milk, in litres
SALESM-Sales of industrial milk, in litres
TMP-Total milk produced, in litres
SQV- Fluid milk static quota value in $/hectolitre
INDSQV-Industrial milk static quota value, in $/hectolitre
P-Differential between fluid and industrial price, in $/hectolitre
PAYOUT-Proportion of fluid milk production used by the fluid market
TOTQU-Total milk quota holdings, in litres/day
NSQV-Static value of single quota, in $/hectolitre
NMC-Single pool, single quota marginal cost, in $/hectolitre
EX-Net exports, in litres

Key Identities

1. MC = PPRICE - SQV
2. INDMC = BLENDP - INDSQV
3. TMP ALES + SALESM
4. EX = TMP - (SALES + SALESM)
5. NMC = NBLENDP - NSQV

RESULTS

The base simulation presents results based on the current system of ply management in the dairy industry for each province. These results are given in T e 4. The greatest fluid and industrial quota values are for the maritime provinces an uebec. Quebec has the lowest marginal costs in the country. The quota values and margi costs for the other provinces are in a narrow range. The farm prices of fluid and industrial milk also occur in a narrow range across provinces.

The second simulation solves the model allowing transferability of milk and quota across provinces. The results are presented in Table 5. Quebec and Prince Edward Island gained quota through transferability. All other provinces lost quota. PEI, Quebec, and the prairie provinces exported milk, while Nova Scotia, New Brunswick, Ontario, and British Columbia import. Table 7 shows the change in aggregate annual quota value across provinces. While Quebec gained a significant volume of quota, the aggregate value of its holdings declined. Conversely, the western provinces lost quota but realized a substantial gain in the value of quota holdings. Total milk production decreased in every province except for Quebec and Prince Edward Island. Table 6 shows the impact on provincial revenues of trade in milk and quota. All provinces except Quebec and Prince Edward Island suffer a loss in total revenue from trade in milk and quota.

CONCLUSIONS

The results of this study have shown the potential effects of a single pool-single quota supply managed milk market on Canadian dairy producers. It appears from the results that the removal of provincial boundaries to trade in milk and milk quota could have significant structural impacts on the Canadian dairy industry. The flow of quota away from some provinces and into Quebec and Prince Edward Island suggests that the industry could be characterized by regional milk production in the future. This analysis indicates that PEI, Quebec, Manitoba, Saskatchewan and Alberta would be net exporters of milk under a national single pool, single quota system. Total milk production would fall in all provinces with the exception of PEI and Quebec.

The structural change and altered quota values suggest that any move toward a single pool-single quota system on a national basis could have political consequences. This analysis indicates that the revenue benefits of trade in milk and quota accrue only to PEI and Quebec. Other regions stand to lose revenue. Trade in quota results in a gain in aggregate quota value for most provinces, with Quebec, the province which gains the most quota, incurring a loss in aggregate quota value.

Freely traded milk and quota appears to flow in a manner consistent with the theory. Quota flowed to regions with higher quota values from regions with lower quota values. The regions which gained quota exported milk to other regions which lost quota through trade. Free trade resulted in an equilibrium quota price nationwide.

This study has used the report presented by the dairy industry stakeholders as a guide in modelling the impact of an interprovincially liberalized milk market on dairy producers. The impact of a national system of milk classification has not been incorporated in this paper. Some of the elasticities/ flexibilities may have been erroneously assumed to be equal across all provinces, as may some of the assumptions of quota value for regions which did not exchange it in 1990. The synthetic model has also only used 1990 data rather than time-series data which is available using an econometric approach. Despite its shortcomings, this paper can contribute to the understanding of the effects of a national single pool-single quota system by pointing out the direction of resulting changes, rather than accurately citing empirical results.

REFERENCES

Agriculture Canada. 1990. *The Dairy Market Review.* 1990. Ottawa:Agriculture Canada.

Balcaen, Louis; Doyle, Richard; Matte, Kempton; Morin, Roch; Sherwood, William. 1992. *Report of the Consultation Committee on the Future of the Dairy Industry*. Ottawa:Dairy Farmers of Canada. 1992.

Barichello, R. 1981. *Economics of Canadian Dairy Industry Regulation*. Ottawa: Economic Council of Canada.

_____ and C. Cunningham-Dunlop. 1987. *Quota Allocation and Transfer Schemes in Canada.* Working Paper 87-08. Ottawa: Agriculture Canada).

Chyc, Karen. 1992. *Optimal Allocation of a Generic Advertising Budget: the Case of Fluid Milk in Canada. MSc Thesis*. Guelph, Ont.:University of Guelph, Department of Agricultural Economics and Business.

_____ and Ellen Goddard. 1992. *Optimal Investment in Generic Advertising and Basic Research:The Case of the Canadian Supply Managed Egg Market*. Guelph, Ont.:University of Guelph, Department of Agricultural Economics and Business.

Dairy Farmers of Canada. 1992. *Facts and Figures at a glance - 1992*. Ottawa:Dairy Farmers of Canada.

McCormick, Veronica. 1973."Dairy Support in Canada, 1962-1972".*Canadian Farm Economics*. (7):4

_____. 1974."Milk Quotas: What do they mean?". *Canadian Farm Economics* (8):5 pgs.26-30.

McCutcheon, M.L. and Ellen Goddard. 1992. *Optimal Producer and Social Payoff from Generic Advertising-the Case of Fluid Milk in Ontario and Quebec*. Guelph, Ont.: University of Guelph, Department of Agricultural Economics and Business.

Mestern, H.J. 1973. "The Evolution of Supply Management in the Canadian Dairy Industry". Canadian Farm Economics(7):5. pp.12-16.

Moschini, Giancarlo. 1989."Modelling the Supply Response of Supply-Managed Industries: A Review of Issues". *Canadian Journal of Agricultural Economics*. (37):379-392.

Rude, James I. 1992. *The Impact of Trade Liberalization on the Canadian Dairy Processing Industry. PhD Thesis*. Guelph, Ont.:University of Guelph, Department of Agricultural Economics and Business.

Stonehouse, D. Peter and Murray A. MacGregor. 1981. "Decision-making Criteria for Purchasing Milk Quota at the Individual Farm Level". *Canadian Journal of Agricultural Economics*. (29): 203-216.

Stonehouse, D. Peter. 1987.*A Profile of the Canadian Dairy Industry and Government Policies. Working Paper 4/87*. Ottawa:Agriculture Canada.

VanKooten, G.C.; Spriggs, John. 1984."A Comparative Static Analysis of the welfare Impacts of Supply-Restricting Marketing Boards".*Canadian Journal of Agricultural Economics*. (32):221-229.

APPENDIX 1

Table 1. Average Quota Values, by province (1990)

Province	Fluid	MSQ Unused	MSQ Used
	$/L/day	$/kg b.f./yr	$/kg b.f./yr
P.E.I.	NA	8.7	8.67
Nova Scotia	NA	17.79	9.16
New Brunswick	276.58	20.07	12.89
Quebec	368.38	25.59	18.42
Ontario	247.91	15.19	10.14
Manitoba	218.25	NA	NA
Saskatchewan	NA	NA	NA
Alberta	220	11.5	7.2
B.C.	NA	NA	NA

Source: Agriculture Canada (1990)

Table 2. Elasticities used in the base simulation

Equation	Fluid Supp.	Fluid Dem.	Fluid Dem.	Ind. Supp.	Milk Prod.	Ind. Dem.	Blend Price	Price Link.
Endog.Var	MC	RPRICE	ADV	INDMC	PAYOUT	BLENDP	PPRICE	PPRICE
Province								
P.E.I.	1.83	.2	.004	2.22	.015	1.56	.244	.82
N.S.	1.83	.2	.004	2.22	.015	1.56	.244	.56
N.B.	.76	.2	.004	2.22	.015	1.56	.244	.76
Que.	1.36	.2	.004	2.22	.015	1.56	.244	.48
Ont.	1.88	.2	.004	2.22	.015	1.56	.244	.317
Man.	1.7	.2	.004	2.22	.015	1.56	.244	.317
Sask.	1.64	.2	.004	2.22	.015	1.56	.244	.317
Alta.	1.19	.2	.004	2.22	.015	1.56	.244	.317
B.C.	1.5	.2	.004	2.22	.015	1.56	.244	.89

Table 3. Functional forms used in the model

Simulation I	Simulation II
Fluid Supply=f(MC)	Industrial Demand=f(BLE)
Fluid Demand=f(RPRICE,ADV)	Supply=f(NMC)
Industrial Supply=f(INDMC)	Demand=f(SALES+SALESM)
Milk Production= GAP,PAYOUT)	Single Pool Blend Price=f(PPRICE,SALES, BLENDP,SALESM,TMP)
Retail Price=f(PPRICE)	Single Quota Value=f(MC,BLENDP,EX)
Blend Price=f(PPRICE)	

Table 4. Base Simulation

		P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
TOTQU	(in millions)	104.1	199	152.1	2962.3	2641.7	296.3	244	653.4	550.3
TMP	(in millions)	97.45	177.6	131.57	2828.6	2471.4	292.6	221.21	598.36	506.63
SALES	(in millions)	13.013	91.16	60.423	657.01	930.09	101.86	89.54	245.52	283.01
SALESM	(in millions)	84.436	86.44	71.14	2171.7	1541.2	190.73	131.6	352.8	223.6
SQV	($/HL)	3.96	3.96	3.96	5.11	3.55	3.13	3.15	3.15	3.55
INDSQV	($/HL)	1.64	3.35	3.78	4.81	2.86	2.41	2.41	2.41	1.10
MC	($/HL)	33.358	34.133	33.83	29.39	31.39	33.10	32.40	30.73	34.01
INDMC	($/HL)	23.94	23.462	22.02	21.823	24.49	23.70	22.82	23.80	24.89
BLENDP	($/HL)	25.579	26.81	25.8	26.64	27.35	26.11	25.23	26.21	25.99
PPRICE	($/HL)	37.32	38.095	37.8	34.51	34.945	36.23	35.55	33.88	37.57

Table 5. Simulation II

		PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC
TOTQU	(in millions)	105.068	188.972	147.77	3082.32	2580.86	290.035	239.886	642.976	519.806
TMP	(in millions)	98.326	168.657	127.803	2943.31	2414.48	286.404	217.502	588.850	471.599
NBLENDP	($/HL)	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618	29.618
NMC	($/HL)	25.70	19.24	19.24	19.24	19.24	19.24	19.24	19.24	19.24
NSQV	($/HL)	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
EX	(in millions)	6.6247	-10.154	-.4235	126.213	-111.80	.5651	8.3662	1.8217	-21.2118

Table 6. Annual value of farm milk production

		PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC
Initial Revenue	(in $ millions)	26.455	57.902	41.194	805.275	746.538	86.703	65.034	175.651	164.44
Single Pool Revenue	(in $ millions)	28.6718	49.9528	37.8526	871.7495	715.1206	84.8271	64.4197	174.4056	139.6782
Revenue Gain	(in $ millions)	2.2168	-7.9492	-3.3414	66.4745	-31.4174	-1.8759	-.6143	-1.2454	-24.7618

Table 7. Annual value of quota

		PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC
Fluid Quota Value	(in $/HL)	3.96	3.96	3.96	5.11	3.55	3.13	3.15	3.15	3.55
Ind. Quota Value	(in $/HL)	1.64	3.35	3.78	4.81	2.86	2.41	2.41	2.41	1.10
Initial Aggregate Quota Value	(in million $)	2.1676	7.5212	5.9192	145.0179	84.1869	8.0295	6.8333	18.3834	15.1898
Single Quota Value	(in $/HL)	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91
Aggregate Single Quota Value	(in million $)	4.1081	7.3888	5.7778	120.5187	100.8780	11.3390	9.3449	25.1403	20.3244
Quota Value Gain	(in million $)	1.9405	-.1332	-.1414	-24.4992	16.6911	3.3095	2.5116	6.7569	5.1346