Canadian Supply-Managed Agricultural Sectors Revisited

Robert Saint-Louis and Yvon Proulx
Univ. of Laval, Dept. of Rural Econ.
Quebec.

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Background, Issues and Objectives

Most supply management marketing boards (SMMB)[1] in Canada anecdoticly date back to the period when the Mondale Bill was debated in the United States (Saint-Louis et als 1968). Farm groups having established SMMB are therefore in the process of passing their farms on to the next generation. So peculiar circumstances point to increases in quota and in whole farm sales under SMMB schemes, in the near future. Perhaps this is the main reason why concern over the impact of SMMB on consumers has given way to farm-focused problems (Plumptre Commission; Forbes, Hughes and Warley; Forbes 1974; Proulx and Saint-Louis; MacDonald Commission).

Consequently, Canada has been prone to raise questions on SMMB, perhaps even more so in regard to recent quota prices which have quite suddenly taken off, as compared to their rather stable deflated value up to 1979 (table 1). Surprisingly such surges in quota prices have happened despite increasingly rigid restrictions in interprovincial movement of base quotas, which is also a severe problem in Canada (McCabe, Wampach).

One such question has to do with a noticeable gap between currently high-priced quotas on marginal unit sales and the price level which quota buyers can now afford to pay on complete farm purchases (Clark; Brinkman). Indeed, the magnitude of post-1980 quota price jumps, which still seem to reflect farming conditions prevailing before 1980, are definitely out of proportion with declining trends in other farm assets observed after 1980. This is alarming because those increases are

apparently sustained neither by significant net farm income flow rises since 1980 nor by projected increases up to 1990. Nevertheless, several foreign analysts and observers have started looking upon this SMMB matter in a different light (Wagstaff; Annexstad; Annexstad).

This paper pursues two objectives. The first section suggests a graphical restatement of recent neo-classical approaches to SMMB analyses, with the intended purpose of accounting for issues that have recently been brought to light by European and American observers (Hamm and Watt; Gouin) as well as by other Canadian commodity sectors (Morisset and Revéret). Special attention is paid to out-of-farm quota sales. The second section explores some of the options available for medium and long term adjustments to certain quota allocation and transfer systems.

Theorical Framework

Economists, like medical therapists, tend to diagnose problem areas from "anomalies" that are the easiest ones to detect. Such has been the approach of the early SMMB analysts. Their main concern rapidly zeroed in on high nominal quota values in specific regions, but particularly in provinces with very small shares of the national quota (Grubel and Schwindt). Attempts to explain behaviour of quota sellers and/or buyers then gave rise to three approaches. The first two dwelled on neo-classical economics while the third departed from it (Gouin, 1986; Gouin, 1987; Wampach).

The first one suggests that deviations from free commodity market price and quantity equilibria, resulting from the SMMB, are the only basis for evaluating the true costs of their existence for society (Arcus; Barichello; Veeman; Forbes). Supply management is viewed as a

Table 1. Estimates of Quota Prices in Nominal and Deflated Values, for Flue-Cured Tobacco, Fluid Milk (milk group 1), Chickens, Eggs and Turkey, in Quebec and Ontario, 1968-1978, 1980, 1984-1987 (Canadian dollars)

	QUEBEC[a]				ONTARIO[a]				
Sector	Fluid milk	Chicken	Eggs[b]	turkey	Flue-cured tobacco	Fluid milk	Chicken	Eggs	Turkey
Year	$/litre	$/square foot	$/hen	$/square foot	$/lb	$/litre	$/unit	$/hen	$/lb
A. Nominal "quoted" open market prices[c]									
1968	--	--	--	--	--	16	.25	--	--
1969	--	--	--	--	--	33	.50	--	--
1970	--	--	--	--	--	50	.75	--	0.15
1971	--	--	--	--	--	55	.80	--	0.03
1972	--	--	--	--	--	39	1.30	--	0.05
1973	13.4	--	0.4- 0.9	--	--	31	3.00	--	0.10
1974	7.7	--	1.0- 1.5	--	0.32-0.34	15	4.00	--	0.12
1975	19.0	1.8	1.5- 2.0	1.00	0.80	15	5.00	--	0.18
1976	51.9	--	2.0- 3.0	--	1.00	38	--	--	0.20
1977	64.1	3.5	6.0	1.50	1.08	36	--	--	0.25
1978	112.7	4.0	7.5- 9.0	2.50	1.08-1.15	36	--	--	0.30
1980	114.9	6.3	11.0-16.0	4.92	--	84	9.50	15	--
1984	287.9	137.0	25.0-27.0	90.00	2.00	223	10-22	35	.65-.75
1985	352.2	150.0	24.0-25.0	113.70	1.00	250	--	35	0.80
1986	367.0	--	25.0-28.0	--	--	--	--	--	--
1987(jan.)	381.0	--	25.0-28.0	--	--	--	--	--	--
B. Deflated "quoted" open market prices[d]									
1971	--	--	--	--	--	55	.80	--	.03
1973	10.2	--	0.3- 0.7	--	--	23.5	2.3	--	0.08
1974	4.9	--	0.6- 1.0	--	.20-.22	9.6	2.6	--	0.08
1975	11.1	1.1	0.9- 1.2	0.6	0.48	8.8	2.9	--	0.11
1976	29.9	--	1.2- 1.7	--	0.58	21.9	--	--	0.12
1977	34.5	1.9	3.2	0.8	0.58	19.4	--	--	0.13
1978	54.8	1.9	3.6- 4.4	1.2	0.52	17.5	--	--	0.15
1980	44.7	2.5	4.3- 6.2	1.9	--	32.7	3.7	5.8	--
1984	89.4	42.6	7.8- 8.4	28.0	0.60	69.2	3.1-6.8	10.9	0.20-0.23
1985	107.8	45.9	7.3	34.8	0.30	76.5	--	10.7	0.24

Sources: - Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, December 1986.
- McCabe, Bernie, CJAE, June 1986.

a - In 1986, the Ontario-Quebec combined output or quota shares of Canadian totals for those commodities were respectively: fluid milk: 59.0%; chicken: 66.0%; eggs: 54.4%; and turkey: 66.4%. Ontario prices quoted here represent the value of basic quota. The true purchase cost is actually 30-40 percent higher since annual quota allotments for most supply managed commodities are set at 60 to 70 percent of basic quota.

b - Quota prices reported only for producer-to-producer sales.

c - -- indicates relevant quota market is not tractable, or that value was not available, or that quota policies have changed significantly over the years.

d - Deflated by the food and beverage sales prices index (1971 = 100).

form of monopoly power in farmers' hands. This also permits undue rises in price levels and transfers of income from consumers to producers.[2] Quota values are assumed to be closely related to differences between output price levels under perfect competition P^* and that under supply management P (Figure 1).[3] In turn, this price gap is considered reflective of increases in producers' surplus by unit of commodity (Veeman).

Schmitz has been particularly influential in arguing that some of these studies have overestimated producers' surplus especially when quota prices under SMMB, multiplied by total volumes of quota issued, were used as an estimate of the surplus (Schmitz). Indeed, the exact change in producers' surplus because of SMMB, with reference to free commodity market, is the shaded surface $PabP\hat{} - bcd$ (Figure 1).

The second approach departs from the previous one on two aspects (Gouin). First, the assumption of commodity price equilibria, with built-in market clearing supply-demand relationships, but also allowing for fair distribution of incomes <u>at zero social costs</u> between all participants, is rejected (Lane and MacGregor; Proulx et Saint-Louis; Messer; Wagstaff 1987). Imperfect mobility of capital and labor, especially in regions where SMMB are used, among other things, to alleviate rural adjustment problems, is the main reason for rejecting the first approach (Morisset and Revéret). Secondly, the hypothesis of pure monopoly power resting in SMMB is also challenged. Unlike the United States tobacco case, observed average commodity production costs, calculated under government supervised accounting systems, are used in Canada as <u>a reference</u> for establishing milk, egg, chicken and turkey

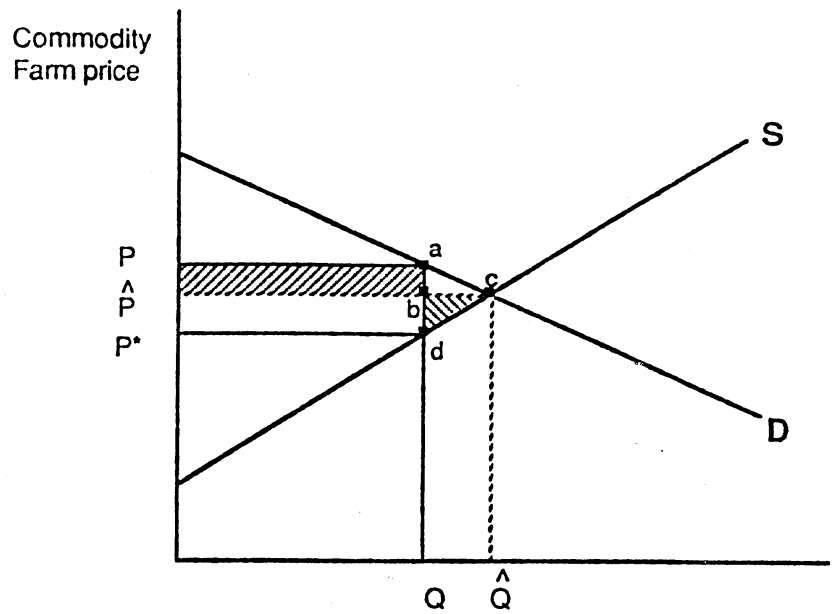

Figure 1. Simple Neo-Classical Analysis of Supply Management

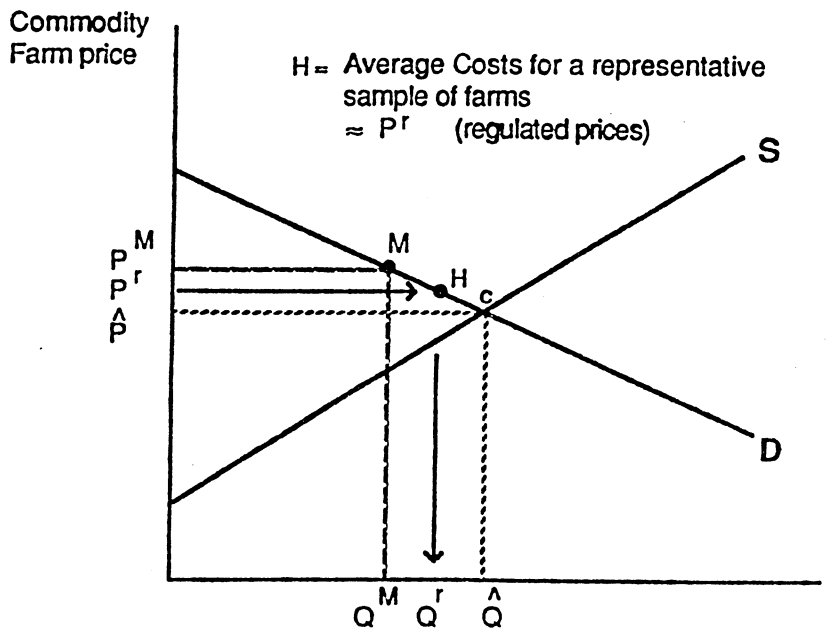

Figure 2. Simple Analysis of Supply Management with Publicly Supervised Cost-Reference Pricing

price levels at P^r (figure 2).[4] P^r can therefore be significantly lower than P^M, the optimum price target of a pure monopolist. It would be a fortuitous event when $P^r = P^M$ under such conditions.

Public bodies supervising SMMB are assumed here to be qualified not only for setting up proper reference price levels but also for preventing quota ownership costs from being included in the accounting costs of production of relevant commodities (Saint-Louis, Ivison and al.).

Finally, there is a third approach which, for reason of brevity, cannot be explored here. In short, it suggests enlarging the range of quota-related issues to analysis of market and price relationships between SMMB and other participants in relevant commodity sectors (Morisset; Schmitz). This could shed light on new issues, particularly for cases where quota ownership has been branching out of agriculture.

The lack of an appropriate neo-classical framework for analyzing the economics of quota ownership spilling out of agriculture, while also taking into consideration the role of agencies supervising SMMB commodity pricing mechanisms, is one of the major reasons for present controversies on evaluation of SMMB impacts in Canada. In the remainder of this paper, such a framework is introduced and attention is turned to the following questions:

a) Why have quota prices in most SMMBs exploded since the late 1970's, and is non-farm quota holding part of the explanation?

b) Are there alternatives for an improved system that will meet the needs of both present and next generations of farmers, while satisfying general goals stipulated for Canadian agriculture?

Recent research has focused on the second issue; however the two questions are closely related (McCabe; Rosassen and Maley). Moreover, timing seems most convenient to raise all two questions in parallel since under the circumstances that prevailed originally, Canada chose to allow specific groups of farmers the use of some market power under SMMB to enhance rates of returns on farm resources and to reduce their variability, while not excluding the possibility of quotas having value. However, the perspective of quota values becoming a crucial issue in farm transfers raises a number of new research issues.

Explosion in Recent "Quoted" Quota Prices;

Meaning, Risks and Methods of Control?

Except for flue-cured tobacco, deflated "quoted prices" for quotas in Quebec-Ontario SMMB have more than doubled between 1980 and 1985 (table 1). For simplicity, "quoted price" here refers, in a general sense, to prices reported by various boards for various sizes of traded-blocks of quotas, which are more or less homogeneous in nature, divided by the total number of quotas traded in a relevant period. Therefore, when account is taken of all details which prevailed during and after each specific quota transaction, especially on complete farm purchases, the true final cost of quotas to the purchaser may be significantly less than the full value of "quoted prices".

For these and other reasons, most of which have to do with the wide diversity of market mechanisms for trading quotas in Canada as well as with inter-provincial trading restrictions, these splintered quota markets can be very thin since they are so time-and-restriction specific

(Barichello 1987). Thus "quoted prices" alone cannot be inconsiderately used without running the risk of extravagant over-generalization.

This notwithstanding, the pending issue of transfer between generations of farmers in SMMB is equivocal if not disturbing. Indeed, observable impacts in SMMB sectors indicate that some objectives firmly held by those farmers in the 1970's and in the early 80's were at least partly met (Proulx and Saint-Louis). However, the notion that the next generation of farmers may meet the very same objectives with the very same set of policies may unfortunately be questioned.

To inside as well as outside observers, the outlook for a clear set of reasons why such jump in quota prices occurred precisely since the late 1970's is unfortunately quite bleak. A whole series of events including difficulties faced by non-SMMB-sectors such as grain production, the falling value of the Canadian currency versus the United States dollar and present and/or foreseen changes in government agricultural policies all probably have something to do with it but the relationships between them are not evident. Perhaps the stabilizing impacts of SMMB are somehow so much more strongly appreciated by some groups of Canadian farmers when general farming conditions are bad than when they are good, that support for SMMB is magnified to some extent through quota prices. Unfortunately those are strings of factors which are beyond the scope of this paper (Saint-Louis 1986). Nonetheless, whole set of pressing and highly controversial research issues related to SMMB quota systems are raised. Are present quota price levels an "anomaly" which may be curred through simple changes in quota transfer mechanisms, without unwanted side effects? What about more drastic

changes, such as modifying fundamentally either the inside rules of the game concerning SMMB quota systems or their macroeconomic environment, litterally from the outside?

Internal Means

In 1979, an Ontario committee established a genuine classification of SMMB that readily lent itself to analysis of quota transfer systems (Lane and MacGregor). Unfortunately it sidestepped the existence of non-farm quota ownership. It refers to three specific approaches for tighter controls on quota prices. These are: (1) fully controlled quota markets (FCQM); (2) systems of quotas attached to assets (SQAA), or (3) negotiable quota systems (NQS).

From NQS to an all out FCQM System?

It has long been suggested that going from an NQS, which has been the dominant mechanism, to an FCQM system was perhaps a means to limit quota price increases. (Babey). But surprisingly this option has remained uninvestigated (Interprovincial Committee).

In the late 1970's, some opposition was offered to it but exclusively on principle. In Canada, common use tends to confirm rather strongly that it is no easy task to bring assistance to a vast majority of farmers in SMMB through such public actions without infringing upon third parties, while avoiding the trap of freezing structural changes in agriculture (Proulx and Saint-Louis 1980).

From FNQS to SQAA and Non-Farm Quota Ownership Issues?

Going from an NQS to a SQAA for limiting quota values has not been thoroughly investigated either. Many SMMB in the tobacco, chicken and egg sectors have been or are presently operated under a SQAA system.[5] In

the late 1970's, Manitoba attempted to strictly enforce SQAA on all provincial SMMBs, but with little success (Wood). This question of advantages of SQAA over others seems to have regained some momentum as a means of controlling the controversial non-farm quota ownership. This issue therefore merits further research.

In theory, ownership of quotas by non-farm firms renting these back to farmers may have had a significant impact on quota prices. Consider, for example, feed milling supply and demand functions of a quota-owning feed firm (Figure 3). Assuming that all quota renting farmers buy all their feed stuff from it, there may be a captive-market effect, modifying demand curve from Dfeed D'feed to Dfeed FG. The vertical segment FG of this kinked feed-demand curve is of utmost importance for the plant since its own feed production surplus can be significantly increased if this kinking effect can be brought about. This surplus is assumed to increase by (P_{m_o} jhP_{m_1}) (shaded in Figure 3). The lower the price elasticity of demand for feed, the greater the value of egg quotas for the feed firm, ceteris paribus. The feed firm's degree of local, provincial, national or even international market power is the crucial variable.

Assuming that many feed firms purchase quotas, the marginal cost of egg production, due to an increase in the price of feed, might in theory shift up, thereby pushing up the egg supply curve from S to S' (Figures 4 and 5). Past confusion in literature concerning the correct measure of egg producer's reduced production surplus under such conditions can be removed quite simply by specifying precisely one's point of reference. Using pure competition as a reference, <u>reduction</u> in egg producers' production surplus resulting from market power exercised on

feed input supply is $\hat{\hat{P}}_{ru}\hat{P}$ - VucT (figure 4). On the other hand, if SMMB without non-farm quota ownership is the point of reference, the measure of reduction in the egg production's surplus resulting from the very same situation is srn - $P_{as}\hat{\hat{P}}$ - VndT (figure 5). It is assumed here that egg ouput under quotas and with non-farm quota ownership is greater than that under quotas but without non-farm quota ownership. This seems credible since economies of size plus growth in the size of farms, which might be a long term consequence of non-farm quota ownership, also lead to a leftward shift of the egg supply function strictly because of feed cost increases. The latter may however be partly, but probably not totally, offset by farm-level feed cost differences between the two situations compared.

In any case, graphical analyses for both reveal the same conclusions. The case of non-farm-owned quotas being rented back to farmers, who in turn purchase total supply of feed from the quota owner, may cause reductions in farmers' production surplus. It depends upon whether or not the quota-owner has significantly increased his market power on input supply to this " captive" market. In addition, the cost of renting quotas is constrained within a set of self-equilibrating market forces, including the quota, the egg and the feed markets. The higher the price elasticities in each of those markets, the lower the price for renting quotas, and inversely.

Otherwise non-farm quota ownership also raises two issues usually not considered by neo-classical approaches in quota evaluations. First, the value of specific units of quotas for the purchaser can no longer be fully estimated strictly by capitalizing the extra flow of farm income

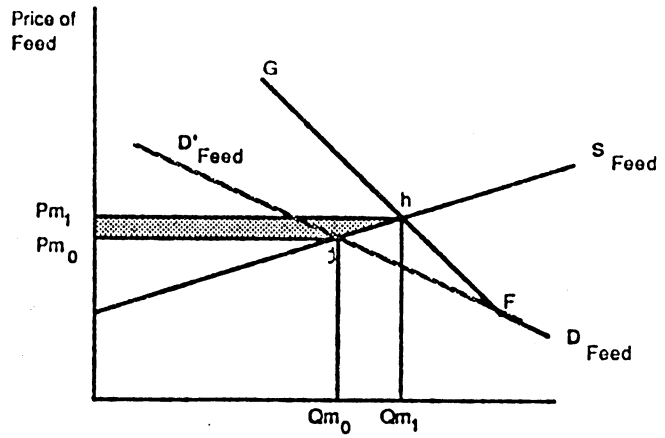

Figure 3. Supply and Demand of Formula Feed: The Case of Egg Quotas Holding and Renting by Feed Mills

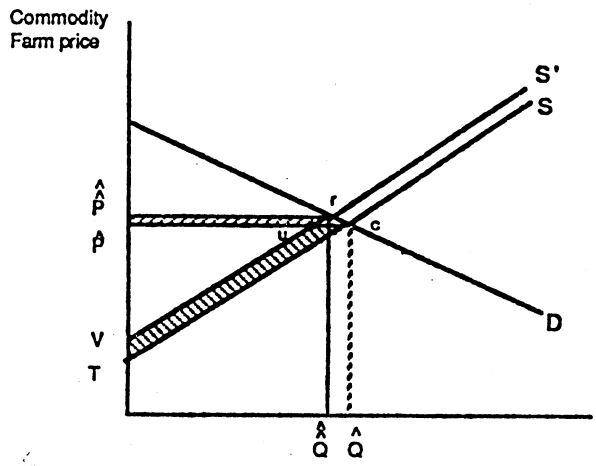

Figure 4. Simple Neo-Classical Analysis of Supply Management with Farm Rented Quotas Belonging to Non-Farm Quota Holders; FREE MARKET AS A REFERENCE

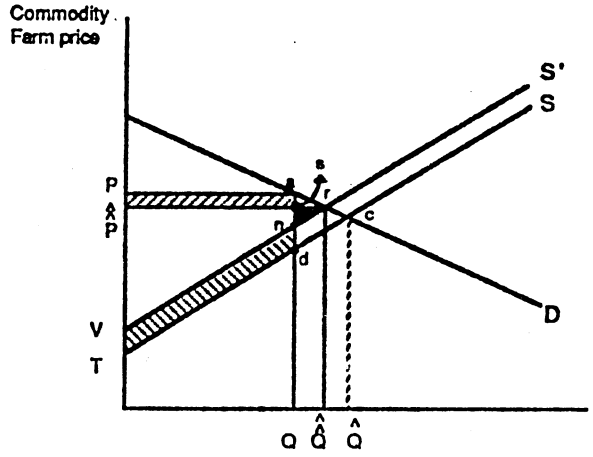

Figure 5. Simple Neo-Classical Analysis of Supply Management with Farm Rented Quotas belonging to Non-Farm Quota Holders
SUPPLY MANAGED COMMODITY WITHOUT NON-FARM QUOTA HOLDING AS A REFERENCE

due to the quota (Gilson and Saint-Louis; Levallois; Lane and MacGregor). In calculating the income flows to the non-farm quota owner, it is necessary to take into account the relevant time horizon as well as the sources of income, which may differ from those of the farm quota owner.

A recent study compared quota prices and renting costs in Quebec egg-SMMB over the 1979-1983 period. The proportion of quotas sold from 1979 to 1983 and which were purchased by non-farmers was then between 30% and 50%. Average "quoted" prices went from $11.50/hen (1979) to $25.00/hen (1983). Renting costs for marginal blocks of quotas, on the other hand, went from $1.15/hen (1981) to $2.50/hen (1984) (Morisset 1985). However, a recent (May 1987) regulation issued by supervisory authorities will most likely prohibit further non-farm quota ownership in this case.

While there are restrictions on the transfer of quota ownership from farm to non-farm agents, this phenomenon may explain in part the rapid increases in quota prices recently observed in some SMMB. It is therefore a major issue deserving more than casual public attention. But switching from a NQS to a SQAA system to prevent non-farm ownership may not be appropriate. Indeed, fictitious or "unnatural" types of farming units might emerge as a convenient way of evading constraints of a SQAA system. As a result, non optimal resource allocation decisions could occur, particularly with regard to technological choices (Proulx and Saint-Louis).

NQS Systems

Recent support from the Federal government of SMMB in Canada

indicates that present NQS systems remain as close as possible to an "ideal" way of trading quotas among farmers (Agriculture Canada).

The preference for NQS over FCQM and SQAA systems in the late 1970's stems from the following arguments. In the absence of non-farm quota ownership, transfers of wealth do take place between present quota purchasers and farmers who were originally allocated quotas at zero cost. However, correcting agricultural market failures may be a real contributor to increase the size of the pie. Moreover, NQS allocates quotas to farmers who get the most out of them at the margin (Proulx and Saint-Louis 1985).

Can the same be said of NQS system with non-farm quota ownership? We de not know. A sectorial analysis of one supply-managed sector from an industrial organization perspective, as was recently suggested, may be the correct approach to answering this question (Schmitz).

One could refine further this analysis by distinguishing between types of SMMB with a NQS system. For instance, such groups may significantly differ from one another if boards have powers to (1) vary amounts of quota allocated, (2) establish maintenance clauses, or (3) adjust the demand for quotas, through such actions as minimum and maximum limits on individual amounts of quotas held or by varying the price of the relevant commodities (Lane and MacGregor). The latter has inspired a proposal made in the late 1970's. A precise formula was suggested which incorporates variations in quota prices to calculated costs, the latter being used as a reference for setting commodity prices in SMMB. For instance giving some weight to "undue" quota price increases which would level off or even bring down calculated costs over time, would seem a

logical approach (Proulx and Saint-Louis 1979). But this idea has met with little success so far.

External Policies to limit Quota Prices

A host of outside means can be imagined to restrain whatever market power SMMB have gained, thereby creating some downward pressure on quota prices. For instance, if agricultural and food commodity trade liberalization between Canada and the United States were to lead to a strengthening of the Canadian dollar in reference to the United States currency, SMMB in Canada would be significantly weakened (Proulx; Ssint-Louis). Free trade between the two countries might even mean total disappearance of some SMMB (Proulx).

In fact, there are few nice and easy ways to bring SMMB in line with some ideal level of agricultural market power. However, present political pressures point to an enlarged framework within which the issue of quota allocation and prices might unfold in the medium and long terms.

The 1970's might be correctly remembered as years when farmers in most of the industrialized world were lured into capital gains as an important form of wealth accumulation. What about quota values viewed in that perspective? Assume at this stage that Canadian farmers have truly developed a large and perennial appetite for capital gains in the 1970's. Can this appetite still be used, even in the present environment of depressive farm asset markets, to relieve high pressures on quota prices?

It should be emphasized that it would otherwise seem ironical to take very firm stands against high quota prices precisely when 1985 and 1987 federal fiscal reforms have softened rates of taxation on capital gains up to $500,000 for individual farmers over his lifetime and when

gains anticipated in the early 1970's failed to materialize on land-related and other farm assets (Department of Finance).

One research avenue might consist in the analysis of the actuarial feasability of a special kind of Farm Trust. The general but perhaps complex idea would be to offer quota sellers an alternative. They could perhaps exchange quotas for common preferred stocks, while preserving the right to produce the commodity even if a final quota sale is closed. Those stocks could be integrated within pension plans suited for farmers' needs, with some regard to transfer of other assets. The objective could thus be to establish specific pension plans for farmers, such as advocated by the MacDonald Commission (Messer).

Such a Trust might hold quotas and perhaps even pay interest on them, such as on prespecified-value deposits, depending upon its own returns on its investment portfolio. Stocks that are less volatile to variations in current income flows in their relevant sectors than farm assets to net farm incomes fluctuations would obviously be preferable. The farmer could select either to retain his quota or to close the original deal at specific points in time, whatever choice would then seem the most advantageous for him.

Another option could be to grant full collateral status to SMMB quotas in their use by farmers for borrowing from recognized farm credit institutions. If such were the case, however, it seems logical that the cost of owning quotas would become fully accounted for in cost reference pricing mechanisms. However, this option may not be the most desirable from an economic standpoint. Limiting quota transfers from farm to non-farm owners might be one of its welcome side effects. But creating

additional and somehow self-feeding pressures on recent increases in quota prices might be its main undesirable aspect (Saint-Louis and al.).

Finally, there is a a third and a fourth major option. The former suggests to constrain quota price increases within a limited range which the next generation can afford to pay. Putting an absolute ceiling on nominal prices for quota units sold as marginal blocks is an example of such an approach. This option has already been investigated to a little extent (Proulx and Saint-Louis). The latter might rather have as a target to establish an alternative marketing mechanism which would make agricultural sectors under SMMB more responsive to future variations in the relevant provincial, national and international markets. For instance, voluntary forward pricing contracts offered to producers through a government-sanctioned agency could be one such instrument (Rosaasen and Maley).

CONCLUSION

The debate over supply management issues related to quota transfers and values is timely and relevant since it focuses on various aspects of SMMB which are directly at stake under present bilateral trade liberalization discussions.

Since the late 1970's, quota prices have reached levels that may be so unduly high that they no longer readily allow outright and transparent quota transfer methods which permit resource allocation and necessary structural adjustments at the farm level. Non-farm quota ownership may have contributed significantly to such quota price rises in some SMMB, however different avenues of study need to be pursued on causes.

In fact, the problem of quota values has taken such proportions that it may call for a set of policy initiatives both from the inside as well as from the outside of SMMB present rules of the game. The selection of this set of actions is likely to be a very delicate procedure. Nevertheless, it seems desirable that fully transferable quotas between producers, unattached to facilities or other constraints, at freely negotiable prices, remain a central feature. In addition, the general public is likely to give relatively more support to farm-ownership of quotas than to systems allowing for outside quota investors, using quotas as a basis for developing captive markets for farm inputs. In the meantime, serious doubts persist about the willingness of producers in SMMB to loosen their hold on supply management.

1. Friends and foes of supply management in Canada still agree on designation of supply-management (or restricting) marketing boards (SMMB) as specific groups of farmers having strengthened their hold on managing supply of relevant agricultural commodities at the farm level since the mid 1960's. Creation of the Canadian Dairy Commission (1966) and sanction of the Farm Product Marketing Agencies Act (1972) were instrumental in their development. Clearly, SMMB in the milk, egg, chicken and turkey sectors are the most widely known because they perhaps fully bear their most important legal traits. However, tobacco producers were the real forefathers of SMMB in the mid 1950's.

2. In the remainder of this article, all prices are in Canadian dollars.

3. Taken directly from Figure 1 in Schmitz, except for a modification for point "a", which must be placed on the right hand side of point M (Figure 2), somewhere between point M and point c on the segment Mc, and not to the left of point M as in Schmitz's graph.

4. In the United States, the flue-cured tobacco producers' target price is P^M (Summer).

5. Originally defined as quotas to be allocated to farmers for use on own farm holdings.

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