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QUOTAS FOR U.S. DAIRY FARMERS? A REVIEW

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I. EXECUTIVE SUMMARY

An expected scenario is developed showing that by 1990 the U.S. government will again be purchasing too many dairy products. Congress may prefer to solve this problem with dairy farm production quotas instead of major price cuts. This paper is an extension aid to help farmers and their advisors think about how quotas could be designed. Arguments for and against quotas are given in a literature review format.

There are many ways to design a national quota system. We tend to look only at the Canadian design, and forget our own country has had considerable experience with state quotas, cooperative quotas, and Class I base plans. The European Economic Community and many of the countries in the Organization for Economic Co-operation and Development have current experience with a variety of quota plans. More study should be made of the European Community experience.

Quotas can be voluntary, mandatory, marketable, or transferable only under bureaucratic control. Quotas can be assigned to farmers, or to processors. If marketable, they tend to take on cash values. These are windfall gains to the original recipients. The values can get quickly capitalized into the cost of production. If transferable, they tend to offset arguments that quotas freeze production patterns and costs. There are major administrative burdens to any quota scheme.

The main enforcement tool in quota plans is to set a very low price for overquota production. Failure to set excess prices low enough probably caused Class I base plans to be ineffective. To be successful, a quota plan in the U.S. would have to have mandatory quotas, rigid rules against new producers and an overquota price about one-quarter as much as current blend milk prices.

Arguments against quotas are grouped under: 1) higher than necessary costs resulting from not attaining economic equilibrium; 2) freeze patterns of production, both among farms and regions; and 3) institutional and personal costs. Economists place major emphasis on point 1, especially the higher costs of consumer products. However, little is known about what the actual levels of these costs would be in the U.S. if a quota plan were started. Research is needed on this point.

Arguments for quotas are grouped under: 1) quotas will stop excess production if designed with that goal; 2) government intervention is needed in the U.S. dairy sector; and 3) stability of the industry. The major measurable factor here is that cost to taxpayers of the current surplus removal program could be avoided. A family-sized farm structure would be more likely.

The big trade-offs in deciding whether or not to start a quota plan are: 1) should farm income support be paid by taxpayers or consumers?; 2) is assured profit worth giving up freedom of choice?; and 3) should quotas be the only government dairy program or should it be in addition to Federal milk orders and price supports? Diverse opinions within agriculture and within society in general will need to be ironed out in the political process before enabling national legislation could be passed.

II. INTRODUCTION

This paper was written in mid-1986 with the goal of being a review of the use of quotas as a tool of supply control management in the dairy industry. Dairy farmers were asking how quotas could work in our country. Supply control is distasteful to most American economists. Hence, nothing of a complete and balanced nature was available in extension literature. We hope this balanced study will be of use in extension education irrespective of how individual specialists or agents personally feel about quotas.

It is agreed there are several policies the U.S. could use to curb future excess milk production. The purpose of this paper is to examine only the quota alternative. Other literature exists which discusses the remaining alternatives.

Overview Of The Paper

This section reviews the reasons why quotas are currently of interest. Section III gives the conditions needed to make quotas work. Descriptions of terms and alternative quota plans are discussed. Section IV reviews quota plans used around the world in the past decade, starting with the Ontario, Canada scheme. Several European countries use a variety of quota plans. The section finishes with an historical discussion of U.S. Class I base plans and mention of other dairy quota experiences.

Section V lists the arguments against and for quotas, along with a review of the economic impacts. Section VI discusses the steps needed to activate a quota plan in this country.

Current U.S. Dairy Situation

Dairy farmers in the United States produced from 10 to 12 percent more milk than was needed for domestic consumption in 4 of the last 5 years./38, p.15/* Low world market prices prevented exports from being a factor. Taxpayers, through government purchases of manufactured dairy products, have carried the cost of the excess supplies.

The cost has become unacceptable to taxpayers. Since 1983, there has been a reduction of price support levels, a diversion program allowing farmers to be paid for reducing sales up to 30 percent of prior production, and a whole-herd buyout program allowing farmers to bid for payments for removing resources from the milk production business for 5 years.

Dairy imports exist, but they are controlled by quotas. Current import quotas are directly linked to the current U.S. price support program. In recent years, they have amounted to less than two percent of domestic farm production. A loophole developed which casein came in through, but steps are under way to stop casein imports. Some specialty cheeses not made within the country will likely always be imported.

*Numbers inside the slashes refer to the bibliography. Page numbers are included where appropriate.

The diversion program and the whole herd buyout have generally met (or will meet) the objectives set for them. However, there is concern that by 1990 the U.S. situation will be right back to having 10 to 12 percent more milk than will be consumed at home. Even assuming the supply lines need 2 to 3 percent excess during the year to meet the fluctuations in demand from week to week, that still leaves 5 to 10 percent excess milk that the taxpayers don't want to buy, but which farmers would like to sell at a supported price.

Consider the evidence. Some of the states with the largest portion of the country's milk production have recently seen year over year production increases in excess of 10 percent annually. These increases are likely to resume once the wholeherd buyout impact is finished. Corn and soybeans are low priced and are likely to stay that way for the next 4 to 6 years, which translates into cheap energy and protein feeds for dairy cows. Cheap feed usually means increased milk production. A significant number of dairy facilities have milking parlors; the marginal cost of milking more cows in such a facility is miniscule. Isoacids and other feeding technology capable of increasing per cow production are well-started towards adoption. Bovine growth hormones (bGH) await FDA clearance. Farmers anticipate an 8 to 12 percent increase in milk per cow with bGH. One of these years embryo transplants will be economically feasible. These recent developments, when combined with the tremendous genetic capacity already bred into the U.S. dairy herd, could cause a big jump in per cow milk yields. Between now and 1990, it appears few other profitable farm enterprises will be available. And lastly, some argue dairy farmers have anticipated the arrival of quotas and have embarked on a "base race" to enhance their future relative position.

It will be a problem to dam up this flood of milk and control its flow through the economy. If it is left to the market place, the price received by farmers has got to come down drastically, thus forcing many people and resources out of dairying. The specter of the resulting financial and emotional losses enhances the political power of the dairy industry which, since the 1930s, has helped keep dairy farming profitable through Congressionally sponsored price support operations. The federal government is not expected to have the courage to price milk low enough to avoid excess supplies in the future.

If the flood materializes and price policy via the free market is not allowed to operate, then other ways of stopping the production of milk at the farm level need to be found. Mandatory supply controls, or production quotas, may be something the United States should adopt. Most countries in the major dairy areas of the free world already have. Even New Zealand, who many think of as being able to sell at the low world clearing price for dairy products, uses something like quotas to control the fluid market within their home islands.

Farmer Interest In Quotas, 1986

A telephone survey of 557 Wisconsin farmers in the fall of 1985 indicated a heavy majority prefer a supply management approach over a "free market" approach. However, 64 percent favored optional diversions and buyouts./18, p.1180/

The U.S. milk industry is not geared up to track whether an individual's milk goes into fluid or manufacturing markets. Instead, all sales are pooled if the farmer is in a Federal Order. The farmer gets a blend price. The challenge is to predict whether farmers would get higher gross milk income, or lower gross income, if quotas were adopted. Using the above elasticity ideas, markets where more than half the milk is going into fluid markets would probably benefit more with quotas. Farmers whose markets use less than half the total milk as fluid (this includes Michigan where about 40 percent of total sales were Class I in recent years) might have lower gross incomes with quotas.

Whether dairy farmers would be better or worse off with quotas, then, depends somewhat upon the proportion of milk moving to consumers as fluid products. In the Southeast, for example, quotas would likely improve gross milk income. In the Lake States, quotas would probably reduce total gross income at the farm level. Administrative rules might or might not try to equalize this impact across regions. Resolution of this issue is probably necessary before the dairy industry becomes united behind quotas.

This assumes prices are allowed to float to market clearing levels. Of course, if the government continued to support farm prices above market clearing levels, elasticity considerations would not matter.

The demand curves implied by Figure 1. can change dramatically if substitutes, such as filled milk, become available. Imports would have to continue to be controlled or completely stopped, which might affect trade relations with other dairy producing nations. Consumer tastes and income levels can change significantly over time. These, in turn, affect the elasticities and position of the demand curves. It would be a problem for the quota administering agency to identify and allow for these changes.

Predict Milk Needed And Relevant Prices. Quotas are forward looking by definition. The administering agency would have to know how much milk would be needed at least 12 months ahead. This would involve data about population numbers, per capita consumption, and the price elasticities of demand for the quantities to be allowed under the quotas. Processors would probably have to allow access to their actual and projected sales. For the whole country, this information is probably readily available. There might be problems in fine tuning quantities for individual city or regional markets. There would need to be a small excess production level (2 to 3 percent of annual consumption) built into the quotas to allow for short-term local disruptions. These might be processors not operating during the weekend, or the startup of school lunch programs in the fall. Local markets might have marked variations in quantities needed from season to season. Any problems in making predictions would probably be solved in the first 18 to 24 months of operating a quota plan.

Ensure Monthly Milk Supplies. Seasonal milk production patterns used to be a problem. These could reappear if the quota plans were not provided with incentives to ensure deliveries by relatively short time periods. Monthly amounts would likely do the job, although daily quantities might be necessary. Strong penalties, such as forfeiting the unmet quota, should be provided in the administrative regulations. The idea of "use it or lose it" would be applied. Meeting a monthly production goal would be a new management challenge for U.S. dairy farmers.

Description Of Quotas

People often talk of a quotas as if there were only one type of plan. In Michigan, we often look to Ontario, Canada, and think their way is the only way. In fact, there are lots of different ways to design quota systems, and several of them have been tried in various parts of the world. Anyone designing a plan for the U.S. should consider all the options and provide what will work best for us given our objectives and resources. The following mentions some of the alternatives available.

Voluntary Quotas. The administering agency could draw up quota amounts for each individual throughout the country. Moral suasion or an appeal to one's sense of fair play would be the primary enforcement tool. Norway did this in 1977, but gave it up for mandatory quotas in 1982. Finland set up a voluntary quota system in 1981 with added incentives to control production, but was in an oversupply situation by the end of 1984. Japan, though, successfully used voluntary quotas from 1979 through 1986. See Section IV below for details and references.

Mandatory Quotas. These quotas would be forced onto all milk producers or marketing agencies operating within a defined geographical area. There would be no personal choice; if one wanted to handle milk it would be under the terms dictated by the administering agency. States do not have enough authority to run a quota plan because an individual state is forbidden from interrupting interstate commerce. A mandatory plan in the U.S. would have to be authorized and activated at the national level. Such a plan would likely include the 48 contiguous states; perhaps Alaska and Hawaii could be left out of it as long as they were locked out of the mainland markets like any other foreign exporter.

Quotas can be used in combination with policies other than just supply restriction. A 1955 study from the USDA listed these major variants of sales quota plans:

- "1. Quotas with penalties for excess marketings;
2. Quotas with payments for reduction in marketings;
3. Quotas with payments on quota milk only;
4. Quotas transferable with decreasing payments;
5. Quotas with price insurance;
6. Quotas enforced only by legal action."/37, p.3/

Assigning Quota Quantities. People talk as if quota amounts would be stated in terms of cwt. of milk sold per farm. This implies a permission to sell a given amount would be assigned to a person, or a partnership, or a corporation. Overproduction could find other uses on the farm, but it couldn't be sold. If overquota sales were allowed, it should only be at a very low price. To enforce, the administering agency need only pick a level (such as first buyer or processor) in the marketing system and monitor total movements on a daily basis.

Another, harder to enforce, alternative would be to put quotas on total production, regardless of its end use. This control would be needed if it were felt that other uses of milk, such as milk fed pigs, or milk fed veal, would be burdensome to the market.

The amounts allowed to be sold could be assigned to land. It could be stated in cwts. per acre per month. This would work best in areas where most of the milk on the farm results from feed grown on that farm. It would be a problem to equitably create quotas assigned to land for the Southwestern U.S. where most feed is purchased. This scheme was used in England when the EEC countries activated quotas in 1984. See Section IV below for details and references. Base assigned to farmsteads was part of 1986 proposed U.S. legislation./27, p.28/

Crop support programs have attempted to limit quantities marketed by limiting the number of acres harvested. A similar idea for the dairy industry would be to limit the number of cows permitted on each farm. The administering agency, if it were to be effective, would need the authority to reduce the cows permitted year by year in the future to offset likely increases in milk per cow.

Market Firms. Quotas could just as well be assigned to the first buyer of milk (marketing cooperatives, processors, or dealers) instead of to farmers. These handlers could be allowed to buy only so much milk during the year or month. Because virtually all U.S. milk is pasturized or further processed, the first buyer provides a workable control point, with special provisions having to be made for the few producer-handlers still in business. The administering agency would have a simpler job as there are a lot fewer first buyers than there are farmers. The first buyers would decide how to allocate their quota limits among farmers. Given the predominance of cooperatives in the milk business, this could be worked out in an equitable manner. This type of plan was used by seven of the ten EEC countries when they set up quotas in 1984. U.S. sugar production is controlled this way. See Section IV below for details and references.

Transferability Of Quotas. The major control point in any quota operation is who "owns" the privilege to sell milk. This right quickly becomes an asset that has value. With quota, one may enjoy the future stream of income which comes from selling milk. Without the privilege, one becomes willing to do things, such as paying money, in order to obtain the privilege. The control of ownership rights in the quota, then, is crucial to the equitable long run administration of a quota system.

U.S. dairy farmers often assume that upon creation of a quota plan that quota rights will be assigned to farmers, personally, and that they will be freely able to buy and sell those quotas. This is certainly one way to do it, but it's not the only way. The right to buy and sell quotas does not necessarily have to be with the individual farmer. If farmers really want a quota program, they may have to give up the idea of personally owning their quota. It could be one of the bargaining points in creating the enabling legislation.

A major argument against quotas is that when the program is first set up, the quotas are given to the farmers currently in business. After a few years, the farmer might sell the quota for a profit. Citizens observe this and note that they have given away a right which individuals are cashing in for a windfall gain. Some believe this type of gain is bad. Of course, these types of governmental gifts are not without precedence in this country. The government gave large amounts of land to the railroads to get them started in the West. The Homestead Act gave land to farmers if they lived on and worked the land for a few months. Land was given to finance land grant universities. Tobacco growers were given allotments that have appreciated in value.

Another argument against transferable quotas which may be bought and sold is that the price paid gets rolled into the cost structure of the farms. These higher costs will, after awhile, cause the consumer price of milk to get higher than it would be without the cost of quotas. This is called "capitalization" of the quotas. It is easy to overlook this item when first starting a quota plan. Within a few years, though, new farmers want to get into the dairy business, or a child wants to join the farm and more quota is needed to enlarge the business to profitable levels. The new ones, and the children, have to buy the quota. To these people, the cost of quotas is quite apparent. By the time the second and third generations take over from the initial quota recipients, they will have had to include the cost of quotas (at the very least the opportunity cost of interest on the quota asset) in their decision of whether or not to be a dairy farmer. At that time, consumers will have to be paying enough higher prices for milk and cheese so as to be rewarding dairy farmers for their extra costs of obtaining quota. However, this may erode milk product demand so as to make the industry smaller and smaller.

Critics of quota plans correctly argue that the creation of the initial quotas tends to lock in the current structure of the industry. Farm sizes won't change as much as without quotas. New technology with cost saving potential might not get adopted. Quotas tend to stop the relocation of the industry to meet shifting population patterns. Transferable quotas do much to overcome these criticisms.

The administering agency (the Federal Government) can just as well keep the ownership of quotas and control their transfer. The citizens would thereby avoid giving away the windfall gain and quota investment costs wouldn't have to creep into milk prices. This concept was found in a 1986 house bill./27, p.28/ Once the initial quotas were distributed, the administering agency would be the only place quota could be transferred to when a dairy farmer quit or died. If the agency wanted to issue more quota, it might do it by lottery to those interested. Precedence might be given to the immediate family members of quota owners. Or, the agency might run an exam pertaining to dairy farming; those with the highest scores would get the added quota. This would be similar to the licensing exams required for many occupations.

Between the two extremes of freely marketable quotas and full ownership by the government, several intermediate schemes could work. If windfall gains were unacceptable, profits on quota gains could be made 100 percent taxable. Or, a surcharge equal to the gain could be made payable to the administering agency. If giving away the initial quotas were unacceptable, the agency could auction them off; even farmers currently dairying would have to buy the right to continue in production. The proceeds might cover the administrative agency's start up costs.

However it is done, the flexibility implied by transferable quotas would be a necessity. There should be allowance for increasing and decreasing total quotas to meet changing population and consumer tastes. Farmers would need to enter and leave the business. Farms will need to get larger or smaller to capture the economies of scale which new technology will bring. Economists will argue a market mechanism for trading quotas will work more efficiently than government run lotteries and controls. However, questions of equity and consumer costs could be more important than efficiency.

Two-Price Plans

Proponents of this idea point out that U.S. dairy products are classified into two or three categories by the Federal order system. Each class is priced differently to the consumer. Class I, or fluid products receive a much higher price than do Class III, or manufactured products. Farmers, however, receive a blend price depending how the whole pool is used within the order region. The farmer never gets an understandable price signal that the excess milk ends up in lower value government purchases. A two-price plan would pay the dairy farmer a stated higher price for that portion going into fluid products, and a lower price for the manufacturing milk. The hope is that farmers will see the lower price and understand that it is the marginal value of the excess milk. The desire to expand would be thwarted by the lower price.

To be effective in controlling production, someone has got to decide the amount of milk needed to meet the commercial consumption of manufactured products without producing so much the government has to buy it. This amount would have to be allocated among farmers in the order region. It is likely a third price would be needed, which would be paid for any milk in excess of manufactured needs. This price would have to be low enough to stop excess production. By the time a government agency has set the rules, amounts and the prices, the end result would look like a quota plan to us.

The U.S. has had experience with two-price plans. They were called Class I base plans and were used in the states of Washington and Georgia. They failed as supply control devices. See Section IV below for details and references.

IV. USE OF QUOTAS AROUND THE WORLD

Canada¹

There are two milk marketing systems in Canada. Fluid milk is regulated through the provincial legislation. Manufactured milk, or industrial milk, is regulated through a combination of provincial and federal legislation with the actual administration of the producer quotas done by provincial agencies. Canada, therefore, has developed two quota systems; one for fluid milk at the provincial level and one for industrial grade milk at the national level.

The framework for the national supply management program is provided by the National Milk Marketing Plan; a federal-provincial agreement administered by the Canadian Milk Supply Committee which is comprised of representatives from the provincial milk marketing boards and various government agencies. The Committee is chaired by the Canadian Dairy Commission founded by legislation in 1966. The duties of

¹This brief description of the Canadian dairy program is taken from the Michigan State University Agricultural Economics Report No. 489 titled, "The Canadian Milk Quota System: An Analysis And Comparison To The Michigan And U.S. Dairy Industry." Detailed operation, price, and cost data on the Ontario milk marketing system are contained in /12/.

the Committee include estimation of the Canadian demand for dairy products on a butterfat basis. The estimated demand then establishes the level of quota within the national Canadian marketing system. This quota is divided among the provinces. The system requires producers to be responsible for all costs of exporting surplus dairy products from the system including the structural surplus of solids-not-fat (skim milk powder) which is inherently produced as a by-product of balancing the system on a butterfat basis. Although the quotas for manufactured (industrial) milk are set by this national committee, provincial shares of these quotas are given to the jurisdiction of provincial authorities.

In Ontario, the 1965 Ontario Milk Act gave the powers to regulate and control the marketing of milk and cream to the Milk Commission of Ontario. Many of these powers were in turn delegated to the Ontario Milk Marketing Board and the Ontario Cream Producers' Marketing Board with any parties viewing that they have been unjustly treated by decisions of either Board having the right to appeal to provincial authorities. The Milk Commission of Ontario includes eight industry and consumer representatives plus six civil servants representing the Ontario Ministry of Agriculture and Food.

The regulatory powers of the Ontario Milk Marketing Board (OMMB) are very comprehensive. The OMMB is the only buyer and seller of milk in Ontario. The Board sets the price to be paid to producers for the milk on an end use basis. The Board has complete control over both fluid and industrial milk marketing quotas within the province. The OMMB controls and assigns haulers and transportation costs within Ontario. The OMMB also takes responsibility for the promotion of fluid milk within the province, the collection of producer levies under the national supply management program, and the collection of advertising fees for the provincial fluid milk promotion program as well as for the National Promotion Program for butter and cheese.

Over 60 percent of Canadian milk production is used for manufacturing (industrial) milk. Roughly 56 percent of Ontario's milk goes into manufactured products. The national industrial milk quota determined by the projected demand for manufactured milk in Canada is allocated to individual provinces according to historical production shares. The manufacturing milk quota is known as market sharing quota or MSQ. MSQ is expressed and allocated to provinces in terms of butterfat. Depending on the province, the MSQ is then issued to producers on either a butterfat or a volume basis converted from butterfat to volume at the average provincial fat test. It is an annual quota representing the volume of milk or amount of butterfat that can be shipped in a given marketing year (August through July). In Ontario, MSQ is issued on a volume basis. Any given volume of MSQ may be referred to as used or unused. Used MSQ is quota that has already been "used" in the current year to send milk to market. Unused MSQ is quota that can still be used to ship milk during that particular dairy year.

The national industrial milk quota covers domestic requirements, a small amount of planned exports, and may, from time to time, include a "sleeve" which represents additional production to account for over- and under-production on the part of producers. Since the national Canadian dairy program operates on a butterfat basis, levies are imposed on producers to fund the cost of exporting any of the structural surplus nonfat dry milk powder. These levies are called within-quota levies. Within-quota levies have been rising steadily since 1981 and currently amount to about \$1.91 per cwt. for the Canadian marketing year 1985-86.

Producer returns for industrial milk are linked to world markets through the within-quota levy. As world milk supplies increase and lower the market prices for skim milk powder, the within-quota levy in Canada rises, thus lowering Canadian producers' net prices. Since 1981, as both the U.S. and EEC have had mounting dairy product surpluses, the world market price for powdered milk has weakened, resulting in an increasing within-quota levy being imposed upon Canadian dairymen. This is one reason many Canadian dairymen and their organizations monitor U.S. dairy policy debates and deliberations.

Canadian industrial milk prices are based on a formula pricing system. The pricing formula weights milk production costs by 45 percent and the Canadian Consumer Price Index by 35 percent using a 1975 base. The remaining 20 percent is a judgmental weight that has been fixed at the base year value (yielding a constant CAN \$5 per hectoliter for the judgmental factor).

Support prices for butterfat and skim milk powder are periodically adjusted in response to changes in the pricing formula. They are set at levels which, less an assumed processor margin, will yield producers a price from the market equal to those predicted by the formula less the direct subsidy payment to producers. Aside from the subsidy payment, this procedure is very similar to how the U.S. calculates product prices for butter, powder, and cheese to guarantee that U.S. producers get the legislated support price.

The Canadian government provides a direct subsidy payment for every cwt. of manufacturing milk produced in Canada. In the 1985-86 marketing year, the subsidy stood at \$1.96 per cwt. Canadian policy does not favor government purchases and storage of surplus products. This subsidy is designed to keep consumer prices for manufactured dairy products lower in Canada than they otherwise would be. The result is to maintain a larger Canadian dairy industry than might otherwise be possible in the absence of this government subsidy.

The price indicated by the industrial pricing formula is referred to as the target return level. The degree of market support or price guarantee associated with this target return level as implemented through support price adjustments effectively establishes the basis for price negotiations between processors and various provincial marketing boards or marketing authorities. While no actual price negotiation takes place in Ontario, the prices set by the Board can be appealed by processors to an independent government appeal tribunal.

Systems used to price and allocate fluid milk differ by province. However, Ontario's system is fairly representative of Canada. Ontario fluid quotas are expressed in terms of volume per day (one liter of milk shipped per day). They represent a producer's share of the market for the higher priced fluid milk. Approximately 92 percent of Ontario's 10,300 dairy farmers hold fluid quota and share in the returns from fluid markets. All of these producers must also hold MSQ under the national milk supply management program. This quota covers their milk shipments in excess of their share of the provincial fluid market. All provinces, with the exception of Newfoundland, are self-sufficient in fluid milk with very little milk moving interprovincially.

Ontario fluid milk prices are set using an economic formula as a guide. The formula has different components and weights than those used in the manufacturing milk

pricing formula discussed above. The base period for calculating the fluid milk price formula is currently 1983-84. The base is updated annually to reflect the most recent information available on cost of production from a randomly selected sample of producers. The formula base is projected from using an indexing system consisting of the following components and weights: cash input prices (35 percent), average weekly earnings of industrial workers in Ontario (20 percent), general wholesale price index (30 percent), and fluid sales as a percent of total milk sales (15 percent).

Ontario producers must have fluid milk quota in order to receive the higher Class I price for milk. This quota is known as Group I quota. However, only a portion of the milk associated with this quota receives the higher price. Depending on the season, this varies between 68 and 72 percent of the Group I quota. In other words, a producer may own 300 liters (daily shipment rights) and produce enough milk to meet that Group I quota. However, only about 70 percent of that quota would be eligible for the higher Class I price.

The Ontario fluid quota plan started in 1968 when the Ontario Milk Marketing Board allotted quotas to fluid milk producers in proportion to provincial fluid milk sales relative to total provincial sales. Special provisions established at the time allowed for the graduated entry of qualifying industrial milk producers into the program. In 1985, 96 percent of the total Ontario milk supply was produced by producers holding Group I quotas; only 4 percent of the milk supply hold no Group I quota. Since the introduction of the single quality standards for both fluid and industrial producers in 1981, all Ontario milk producers have been eligible to become part of the fluid quota system, and were encouraged to do so. Thus, the few producers not under fluid quotas have elected to remain outside the fluid quota system.

Ontario and Canada rely on a two-tier pricing system to "force" production within quota allocations. Any excess milk produced over that covered by Group I quota must be sold in the manufacturing market. Therefore, the producer is required to carry MSQ quota to cover any shipment in excess of his share of fluid milk market. Should the producer ship more milk than the MSQ covers, the government assesses the individual producer an overquota levy. Thus, this two-tier pricing system severely penalizes overproduction by the individual farmer. The severe overquota levy is sufficient to maintain Canadian and Ontario milk production within the bounds set by Canadian consumer demand.

Ontario (as does Quebec) has a formal quota exchange which matches buyers and sellers and establishes a market price for quotas. In Ontario, the quota exchange is a computerized exchange operated by the OMMB. Quotas also may be transferred as part of a whole dairy farm sale or through an intergenerational farm transfer. In recent years, approximately 65 percent of quota transfers have been within family, 5 percent through whole farm sales, and 30 percent through the quota exchange.

With the exception of within-family transfers, quota transfers are subject to an assessment of 15 percent. For example, a producer selling 100,000 pounds of quota would transfer and receive payment for only 85,000 pounds. The remaining 15,000 pounds would revert to the Ontario Milk Marketing Board for reallocation to existing or new producers or to adjust downward the outstanding quota pool to more accurately reflect current market conditions.

Producers are required to market milk equal to at least 85 percent of their annual MSQ. Those failing to meet this requirement would forfeit MSQ unless the MSQ is sold. It is imperative when running a supply control system that producers be required to manage their production both on the bottom side as well as the top side of their output. Thus, the "use them" or "lose them" quota rules are imperative for running any supply management system.

The Ontario system also has a market for two classes of MSQ; used and unused. The value of unused quota can vary substantially within the marketing year, depending upon supply conditions. The OMMB rules require that producers do not ship more than 80 percent of their annual MSQ quota through the first two-thirds of the marketing year (August 1 through March 31). All production over 80 percent of their MSQ during these months is subject to the overquota levy. After March 31, producers are allowed to use 5 percent of the remaining MSQ in each of the four remaining months of the dairy year with overquota levy deductions adjusted accordingly. This need to manage production relative to product needs puts a further premium on individual dairy farm managerial expertise.

The value of quota reflects the profitability of milk production relative to other farming enterprises. Formula induced manufacturing and fluid milk price increases in the face of declining prices for other agricultural commodities have increased quota prices. Prices for manufacturing quota have also been increased by higher overquota levies and quota reductions in recent years.

The quota system with its associated retail, producer, and government subsidy pricing and financial considerations has created a very tenuous quota asset value situation within the Ontario dairy industry. Increasing quota values put pressure on producer returns that would otherwise not be there. Also, increasingly producers would like to use this asset as collateral to purchase other expansions or capital investments in their dairy operation. Some market speculation in quota trading has begun to develop. These problems are generally recognized by the dairy industry leadership in Canada, and studies and actions appear to be formulated and undertaken to address some of the possible destructive consequences of rapidly rising quota values.

Canadian Implications

The greatest beneficiaries in the Canadian quota system were the farmers who were in business when it started. They received stability and income assurances as well as a windfall capital gain. At least until recently, Canadian production has rarely exceeded the MSQ./30, p.62/ The levy on overquota production has appeared to be effective in controlling supply.

Number of cows and number of farms decreased drastically in Canada during the 1970s./22, pp.13-14/ Whether or not this was due only to quotas is doubtful. Technological changes probably played a role. Consider the following, taken from /30, p.84/:

Number of Canadian Milk Producers
% Change From 1975 To 1980

Cream supplies	-59%
Industrial milk only	-45%
Integrated suppliers (liquid and industrial milk)	+ 7%

Furthermore, the decline was concentrated in farms with 17 or fewer cows./30, p.84/ It appears Canadian dairy farmers were getting larger, which indicates the adoption of new technology, at the same time they were adapting to quotas.

European Community

Twelve countries currently make up the European community, often referred to as the EC, the EEC or, in the past, the EUR10. The earlier member countries are Belgium, Denmark, the Federal Republic of Germany, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, and the United Kingdom. Portugal and Spain just become full fledged members. The EEC installed quotas April 2, 1984.

History. Milk production and domestic milk consumption were about equal in the original 10 counties in 1975. Ever since, marketings have exceeded domestic use. Quotas were seriously proposed in 1979 and again in 1981. When it appeared a price reduction of 12 percent would be needed to meet the costs of handling surpluses in 1984-1985, the present quotas were started. They will face legislative review before the 1990-1991 marketing year./36/

Description. Although an overall commission sets quotas for countries, each country creates its own plan. In Belgium, the Netherlands and West Germany, the quotas are allocated down to individual farms./36/ In the remainder, the quotas are allotted to milk processors./22, p.16/ In the United Kingdom, quotas got assigned down to the farm level by attaching them to the land./5, p.389/

The original quotas were based on deliveries made in 1981, with adjustments upward for Ireland and Italy. Super levies were set on overquota marketings. For the countries with farm level quotas, the levy is 75 percent of the target price. For quotas allotted to processors, the levy is 100 percent. The determination to use these levies has apparently been effective in curbing production./36/

Quotas are not saleable or transferable except when a whole farm is sold, leased, or inherited. However, transferability is being discussed by EEC policymakers./5, p.314/ Countries may require quotas be brought back into a national reserve./36/ A bit of evidence suggests that quota is being capitalized into farm prices, with quotas adding \$1,500 to \$5,000 per cow to the whole farm price./22, p.17/ In the United Kingdom, quotas cannot be bought or sold, but land with the attached quota can be bought, sold, or leased. Apparently, a farmer can buy land with quota, transfer the quota to other parcels already owned, and then resell the land which initially had the quota./5, p.389/

Results And Implications. In the two years prior to quotas, production had increased 3.8 percent and 3.6 percent; during the first year of quotas it decreased by 4.3

percent./36/ The goal is another 1 percent reduction for 1985-1986./22, p.16/ This will still leave about 12 percent more milk than what is needed for consumption within the EEC. This will likely be exported or used for food relief programs./36/ It appears quota amounts could be reduced in the future./6, pp.580-581/

OECD Countries

The Organization for Economic Co-operation and Development, usually referred to as the OECD, started in 1961. Countries currently accepting the Convention are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, Japan, Finland, Australia, New Zealand and, for certain work, Yugoslavia. The OECD policies contribute to a stable international economy; publishing various studies is one activity. One such study provided data on the following countries not covered in the EEC, Canada, and U.S. sections.

Austria. Austria adopted a full, compulsory quota system in 1978. It was modified in 1984 and will remain in effect until at least 1988./5, p.380/ The initial farm quotas were based on milk sales during the three years of 1976-1978. Quotas are not marketable, but they are adjusted each year for the period July 1 through June 30.

The government starts by calculating a "national required quantity." The formula for it appears to be a rolling three-year average with the smallest historical amount being replaced by the coming year's expected consumption. This has resulted in about 120 percent self-sufficiency on a butterfat basis, and a bit more on a solids-not-fat basis at the national level./30, pp.26-27/ The national quantity is translated into individual farm quantities. There are special arrangements for hardship, for losing quotas, and for extending quotas./5, p.606/

When Austria introduced quotas in 1978, the penalty for shipping more than quota amounts carried a penalty of nearly 60 percent of the base price. However, this penalty is adjusted often during the year; in some months the penalty may be nothing. The penalty level, then, is probably not a factor in a farmer's future planning./30, p.27/ With frequent changes in the overquota penalty, it appears quotas are used to change amounts and timing of marketing instead of permanently altering total production./30, p.66/ With an average herd size of less than six (6) cows per farm, Austrian dairy farmers can likely find alternate uses for milk on the farm and, hence, avoid penalties.

The Austrian quota policy is accompanied by governmental price supports, price controls, import levies and subsidized exports. Farm prices received are fixed for milk, as are maximum wholesale and retail prices paid for dairy products./30, p.19/

Quotas are set at about 20 percent more than domestic consumption. The Austrian government finances the first 16 percent through both domestic social programs and export subsidies. The government's contribution, especially for exports, is substantial./30, p.57/ A producer's contribution for promotion is collected to finance excesses from 16 to 21 percent. The overquota levy is charged to farmers on anything above the 21 percent./30, p.20/

Despite total production being well above domestic needs, the Austrian quota system appears to be an efficient method of regulating milk supplies. This is because quota is taken away from farmers who do not fill their quotas each year. It is transferred to those selling more than their quota. This allows for structural flexibility within the industry./30, p.64/

Some 25 percent of Austrian production in 1983-1984 resulted in highly subsidized exports./5, p.380/ If minimizing taxpayer expense was an objective, the quota system in Austria has not been a success. It appears the three year rolling average formula and the level of projected domestic use for the coming year have not been used to lower historical surpluses of domestic production.

Finland. This country adopted a voluntary quota system in July 1981 to remain for 3 years. It was accompanied by several other government programs designed to curtail milk production. A dairy farmer who reduced milk sold by 25 percent or more (including quitting completely) got a special payment./30, p.25/ Farm milk prices were influenced by retail price controls. Imports are regulated. Special payments and transport subsidies are made to maintain farmer incomes in selected regions. The excess production is exported, with subsidies partially coming from farmer fees./30, pp.20-21/

Finland will pay a farmer to keep dairy cows (at least 2) for the sole purpose of feeding the milk to beef calves. Contracts for this can go for 8 years./29, p.28/ Prior to 1981, three measures were used to reduce cow numbers. The first took land out of production, including a premium for dairy cows that were on the farm. The second helped older and disabled farmers to quit farming. The third helped the slaughter of cows with diseased udders. In 1979 and 1981 Finland passed laws limiting the maximum size of dairy herds to 30 and 20 cows, respectively. The goal was to prevent industrial sized farms. In 1981, an excise duty was charged against protein feeds to discourage milk production./30, pp.29-31/

Milk sales makes up nearly half of all agricultural income in Finland./30, p.20/ Hence, it attracts considerable domestic attention. Despite voluntary quotas and several other policy tools, it appears domestic milk production exceeds demand.

Norway. A voluntary quota was tried in Norway from 1977 through 1982. Farmers delivering less milk than in one of the three previous years were paid a higher price. As production increased, the system failed to control supplies./30, p.25/ The voluntary quotas were perceived to be temporary; farmers increased production to better position themselves./30, p.65/ In January, 1983 a two-price system with a quota for the higher priced milk was implemented. An individual's quota was set as a sliding average of the previous three years milk sales. The lower price for nonquota milk was to be so low production and sales would stop./30, p.27/ Policymakers acknowledge this could transfer more resources than wanted into other livestock enterprises./30, p.65/

Norway encourages grain production on its best land. Dairying is encouraged to use other areas through a variety of milk price enhancements. Retail milk prices are fixed. Concentrate feed costs are set at a high level to encourage more roughage feeding and less grain feeding of dairy cows./30, p.31/ Imports of dairy products are strictly controlled by licensing./30, p.59/

Norwegian experience with the quotas set up in 1983 indicates it is hard to drop quotas, even voluntary ones, once they are in place. Increased prices are a cost of

implementing quotas. Small farmers may have the most trouble complying with quotas, and the distribution of quotas among individuals and regions is always hotly contested./5, p.743/

Switzerland. Agriculture policy in Switzerland has the goals of keeping farmer's wages at the same levels as those for skilled workers, and to keep prices high enough to cover costs. This led to surplus milk production./30, p.21/ Switzerland then adopted a full, compulsory quota system in May, 1977. Quotas were allocated to farmers based on their 1975-1976 production. Overquota production was taxed at 66 percent of the milk price. In 1979, quotas were removed from farmers and assigned to cooperatives which in turn assigned bases to members on the basis of milk sold per hectare. In 1980 the tax on overquota sales became 76 percent of the milk price. However, this is paid by a farmer only if the whole cooperative's deliveries exceed the cooperative's quota. Farmers have to keep under the upper limits on milk produced per hectare./30, p.27/ Milk marketing quotas are not saleable, but policymakers are considering a change. It is hoped that allowing transferability will permit structural change./30, p.30/

Switzerland pays premiums to dairy farmers who use milk on the farm instead of selling it./30, p.28/ Incentives are given to produce grain domestically, while duties are charged on imported feeds. This makes dairy rations more expensive and tends to reduce milk production./30, p.31/ Fluid milk prices within the country are set by the free market, but wholesale prices for manufactured dairy products are set by the government to meet farm income goals./30, p.22/ Imports are taxed enough to insure products sell for prices comparable to domestic products, but imports of cheese and butter flow relatively freely./30, p.33/ Exports are subsidized. In 1981, 7 percent of the losses from exports were paid by farmers; the government paid the rest./30, p.35/

Switzerland wanted to favor dairy farms in the highest mountain regions, so no quotas were applied in those areas from 1978 to 1981. Milk production increased so much that quotas were again set for those areas. Production quotas have allowed the authorities to increase milk prices, but farmers are stopped from increasing incomes by way of greater milk output./30, p.64/ Switzerland adopted quotas because other policy measures had failed. For those areas of the country with quotas, milk deliveries from 1977 to 1981 increased only 3 percent./30, p.77/

Japan. A global voluntary quota for milk going into manufactured products was first used by Japan in 1979. Such milk, which is about a third of total production, receives a government subsidy. Overquota amounts, though, receive a lower price./30, p.56/ The government assigns each geographic area a planned production target which changes each year only as projected domestic consumption changes. Self-restraint to keep within these targets is expected of the farmers./30, p.26/

Japan pays minimum guaranteed prices to farmers for fluid milk, and for some milk going into manufactured products. Through 1983, market prices had been above the guaranteed levels. Fluid prices were dropping due to over supply and the marketing power of retail stores./30, p.11/ Real prices paid to producers in 1981 were only 75 percent of what they were in 1975./30, p.96/ Japan buys surplus dairy products to stabilize and support prices. Import levels are tied into the system./30, p.18/ There has been an increase in the government stocks held./30, p.19/ However, imports of raw cheese and skim milk powder are made in significant amounts./30, p.33/ Farmers are paid a subsidy on milk sales given up from low yielding cows slaughtered for beef, and for milk kept on the farm and fed to calves or hogs./30, p.26/

From 1978 to 1980 Japan's milk production grew only 2.0 percent. In the three years before 1978 the annual growth rate was 7.7 percent. This desired reduction in growth rate was likely due to a fixed global quota to which subsidy payments were limited. A freeze in manufactured milk prices and a drop in fluid milk prices during the time period may also have helped./30, p.65/

Partitioning annual data differently shows that from 1977 to 1979 milk production increased 10.7 percent annually. After the voluntary quotas were put in place, production grew by only 2.3 percent from 1979 to 1981. Japanese farmers probably applied this voluntary restraint due to rapidly falling unit returns./30, p.77/ By early 1986, falling fluid consumption caused the cooperatives (which have more authority than do U.S. cooperatives) to ask farmers to cut production by 3.1 percent. A temporary program to buy cows above the normal culling rate was started./14/

New Zealand. Liquid milk for domestic consumption is tightly controlled by quotas. In 1980-1981, 1,467 farmers held quotas while 15,200 produced milk for manufactured products, most of which were exported. The farm price is fixed for the fluid milk at levels set to meet the higher costs of production./30, p.8/

New Zealand dairy farmers receive the world market price for their milk. Government policy is to move products into export channels with little, if any, subsidy./30, p.8/ Dairy farmers have become fewer in number, and larger in size during the 1970s in response to free market pressures./30, p.87/

South Africa

There is a quota scheme on milk and other products in South Africa. Milk is controlled by the amount marketed./10, p.63/ Quota is transferable, and its price varies with the supply of available milk./28, p.196/ It was argued that without the quotas and their capital values, there would be a gain in land rents, and hence, higher land prices, especially if quotas were removed by the government./28, pp.194-195/

Implications From Several Countries

Quota plans are not the only dairy farm policy tool in countries that have quotas. Instead, quotas are usually one of several programs national governments use for supporting farm incomes and controlling production. The total package is usually complex. This makes it hard to judge any quota plan on its own merit.

The EEC introduction of quotas in 1984 provides a laboratory experiment U.S. policymakers should study closely. The startup problems are fresh in the minds of those involved. The EEC was in an oversupply situation a bit worse than what the U.S. faces. The 12 countries are trying a variety of ways to implement quotas. We suspect the 12 countries had as many diverse opinions which had to be settled as would occur if our 50 states were commissioned to implement individual state plans.

United States Quotas And Class I Base Plans

Although the United States has not had a countrywide quota plan, something very like quotas were allowed in the Federal Milk Marketing Orders from 1965 to 1985. These were called Class I base plans. Individual states have had experience with base plans; California still uses a statewide quota plan. Farmer owned cooperatives have used quotas and base plans in the past within the markets they serve. Some are still currently in use.

Class I Base Plans. The legal authority for these were first provided in the Food and Agriculture Act of 1965. It allowed federal milk marketing orders to establish them on an order by order basis. A Class I base plan is a "relatively-closed base plan where the base-building period is generally longer than one year and emphasis is more on annual than seasonal milk deliveries. Market rights of individual producers to the Class I sales of a market are generally established for periods longer than one year. These plans operate under the principle that a producer who supplies a market during some designated period of time -- say a year or period of years -- establishes a claim or market right to supply the higher priced fluid market during subsequent years."/8, p.33/ The farmer gets paid two prices. One is a higher price for the base milk, which is often the fluid needs for the market being served plus a 10 to 20 percent reserve. The other is a lower price, often called the excess price, for milk going into manufacturing purposes. This lower price is thought to lower the incentive for increased farm production.

Records show that "only the Puget Sound and Georgia Federal milk orders actually used Class I base plans. The Puget Sound plan was in effect from September 1967 until January 1984, when the Puget Sound Federal order was merged with the Inland Empire Federal Order. A Class I base plan was in effect in the Georgia Federal milk order from March 1972 until September 1980, when it was replaced by a base-excess seasonal pricing plan. Authority for implementing new Class I base plans under Federal milk marketing orders expired on December 31, 1981."/7, p.30/ The 1985 act did not renew the Class I base plan enabling provisions.

By January 1971, there were 62 Federal Order Markets./8, p.6/ Only two orders ever had Class I base plans, although at least four others expressed interest about them to the USDA./8, pp.15-16/ From 1965 to 1971, farmers in the other 60 orders were not interested enough in such plans to have successfully petitioned for them. This evidence could mean U.S. dairy farmers are not interested in quota type policies.

Cooperative And State Quotas. The Mountain Empire Dairymen's Association started a new quota plan in early 1986./15, p.587/ "Producer cooperatives have operated various types of base plans on a local market basis since the early part of this century. Several states -- primarily in the South in predominately short-supply areas -- have used base or quota plans since the early 1930's. California has operated a quota plan since 1969."/7, p.30/

Current California Quotas. When the California system started, it allocated a share of the statewide market using proportions which individuals shipped in two previous years. "The volume of market milk shipped became the production base of the producer, while the Class I portion plus 10 percent became his quota.

"Under the quota system, all classified use in the State is accounted for in reports submitted by distributors. A blend (weighted average) price is computed based on respective quota, base, and overbase milk. "Base milk" is the difference between a producer's production base and his quota. "Overbase" is any amount of market milk produced and shipped in excess of the production base."/7, pp.30-31/ An individual farmer's blended price is based on an average of the three prices depending on the amount of quota owned and how the milk is used in the pool./23, p.2/

California regulates the prices paid to farmers by handlers for milk going into various end uses./40, p.iii/ The quota milk price was \$13.49 per cwt in August 1984, while overbase milk was \$11.79 per cwt. New producers can start selling milk at the overbase price, or they can buy quota./7, p.31/

Performance Review. Fallert and Lough in 1972 suggested the performance of Class I base plans and quotas in U.S. dairy markets be grouped under either "supply management" or "supply control." The former is "use of a milk marketing plan designed to encourage an adequate but no excessive supply of milk for consumers in a designated market. Supply control is use of a milk marketing plan designed to discourage excess milk supplies when prices are above clearing levels."/8, p.33/

The U.S. actions perhaps succeeded in supply management, but have failed as supply controls. Initially, the Class I plan in Puget Sound reduced farm milk production, compared to increases in the years preceding the plan./35, p.348/ A later study, though, said "experience under the relatively closed Class I base plan provisions of the Puget Sound, Washington, order showed that the plan did not curtail production, compared with results in the core markets."/8, p.27/

"Limited market experience indicated that Class I base plans under Federal orders, even with the relatively restrictive provisions of the 1965 act, could not curb production. This inability largely resulted because the surplus price could not be set below the marginal cost of production. Provisions of the 1970 act giving greater freedom of entry make effective supply control under Federal order Class I base plans more impossible."/8, p.26/

A 1971 study of a Class I base plan operated by two cooperatives in the North Texas Federal Milk Order showed that in a representative month that base plan farmers decreased production of over-base milk by 30 percent from 1968 to 1970. However, for the whole order, receipts of total milk increased. The authors found "base dairymen decreased their production of over-base milk and helped stabilize receipts in the market."/31, p.8/

A 1984 article said interest in quota systems increased when surpluses arose, and decreased when shortages developed over the previous 20 years. It also pointed out that in California in recent years milk supplies have grown faster than in most areas of the country./7, p.35/ California has also had rapid population growth. Although quotas have been around since the 1930s, they have not appeared to play a major role in supply control.

Farmer opinion surveys have attempted to measure how dairy operators feel about quotas and base plans. A Puget Sound survey in 1970 found a large majority of the farmers said they were better off under the Class I base plan./35, p.350/ A 1971 survey

across seven regions in the U.S. found that farmers under a dairy base plan strongly favored production regulation. Those in regions without a dairy base plan found respondents evenly split on whether they favored regulation or not./31, p.2/

Implications For The Future. Milk production quotas are not new in this country. They have been tried in several individual markets off and on over the last fifty years. At the time this was written, dairy farmers in at least two states were trading transferrable quotas on the open market. There is much to be learned from the various past experiences in localized areas of the U.S. dairy industry.

We drew two major conclusions from the literature reviewed in this section on U.S. quota history. First, if quotas are to be used as an effective means to curb overproduction, new entrants into dairying must be stopped. This exclusion might have to continue for several months. The Class I base plans had a major flaw in this regard. The legislative rules initially seemed preoccupied with "fairness" in allowing for new producers and gentlemanly considerations of equity. The writings of one of the leading academic proponents of Class I base plans, Dr. Leland Spencer, reflect this attitude./34, pp.9-11/ If quotas are to prevent excess supplies, not manage them, they must be totalitarian in both construction and administration.

The second conclusion was that U.S. quota plans didn't stop overproduction in the past because the prices paid to farmers for overbase or overquota shipments were too high. Marginal, and perhaps even average, costs of production were lower than the lowest price received by farmers. The incentive to increase production continued under base or quota plans. If quotas are to control excess production in the future, the penalty for overquota sales has got to be severe.

V. ECONOMIC ANALYSIS OF QUOTA IMPACTS

This section starts with an overview of items economists would consider in measuring the impact of any governmental agricultural policy on a nation's economic system. The general directions of costs and returns are mentioned. A list of the major arguments against quotas is given, followed by a discussion of each argument with literature citations. The same is then done for arguments in favor of quotas.

Principal Effects Of A Dairy Quota Policy

A recent OECD study listed the following classes of effects which may be generated by any specific policy such as quotas:

1. Those which occur within the dairy sector itself (milk producers, processors, and distributors).
2. Those in the rest of the agricultural sector.
3. Those in industries related to agriculture.
4. Those generated because of changes in consumption patterns.
5. Effects generated as the result of changes in foreign trade.
6. Those resulting from changes in government expenditure./30, p.44/

To use the above classification, the following factors about the U.S. dairy industry must remain true. There will be an excess supply of milk on a national basis. The

implementation of quotas will reduce this supply produced by farmers to levels just adequate for meeting domestic needs. Exports will remain at their currently low levels, or be eliminated. Import restrictions now exist. These would continue so as to keep total imports at or below their current levels. The supply curve for farm milk will remain upward sloping. This means that if price were to increase, supplies would increase, and vice versa. The demand curve for total farm milk is inelastic. This means that if quantities demanded drop a little, the price paid will increase a lot. This is true of fluid milk. Some manufactured products face a less inelastic demand. These assumptions permit qualitative statements about the impact of implementing quotas.

Dairy Sector Effects. Reduced supplies coming from farms will cause milk prices to go up. Farmers' gross incomes will increase. Processors, wholesalers, and retailers will adjust their prices upward.

A smaller physical volume of milk will be handled, at least until population catches up. Assuming fluid needs will be met first, the volume reduction will primarily hit the manufacturers of butter, cheese, and powder. Because of economies of scale in processing plants, some of these will probably close. The majority of these are owned by producers via their cooperatives. Thus, there is a trade-off between income statement and balance sheet effects of a quota system.

Other Agricultural Sectors. Quotas would stop, at least initially, the creation of new dairy farms. Managers in other types of farming with lower profits could not transfer resources into dairying. Sales of grains and roughages would be reduced. Land and other resources not needed would be put to use in other agricultural enterprises. Prices in these alternative enterprises might be driven down. Land prices, because they tend to be inelastic, will be reduced, especially in specialized milk producing areas.

Related Industries. The input industries serving processors and dairy farmers will have fewer gross sales. With lower volume, unit prices would be higher. Those supplying variable inputs, such as fuels and medicine, will react almost immediately. Those supplying fixed inputs such as machinery and buildings will be affected, but it will take longer. There will be a general movement of resources away from dairy into other sectors of the economy. Given a surplus situation, this impact would also occur in a free market which moved towards equilibrium.

Consumption Patterns. As prices rise, consumers will buy less. Higher retail prices make the products more vulnerable to substitutes. Consumers' real incomes would be lower. Lower incomes will have a detrimental ripple effect throughout the economy. Low income families will be more responsive to price. Volume of dairy products consumed by middle and high income families may change little, if any. These impacts will be subject to preference changes and advertising.

Foreign Trade. We assume there will be no impact on foreign trade. However, the freezing of imports to enable quotas to work means that dairy items could not be bargaining chips in international trade negotiations.

Government Expenditures. A government agency would have to take on the job of administering quotas. This would take people, computers and offices. No excess supplies would mean no government purchases of butter, cheese and powder for storage. The quota agency would probably cost less than the savings from surplus purchases, thus

saving taxpayer funds. Furthermore, the agency could assess farmers to cover the cost of operation./30, pp.43-49/

Arguments Against Dairy Sales Quotas

The arguments generally raised against dairy quotas are listed below. We have listed them under three major headings:

- I. Higher than necessary costs resulting from not attaining economic equilibrium.
 - A. Higher prices of milk and milk products to consumers.
 - B. Transfer of wealth from consumers to producers.
 - C. Windfall gain for those at start up, later becomes worked into cost of production. Quota investment is capitalized.
 - D. Input suppliers' sales drop.

- II. Freeze pattern of production, both among farms and among regions.
 - A. Misallocation of resources.
 - B. Losses in efficiency, especially long-run.
 - C. Create interregional tensions.

- III. Institutional and personal costs.
 - A. Cost of administration.
 - B. Negotiable quotas injure small farmers.
 - C. Open up possibilities of bureaucratic production controls and are an affront to personal liberty. Lose freedom of choice.
 - D. Underrate farmers' ability, and overrate government officials to make sound management decisions.
 - E. They are self-perpetuating, very hard to remove.
 - F. Once introduced in the dairy sector, other sectors will want them also.

Losses From Not Attaining Economic Equilibrium

In a perfectly competitive market, theory says long run equilibrium will be attained when amounts supplied are equal to amounts demanded. There will be a price at the point where supply equals demand. This market clearing price brings forth the largest possible quantity of consumer products at the lowest possible price given the investment needed in a variety of resources. This theory is often illustrated to the dairy industry by drawing an elastic supply curve and an inelastic demand curve in a two-dimension grid. A numerical scale is seldom entered on the grid.

Now make believe we have just imposed quotas on the farms in this perfect market. One of the main goals of the quotas was to reduce quantities coming into the market. The quantity of milk allowed to be sold must then, by common sense, be less than the market clearing amount at the competitive price. Because there is less milk available, consumers will bid up the price until the smaller amount is allocated throughout the market. This new balance price is higher than the perfectly competitive price. Hence, consumers will be paying more for their milk after the quotas are in place.

Dairy Products Cost Consumers More. The simple construct of logic in the two preceding paragraphs is at the base of the argument that quotas are costly. Economic theorists can simply say, and correctly so, that quotas will cause higher prices of milk and milk products to consumers than will a free market./5, p.105/ Those resorting to emotional pleas against quotas will conjure up visions of starving children and low income elderly going without essential calcium.

Transfer Wealth From Consumers To Farmers. Those higher prices consumers are paying under quotas must be getting passed back to dairy farmers. Farmers are getting more per cwt. than they were in the perfectly competitive market. The farmers, at this higher price, would be willing to produce a lot more milk, but they are being stopped by the quotas. To conform, they might keep fewer cows, and work fewer hours. Resources are left idle, yet they are getting paid just as much as they were when the barn was full. More wealth is being accumulated by the farmers than they really need. Economists call this a transfer of wealth from consumers to producers./1, p.46/ /32, p.135/

The consumers, if they wish to maintain their healthy intake of dairy products, have to spend more of their disposable income on milk and less on other things. If they budget the same amount of income towards dairy products, they will get less quantity, all other things being equal. Either way, the consumers are worse off than they were before quotas. Higher food prices raise equity concerns because a disproportionate share of the burden is carried by lower income consumers./9, p.8/

Proof. The bulk of economic literature supports the above cost arguments by drawing the supply-demand diagrams on two dimensional grids as previously described. The grids don't usually have numerical scales, so the actual monetary costs are not mentioned. The magnitude of costs on the static diagrams are sometimes indicated as "the deadweight loss," /9, p.11/ "the economic rent rectangle," /1, p.47/ or as the amount of "monopoly price effect."/32, p.147/ To appreciate the evidence, one must be adept at abstract thinking.

Quotas have been used in Canada long enough for a few researchers to attempt measuring the actual cost impacts. A study of British Columbia in the mid-1970s caused differences of opinions among authors as to methodology and results. A reviewer of original work felt the transfer cost was CAN\$28.80 per family./1, p.46/ The amount of CAN\$46.60 was used in the original study. Table 1 was taken from the work of Richard Barichello; it represents the type of numerical results available about the Canadian quota system./2, p.45/ It would be tempting to take the CAN\$208 million welfare cost and adjust it to U.S. currency and population size. However, there are enough differences between the Canadian and the U.S. systems to make this a questionable procedure.

Canada also has quotas on hogs, eggs, broilers, and turkeys. Marketing boards, with close to monopoly control over a variety of crops, also exist. Studies of these institutions have been made to assess their impact. Andrew Schmitz and Michele M. Veeman are writers who provide good starting points. Both conclude that the transfer impacts from consumers to farmers are substantial./32, p.135/ /41, p.21/ Although neither give many specifics for the dairy industry, the results would be similar for most products.

TABLE I.
Welfare Costs and Gross Transfers Due to Regulation,
Fluid and Industrial Milk Markets, Canada
 (in millions of 1980 dollars)

Welfare Cost		208
Income Transfers To:		
Milk Producers	+	671
Milk Product Consumers	-	686
Taxpayers	-	303
Sellers of Industrial Milk Quota	+	256
Buyers of Industrial Milk Quota	-	256
Sellers of Fluid Milk Quota	+	176
Buyers of Fluid Milk Quota	-	176
Overseas Consumers of Skim Milk Products	+	

Source: Richard R. Barichello (1981) "The Economics of Canadian Dairy Industry Regulation," Technical Report No. E/I 2, Economic Council of Canada, March, p.45. As shown in /9, p.24/

Although quotas exist in a few isolated places in the U.S., they are probably not a factor in national average consumer product prices. In Canada, quotas are a factor. In 1985, the U.S. average price for a half gallon of 2 percent milk was \$1.08 versus \$1.00 in Ontario, Canada. Milk price differences were only one cent in 1984 and 1983. Butter cost about \$.17 more per pound in the U.S. from 1983 through 1985. Cheddar cheese cost \$.37 more per pound in Ontario in 1985, and \$.45 more in 1984. All prices are in U.S. currency./12, p.24/ Despite the differences between the two national economies, it would be tempting to say these net price differences indicate the level of wealth transfer from consumers to farmers.

One purpose of this paper is to present what must be done to get national quota laws passed. Early in the debate process, congressional staff and budget office agencies will be looking for cost implications. Past work such as /20/ are but starting points. In these times of computers and econometrics, static diagrammatic analysis isn't going to cut it. We don't know of any pertinent studies that even start to address what the dollar loss to consumers in the U.S. would be with farm level milk quotas. We suspect that current national econometric models are ill-equipped to deal accurately with this question. Research on these questions needs to get started immediately.

Windfall Gain At Start Up. A quota plan has to start somewhere. Usually, those already selling milk are given the privilege of continuing in business. If the plan includes marketable, transferable quotas, the quotas will take on a cash value. At the time of startup, then, the government has given away a valuable asset. This may not be considered equitable. Farmers coming into the business after quotas are installed have to buy the quotas. This extra cost eventually finds its way into higher consumer price levels./10, p.62/ This capitalization process is like a tax levied by the farmers in business at the time of startup against consumers and against future generations of farmers./33, p.2/ Economists generally cite the cash value of quotas as strong evidence that prices and quantities are not being balanced at a beneficial point for consumers.

Input Suppliers Lose Sales. As milk production is cut back and fewer consumer products are sold, farmers and processors require fewer supplies. When the EEC started quotas in early 1984, farmers cut back cow numbers and went to feeding more farm produced grain and roughages. The sales of protein feeds for 1984 was projected to drop 20 percent from 1983 levels./5, p.109/ Once this type of economic activity is lost, it can never be regained./9, p.11/ Although this ripple effect logically exists, we do not know of any precise measurements of what the magnitude would be if quotas were started throughout the U.S.

Freeze Patterns Of Production

This is closely related to the previous section. A quota system would move the economy away from a perfectly competitive market. Productive resources would not be allowed to shift over time in order to find the least cost combination. Or, the movement would be considerably slowed. The question would be critical if significant short-run population shifts were expected.

Misallocation Of Resources. A 1983 review of four studies concluded quotas caused misallocation of resources in that too few resources end up being invested in the industry. The impact, though, is small compared to the transfer of wealth from

consumers to producers./32, p.139/ Past studies have considered the industry with quotas under analysis as operating in an economy where all other markets are perfectly competitive. This is probably not the case. Hence, the perceived costs are likely overstated./32, p.150/

Losses In Efficiency. Quotas may prevent or delay movement out of dairying if accompanied by high farm prices. "A healthy dairy sector requires continuous purging of the least efficient."/22, p.21/ Economists generally agree there are losses in efficiency. But, "short-run losses in allocative efficiency are relatively minor compared to the transfer effects. However, the potential long-run losses in efficiency are substantial."/41, p.21/ At the time of starting up a quota system, efficiency may not immediately suffer. If future technology developments should make it more efficient to change the location of production, then quotas may get in the way of adjustments and efficiency would erode./3, p.255/

Interregional Tensions. Population and new technology have shifted significantly in the U.S. There is reason to believe they will continue to do so. Quotas tied to farm production would tend to stop farm numbers from increasing or decreasing in a given region faced with changes. Quotas lock in the geographical production patterns which existed at startup. If the quotas are used to raise prices of consumer products above competitive levels, then interregional equity becomes a serious problem./22, p.21/ Farmers in areas which produce mainly for a fluid market, such as some areas of the Southern U.S., will have an income advantage they won't want to give up. Areas that mostly produce for manufactured products, such as the Upper Midwest, will be penalized. Cooperation and progress with a view towards national improvements become hard. Each region under quotas will tend to fight only for its own percentage portion of the market pie./33, p.2/

A generally accepted argument for avoiding locking in historic patterns is to have transferable quotas. The administering board could provide a quota market ensuring all regions of the country could bid on quota amounts being sold. Changes in regional production patterns would probably be incremental, even in the long run. Even without quotas, milk production would be scattered throughout the country. The bulk and perishability of fluid milk tend to support this argument; there is a limit as to how far fresh milk can be moved. All dairy farms would not end up being in the Southwest despite that region's apparent current advantage in production costs.

Institutional And Personal Factors

Administration Costs. Given that a national administrative agency would have to take on the job of running a quota system, there would be the expense of salaries, space and operations./11, p.17/ One could look at similar governmental costs to run such offices as the ASCS or the Federal Milk Marketing Orders to get estimates. The agency will need considerable capability for doing research; the projecting of consumer requirements by region or city is not currently done. Enabling legislation should deal with how the funds would be obtained. They could come from a variety of sources. The extremes would be either general tax funds or farmer assessments.

Negotiable Quotas Injure Small Farmers. Farmer interest in quotas is sometimes stated in terms of protecting the family sized farm. The history is that even with quota

schemes, the trend towards fewer and larger farms has continued, often fueled by transferable quotas which may be bought and sold. In a review of literature, Brandow concluded "Farm leaders, especially leaders of organizations voicing concern about small farmers, usually have opposed negotiability, though injury to small farmers is not a necessary result."/3, p.256/ The EEC quota system has been criticized by a German group for tending to drive small and part-time farmers out of dairying./5, p.606/ A cooperative administered quota plan in northern Texas in the late 1960s showed larger farmers with access to funds were the ones who bought base and expanded./31, p.1/ The implication was that small farmers couldn't afford to compete in the bidding for quotas. Canadian experience is that "any market value that becomes attached to quotas will benefit larger farmers more than smaller ones."/22, p.14/

Government Controls Versus Personal Liberty. How one argues this point depends upon philosophy and personal beliefs. "... economists regard restrictive quotas on agricultural products as anathema; they open up possibilities of bureaucratic production controls and are an affront to personal liberty."/5, p.105/ There is a "high degree of loss of freedom in individual decision making."/10, p.65/

We have stated elsewhere in this paper that anything less than total authority to stop production vested in the administering agency will doom a quota plan to failure. Will the transfer of wealth mentioned above be enough to offset this loss of freedom? This is a serious question American farmers will not want to take lightly. The impact becomes real when a parent wants to take a child into the business. This usually means a bigger business is needed to support two or more families. With quotas, the families will first have to come up with the funds to buy the right to sell more milk. Or, they will have to wait in line for their share, depending upon the quota system's design.

Farmer Versus Government Decisions. Quota plans imply policy makers overrate the competence of government employees to make sound managerial decisions and underrate the ability of farmers to do so./10, p.65/ This policy is a step towards socialism and away from capitalism.

Hard To Remove. If marketable quotas had been developed, farmers would have been accustomed to seeing their value on balance sheets./39, p.85/ They could be expected to lobby hard to prevent losing them. Once the administrative mechanism is in place to run a quota plan, it would be hard to dismantle./5, p.105/ It is much easier to hire people and create a governmental agency than it is to fire people and disband it.

Others Will Also Want Quotas. Producers of other commodities, both agricultural and nonagricultural, will want to have quota plans for their sector./5, p.105/ It would be hard to show why dairy farmers should have them and others should not. However, it has been shown that quotas are already in use in some parts of the U.S. Tobacco and peanuts have had quotas for some time. As this paper is written, however, the outlook for most farm commodities is grim. Commodity groups would be especially alert to the implications of opening up quotas for just one type of farm at this time.

Arguments In Favor Of Dairy Sales Quotas

There are several things to be said in favor of quotas. They are outlined below, and then discussed.

- I. Quotas will stop excess production if designed with that goal.
 - A. Reduce quantity supplied and increase prices.
 - B. Cost to taxpayers will be low to negligible.
 - C. Monopoly price impact is relatively small.
 - D. Farm value is but one part of the consumer price.

- II. Continued government intervention is needed in the U.S. dairy sector.
 - A. History of involvement.
 - B. Spread the impact of policy among all farmers.
 - C. Provide self-discipline without severe financial and social losses.
 - D. Enable family farms to survive.

- III. Stability of the industry.
 - A. Continue to provide adjustments for efficiency gains.
 - B. Reduce seasonal price variations.
 - C. Management planning is easier, expansion mentality is minimized.

Prevent Excess Dairy Supplies In The Future

A quota system will be able to bring production into line with consumption in the U.S. Economists may consider quotas expensive and be opposed to them, but it is generally accepted that they would do the job. "Supply management can work - it can achieve its objectives."/21, p.12/ The only other way to halt excess supply is to lower the prices received by farmers. This paper is based on the assumption that society's political institutions are unable to use the price cut option.

Lower Supplies And Higher Prices. Quotas work because they stop milk from getting into the market. With decreased quantities, the price charged to consumers will increase. Given the inelastic demand for dairy products, especially for fluid milk, gross farm income can increase. This is because consumer prices increase more than quantities decrease. In most parts of the world where quotas are in use the government also supports farm milk prices. However, this is not a necessary feature in a quota plan.

Low Cost To Taxpayers. With no excess supplies coming from farms, the government would not have to buy dairy products. In recent years, purchasing manufactured dairy products and related program activities have annually cost the U.S. taxpayer \$1.5 to \$2.5 billion./22, p.19/ With quotas, this would be avoided. Furthermore, the administrative agency expense could be obtained by assessing farmers. Current program costs could be reduced without lowering farm incomes./35, p.316/

Price Impact Is Small. It was shown above that a major argument against quotas is based on the logic that quotas prevent the market from reaching the perfectly competitive clearing price. In effect, consumer prices would be like prices charged by monopolists. One reviewer suggested that this net welfare loss created by quota plans is relatively small./28, p.151/

Farm Share Of Retail Price Is Small. Price increases experienced by farmers will not be passed through to retail levels on a one to one basis. The impact will be greatest for fluid milk, as less processing is done. Cheese would be the other extreme where processing and storage make up a relatively large part of the final consumer price. There is no reason to believe a change in price paid to farmers for milk destined for cheese will have anything except a small impact on retail cheese prices. The processors will be tempted to use the occasion to raise prices much more than warranted. In fact, removing the government as a competitive buyer for manufactured items could lower the retail price.

Government Intervention Is Needed In Dairy

After reviewing nearly a half century of dairy marketing history in New York, two authors concluded it is unfortunate, but the visible hand of government "moves more surely, effectively, and efficiently than the invisible one" of the market place./29, p.17/

History. Despite governmental involvement through Federal milk marketing orders, health controls and other programs, one could describe U.S. dairy farms as having many elements of perfect competition. Some farm organizations would like to completely remove the government from meddling in agriculture. However, in many other areas of the world, agriculture has had to give up free markets and accept considerable government controls in order to survive. Cochrane, writing in the 1960s, argued that many major agricultural commodities, including manufacturing milk, could be brought successfully under production controls./4, p.713/ Perhaps now is the time for the dairy industry to seriously consider this major structural change.

Spread The Impact Equitably. A quota plan could be designed to spread the costs and benefits equitably throughout the U.S./39, p.68/ This could forestall tensions among regions as to who is responsible or not responsible for the surplus situation. This might require the overquote penalty price to vary by region./20, p.104/

Industry Self-Discipline. A quota plan could allow all farmers to work as an industry to overcome the problem of surpluses. It might prevent the financially weak or the least-efficient farms from bearing most of the adjustment burden./22, p.19/

Enable Family Farm Survival. Some argue that quotas will enable the smaller family farm, as opposed to the huge factory farm, to survive. "Those farmers who received a production base would have their future profitability practically guaranteed."/33, p.1/ An editorial cites the information that with a continuation of current price support policies, a 52-cow farm has a 34 to 38 percent chance of survival. With quotas, the survivability probability goes up to 92 percent./19, p.470/ A study of Class I base plans showed base plans neither slowed nor accelerated the trend towards larger but fewer farms./35, p.351/

These opinions differ with the argument against quotas which stated that with marketable quota, large farms would eventually take over the small farms. To reconcile these, one needs to define what a family farm is, and the time period being considered. We suspect that in the short-run, quotas would keep current farms, no matter how small, in business. When ownership changes, if marketable quotas are permitted and technology continues to improve, the larger and better financed operators will tend to take over.

But, quotas need not be marketable, in which case the administering agency could ensure, at a cost, any size of farm it wanted.

Stabilize The Dairy Industry

Continue To Adjust. Investors prefer to keep a fixed asset as long as possible so as to maximize returns from that asset. New technology can cause economic obsolescence long before an item, such as a barn, is worn out. If quotas slow down the adoption of new technology, they may well prevent such losses. It is generally argued that transferrable quotas allow new technology to be adopted. Economists do not agree on the magnitude of the lost allocative efficiency implied by quotas./24, p.372/ Quotas would continue to encourage individual farmers to become more efficient./22, p.20/ With marketable quotas, one writer concluded "that the rate of increase in efficiency in agriculture would be exceedingly rapid under comprehensive supply control - perhaps more rapid than anything experienced in modern times."/4, p.712/

Reduce Price Variability. A quota plan could reduce seasonal price variability. This might be of help to farmers, but probably not to consumers./1, p.51/ In a market with a cooperative run Class I base plan, base dairymen helped stabilize receipts in the market./31, p.8/ This stability came from leveling out quantities shipped, which may indirectly reduce price variation.

Management Planning Easier. With a quota plan where quantities allowed into the market are regulated, it is expected every farmer will want to consistently ship the full daily amount./39, pp.66-67/ Amounts of milk will be known by the processors. Prices will not need to change very much. The risk of price changes faced by dairy farmers will be much less with quotas. This facilitates better farm management decisions. Farmers are relieved of worrying about continually expanding to maintain gross income./35, p.351/

VI. STEPS TO IMPLEMENTING QUOTAS IN THE UNITED STATES

Two steps are needed to implementing a quota plan in the U.S. First, everyone must decide that they want to accept the concept of quotas. This would mean facing some major trade-offs. Second, one can move on to deciding about the details to include in the proposed legislative package.

Conclusions About Trade-Offs

Taxpayers Vs. Consumers. It has been shown above that if a quota system is started, consumers will be paying for the gains which will accrue to farmers. Currently, U.S. dairy farmers are obtaining higher than competitive prices for their milk because the government is supporting the market by purchasing dairy products and storing them. The net cost of this is primarily coming from general funds, or taxes. The people who pay the most taxes are not necessarily those who drink the most milk./20, p.19/ Assuming society continues to desire to support farm incomes, the choice is whether to do it by taking funds from consumers, or to continue to take funds from taxpayers.

Freedom Vs. Profits. Farmers supporting the idea of quotas are assuming they will increase their net profits in the future. It has been shown above that among the emotional arguments against quotas is the fact that to be effective, quotas must take away the individual's freedom of choosing how much milk to sell. That decision would be passed to a government agency. It will be a challenge to convince Congress that American dairy farmers are ready to trade freedom for profit.

Quotas Only Vs. Quotas Plus The Current Policy. It has been shown that all countries currently using quotas also use several other programs aimed at controlling dairy production and farm income. For the U.S., quotas could become the only government program for dairy. The Federal milk market order system and support price projects could be shut down. What's left of the free market once supplies were limited by quotas could work to find the market clearing price. Or, a quota plan could be added on top of the Federal orders, and prices could still be controlled through excess purchasing. The trade-off will be a sweeping change versus adding one more procedure to the system already in place.

Creating The Legislative Package

Dairy farmers, through their various marketing and policy making organizations, will have to decide exactly what kind of a quota plan they want and what is politically feasible. The above paper has discussed several possibilities.

First, farmers must agree that they want to give up their freedom to produce as much milk as they please. They must believe that there is a reward to be had from giving up this freedom. Once the concept is accepted, details can be worked out. These include:

1. Quotas to be voluntary or mandatory?
2. Are the quotas to be marketable or controlled?
3. Will gains on quotas as assets be allowed?
4. What agency will administer the plan?
5. How will the administering agency be funded?
6. How will the initial quotas be calculated?
7. How will future market needs be calculated?
8. Area to be 48 contiguous states or all 50 states?
9. What provisions for hardship cases are permitted?
10. Will overquota milk be allowed off the farm?
11. What penalty will be charged to overquota milk?
12. Will quota be forfeited if not filled?
13. Will the support price mechanism be disbanded?
14. Will Federal orders be disbanded?
15. Will the quota plan law have a sunset provision?

Most of the above questions have been touched upon in the paper except for 11; assuming overquota milk is allowed to leave the farm, what price or penalty will it receive? We have taken the position that Class I base plans and base-excess plans have failed in the past because the low price was not low enough to stop production on the part of all farmers. A 1973 study said the marginal cost of production was a low enough price to be effective. That was found to be about 60 percent of the blend price./20,

p.105/ We doubt that is low enough. Canadian farmers currently receive less than \$1 per cwt. for overquota milk; some believe even that is not low enough to discourage expansion minded farmers./33, p.2/ European countries seem to have been successful with overquota prices set at one-quarter to one-third the price of the quota milk.

Most of the arguments presented in the above paper assume quotas are being compared to a perfectly competitive market at equilibrium. However, if quotas are started in the U.S., they would be starting in a market that is neither perfect nor in equilibrium. In this case, theory is unable to tell us whether quotas would be moving the market towards perfectly competitive equilibrium or away from it. The impact of quotas can, at best, be only estimated with a considerable degree of uncertainty.

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