COMPARING U.S. AND CANADIAN DAIRY POLICIES AND THEIR IMPACTS

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Where have all the dairy farmers gone?

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I. Introduction to Supply Management

A. Context of Research

The 21st century mantra for dairy, similar to many other agriculture sectors, is "get big or get out." Though most people in North America drink milk or eat yogurt or cheese, few are aware of the long-standing, complex supply management systems within their dairy industry. Supporting small-sized dairies and family farms is a common justification for providing high levels of support for dairy farmers. However, despite varying levels of support, there have been near-identical percentage declines in the number of dairy farms in the U.S. and Canada.

In Canada, for example, dairy farming is one of the largest agricultural sectors—contributing about 10 billion USD to the economy each year. Dairy farmers in Canada receive an income that is higher than the incomes found in other agricultural sectors. This is influenced by supply management policies at the regional and national level that have been in existence since the 1970s., providing farmers cost of production plus profits Yet, in 2011 there were only13,000 dairy farms left in Canada. Similarly, the U.S. dairy industry saw the number of dairy farms decline from 97,460 in 2001 to 65,000 in 2009, a decline of 33 percent.[i] In 2013 dairy sales reached a record high at 43.1 billion USD.[ii] In contrast, however, as recent as 2007 dairy farmers in the U.S. were receiving $12.00 per 100 pounds of milk while the cost of production was estimated to be $17.00.[iii] As it were, dairy farmers with small herds are being driven out of business by a handful of companies in both countries.

This research highlights major policy change and the impacts of policy change on dairy farmers, forming a narrative for both the Canadian and U.S. dairy industries. Specifically, this research identifies varying degrees of supply management policy in the dairy industry, referencing the historical roots and developments into a comparative case—political, social, economic, and otherwise—of the U.S. as a "productivist" and Canada as a "producerist" state, to acknowledge the pros and cons of two independent milk marketing systems. Through policy change, these two policy regimes have shaped their dairy industries evolution, respectively. Understanding these origins and evolutions will help inform decision-makers in making changes to dairy policy that reflect the realities of today's industry, trade and public policy interests, and the domestic and international contexts. As it were, five pressures have influenced policy change related to supply-managed dairy:

1. Technological change
2. Global trends in supply and demand
3. Low-fat/Value-added market shifts
4. Fiscal pressures
5. Free trade

This paper looks at how these five factors have shaped U.S. and Canadian agricultural policies. The discussion is manageable, focusing only on major policy instruments. Quantitative evidence is provided, showing the impacts that supply control programs generate from cow to consumer. Interestingly, both countries in this comparison have so much similarity in their agricultural and economic environments, in their problems and issues facing policy makers, and in the trends in important economic variables. Yet policy responses have been, and remain to be, quite dissimilar.[iv]

A major difference this research highlights is that the weaving of policy and politics was shaped most significantly by one political bargain: the consumer-dominated demographics from U.S. constituents. For instance, political culture in Canada has included more powerful agricultural interests and weaker urban constituencies, emphasizing "producerist" policy that accentuated farmer political and economic organization as part of the solution for dairy farmers. This included farm strategies more dependent on farmer's resources and institutional linkages forged beyond the farm-gate. In contrast, experts at the United States' "land grant" agricultural college at Cornell University, along with health policy officials supported "productivist" policies—the encouragement of large-scale, efficient, highly productive form of dairy farming—in order to provide urban consumers with safe milk cheaply.[v] Whereas Canadian dairy farmers were able to maintain a more populist form of political culture that could publicly challenge the ideal of industrial dairy production and maintain a higher farm-gate price, U.S. dairy farmers could not.

That is what the historical narrative of dairy ameliorates, however, since the 1970s about 90 percent of the dairy farmers in the U.S. and Canada have exited the industry. The main quest of this research is to better understand why dairy farmers have left the industry in both countries, at nearly same rate. This research looks at several successive questions: Why do these countries have such policy? How did these come to be, and how have they changed over time? Do these systems still support dairy farmers? What have been the intended and unintended consequences for dairy farmers?[vi] However, it is clear that both the U.S. and the Canadian milk marketing systems will need to change their current policies—whether marginally, dramatically, or in between—in response to domestic and international pressures.

B. Supply Management

Supply management, a form of protectionist policy, is the processes and methods of restricting the supply of dairy products. Supply management has operated based on three pillars in Canada since the 1970s:

1. Production management—using a quota system to help ensure a steady supply of quality dairy products for consumer demand.
2. Predictable imports—Canada's federal government limits the amount of imports to ensure that the Canadian dairy market requirements are primarily met by Canadian milk production.
3. Pricing mechanism—Canadian producers do not rely on taxpayer subsidies, and receive prices that enable producers to cover production costs.

Unlike the Canadian dairy industry that uses a quota system, the U.S. does not have control of its supply. This has resulted in chronic oversupply of dairy in the U.S.

A main influence of milk supply management policy has been the cost to governments of managing surpluses. In Canada, this accounted for changes in national milk policy in every decade since the 1960s, when government dairy policies began to coalesce into what is recognized as the Canadian supply management system. In addition, during the same time period, production technology on the farm began to increase milk supplies. Innovations included the switch from a bucket system to mechanized milking, which adopted through the installments of a pipeline system—a trend also experienced in the U.S.

There are more dairy farms per capita in Canada than in the U.S. The population in Canada during this time period was just over 30 million.[vii] The U.S. grew from 250 million to about 300 million in the same timeframe. Canada, thus, had about one-tenth of the population of the U.S., but roughly one-fourth of the dairy farms. In addition, as Table 1 indicates, there was a near-identical decline in the number of dairy farms in the U.S. and Canada.

A study by the IDFA in 2009 identified four general outcomes of supply-managed countries over the past two decades:[viii]

1. The number of dairy farms has dropped.
2. Milk price volatility has increased.
3. Supply control has raised consumer prices, which in turn limits consumption growth.
4. Generally, the number of imports has increased and the number of exports has been limited.

These aspects are examined within the paper. Furthermore, as dairy industries become increasingly globalized and complex, dairy policy has also become the source of frequent criticism—especially in international free trade arenas beginning in the 1990s, when the U.S. and New Zealand successfully challenged Canada's subsidized dairy sector under WTO provisions. This impact is also discussed within in the paper.

C. Special Features of Dairy

The extreme perishability of milk and the constant production of milk on mechanized, large-scale dairies make dairy farmers especially depended on their buyers. Farmers have to move their milk while it is still fresh, which gives buyers substantial leverage. This has become especially true in the U.S. as the milk-processing industry has consolidated and specialized; this leaves farmers with fewer options in their areas—a condition that smaller-scale dairy operations cannot survive.

In addition, the domestic milk market of the 1950s and 1960s in Canada faced difficulties with this highly perishable product. In urban areas fluid milk became seasonably

Table 1. Near-identical decline in U.S. and Canada

Number of Dairy Farms

	U.S.	EU-15	CA	NZ
'92	170,500	1,018,077	31,200	14,458
'00	105,055	690,140	19,411	14,025
'09	65,000	397,435	13,214	11,638
'92-'09	**-62%**	**-61%**	**-58%**	**-20%**

Source: IDFA

short due to production seasonality. In the decades since, milk production has grown to address year-round consumer demand in urban centers. The innate characteristics of milk have caused marketing to be a complex web, fragmenting producers across regions, producer association, and markets.

In the U.S., the majority of milk supply in the early days was of manufacturing grade. The federal milk marketing order was created in the 1930s by the United States Department of Agriculture as a market plan to increase the returns to dairy farmers and segregate the usage of raw Grade A for fluid milk. However, a surplus of Grade A milk developed around the population centers.

As a response to urban development, the milk marketing systems of the U.S. and Canada have both adopted a "classified pricing" system. Within these systems, demands for dairy products range from low value, undifferentiated, products to higher-value, differentiated, specialized, and premium priced products. Furthermore, the U.S. and Canadian industries have developed pooled (or "blended") pricing to return profits to dairy farmers based on the fluid milks end-use. These systems are discussed in more detail later in this paper.

Products derived from basic raw milk include processed dairy products themselves, industrial inputs for non-food manufacturing, and functional and nutritional food ingredients used in other food and beverage processing industries. Dairy industries produce a wide range of consumer dairy products, such as fluid milk, butter, cheese, ice cream and yogurt.

Table 2. Per Capita Consumption, '91-'09

Milk Equivalent per Capita Consumption (in pounds)			
	US	EU-15	Canada
'91	506	603	493
'00	532	638	507
'09	561	659	496
'91-'09	**11%**	**9%**	**1%**

Source: IDFA

In this table, supply controls are responsible for creating higher prices for consumers. In turn, the EU and Canada both experienced slower consumption growth: 9% and 1%, respective. The high prices and slow growth also encourage the consumption of substitution and imitation dairy products; for example, margarine, instead of butter.[ix]

Since the 1970s milk production has nearly doubled in the U.S. However, only about one-third of raw milk is processed into cream products and fluid milk. For instance, a growing cheese demand is another factor reshaping the U.S. dairy industry. Though in-home preparation has declined the use of fresh milk, per capita cheese use has doubled in the last 25 years, and the USDA outlook does not predict a leveling-off in the near future.[x]

II. How did we get here?

A. The Historical Restructuring of U.S. Dairy Industry

Beginning in the 1800s, and continuing into the twentieth century, most milk was produced on small farms and sold locally. As the U.S. became more urbanized, farmers began selling milk to processors for distribution into urban areas. After the advent of refrigerated railroad cars and trucks, marketing and distribution for milk became more regional. Eventually, many farmers banded together to form

cooperatives so that they could use collective bargaining with buyers. These cooperatives allowed producers to pool the product and participate in the pricing set by the federal milk marketing order (FMMO) that was first established in 1937, when the USDA effectively divided the country into regions.

The first FMMO system was established and amended in 1937 as a piece of New Deal-era legislation used for price stability, as a response to pressures faced by small farmers in the 1920s. Marketing orders provided farmers orderly markets and a classified pricing system. This assurance inclined dairy farmers to make heavy investments in milk cows and equipment.

Only a few marketing firms dominated processing and distribution from the 1920s to the 1970s, including Borden Dairy Company (later Kraft), Beatrice, Carnation, and Pet. A report by the USDA's Economic Research Service states that, "Acquisitions by corporations were at an all-time peak in the late 1920's when the National Dairy Products Corporation and the Borden Company started their growth. After droppings off during the Depression, acquisitions of more than 1,000 companies were recorded during World War II, a level never again reached.

The Federal Trade Commission (FTC) brought a virtual halt to acquisitions by the eight largest dairy companies in the mid-1950s. By the 1960s these companies had become part of large diversified firms created through mergers and acquisitions. From just after World War II and into the late 1960s, milkmen delivered a large percent of the milk people drank to their homes. But as grocery store chains appeared, power shifted to the retail sector and those companies that serve retail chains.

Over the last twenty years, dairy farms in the United States have transformed into milk-production factories. Producers sell their milk to a company, usually a giant cooperative that collects the fluid milk at the farm. In turn, cooperatives then sell milk to a processor to be pasteurized, bottled, and distributed. However, very little money paid by consumers for milk ends up in the hands of the farmers.

The growing spread between what consumers pay at regional and local supermarket chains, and what farmers receive in return, is being captured by dairy processors and retails that dominate the industry as massive changes have occurred in response to changes in the retail market.[xi]

A 1995 consumer price index, the All Milk Price Index, of 93.9 reflects that U.S. dairy farmers are unable to keep up with the price consumers' pay for all dairy products.[xii] The spread between prices that dairy farmers receive and what consumers' pay continues to grow.

Table 3. Consumer Price Index, '96-'09

Dairy Consumer Price Index			
	US	EU-15	Canada
1996	100	100	100
2003	112	102	107
2009	119	147	159
1996-2009	**19%**	**47%**	**59%**

Source: IDFA

B. Canada's Dairy Industry before Supply Management

In the early 20th century, Canada was a dairy product exporter. During the Depression and even in the late 1920s, dairy exports continually dropped. However, during World War II, Canada became a significant supplier of dairy products, especially cheese to the United Kingdom, which was cut off from the traditional supply in continental Europe. As the war ended continental European dairy production recovered and Canadian cheese exports sharply declined. Following World War II, floor prices for products were established to support farm milk prices.

The subsequent reduction of cheese exports caused the Canadian dairy industry to focus on its domestic market, which at the time had to deal with surpluses due to the export driven production market capacity. In the 1950s and 1960s, the domestic market grew based on both income and population.

A 1967 report by the Nova Scotia Milk Industry Inquiry stated that the dairy industry's major problem was the lack of industry coordination. To this end, producers had difficulty understanding the size of markets and suffered cyclical overproduction, which enabled processors to exert market power over producers.

To respond to the above market condition, the provincial and federal government implemented policies to stabilize the market. And in the mid-1960s, government dairy policies coalesced into what we recognize as the Canadian supply management system.

Through the late-1950s and 1960s, federal marketing boards—responsible for provincial milk boards—joined with the Canadian Dairy Commission (CDC) when it formed in 1966. By the late 1960s and 1970s, the modern supply management system developed, which showed marketing boards having dominant—and eventually complete—shares of milk marketing receipts.

This act was enforced through the federal government's management of product stocks, and payment schemes. This effort grew to include all forms of cheeses, butterfat, skim milk powder, and range of other dairy products. By the 1970s, import controls and binding quotas were robust, thus, supply management was implemented—providing quota systems to support dairy product and milk processing, border controls.

The Marketing Sharing Quota (MSQ) that was established for milk manufacturing quotas, however, did not constrain milk production between 1970 and 1975. And in 1976 the surplus became an expensive problem for the government. The National Milk Marketing Plan (NMMP) replaced the interim supply management system of the 1970s in 1983. This implementation further defined the provincial marketing boards, their role on the national level. It also stopped the federal government from paying direct subsidies from exports within quotas. In addition, the carrying costs for storage of butter and skim milk powder were allocated to producers. These costs were passed on in milk price increases.

The NMMP under the CDC is discussed later in this paper.

C. International Pressures from Free Trade Regimes

In the 1990s and 2000s the Canadian supply management system was pressured by free trade discussion with the United States and later Mexico, the multilateral Uruguay Round Agreement on Agriculture, domestic fiscal pressures, and market changes brought about by substitute products.

These pressures caused several outcomes for Canadian dairy:

1. Unlocking the domestic market: WTO provisions replaced import quotas with to a schedule of tariffs and tariff-rate quotas
2. Consolidation: fluid and industrial milk quota to a single quota
3. Loss of U.S. export markets under NAFTA
4. Phased-out: Provincial and national regulations both discouraged the growth of farm size. Legislation in 1996 abolished these regulations.[xiii]
5. Deemed subsidized: The U.S. and New Zealand successfully, under the Uruguay Round, deemed Canadian dairy exports to be subsidized. This limited their exports.[xiv]
6. Milk Protein Concentrate (MPC): Imports are increased in the 2000s and substituted for Canadian milk used in manufacturing.
7. Tightening of provincial-level quota administration: Quotas became limited, many provinces began price-capped systems.

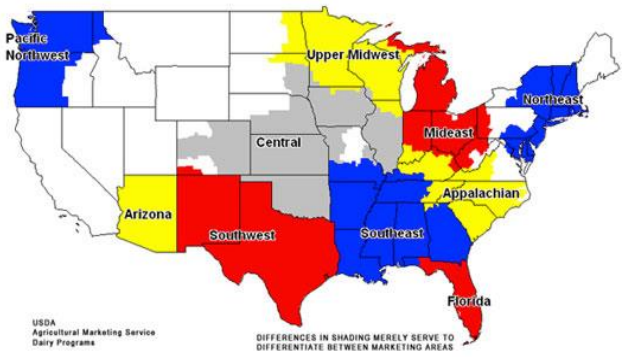
The quotas that were essentially freely traded were now embedded into a system of assessment that takes into account quota sales, and many provinces the quotas are price-capped to limit quota prices and restrict certain forms of transfers that were previously available. Furthermore, production quotas are adjusted to sell milk at a target price—adjusting to the market to clear the market at the target price. Because the milk price in Canada is well above the world price, tariffs are used to reinforce protection for the domestic milk market. Quotas, thus, help to limit production and allocate deficiency payments.

III. Current Programs and Milk Pricing Schemes

A. Federal Milk Marketing Orders and the Farm Bill in the U.S.

The Federal Milk Marketing Order (FMMO) system sets a minimum price for milk products by taking into account the economic conditions throughout the year. This system handles about two-thirds of the milk produced in the U.S., while much of the rest is handled by California's separate system of regulations.

Image 1. FMMO Areas



Source: Dairy Business Milk Marketing Cooperative

The USDA sets the fluid milk price. As such, fluid milk is referred to as Class I, and is the highest priced class. Ice cream, cottage cheese, and yogurt are all in Class II, the so-called "soft" products. Class III includes the "hard" products, such as cream cheese and hard manufactured cheese. Class IV concerns butter and any milk in dried form.

Classified pricing used by the FMMO system requires that processors pay different prices for milk in each category (Classes I-IV). Further, producers are paid a weighted average, or "blended price," for all uses of milk in a market or order.

Processers will pay into or draw from a pool based on their milk end-use, relative to market average use. Producers participating in blended pricing receive identical uniform blended prices, with adjustments for butterfat content in addition to the location of the plant that the milk is delivered.

The 1996 Farm Bill required the USDA to reduce the number of federal milk marketing orders. What began in the 1930s to promote orderly marketing conditions, eventually grew to 31 different milk marketing orders, but is now down to 11 after the USDA implemented the changes requested by the 1996 Farm Bill.

The United States Farm Bill is the primary food and agricultural policy tool for the federal government. Nearly every five years the U.S. Congress amends and repeals legislation on the Farm Bill. This includes provisions for commodity programs, such as trade, rural development, farm credit, agricultural research, conservation, food and nutrition programs, and marketing. There is considerable debate over the effectiveness of the Farm Bill to protect farmers in the U.S. against several issues: flat pricing, below-cost pricing, and volatile. This is the most critical issue facing dairy farmers. There is general agreement among dairy farmers, agriculture officials, and legislators that milk prices at the farm are far too low.

B. Milk Boards and the Canadian Dairy Commission

The major challenges faced by the Dairy Farmers of Canada (DFC) following World War II resulted in the creation of the Canadian Dairy Commission. Beyond stabilizing dairy markets and increasing revenues, which had been attempted since the 1930s, the CDC ensures producers receive "fair" returns on investments. Since 1966 the CDC has been responsible for determining the price of milk that processors and consumers pay as part of supply management policy.

The CDC implements the price target of farm milk by adjusting "the target" based on surveying the costs of productions and other market factors for that year. The target price also draws on the support prices of butter and skim milk powder (SMP). Provincial marketing boards adjust protein/other solid prices proportionally to the SMP support price, and it also adjusts prices for butterfat proportionally. Industrial milk prices are established at the national level, but provincial marketing boards maintain authority for fluid milk pricing. About 40 percent of the milk produced goes to the fluid milk market, while the other 60 percent of milk production is a part of the industrial/manufacturing market.

This separation occurs because Canadian Provinces are responsible for managing the sale and production of fluid milk through quotas as well as determining the price of milk through the milk pricing formulas. On the other hand, the Canadian Federal Government manages the "target price" for the industrial quota system, which is also responsible for support price programs for skim milk powder and butter—these determine trade policy.[xv]

Target prices, in practice, are implemented by classified pricing.[xvi] Marketing boards sell milk to processors at different prices—according to their intended end use. The end-use class prices are blended (pooled) for payment to farmers, with blending corresponding to the target price.

The Canadian Milk Supply Management Committee determines the industrial level of milk quotas and monitors the performance of national supply management system. Production quotas are adjusted to sell farmers milk at the target price. Quotas are adjusted according to market conditions to clear the market

at target price. Since target milk prices are relatively high compared to world prices, tariffs are used on dairy products to protect the domestic market.[xvii]

The CDC coordinates federal and provincial dairy policies, creating control mechanisms to stabilize revenues, and avoid surplus costs. Thus, its jurisdiction is shared with the federal government and the provinces. Since its creation, the CDC has been in charge of two of the three pillars of the supply management system: support prices and market sharing quota. Every year the CDC sets the support price of skim milk powder and butter—following consultations with industry stakeholders. In turn, the prices are used as a reference by provincial milk marketing boards to establish the prices of

IV. Market Outcomes and Socioeconomic Impacts

A. Consolidation in the U.S. Dairy Industry

In the U.S., policy change has been toward fewer but larger farms. In the past 10 years the number of dairy farms in the U.S. has decreased from 117,000 to 65,000.[xviii] Not only have fewer farms resulted, but as Table 4 shows, there has been an increase in the number of cows for all of the exemplified countries. However, Canadian dairy farmers are getting bigger at a much slower rate than the U.S. In other words, consolidation is happening much quicker in the U.S.

Table 4. Average Cows per Farm

Average Milking Cows per Farm				
	US	EU-15	CA	NZ
1992	58	23	40	188
2000	88	29	57	250
2009	142	45	74	371
1992-2009	149%	95%	83%	98%

Source: IDFA

The driving force behind this trend has been the economies of scale—the costs for large operations compared to the costs for smaller operations. Production has remained fairly constant in the U.S., while the scale of the farms has increased significantly.[xix] The emergence of western factory-farmed dairies, has contributed to the decline of local dairy farms in the Southeast, Northeast, Upper Midwest, and parts of the Midwest.

Profitability has played a major role in the U.S. milk marketing systems. In turn, the trend in the U.S. milk production includes a fairly steady increase in production of fluid milk, as gains in milk production per cow outweighed declines in the number of total cows. Overtime, the same general trend occurred in Canada—and on a state/provincial level as well—with farm numbers declining, the average number of cows per farm increased alongside efficiency of production. As such, since 1992, the average number of cows per farm has increased by 83% in Canada and by 149% in the U.S.

Table 5. Farm-Gate Milk Prices

Average Farm-Gate Milk Prices (USD/cwt)				
Years	US	EU	CA	NZ
'01-'06	13.95	14.81	20.27	8.47
'07-'10	16.40	19.19	29.87	14.49

In recent years, milk prices for farmers have been on a roller-coaster ride. In the summer of 2007 prices reached record high, and as prices rose, large-scale dairies added more cows to capitalize on the higher price of milk. In the following two years, overproduction caused prices to fall by half. Although milk prices fell, production costs did not: during 2008 the cost of feed rose 35 percent and the cost of energy rose by 30 percent. Many dairy farmers were losing between $100 and $200 per cow every month in 2009.[xx]

Increases in Volatility of Milk Prices

Milk pricing has become increasingly volatile: unstable and erratic. For dairy farmers who have no control over what they are paid, this has been disastrous. For the large milk processing firms who buy milk from farmers, and sell to grocery stores there has been unprecedented profits and near-monopoly control. America's dairy farmers were recently paid as little as $12 per 100 pounds of milk while cost of production was $17.[xxi] This demonstrates that not only are prices volatile but they are also low.

As Table 5 shows, milk prices have been higher on average from 2007 to 2010. Not only have milk prices on average been higher but they have also been more volatile. Volatility, which is bad for farmers, has occurred due to lower buffer stocks, strong growth in global demand, and lower government support prices.

Consolidation

Furthermore, consolidation in the U.S. grocery industry has driven consolidation in all sectors of the dairy industry, from farms to mega-cooperatives, fluid milk processors, and dairy product manufacturers.[xxii] Consolidation in U.S. agriculture reflects how the dairy industry has been restructured to serve large retail grocery stores. Milk produced on the 65,000 remaining dairy farms in the U.S. is funneled through a handful of powerful buyers and retailers that use their market power to push down the prices farmers receive for milk.[xxiii] Historically, regional cooperatives allowed dairy farmers to remain immune to the consequences of restructuring until more recently when new grocery retailer powerhouses began exerting power of food suppliers and able to influence the marketplace.

The massive changes in the dairy industry are in large part a response to changes in the retail market. Regional and local supermarket chains have disappeared in recent decades and national supercenters and discounters have emerged as new grocery retailer powerhouses that exert power over the food suppliers that are invisible to consumers. Rural sociologists Mary Hendrickson and William Heffernan, known for their groundbreaking work on consolidation in agriculture, reflect on how the dairy industry has been "restructured" to serve large retail grocery stores: dairy industry changed in response to large retailers' power and influence in the marketplace, which meant that they can dictate terms to food manufacturers and processors "who then force changes back through the system to the farm level."[xxiv] As a result, the food processors and manufacturers have embraced consolidation in retailing because it cuts down on the transaction costs of dealing with large numbers of customers.

Consolidation also slashed the number of dairy cooperatives by half in twenty years, but the smaller number that has resulted has gained a larger share of the milk market. In 1980, there were 435 dairy cooperatives that marketed 77 percent of the fluid milk; by 2002, there were only 196 cooperatives, but they marketed 86 percent of the milk.[xxv]

Dairy Farmers of America (DFA), the largest cooperative controls 30 percent of milk production in the United States, according to the group's Web site. The top four dairy co-ops control 40 percent of fluid milk sales: DFA; California Dairies, Inc.; Land O'Lakes; and Northwest Dairy Association. DFA is a marketing cooperative with more than eighteen thousand members and ties to big processing companies that collect and market milk. DFA was created in 1998 out of the merger of four large cooperatives.

Dairy farmers effectively are required to market their milk through DFA to access the marketplace, and they take whatever price DFA offers. According to Hauter, "…the cooperative corporate-like cooperatives determine how to distribute the milk payments among the membership, and the cooperative is not required to pass any price premiums for the highest-value products to its members."[xxvi]

B. Canadian Dairy Industry Imports Substitutes

Two factors have dominated agricultural policy developments: the political priority given to budget cuts at federal and provincial levels to reduce government deficits, and the importance of new trade agreements.[xxvii] According the Conference Board of Canada, "the Canadian supply-managed dairy system has reduced chronic milk surpluses and provided stable, higher returns to farmers, but it has come at a significant cost to the industry's economic performance."[xxviii]

In the 1970s, fiscal pressures limited the federal government's means and willingness to mobilize and finance certain elements of dairy policy, especially with regard to surplus removal. Canadian dairy policy, thus, did not develop smoothly.

Encouraging Substitute Imports

Dairy policies have evolved to adapt to changes in the markets, government finances, technology and trade. As such, the goal of the Canadian dairy industry has been to control milk surpluses and market equity/access and increase returns to dairy farmers at a manageable cost to the public. Though the system has developed effectively, born out of difficult situations of chronic surplus and low returns, the success has come at a cost.

Peer countries are seeing significant dairy market growth in aggregate. The dairy industry is getting bigger as the demand for dairy products is going up globally. However, the global export market only provides dairy consumption for about 5% of the world market. Notably, however, about 80 percent of the global exports market is provided by the EU-15 and four other developed countries: U.S., Canada, New Zealand, Australia.[xxix] In addition, more recently, high milk prices created by supply management policies in Canada have attracted imports and substitute products. As such, supply management programs have slowed the dairy industry and its job growth in Canada. The slow export and domestic growth have pushed Canadian processors to expand and invest in the U.S. and other countries. In 2009, the U.S. domestic imports were only 3% of production, but in Canada imports reached 24% of domestic milk production.[xxx]

Because domestic prices are supported to an extent well-above world prices, the incentive to import dairy products was created. The imports that Canada undertakes, relative to domestic milk production, means that farmers are losing market share to imports.

Supply Control Reduces Growth

As the global demand for dairy products is increasing due to the changing diets in the developing world and income growth, new opportunities for exports are available. Countries with supply controls, like Canada, are losing market shares to countries like the U.S. whom do not have production restrictions. As such, the U.S. has increased its share of the world dairy market from 6% in 1996 to 17% in 2009, while, at the same time, Canada's share has declined from 3% in 1996 to 1% in 2009.[xxxi] Furthermore, Canada was a net exporter of dairy products up until 1999, mainly due to subsidies, however, as the domestic milk price grew higher and world prices remained relatively flat, subsidies could not meet the rising demand to export each pound of milk as the cost to export each pound increased over time. This occurred because the total amount available to spend is fixed in Canada.

Table 6. Supply Control Increases Imports

Milk Equivalent Imports as a Percentage of Domestic Milk Production		
	US	Canada
1996	4%	8%
2000	4.5%	15%
2009	3%	24%

Source: IDFA

Consumer Price Index

Canadian dairy prices have been trending higher over time; the same goes for the prices in the U.S. However, in the U.S. this has moved at a much slower pace. Since 2006, the Canadian dairy consumer price index has been above that of the U.S. In addition, there was a notable increase in the number of substitutive products during this time, especially of casein and milk protein concentrate, which lowered the price of processed cheese. Since 2001, the consumer price in Canada has moved sharply higher, notably eclipsing the steady increases in the U.S. As such, the strict supply management plans have increased consumer prices by 59% from 1996 to 2009. In contrast, the U.S. has only seen a rise of 19%.[xxxii]

Looking at the actual prices, as Table 7 shows, Canadian dairy prices are about 20 to 35 percent higher than those in the U.S. from 2008 to 2009. This comparison becomes more significant when recognizing that the average consumer in each country consumes about 20 gallons of milk and 7 pounds of cheddar each year. As such, the Canadian consumer of dairy products is paying about 10% more for dairy than the average consumer in the U.S.—based on per capita consumption. The total amounts of fluid milk, cheddar cheese, and butter consumed and multiplied by the consumer price over a year results in about $149 for the U.S. and about $164 in Canada.[xxxiii] This suggests that supply control programs are regressive in nature, costing low-income consumers to pay higher percentages

Table 7. Consumer Prices, 2008 & 2009

Consumer Prices, Average 2008 & 2009			
	Fluid Milk (USD/gallon)	Cheddar Cheese (USD/lb.)	Butter (USD/lb.)
U.S.	$3.65	$4.70	$2.99
Canada	$4.37	$6.33	$3.97
Difference	$0.72	$1.63	$0.98
Percent Difference	20%	35%	33%

Source: IDFA

of their income to dairy products. In contrast, the U.S. support program may be seen as progressive—costing lowing income tax payers.[xxxiv] Further research is needed, however, to better understand the wealth divide in Canada to better understand if low-income consumers are really spending a disproportionate percentage of their income on food.

IV. Conclusion

This comparative case has shown how two different policy regimes have produced in some ways similar outcomes—fewer farms and bigger farms—yet, in other ways fairly different outcomes such as the number of dairy cows per farm being much greater than those in Canada. In addition, while milk prices in Canada are somewhat higher in Canada than in the U.S., the U.S., in comparison, has been able to stabilize its milk price volatility. These shifts, as previously explained, manifested due to five general pressures:

1. Technological change— Switching from a bucket system to a pipeline system has allowed for improved management practices that have increased cow productivity. Outside the scope of this research exists additional changes that have occurred in filtration technology as well as genetic and evolution selections, which also increase the productivity of dairy farms.
2. Global trends in supply and demand— As a result of global economic fluctuations in the world economy the U.S. and Canada both had to deal with periods of milk oversupply. Overtime, however, most dairy markets have tried to curb overproduction. Yet this has not been the case in the U.S. as oversupply remains untamed.
3. Low-fat and value-added market shifts—The dairy market has reduced its "traditional" dairy products like milk and butter. Specialty products like yogurt, cheese, and ice cream are driving the growth of the dairy sector today—at home and globally, as changing diets in developing world are showing increases in need for dairy products. However, trade negotiations have limited protections on value-added products. As such, butterfat was once a major component of milk, but is now becoming a surplus component. This change has called for changes at both the farm and processing level.
4. Fiscal pressures— The budget pressures in the Canadian dairy policy have reformed major changes in market management. This has also occurred in the U.S. Ultimately, the Canadian agricultural sector was able to implement supply management policies that placed the price of the dairy industry on the consumers and not on the government. The U.S. agricultural sector, on the other hand, still subsidizes its dairy sector.
5. Free trade regimes— The increase in globalization has also encouraged global approaches to production. As such, governments have negotiated multilateral and bilateral trading rules that reduced trade barriers. The dairy industry in Canada is still one of the world's most protected industries; alas it has been affected by free trade policy shifts more than many other industries. Increased tariffication of import quotas resulted because of the outcomes of the Uruguay Round of the GATT.

In addition, this study shows four general outcomes of supply-managed dairy:

1. Changes in the number of dairies and dairy cows— As Table 1 indicates, the number of dairy farms in the U.S. declined 62 percent and the number of Canadian dairy farms declined 61

percent from 1992 to 2009. Consolidation, the merger and acquisition of smaller farms into larger farms, is the major driver shaping this outcome. In addition to there becoming fewer dairy farms, the number of cows per farm increased. As Table 4 shows, this growth occurred much faster in the U.S. at a increase of 149 percent from 1992 to 2009, while in Canada the growth occurred at a rate of 83 percent, as average herd size increased from 40 in 1992 to 74 in 2009.

2. Milk price volatility— Milk price change is represented in Table 5. The difference in Canada for the time period 2001-2006 to 2007-2010 is larger than that of the U.S. Accordingly, the programs in the U.S. are less affected by price volatility than those in Canada. Thus, market price volatility is not likely to be reduced because of supply control programs.
3. Consumer prices and consumption growth— The consumer price index in Canada has risen 59 percent from 1996 to 2009. In the U.S. the growth was 19 percent for the same time period. Unfortunately, Table 3 does not capture the spread of the price that dairy farmers receive compared to what consumers' are paying. In the U.S., dairy farmers are not receiving the cost of production plus a profit. This is largely due to the changes in the retail market that have placed downward pressures throughout the industry. In addition, American diets have seen a growth of milk equivalent per capita consumption. This has largely been a result of changes in diet that have grown to include more cheese products and healthy snacks like yogurts, for example. As Table 2 indicates, the U.S. has seen a growth of 11 percent from 1991 to 2009, whereas Canada has seen a growth of only 1 percent—despite income and population gains. This might also suggest that the higher prices for dairy products have slowed the growth of the dairy sector in Canada.
4. Changes in the number of imports and exports— As Table 6 demonstrates, the Canadian dairy sector has increased the number of dairy substitutes over the last two decades. This growth has risen from 8 percent to 24 percent from 1996 to 2009. In contrast, the U.S. has seen a reduction of imports going from 4 percent to 3 percent in the same time period. This suggests that a major pressure of the Canadian dairy sector has been its inability to address import substitutes.

Ultimately, the policy change in both countries is a result of political compromise. This comparison shows that once government programs are put into place they are unlikely to be dismantled, instead, however, new polices are likely to be placed on top of old policies in an attempt to fix, rather than to scrap weak policies. Numerous attempts have been made at supply control programs since World War II, and the results have generally been the same across each country. Yet, according to IDFA, policy makers often ignore program failures in other countries.[xxxv] In addition, to break up the monopolies that exist in the diary industry and rebuild vibrant regional food systems, farmers need to be able to make a living and consumers need to receive high-quality productions. Supply management is an ever-evolving system that needs to recalibrate its strengths and weaknesses again-and-again.

[i] USDA. "Overview of the United States Dairy Industry," Released September 22, 2010, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, (2010). Available at http://usda.mannlib.cornell.edu/usda/current/USDairyIndus/USDairyIndus-09-22-2010.pdf.

[ii] Congressional Research Service. "U.S. Farm Income." Report by Randy Schnepf, Specialist in Agricultural Policy, (February 28, 2014). Available at http://www.fas.org/sgp/crs/misc/R40152.pdf.

[iii] Hauter, Wenonah. Hauter, Wenonah. "Milking the System." In *Foodopoly: the battle over the future of food and farming in America*. (New York: New Press, 2012).

[iv] Barichello, Richard. "*Overview of Canadian Agricultural Policy Systems*." Understanding Canada/United States Grain Disputes (1995): Available at http://farmfoundation.info/news/articlefiles/886-barichello.pdf. 38

[v] DuPuis, E. Melanie. Nature's perfect food: how milk became America's drink. New York: New York University Press, 2002.

[vi] Mussel, Allan et al. Canada's Supply-Managed Dairy Policy: How We Got Here? The Conference Board of Canada. Briefing—August 2012. Available at http://future.aae.wisc.edu/publications/CanadasDairyPolicy.pdf.

[vii] Employment and Social Development Canada. "Canadians in Context—Population Size and Growth". Available at http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=35.

[viii] International Dairy Foods Association (IDFA), An International Comparison of Milk Supply Control Programs and Their Impacts (2010). 3-4

[ix] IDFA

[x] USDA, Economic Research Service, 2014. Livestock, Dairy, & Poultry Outlook/LDP-M-235/Jan 17, 2014.

[xi] Hauter, Wenonah. Hauter, Wenonah. "Milking the System." In *Foodopoly: the battle over the future of food and farming in America*. (New York: New Press, 2012). 213

[xii] Nicholson, Donald R. "Discussion: Impacts Of Past US/Canadian Dairy Programs On Structure, Efficiency, And Trading Relationships." In Understanding Canada\ United States Dairy Disputes; Proceedings of the 2nd Canada\ US Agricultural and Food Policy Systems Information Workshop-1996, no. 16946. Farm Foundation, Agricultural and Food Policy Systems Information Workshops, 1996. Available at http://pdic.tamu.edu/black/nicholson.pdf.

[xiii] Knutson, D. Ronald et al. Farm Level Consequences of Canadian and U.S. Dairy Policies. Texas A&M University, Agricultural and Food Policy Center. AFPC Working Paper 97-8 (1997). Available at https://www.afpc.tamu.edu/pubs/0/99/wp97-8.htm.

[xiv] Agriculture and Agri-Food Canada (AAFC), "*The Canadian Dairy Sector: Structure, Performance and Policies*." Understanding Canada\United States Dairy Disputes; Proceedings of the 2nd Canada\U.S. Agricultural and Food Policy Systems Information Workshop-1996 16950, Farm Foundation, Agricultural and Food Policy Systems Information Workshops (1996). Available at http://ageconsearch.umn.edu/bitstream/16950/1/ag960011.pdf.

[xv] Bailey, Kenneth, "Comparison of the U.S. and Canadian Dairy Industries" Staff Paper #349 Department of Agricultural Economics and Rural Sociology, The Pennsylvania State University (April 2002). Available at http://www.agmrc.org/media/cms/staffpaper349_42eab16a91e4f.pdf.

[xvi] The "Harmonized Milk Classification System" is available at the following link: http://www.cdc-ccl.gc.ca/CDC/index-eng.php?id=3811. (Accessed 4/21/2014)

[xvii] AAFC

[xviii] Hauter, *Foodopoly*, 214

[xix] MacDonald and McBride, *The Transformation of U.S. Livestock Agriculture: Scale, Efficiency, and Risks*

[xx] Hauter, *Foodopoly*

[xxi] Hauter, *Foodopoly*

[xxii] Mary Hendrickson et al., "Executive Summary: Consolidation in Food Retailing and Dairy: Implications for Farmers and Consumers in a Global Food System," report to the National Farmers Union, Department of Rural Sociology, University of Missouri--Columbia (January 8, 2001).
[xxiii] Shields, Dennis A. "Consolidation and Concentration in the U.S. Dairy Industry," Congressional Research Service, (April 27, 2010).
[xxiv] Hauter
[xxv] USDA, "*Economic Effect of U.S. Dairy Policy and Alternative Approaches to Milk Pricing,*" report to U.S. Congress, (July 2004): 17-18.
[xxvi] Hauter, 218
[xxvii] Barichello, 59
[xxviii] AAFC
[xxix] IDFA
[xxx] IDFA, 11
[xxxi] IDFA, 12
[xxxii] IDFA, 32
[xxxiii] IDFA, 32
[xxxiv] IDFA, 9
[xxxv] IDFA