

Disequilibrium and Volatility in the Canadian Egg Market – The Path to Supply Management

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Abstract:

Egg Production underwent rapid technological change in the twentieth century. This meant that the industry was in dynamic disequilibrium with fluctuating prices and the exit of many egg farmers. The technology was biased toward economies of scale leading to losses for small scale producers. Exit and (re)entry led to rapid price adjustments. Given this disequilibrium, farmers lobbied Canadian governments for stability. In the 1970s the Canadian government intervened but did not implement a policy that would retain the dynamic cost-reducing benefits of technological change that benefitted egg consumers. The enacted policy of supply management removed the market's dynamic element by restricting supply to profitable levels for most farmers – to the detriment of consumers. The policy was applied to other rural industries. Supply management remains in place fifty years later – effectively fossilizing twenty percent of Canadian agricultural output. This article examines the reasons for implementing supply management.

Keywords: disequilibrium, dynamics, eggs, price fluctuations, rural industry

Introduction

For approximately 150 years the history of agriculture in modern market economies has been dominated by the technologically driven shedding of labour. The process led to the exit of less competitive farmers from the sector, the consolidation of farmlands and the replacement of mixed farms with more specialized enterprises. It meant that farm incomes were, on average, lower than incomes in the non-farm sector. Farmers and farm organizations lobbied governments to slow or reverse this process and despite government's best efforts the exit from agriculture continued until only a small proportion of the population remains engaged in primary agriculture. One of the sectors that experienced the most rapid technological change was the production of eggs. The result, from the 1920s through to the 1970s, was simultaneous exit of small mixed farm producers and the entry of large, specialized egg producers leading to a *rollercoaster* effect on egg prices both for farmers and consumers. It altered rural society as egg production moved from subsidiary enterprises (most often the responsibility of women) on mixed farms to specialized labour-saving egg operations.

In Canada, the federal government decided to end the *rollercoaster* and stabilize the egg industry through the use of a national marketing board practicing supply management¹ in the early 1970s. The establishment of supply management in Canada was very contentious, pitting farmer against farmer, province against province, and consumers against farmers. The policy was applied to other agricultural products in Canada and remains in place to this day – and is still contentious. This article outlines the issues surrounding the establishment of the national egg marketing board in Canada and the effect on the sector after the board came into being.

¹ Supply management entails the use of production quotas for individual producers which limit production in aid of raising the producer price. Imports are also restricted under supply management.

The establishment of the Canadian Egg Marketing Agency (CEMA) in 1972 led to one of the most acrimonious exchanges in Canadian policy history between Mrs. A.F.W. Plumptre, Chair of the Food Prices Review Board² and Eugene Whelan (the colorful) Canadian Minister of Agriculture. According to Mrs. Plumptre:

As a result of the failure of the government to take early and effective action on the board's³ recommendation on eggs the Canadian consumer has suffered on two accounts: he has paid more than necessary for eggs at the store, and he will also pay for the government's "bailing out action" of buying up the accumulated surplus (Plumptre, 1974).

Minister Whelan countered:

I'd like to take a few moments to set the record straight. First, she⁴ said that the government and the taxpayers are being asked to bail out the Canadian Egg Marketing Agency. That's hogwash. The government is not subsidizing CEMA. The government is not setting up any special kind of funding for CEMA. And she had better get her facts straight before she makes that type of statement again (Whelan, 1974).

In late 1974, CEMA was purchasing large quantities of eggs to remove them from the market in an heroic attempt to keep farm level prices up (resulting in high prices paid by consumers).⁵ These purchases were financed by placing a levy on producers and, eventually by

² The Food Prices Review Board was established in 1973 by the Canadian Federal Government in response to rises in food prices that began in 1972. It remained in place until 1975.

³The Food Prices Review Board.

⁴ Mrs. Plumptre.

⁵ As the policy of supply management was not yet in place, CEMA had not yet been able to impose limits on production that would clear the market at the price it had negotiated as a *fair* one for producers. As a result there was surplus production at the agreed price and CEMA was obligated to purchase the surplus production.

borrowing. Initially, these eggs were stored in hopes that they could eventually be put on the market but:

Last week federal officials estimated that 30 million Canadian eggs would rot in Canadian Egg Marketing Agency (CEMA) warehouses this year, due mainly to mismanagement by the two year old agency ... First 9,000,000 rotting eggs, then 5,000,000 more, were removed from unrefrigerated warehouses, and bulldozed underground during the past six weeks (Time Canada, September 30, 1974, p. 11).

Needless to say, the press had a field day with the amount of waste. For example:

Just as a matter of interest 27,900,000 eggs is equal to 77,500 cases, or roughly 100 carlots of eggs. A train that length would be a mile long, we figure it would take a mighty big hole to bury that quantity of eggs (Canadian Poultry Review, 1974, p. 20).

The political fallout was considerable and spurred the government to seek a permanent solution to the problem – with the Federal agriculture minister Whelan taking point on finding a solution (Whelan and Archbold, 1986). In the end, dealing with the surplus eggs fell on both Canadian egg producers and taxpayers:

Certainly, any benefit enjoyed by the Canadian producers are highly mitigated by the fact that despite the substantial levies they pay, they have incurred a debt of approximately \$10 million which is attached to their current and future production of eggs (Food Prices Review Board, 1974, p. 37).

Although Minister Whelan may not have allocated any special funding to CEMA when his exchange with Mrs. Plumptre at the CNE⁶ took place in August 1974, a government bail out soon followed:

Canadian egg producers were rewarded for their support of Agriculture Minister Eugene Whelan when the Canadian government assumed the 10 million dollar debt created over the past 18 months by the mismanagement of CEMA, the Canadian Egg Marketing Agency (Minutes of the Proceedings, Issue 14, p. 81).

Minister Whelan also admitted:

The government happens to be using some of the budget set aside for the World Food Program to buy eggs and egg products from CEMA (Whelan, 1974, p. 34).

At the same time as 27 million Canadian eggs were being buried, some 37,800,000 eggs were imported from the United States (Canadian Consumer, 1974, p. 40). The Food Prices Review Board suggested that:

The surplus removal program resulted in prices which were more than 30% or almost 20 cents higher than they would have been with no surplus removal (Food Prices Review Board, 1974, p. 37).

How did the Canadian egg market come to be in such disequilibrium? How was the issue eventually resolved? The latter is extremely important, and contentious, as the policy remains in place for a number of Canadian agricultural products fifty years later.

Disequilibrium

⁶ The Canadian National Exhibition in Toronto.

Policy makers and economists find that interventions in markets are most effective when markets are at or near equilibrium.⁷ Interventions – at least modest ones – tend not to destabilize markets and lead to a return to equilibrium, although one that is different from the original.⁸

Disequilibrium on the other hand arises when there are forces moving the market or economy away from an equilibrium, with no forces to guide the market to a new equilibrium – at least in the short run (Kerr and Anderson, 1991).⁹ Interventions by policy makers during periods of disequilibrium will likely put adjustments on a different path but there is no assurance the new path will lead to a desired result or a new equilibrium (Kerr, 2016). Hence, disequilibrium is difficult to deal with (Kerr, 2022) and policy makers may feel the need to remove the dynamic elements. This was the case with the egg industry in Canada.

Technological change is one of the economic forces that can move a market from a state of equilibrium (or near equilibrium) to one that is in disequilibrium (Smyth et al. 2015). Once a market is in disequilibrium, the paths of adjustment may not trend toward a new equilibrium and, even if they do, a new technological change may move the market to an alternative path of adjustment (Kerr, 1993). It can be argued that this scenario describes the agriculture sector in modern market economies since the mid-1800s. From being a sector characterized by little technological change, stable land use relationships, and unchanging social norms – albeit with external shocks such as droughts, plagues and pestilence (Crone, 2015; Pirenne, 1956) – it became one defined by sustained technological change. Although agriculture did not have a major transformative event, such as the introduction of railways, the application of internal

⁷ Equilibrium is an economic state where there is no endogenous force to move the economy away from its current position.

⁸ In economics this type of change is conceived as an exercise in comparative statics.

⁹ The paths of adjustment followed by the economy during disequilibrium may eventually lead to a new equilibrium, may follow a cyclical pattern, or take a degenerative path (Wilman et al., 1987).

combustion engines to land transport, or the introduction of personal computers to the workplace, instead it was subject to many small and iterative improvements to technology (Kerr, 2014). There were three major thrusts to this technological progress: (1) mechanization – the movement away from animal and human power to internal combustion engines and electric motors; (2) applications of chemistry/biology such as fertilizers, pesticides, antibiotics, and vaccines and; (3) genetic improvements (Kerr, 2023).

Technological advances did not impact all agricultural products equally as the rate at which new innovations entered the market and the speed of adoption varied considerably (Rogers, 1962; Griliches, 1958). Most of the innovations in North America were labor-saving, resulting in the shedding of labour – exit of farmers – from the sector. Rapid rates of technological change led to sectors being in disequilibrium and the rapid exit of farmers.¹⁰ This exit often led farmers in commodity sectors experiencing technological disruption to ask politicians for support, either through subsidies or by intervening in the market.

Rapidly fluctuating prices were a central feature of disequilibrium in sectors where there was ongoing technological change – a price *roller coaster*.¹¹ In an industry experiencing rapid technological change there would be a range of cost structures among farmers, with those unable or unwilling to use the new technology having the highest costs, while those that were able to fully use the technology having the lowest costs. Between these two extremes were farmers whose circumstances meant they could not use the technology in ways that yielded a full decline in costs. In other words, there was a range of costs exhibited by farms in the industry.¹² With technological improvements costs fall for those adopting the technology leading to an increase in

¹⁰ In some cases the term creative destruction was applied to this disequilibrium (Schumpeter, 1950).

¹¹ See Cowper (1979) for an example of egg price volatility in Ontario.

¹² This is an artifact of a market in disequilibrium. If a market were to reach long run equilibrium the only firms remaining in the industry would have the most efficient cost structure.

output.¹³ Increased output drives down the market price. If, as in most cases, the demand curve is steep,¹⁴ then small increases in output have a large negative impact on price. In the case of eggs, declining prices do not induce increased consumption and as eggs have few substitutes for consumers and increases in price do not lead to declines in sales.¹⁵

The decline in price means that the least efficient farmers – those with the highest costs – suffer losses and will have to exit the industry. Their exit reduces aggregate output and, as a result, prices rise. A new technological change sets off another increase in output. Egg prices, hence, appear to fluctuate in a *roller coaster* fashion. Consumers benefit in times of low prices and complain in times of high prices – with technological change, however, the trend in prices is downward sloping. Inefficient farmers suffer from low incomes prior to exiting and efficient farmers may also suffer financially in times of low prices. Farmers have an incentive to ask for help from governments. Governments may, or may not, decide to respond to the lobbying from farmers disadvantaged by being caught in disequilibrium. This dynamic process is the cost incurred by society to reap the benefits of technological change.

Sources of Technological Change in the Canadian Egg Industry

The egg industry has experienced some of the most rapid technological change in Canadian agriculture. According to Pelletier et al., (2018, p. 3):

Although a small number of specialized, commercial egg farms in Canada existed in the early part of the 20th century, egg production was generally one among a series of activities undertaken on the mixed-farming operations that were characteristic of Canadian agriculture at that time. ... Two major developments

¹³ The aggregate (industry) supply curve shifts to the right.

¹⁴ Termed inelastic by economists.

¹⁵ For example, in most recipes eggs are specified in fixed proportions and there are few substitutes for eggs in a traditional breakfast.

that were particularly important to the specialization and intensification of egg production were the adoption of cage systems for housing laying hens and improved genetic selection for egg production and feed conversion efficiency.

The battery cage system for eggs allowed for economies of scale in production with ever increasing barn sizes facilitated by other technological changes in manure disposal and automated feeding (Nurse and Miurhead, 2020). The industry was undergoing a complete structural change from being a subsidiary enterprise on mixed farms to large scale specialized egg farms. Traditional small scale egg operations suffered and the decline in income derived from egg sales contributed to low returns on mixed farms. In many cases the egg enterprise was dropped from mixed farming. When prices did rise as output declined, existing producers rapidly expanded and new farms entered the egg industry leading to rapid increases in output and the resulting dramatic price declines. According to Nurse (2021, p. 390):

Cyclical boom and bust periods intensified in the 1920s, when increased production resulted from technological innovation, improvements in animal husbandry, breeding, and nutrition, and increased demand from rapidly growing urban markets ... Egg farming also remained an important supplementary enterprise for farm women who, often with the help of their children, were usually the primary managers of flocks on mixed farming operations. By 1960, however, egg farming was much more commercialized and specialized, yet producers suffered increasingly volatile cycles of depressed prices due to cycles of overproduction.

Adding to this instability in the Canadian egg market was that the United States egg market was also in disequilibrium as a result of the same set of technological changes at work in Canada. The cyclical movements in prices were not necessarily in the same phase in both countries, such that low-cost eggs from the United States could sometimes flow into Canada further disrupting prices. The open border with the US meant:

That a collapse of the egg market in the United States in March, 1974 during a period of surplus in Canada resulted in an accelerated importation of lower priced eggs (Minutes of the Proceedings, Issue 16, p. 13).

Dealing with Disequilibrium

Constitutionally, in Canada, the responsibility for agriculture is divided between provincial governments and the federal government (Skogstad, 2008). By tradition the provinces dealt with marketing issues while the federal government funded research (Carew, 2001). Hence, the first governments to respond to the disequilibrium being experienced in the agricultural sector, and egg markets in particular, were Canadian provincial governments (Kerr and Douglas, 1985). Provinces legislated the establishment of farmer member marketing boards on a commodity-by-commodity basis, including boards for eggs. These provincial boards attempted to deal with low egg prices through a variety of policies, but there was a major limitation to their efficacy. Canada exhibits considerable regional disparities in agricultural production:

The immediate domestic environment is the Canadian political-economic-social technological system. Because of fundamental difference among its five regional components – the Maritimes, Quebec, Ontario, Prairies and British Columbia – there are substantial divergences in the performance and prospects for farming

and agribusiness in each of these areas (Canadian Agriculture in the Seventies, 1969, p. 5).

In eggs these regional differences were manifest, for example, in feed costs. According to the Food Prices Review Board (1974), p. 29):

Feed costs would appear to represent the major component of differences after capital costs, and range ... from 28.19 cents per dozen in B.C. to 43.22 cents per dozen in Newfoundland. The margin seems to have narrowed somewhat by July 2, 1974 ... to 27.77 for Ontario, at the low, to 34.27 cents per dozen in Newfoundland. It is expected that at least some of these differences can be attributed to variations in available supplies of poultry feeds, particularly grains, and to transportation costs and feed freight assistance subsidies¹⁶ where these exist.

Given these regional differences, arbitrage opportunities existed and eggs moved between provinces. In particular, if provincial marketing boards attempted to raise the price of eggs by, for example, reducing production, eggs from other provinces would flow in to take advantage of the higher prices. Further, provincial marketing boards would subsidize interprovincial movements to deal with surpluses. As provincial governments or their agencies could not limit imports from other provinces, their attempts to assist their producers were largely nullified. Under the Canadian constitution, only the federal government could regulate interprovincial trade.

International trade measures were also under the jurisdiction of the federal government, meaning

¹⁶ Feed freight assistance was a federal government program that subsidized the transport of grains from the prairie region to central Canada and the maritime provinces. The aim of the subsidy was to encourage livestock production in central and eastern Canada (Klein et al., 1991; Klein et al., 1994).

provincial boards could not restrict imports from the United States. Provincial boards trying to assist their own members were not above engaging in *beggar-thy-neighbor* trade wars with other provincial boards.

Farmers in eastern Ontario had supplied part of the Quebec egg market. In a similar fashion, Manitoba producers supplied a portion of the market in western Ontario. In 1970, the province of Quebec legislated the creation of a marketing board for eggs – *Fédération des producteurs d'œufs de consommation du Québec* (FPOCQ) to deal with *roller coaster* prices for eggs in the province. The FPOCQ had the power to control the sale, grading and price of all eggs in Quebec including eggs originating in other provinces. It restricted imports of eggs from other provinces and seized products originating outside the province. Sales of Ontario and Manitoba origin eggs were disrupted. This led to retaliatory seizures of poultry products and eggs from Quebec in those provinces. The altercation became known as the *Chicken and Egg War of 1970-1971* (Nurse and Muirhead, 2022). Manitoba took Quebec to court on the basis that provincial boards could not restrict interprovincial imports. The case ended up in the Supreme Court of Canada, but the court ruled that it had no jurisdiction to hear the motion (Skogstad, 1980). In essence, this meant the chaos in the egg market continued. The Supreme Court, in a separate case, ruled that the board in Manitoba with powers to restrict interprovincial trade was unconstitutional (Skogstad, 1980).

The Canadian Federal government was the obvious choice to arbitrate the issue and to bring order to the egg market. The Federal government could not arbitrarily intervene in the dispute due to the reservation of certain powers to the provinces in the constitution. Its intervention could only take place with the cooperation of the provinces. The *Chicken and Egg War* finally spurred the provinces to sanction Federal government intervention. In January 1972

the *Farm Products Marketing Agencies Act* was passed by the Federal government. It allowed the establishment of the Canadian Egg Marketing Agency (CEMA) (Nurse and Muirhead, 2022).

Now that it had the power to intervene in the country's egg market, the Federal government actually had no strategy for dealing with technologically induced disequilibrium. The benefits of the unregulated market were rapid rates of technological change which lowered food prices for consumers over time. This reduction in egg prices for consumers came at the cost of the *roller coaster* price of eggs received by farmers, income instability for them, and a risky investment environment in the egg industry. Consumers, at times, benefitted from the low price periods of the cycle and suffered on the price up-cycle. The *Chicken and Egg War* was precipitated by a downturn in the cycle and farmers lobbying governments, both provincial and federal, for relief.

The Federal government decided that it would no longer countenance disequilibrium in the egg market and moved dramatically to remove the dynamic elements of the market –it was believed there was no other way to cope with these dynamic elements. In essence, the method chosen – supply management – meant the Federal Government decided to ignore the welfare of consumers. The first indication of this realignment in priorities was a concession that, instead of the government being able to appoint anyone to be on the board of CEMA, producers would constitute a majority of Board members. According to Skogstad (1980, p. 97) the Minister of Agriculture:

By compromising on the composition of the regulatory Council and the marketing boards and on the process of selection of the directors of the marketing boards - by acceding to the concern that boards be run by the

producers and not the government - he secured the alliance of the major farm groups and the left-wing opposition.

This ensured the boards would be run for the benefit of farmers and not consumers or the broader society. The debate over the Farm Products Marketing Act once and for all showed: the dominance of producer groups rather than consumers and agribusiness in the making of agricultural policy. While the media were intensely involved in the national marketing board legislation debate, the consumers and the agribusiness sectors were not (Skogstad, 1980, p. 98).

The system of supply management put in place restricted output, removed competition from imports and set producer prices so that most producers were profitable. The upshot was that consumers were condemned to paying prices high enough for most existing producers to make a decent living all of the time. This had not been the case when the market was dynamic. It was claimed that consumers would benefit from *stable* prices even if they were higher – not that consumers were ever consulted on whether they would make that choice. It is argued that marketing boards offer Canadian consumers a *fair* price (Pelletier, 2018).¹⁷

It had long been argued by producers that they should receive a price that covered their *cost of production*. This was the price CEMA wished to achieve for their producer members. The problem was that there are a range of costs among producers, from very efficient low-cost producers to high-cost inefficient producers. If the price chosen covered only the cost of production for efficient producers, then it would not cover the cost of less efficient producers and

¹⁷ Why it is a *fair* price – or in fact how *fair* is defined, beyond that it is a price that satisfies producers – is not explained from the perspective of consumers. It seems to implicitly assume that producers' welfare is part of a consumer's utility function – a fairly large assumption.

they would have to exit the industry. Clearly, this was not the objective of having an egg marketing agency. While it is never explicitly stated, the prices established by CEMA must be set to cover the costs of a large proportion of producers. The calculated cost of production formulas used to establish prices have been criticized for not reflecting actual production costs (Schmitz, 2008; Cowper, 1979; Van Kooten, 1987). The evidence that the cost of production formulas do not reflect the costs of efficient producers is that individual farm level production quotas¹⁸ have value.¹⁹ If efficient producers, or potential efficient producers (new entrants), can receive the price based on the cost of production formula but produce at a lower cost, then they have an incentive to acquire quota by purchasing it from less efficient farmers. Individual farm production quotas for eggs have positive values – sometimes very positive values (Rajisic and Fox, 2017; Green, 1983; Arcus, 1981). The price received by egg farmers exceeds that which comes from a competitive market (Veeman, 1982).

Once the price is determined by the cost of production formula, the CEMA must determine the total quantity of production that will clear the market at that price. The market clearing quantity becomes the aggregate national production quota. Once that is decided, it must be apportioned among the provinces. This, in turn, must be apportioned to existing individual farms in the province.²⁰ These quota quantities remain fixed unless there is a change in demand. This is how supply is *managed* in the Canadian egg industry. Further, imports quantities are also restricted to allow the cost of production formula derived price to be achieved.²¹

¹⁸ Under CEMA to engage in production of eggs a farmer must possess a license that stipulates the maximum quantity that can be produced – a quota.

¹⁹ If the price based on the cost of production formula only provided a normal (zero economic) profit then owning a quota would not have a value – no one would be willing to pay a positive price to acquire quota.

²⁰ If there is demand growth, some of the addition may be granted to, for example, young farmers that wish to enter the industry.

²¹ Initially eggs were protected by import quotas. With the advent of the World Trade Organization (WTO) in 1995 the import quotas were replaced by *tariff rate quotas* (TRQs) which remain in place. As the import quantities are

Hence, virtually all dynamic elements were removed from the egg market in Canada. The ability to enter into egg production was restricted by the need to acquire a production quota. In essence this fossilized the egg industry to a set of existing producers. Expanding operations to take advantage of, for example, economies of scale, required the acquisition of additional production quota, adding considerably to the cost of expansion and the expected efficiency gains. If the market expanded due to, for example, an increase in population, then the additional quota was shared out among existing producers. Cost-reducing technological changes could still be incorporated into operations. As their individual costs declined, farmers made more profit, but the efficiency benefits of technological change were not shared with consumers as is the case in a dynamic market.

According to Eugene Whelan, the Federal Minister of Agriculture at the time the CEMA was being established and their firm advocate (Whelan and Archbold, 1986, p. 149):

Marketing boards vary in practice but the principle is fairly simple. It is a system whereby the producers – in this case farmers – pool their products and decide, based on a cost-price formula, when and how much to produce and how much to sell at what price. One point I want to stress here – because it usually isn't understood – is that a marketing board is something farmers have democratic control over. They run it themselves; it is not forced on them. A marketing board for perishables makes the most sense: wheat you can store in a bin for years, but you just try to do it with a pound of butter or meat. To produce a surplus of perishable products and assume the market is going to take care of it is just utter economic nonsense and wasteful as hell. So a marketing board is an efficient way

known they can be added to the aggregate domestic production quota to determine the price that achieves the cost of production objective.

of protecting domestic producers and assuring that you will always have a supply for domestic consumption. Otherwise you're subject to the whims and fancies of the international market.

Clearly the disequilibria arising from the *whims and fancies of the international market* were not acceptable – the *roller coaster* of egg prices was replaced by an artificial price biased in favour of egg producers and based on retention of existing industry resource allocations. There was no thought given to if or how the industry should evolve.

Aftermath

The decision to intervene in the market for eggs with the particular mechanism of a supply management marketing board was to have long run and important consequences for a significant portion of Canadian agriculture. The CEMA model was quickly extended to other sectors that were experiencing rapid rates of technological change – chicken with the Canadian Chicken Marketing Agency (CCMA) – established 1978; turkey with the Canadian Turkey Marketing Agency (CTMA) – 1974 and broiler hatching eggs with the Canadian Broiler Hatching Egg Marketing Agency (CBEMA) – 1986. In addition, the supply management model has also been applied to both fresh milk (for drinking) and industrial milk (for processing – butter, cheese, ice cream, yogurt, etc.) – albeit under separate legislation and administered by the Canadian Dairy Commission (CDC).

Approximately twenty percent of farm cash receipts in Canada arise from products produced under supply management (Heminthavong, 2018). This means a considerable proportion of the Canadian agricultural industry is effectively *fossilized* within the various supply management systems. Little has changed in terms of the structure, administration, and operation of the system in the fifty years since the system was put into place.

The value of production quotas – the capitalized value of the difference between efficient farmers’ costs and the price set using the cost of production formula – reached \$37 billion in 2017, up from \$27 billion in 2005 (Heminthavong, 2018). The creep in quota values over time has long been observed (Mansell et al., 1984; Barichello and Klein, 2005; Meilke and Cairns, 2005; Kerr, 1987). Billions of dollars have been invested in permits for production – in essence pieces of paper.

As for the goal of preventing the exit of egg farmers, in 2022 there remained only 1218 egg quota holders in Canada – the commercial farmers.²² However, average flock sizes remain smaller than in the US or the EU. When CEMA was established existing egg farmers received their quotas at no cost. As pointed out above, quotas have taken on capitalized values over time so that new entrants have actual costs of production that include their cost of quota.²³

Canadian egg prices are higher than prices at which eggs can be imported. The TRQs used to support supply management by restricting imports allow small amounts of zero tariff imports – approximately seven percent of the domestic market. The over quota tariff for eggs is more than 150 percent (Heminthavong, 2018). This system has remained in place essentially unchanged since the establishment of the WTO in 1995 under the organization’s Agreement on Agriculture where the TRQs were agreed (Gaisford and Kerr, 2001)

The supply management system has made trade negotiations difficult for Canadian negotiators (Kerr and Hobbs, 2015). Outside of those products covered by supply management, the Canadian agriculture market is relatively open and Canada is a large net exporter. Trade negotiations are conducted on the premise of reciprocity – that to receive concessions,

²² Non-commercial production of eggs is allowed for largely personal consumption with maximum numbers of laying hens/production specified by province.

²³ While most farms have changed hands in the fifty years since the establishment of the CEMA, some farms have been passed down through generations and hence the no cost issued quota is retained in the family.

concessions must be offered. The one place where Canada could offer concessions is on those products covered by supply management – and those products are where foreign negotiators make their *asks* in the negotiations. Successive Canadian governments have publicly declared their support for supply management and have eschewed any concessions on market access in these products. Foreign negotiators know this and, hence, make *asks* in these areas hoping to obtain concessions in other areas of the negotiations (Viju and Kerr, 2011). Canadian negotiators have defended supply management through the Canada United States Trade Agreement (CUSTA) negotiations, those of the North America Free Trade Agreement (NAFTA), the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), the Doha Round of the World Trade Organization (WTO), the Comprehensive Economic and Trade Agreement (CETA) with the EU, the Trans Pacific Partnership (TPP), the United States, Mexico and Canada Agreement (USMCA) and the Comprehensive and Progressive Trans Pacific Partnership (CPTPP) as well as all other trade negotiations whether or not they have yielded agreements.. Only very modest concessions were conceded in the CETA, TPP, USMCA and CPTPP negotiations, with the Canadian government having to provide compensation to the industries negatively impacted by the increases in the TRQ quotas. As costs have declined in countries more open to technological change and disequilibrium, the atrophied Canadian supply managed industries appear to offer increasingly lucrative returns to gaining additional or new access to the Canadian market and the *asks* in international trade negotiations reflect these perceptions.

Since the beginning, supply management has come under criticism for its negative effect on consumers starting with Mrs. Plumptre and the Food Prices Review Board in 1973 (Whelan and Archbold, 1986). Academics have debated the effects since the policy's initiation and the

debate continues to this day.²⁴ Absent from these debates is any discussion of alternative policies governments could have initiated to deal with the *roller coaster* of prices affecting agricultural industries experiencing rapid rates of technological change. While there have been many proposals put forth regarding how to dismantle the supply management policy, the end point is a return to the open market system and the risk of the price *roller coaster* returning. It might be argued that the exit of small farms has by now taken place and a policy is no longer needed. This argument, however, is open to debate.

Conclusions

Large scale technological change is disruptive. It also provides benefits to society in the form of lower food costs. In the case of the Canadian egg market, both the provincial governments and the Federal government perceived that the cost of the disruptions for the industry, and society, were simply too high. Their policy solution was to remove the dynamic element from the egg market. They could not design a policy alternative that could retain the dynamic facets arising from disequilibrium.

The solution was an attempt to *freeze* the industry at a point in time. This was accomplished by restricting the quantity of output through the issuing of production quotas and isolating the market through the use of quantitative trade barriers. Prices were set at levels high enough to ensure most egg producers were profitable. The policy was biased against consumers who had to purchase eggs at higher than international prices.

Except for early implementation problems resulting in the purchase and destroying of large quantities of eggs, supply management in eggs was deemed a success by policy makers and

²⁴ See for example Veeman (1982); Van Kooten (1987); Arcus (1981); Nurse (2021); Cardwell et al. (2015); Cardwell et al. (2018); Doyon et al. (2018); Barichello and Cunningham-Dunlop (1987); Barichello (1984); Saint-Louis and Proulx (1987); Royer (2008); Royer et al. (2016).

the system was extended to other Canadian agricultural products experiencing rapid rates of technological change – primarily chickens, turkeys, fresh milk and dairy products.²⁵ Supply management remains in place fifty years later. It covers approximately 20 percent of the value of agricultural output in Canada.

Supply management remains a contentious political issue in Canada. High consumer prices are an ongoing issue. Trade negotiations are made more difficult as trade partners can see the potential from garnering increased market access. The values that have become attached to production quotas make entering supply managed industries difficult and especially challenging for potential young farmers. They are a *red flag* for the inefficiency and wasted capital. Further, those with a vested interest in supply management must expend considerable resources defending their interests. The cost of dealing with the *roller coaster* prices has been high. Basically, supply management is a policy that *threw the baby* (the benefits of technological change) *out with the bath water*.

²⁵ Note that in industries where technological change was less rapid in the 1960s and 1970s such as beef, pork, cereal grains and oilseeds the policy was not perceived as desirable.

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