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The Canadian Wheat Board in an Open Market: The Impact of Removing the Single- Desk Selling Powers

Murray Fulton

Adapting to New Environments: Agriculture and
Rural Economies in the 21st Century
a KIS Project (CSALE)

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Introduction

Over this past summer and early autumn, the Government of Canada has indicated its desire to remove the single-desk selling powers of the Canadian Wheat Board (CWB). Most recently the government created a task force to recommend options for how the CWB can deal with the transition to a market where its single-desk selling powers would no longer exist. This report was released on October 30, 2006.¹

The purpose of this paper is to explore the impact of removing the single-desk selling powers of the CWB. The main conclusion of the paper is that it will be very difficult, if not impossible, for the CWB to survive as an organization. Thus, contrary to what the task force indicates, the most likely impact of removing the single-desk selling powers is that the CWB will cease to exist.

Although the CWB is unlikely to continue its operations, this paper nevertheless examines whether a newly constituted CWB would be able to successfully operate a pooling system for Western Canadian grain farmers. Since the analysis indicates that a pooling system is unlikely to be successful, the conclusion that the CWB will be unable to survive as an organization is further strengthened.

The paper also examines some of the structural changes that are likely to occur as a result of the disappearance of the CWB. The major conclusion of this examination is that the loss of the CWB will transform the Canadian grain handling and transportation system into one that is very similar to that in the United States. Despite the similarity in the structure and operation of the grain handling and transportation systems in the two countries, the policy environment of the Canadian grain and oilseeds sector will nevertheless differ from that in the United States in one important way – the United States will have a Farm Bill while Canada will not. As a result of this policy difference, U.S. farmers are not exposed to market forces to nearly the same extent as are Canadian farmers.

This paper is not a cost-benefit analysis of the CWB or of alternative marketing arrangements. The paper will not make the case for why one marketing system is better than another, or provide a dollar figure for the gain or loss that can be expected from the policy change that has been proposed. Nor is the paper a response to the task force report, although the recommendations of the task force will be re-

ferred to from time to time. Instead, the purpose of the paper is to paint a picture of what the CWB and the grains sector can be expected to look like when the CWB's single-desk powers are removed. Such an examination has not been undertaken and is needed as decisions are made regarding the future of the CWB.

It is important to note that Western Canadian farmers are in a unique position when it comes to this proposed policy change. Under the terms of the *Canadian Wheat Board Act*, farmers in the CWB area are provided with the power to approve or reject any proposed changes to the fundamental operations of the CWB.² This power is one that is held by almost no other group in society – in virtually all other policy arenas, the government has the power to make changes unilaterally. As a consequence of this provision, farmers have the ability to make a real choice about the nature of the grain marketing system under which they will operate. The Government of Canada has announced that a plebiscite will be held early in 2007 on the marketing of barley under the CWB; no formal decision has yet been made on wheat.³

Given the opportunity to choose the nature of their marketing system, farmers are presented with two very distinct choices for the future of the Western Canadian grains sector. One choice will be to retain the CWB, although likely not in its current form – the CWB has changed significantly over the last 10 years and has already announced its intention to make further changes.⁴ The other choice is effectively to eliminate the CWB. This latter change would fundamentally transform the Canadian grains sector, eliminating the features of the current system that make it distinctive. And the changes will be irreversible – once the system has been altered, it will be virtually impossible to go back and restore the various elements that now make up the system. Thus, farmers have a real decision. In making this decision, farmers will have to ask themselves, “What is my vision of the grains sector in Canada?”

The next section of the paper provides a brief examination of what would happen organizationally if the single-desk selling powers of the CWB were removed. With this as background, the paper then moves on to an examination of the impact on the Canadian grains sector of this policy change. The paper ends with concluding remarks.

Will the CWB Continue to Operate?

It is important to start the discussion of the impact of the removal of the CWB's single-desk selling powers by examining what would happen to the CWB as an organization if this policy change were made. As will be seen in later sections of the paper, the fate of the CWB as an organization has important implications for what would subsequently occur in the industry.

The conclusion of this section is that a new CWB is unlikely to be successful in the current environment regardless of the pricing and marketing models that it would use (an examination of different models is presented in the following sec-

tion). Since a new CWB is unlikely to be successful, it follows that farmers would be unwilling to create and invest in this new organization. As a consequence, the Government of Canada's goal of having a strong, viable CWB cannot be achieved.⁵ Moreover, the outcome envisaged by the task force of farmers purchasing shares in a new CWB is unlikely to occur; unless they see value in purchasing shares, there is no incentive for farmers to purchase them. Thus, the most likely consequence of removing the CWB's single-desk selling powers is that the CWB will disappear and no new farmer-owned organization (or at best a relatively small organization focused largely on the domestic market) will emerge to fill the void.

Determining whether a new CWB would be successful requires the consideration of a number of different arguments. The process that needs to be followed can be likened to determining whether any of three or four different routes through a maze will actually lead to the goal at the other end, with the goal in this case being a viable CWB. Each of the main paths has its own maze of paths, all of which need to be considered. What will be seen in the analysis below is that all of the routes end in a dead end – there is no path that leads to a viable CWB.

What are these paths that have to be considered? The first path that needs to be examined is the organizational structure that a new CWB would have. The analysis of this path indicates that farmers must have ownership and control of a new CWB if it is going to be successful; this ownership and control, however, will only occur if farmers believe the CWB can be commercially viable. Commercial viability, however, depends on the manner in which a new CWB carries out its activities. Here there are a number of options.

One possible path would be for the CWB to operate as a producer marketing agency, buying grain from farmers and selling to millers in Canada and internationally. However, to be viable, a new CWB would have to own and operate its own grain handling facilities in the country and at port position; simply put, a new CWB that operated only as a producer marketing agency would not survive economically.

Another possible path is that the CWB could own its own elevator facilities. It is unlikely, however, that a new CWB would be able to purchase the required assets. A new CWB would not have the capital required to make such a purchase, and even with capital, a new CWB would have trouble acquiring facilities. While it would have been possible 10 to 15 years ago for a new CWB to merge with the existing grain co-ops or to build new facilities of its own, such options are not available today. Purchasing grain handling facilities from other industry players is also unlikely, given that they would not like to see new competition enter the market.

A third possible path starts with the presumption that a new CWB could acquire facilities (although it is known that the probability of this occurring is very small). Even with facilities, the likelihood of a new CWB competing in the international market with the multinationals is very low. Thus, based on this reasoning, it is unlikely that a new CWB would be successful.

Organizational Restructuring – The Removal of the Single-Desk Selling Powers

To begin the analysis, it is necessary to consider the manner in which changes to the CWB can be expected to occur. There are two ways that the Government of Canada could remove the CWB's single-desk selling powers. The first would be to open the *Canadian Wheat Board Act* and remove the provisions for single-desk selling;⁶ the provisions that provide the CWB with government loan guarantees would also be removed. The second way would be to rescind the *Canadian Wheat Board Act*. The approach recommended by the task force is, in effect, a combination of these two options; the task force's proposal is to rescind the *Canadian Wheat Board Act* and to replace it with another piece of legislation.

Both of these options can be expected to have the same result. Consider first the option of rescinding the *Act*. With a rescinding of the *Act*, farmers would no longer be required to deliver their grain to the CWB, the CWB would lose its single-desk selling powers, and government financing would no longer be available. In addition, the CWB would no longer exist as an organization since it would have no legal status. The CWB would only re-emerge as an organization if someone or some group took the initiative to create a grain marketing organization. Under the task force recommendations, the Government of Canada would take this initiative.

The CWB would also require reorganizing if the *Canadian Wheat Board Act* were opened and the key provisions removed. Once stripped of its major powers, the CWB would no longer need to be structured as a government organization; the result would be that the CWB would be restructured. This restructuring could occur as a result of pressure from the Government of Canada, or as a result of a decision by the CWB's board of directors.

Given that restructuring will occur, what alternative structures are likely under reorganization? There are two possibilities. The first is that one or more investors could get together and, using the Canadian Wheat Board name, form a corporation under the *Canada Business Corporations Act*. This possibility is very unlikely, since investors wishing to form a corporation for the purposes of earning a return on their investment would likely want to choose a name that does not have a connection to the CWB.

The second possibility is for a group of farmers to get together and, using the Canadian Wheat Board name, form a co-operative under the *Canada Co-operatives Act* or a farmer-owned corporation under the *Canada Business Corporations Act*. Since the characteristics of a co-operative can be mimicked under the *Canada Business Corporations Act*, these two options are very similar and will be treated as one.⁷ Indeed, since what would be created would, for all intents and purposes, be a co-operative, the discussion below will draw heavily on the experience of co-operatives from Canada and the United States and elsewhere in the world.

It is important to stress that if a new CWB is to be created, success is most likely if it is done voluntarily and as a deliberate act by a group of farmers. Experience with co-operatives around the world indicates that those formed by government on

behalf of a group are almost never successful.⁸ The reason has to do with benefits, ownership, and control – unless a group of people can see the benefits of forming a business and believe they have ownership and control of this business, they will not expend the time and money to form the organization. Yet this commitment of time and resources is required in order for the farmer owners to identify sufficiently with the organization to be committed to it over time.⁹ Given this background, any attempt by government to form a new CWB on behalf of farmers is not likely to succeed.

While the task force calls for farmers to voluntarily decide if they wish to purchase shares in a new CWB, it recommends that the government should establish this new organization. However, unless there is truly a desire among farmers for such an organization, it is unlikely to be successful.

The likelihood of a group of farmers making the effort to form and/or invest in a new CWB depends on a host of economic and non-economic factors. The non-economic factors include things such as whether there is an existing organizational structure that is able to support development, the nature of leadership within the group, and the degree to which a sufficient number of farmers share the same view of how the industry operates and what the impact would be of a new CWB.

On the economic front, the key factor will be whether the group of farmers believes that a new CWB, organized as a farmer-owned business, would provide sufficient benefits to make the effort and investment worthwhile. Thus, any potential organizing group would look forward to what they expected to see happen in the industry if a new CWB were to be created. If they expected that a new CWB could be successful, they would be more likely to make the effort to create a new organization. If they did not expect a new CWB to be successful, then a new organization would not be formed. Success is defined here as the CWB being both commercially viable (e.g., revenues are consistently greater than expenses) *and* organizationally viable (e.g., a significant number of farmers support the organization). Clearly these two elements are interconnected – an organization will not be commercially viable if it is not organizationally viable and vice versa.

There are a number of business models that a farmer-owned business could adopt – the two most obvious are a marketing agent for farmers and a full-fledged grain company. Other business models where the new organization acts as an agent for sellers of Canadian wheat or as an agent for buyers of Canadian wheat are more likely to be models carried out by a group of investors.¹⁰

The New CWB as Marketing Agency

The task force recommends that the new “farmer-owned” CWB begin as a marketing agency for farmers. Operation as a marketing agency for farmers is almost certainly not sustainable. The best-case scenario for a farmer-owned marketing agency would be if a new CWB were able to attract some of the marketing expertise currently in the CWB and use this expertise to line up long-term contracts with domestic and international buyers. Such a scenario is unlikely, however, for at least

two reasons. First, a new CWB would not automatically have access to the people and expertise in the current CWB. Once it was clear that the current CWB was going to be dissolved, CWB employees would immediately start looking for other jobs (if they had not already done so). Other players in the grain industry would very quickly hire the most talented of the CWB staff as these players prepare for a system where they now require domestic and international marketing and logistics expertise. A new CWB would have to compete directly for the former CWB personnel; by virtue of their size and presence, the other industry players would be in a position to make sure that key personnel were enticed to join their companies.

Second, without a grain handling system, a marketing agency would only be able to source grain at the pleasure of the existing grain companies. Since in most cases the grain companies would rather supply the grain directly to the customers that the CWB was attempting to serve, rather than supplying the CWB, a new CWB would find it difficult, if not impossible, to source grain, and hence would be unable to set up long term contracts with major buyers. The situation that the CWB would be in is similar to what would happen if Case New Holland, for instance, were to rely on John Deere's dealerships to sell its line of farm equipment.¹¹

The task force argues that because of excess country elevator capacity on the Prairies, the grain companies can be expected to compete aggressively for grain; one way of competing for tonnage would be to allow the CWB to move grain through their facilities. However, in its annual report on the state of the Prairie grain handling industry, Dominion Bond Rating Service (DBRS) indicates that the period of large-scale elevator abandonment is over and that there is little excess capacity in the industry. In an article in the *Western Producer* from June 2006, Brian Hayward, chief executive officer of Agricore United, echoes this view: "We don't believe there has been overcapacity in the grain handling industry for the past two or three years." This view notwithstanding, DBRS also indicated that the one factor that would prompt further consolidation would be deregulation of the grain marketing system – the implication is that grain companies would be particularly concerned about extra capacity if the CWB were removed and would take steps to make sure that it did not exist.¹² The conclusion is that there neither is nor will be any excess capacity and therefore the existing grain companies will have little if any incentive to allow a new CWB to move grain through its elevators.¹³

Knowing that contracts will not be forthcoming with major buyers, and lacking any special advantage in terms of personnel, farmers would have no incentive to form a farmer-owned marketing agency. It is instructive to note that farmer-owned marketing agencies without grain handling facilities do not exist in the U.S. grain marketing system, evidence that a farmer-owned marketing agency is not a sustainable option.¹⁴

The New CWB as Grain Company

If the new CWB had its own grain handling system – including country and port facilities – the situation would be different, since the new CWB would then be able

to compete directly with the other grain companies for farmers' grain. It is important to note that a new CWB would have to own port facilities if it wanted to be involved in the export trade, since most of the export grain moves through one of the three main ports (Thunder Bay, Prince Rupert and Vancouver). Without terminal facilities, a new CWB would be in much the same position in international trade as if it owned no country elevators.

It would be very difficult for a new CWB to acquire grain handling facilities in the Western Canadian grain industry at the current time. The most obvious problem is a lack of capital. Unlike the Australian Wheat Board, which was allowed to build up a significant investment fund over a substantial period of time, the organizers of a new CWB would have no capital – other than what they could themselves invest – at their disposal. Without capital, acquiring grain handling facilities is simply not possible. Although the task force envisages the CWB selling shares to farmers, this share offering would only add an additional \$110 million in assets, an amount insufficient to purchase a grain handling company (as an example, Saskatchewan Wheat Pool's bid for Agricore United is valued at \$423.8 million).¹⁵

Even with a large capital fund, acquiring grain handling facilities would be difficult. One obvious way for a new farmer-owned entity to acquire facilities would be to merge with existing farmer-owned entities that already own grain handling facilities. With the conversion of the three prairie Pools to standard business corporations over the last ten years, the option to merge with co-operatively-owned grain handling firms is no longer available. A number of farmer-owned inland terminals do exist; however, many are not independent since they are partially owned by existing grain handling firms. Thus, even if one or two of the independent producer terminals were willing to merge (which itself is highly questionable), the result would not be sufficient market presence to operate across all of Western Canada.

Another option for acquiring grain handling facilities would be to purchase them from existing industry players. While some of the grain companies might be willing to off-load some of their more poorly situated elevators to a new competitor, in general the existing players will not want to see a new competitor come into the market and thus will not be willing to sell their elevators. This is particularly the case at port position, where ownership of terminal capacity provides grain companies with significant market influence. Thus, a situation where one or more of the existing companies sell off a significant portion of their grain handling system is very unlikely to occur.

What about the possibility that a new CWB would be able to purchase the entire elevator system of one of the existing companies? While this is a possibility, the likelihood of this occurring is not high. One reason is that all the grain companies are looking to the opening up of the market that would occur with the dissolving of the CWB as an opportunity to strengthen their operations and to improve their bottom lines; as a result, they are unlikely to want to sell. A second reason is that existing grain companies would be willing to spend a significant amount of money to keep a new CWB out of the market – they could do this by making a counter-bid to any grain company with which the new CWB would negotiate (in fact, any

company approached by a new CWB would have an incentive to ask for counter bids from the other existing players). While one of the large multinationals that currently does not have a presence in the Canadian market (e.g., ConAgra) would have the financial wherewithal to outbid some of the current incumbents, a new CWB, with limited financial backing, would not have this ability. Indeed, a probable outcome is that multinational grain companies would end up owning a significant portion of the Canadian grain handling system.¹⁶

A third option for acquiring elevator and terminal facilities would be to build new ones. While this would have been a viable option at the country level a decade ago when much of the elevator capacity needed rebuilding, this option is not viable today given the overcapacity that would result from such a move. The problem with bringing on new capacity today would be that doing so would likely trigger very intense price competition by the existing firms in the industry as they try to retain market share and drive out the new player. The farmers that would be developing the new CWB would have to ask whether they would be willing to invest their money in what can be expected to be a very risky venture, particularly during a period when farm incomes are low. Building new port facilities is an extremely costly exercise and could only be entered into if the new CWB had very secure financial backing. As a point of comparison, the cost of Saskatchewan Wheat Pool's Project Horizon was \$270 million at the end of the last decade – the cost of building new facilities today could easily be double this value, particularly given the rapid rise in construction costs that has occurred during the last two or three years.

The New CWB and Export Sales

Even if a new CWB were able to acquire country and terminal facilities, it is highly unlikely that it would be able to play much of a role in international trade; its activities would be largely concentrated on the Canadian and perhaps the U.S. market. At the current time, the CWB has significant leverage in the international market because it handles all the grain exported from Western Canada. Most millers want a mix of wheat types to produce the flour they are selling. Since Canada is one of the few regions where high quality hard red milling wheat is produced, the CWB is able to gain access to buyers that are looking for this type of product – if the millers want hard red spring wheat, for instance, they need to talk to the CWB.

This situation would change if the single-desk selling powers of the CWB were removed. In that situation, there would be multiple sellers of Canadian wheat and millers would not have to deal with the CWB if other sellers were able to offer a better service. Among these sellers would be the large multinational grain companies such as Cargill, Louis Dreyfus, Archer Daniels Midland (ADM), ConAgra, and Bunge.¹⁷ Some of these companies have a presence on the Canadian Prairies, while others could be expected to acquire this presence when the single-desk selling powers of the CWB are removed. Because of their multinational nature, these companies are able to source grain from all over the world; indeed this is one of the

benefits they provide to buyers – buyers know that if the crop in one region of the world is poor, then the multinationals will be able to source it from another location.

A new CWB would not be able to provide this service to buyers, since it would realistically be limited to sourcing grain from only Canada (the cost associated with operating overseas and the expertise that is required would place this activity outside the realm of a new CWB). While Canadian grain is in demand from buyers around the world, a new CWB would not be the only supplier of this product. As a result, it can be expected that most of the export sales from Canada would go through the multinationals that can supply Canadian grain as well as grain from other regions of the world. This is the experience in the United States, for instance, where the large agricultural co-operatives such as CHS (formerly Cenex Harvest States) do not have much export activity despite the fact that they have a significant presence in the country.

In conclusion, a new CWB would have difficulty operating in the international market. Indeed, any grain company that relied largely on sales from Canada would have difficulty operating in the international market. As a consequence, smaller companies without an international network of supply sources and sales offices can be expected to have trouble competing with the multinationals. The result is that these companies are likely candidates for takeover by the multinationals should the CWB's single-desk selling powers be removed.

The New CWB – A Recap

In summary, a new CWB is unlikely to be successful in the current grain handling and transportation environment. Simply put, the barriers to entry for a new grain handling company, which is what a new CWB would be, are simply too great at the current time. Any company – and this includes the CWB – wishing to enter the Canadian grain industry would have great difficulty in doing so.

To be viable, a new CWB would have to own and operate its own grain handling facilities in the country and at port position – it could not operate only as a producer marketing agency and survive economically. It is also unlikely that a new CWB would be able to acquire elevator facilities. First, a new CWB would not have the capital required to make such a purchase; even with capital, a new CWB would have trouble acquiring facilities. And even with facilities, the likelihood of a new CWB competing in the international market with the multinationals is very low. Thus, it is unlikely that a new CWB would be successful.

Since a new CWB is unlikely to be successful, it follows that farmers would be unwilling to create and invest in this new organization. Specifically, the outcome envisaged by the task force – farmers purchasing shares in a new CWB – is unlikely to occur; unless farmers see value in purchasing shares, there is no incentive for them to make this purchase. Thus, the most likely consequence of removing the CWB's single-desk selling powers is that the CWB will disappear and no new farmer-owned organization will emerge to fill the void.

Even though it is unlikely that a new CWB would be created, it is nevertheless important to examine the pricing and marketing models that this organization might use were it to be successful (indeed, the choice of pricing and marketing models will in part determine success). As the next section shows, a new CWB, if it were to acquire grain handling facilities and become operational, would almost certainly buy grain from farmers on a spot market basis. Without single-desk selling powers, it would be almost impossible for a new CWB to operate a price pooling system. The removal of the CWB's single-desk power would also spawn a major transformation of other aspects of the grain handling system. A subsequent section examines the structural impacts of the elimination of the CWB.

The Myth of Marketing Choice

It was argued in the previous section that it is unlikely that a new CWB would voluntarily be created if the current CWB were disbanded. Putting that argument aside for the moment and assuming that a new CWB would be created, how might this new entity behave? Would it, for instance, offer farmers a pooled price?

The question of whether a reconstituted CWB would offer price pooling is important because of the manner in which the CWB debate has evolved. Over the last 15 to 20 years, critics of the CWB have argued that farmers should have a choice in how they market their grain. This choice was often presented in terms of a dual market. A dual market is defined as an open market where some entity (e.g., a new CWB) continues to offer pooling while the private trade offers cash trading (this definition is consistent with the task force's view that the term "dual market" should be replaced with the term "marketing choice" in the context of an open market). The question of whether price pooling is viable is also relevant because the task force gives the offering of price pools as an example of an innovative financing and pricing product that a new CWB could offer that was not offered by competing grain companies.

The purpose of this section is to show why a dual market will not be viable. The proponents of dual marketing argue that if a new CWB could not compete in such a market then it is inefficient and that failure is the result of poor management. This conclusion is incorrect. A dual marketing structure is not viable because of the incentives that are created as a consequence of the nature of the dual market. Interestingly, since a dual market is not viable, farmers will ultimately have no choice between marketing through a pool and marketing through the open market. Only the open market option will exist.

The pooling options that have been put forward include the following: (a) completely voluntary pools which farmers are free to enter or exit whenever they wish and (b) contractual pools where farmers are required to sign a contract to remain in the pool for a required period of time.

The reason why a completely voluntary pool cannot operate alongside a cash market is a direct function of pooling. Pooling is a system whereby high and low

prices – prices received at different times of the crop year and in different markets – are averaged in a weighted fashion according to sales to give the pooled price. The consequence of the averaging process is that when market prices are rising, the pool price will generally lag behind. Under a voluntary arrangement, the lower price for the pool will result in farmers delivering to the cash market. In contrast, when prices are falling, the pool price will generally be above the cash price. This will provide an incentive for producers to deliver to the pool. The consequence of this behaviour is that the voluntary pool experiences either relatively small volumes being pooled or substantial losses in the pool if guaranteed initial prices are present.

Contractual pools theoretically do not suffer from the problem of producers moving in and out of the pool. However, contractual pools have their own problems. When producers sign fixed delivery contracts, they take on significant production risk. To reduce the risk of not being able to deliver on their contracts, farmers can be expected to contract only a portion of their crop, thereby limiting the amount of grain available to the pool. Contract pools also experience problems with delivery enforcement. In most instances, delivery contracts are not ironclad and cannot be made so. The experience of the Ontario Wheat Producers' Marketing Board (OWPMB) provides a case in point. In 2003, the cash price was above the pool contract price and farmers were renegeing on contracts they had with millers, saying that their wheat spoiled. The millers did not have the time or money to investigate the farmers' claims.¹⁸ The same situation has existed for crops such as mustard – farmers have often renegeed on contracts when the market price rose above the contracted price. Contract enforcement is costly and does not put the grain companies in a good light. The results are a high cost of enforcement and substantial contract default under conditions of rapidly rising prices.¹⁹

Pools may also be subject to the strategic behaviour of the other grain companies in the industry, who may set prices in such a fashion that the pool suffers large losses. While such a strategy may temporarily lower the profits of the grain companies, it may return long-term benefits if the pool is unsuccessful.

Some experience with contract pools exists in the United States where co-operatives have operated a number of pools over the past 30 to 40 years. In California, for instance, dual markets have been in place for such commodities as citrus, raisins, peaches, almonds, cotton, and rice. These dual markets are associated with co-operatives that purchase product from their members at a pooled price. The co-operatives involved in pooling include Sunkist (citrus), Sun-Maid Growers (raisins), Tri-Valley Growers (peaches), Blue Diamond (almonds), Calcot Ltd. (cotton), and Farmers' Rice (rice).²⁰

While pools have been successful in some crops, they have not been successful in wheat. (See Appendix A for a detailed examination of the factors affecting success of marketing pools. As the appendix shows, the grain sector does not possess the characteristics that would make pooling successful.) In the United States, Landmark, Inc. and the Ohio Farm Bureau, FAR-MAR-CO (this was a division of Farmland Industries, Inc.), and Harvest States Cooperatives have all run pools in the past; none of these were ultimately successful.²¹ FAR-MAR-CO's pool, which

began in 1976, was phased out in 1985. Harvest States Cooperatives experimented with a pool in the 1991/92 and 1992/93 crop years. Although the performance of this pool was good in the first year, the basis moved the wrong way in the second year, and Harvest States discontinued the program.

In Canada, the OWPMB has operated a number of pools since its single-desk selling powers were removed in 2000. Although pools are still in operation, only five percent of the total milling wheat was sold through these pools in 2003/04.²² In this past year, the OWPMB had to source grain from Europe to meet a sale to India because it could not access it through the pool. Most farmers obviously did not view the pool accounts as being an innovative pricing product.

It should also be noted that pools have not been used by any of the existing grain companies – including the Pools when they operated as co-operatives – in canola, flax, or pulse crops.

As Appendix A describes in more depth, the operation of a successful and viable pool depends on the interaction of at least three factors: (1) the pool being able to attract a significant market share, (2) the market share being stable, and (3) the pool not operating with a deficit. In a dual market, a wheat or barley pool in Western Canada would be unable to provide the special advantages that are required to attract a significant and stable market share. This inability to offer special advantages gives farmers little incentive to deliver to the pool except when it is strategically advantageous to do so. This translates into a low and variable market share. Combined with a need to avoid deficits (which further weakens a co-operative's ability to operate a pool), the conclusion is that a dual market for wheat and barley will not be viable in Western Canada.

Given that a price pool is unlikely to be viable, a new CWB, if it were to be formed, would purchase grain from farmers using the spot market. In other words, removing the single-desk selling powers of the CWB is almost certain to result in farmers selling the bulk of their grain through the spot market system. The spot market system would be supplemented with contract purchases when grain of a particular quality and without a large market (a good example would be the specific varieties of grain sold to Warburtons) is required.²³ As a consequence, the removal of the CWB's single-desk selling powers would result in a situation where farmers would not have a choice as to whether they deliver to a price pool or the open market. Only the open market option would exist.

The Structural Impacts of Eliminating the CWB

As was outlined in the introduction, one of the conclusions of this paper is that the removal of the CWB's single-desk selling powers will fundamentally transform the Canadian grain handling and transportation system. This section examines some of the major structural changes that could be expected to occur. These changes include a shift in marketing power towards the grain companies and the railways, a

loss of political power for farmers, and modifications to transportation policy. One of the biggest impacts of these changes will be a reduction in the value obtained for Canadian grain.

It is important to note that the task force explicitly acknowledges that the removal of the CWB's single-desk selling powers will have many of the structural impacts described in this section, although it does not elaborate on them. Among the task force's recommendations are ones relating to the measures that need to be taken by the Canadian Grain Commission to ensure access to producer cars and amendments that need to be made to the *Canada Grain Act* to address problems of non-competitive behaviour in the grain handling industry. The task force also acknowledges the need to address issues of rail competition, although it does not link any changes in this area to the removal of the CWB's single-desk selling powers.

Although the task force recommendations are designed to deal with what are real problems, additional regulation is unlikely to effectively address these problems. As is well known from the regulation literature in economics, regulatory agencies are typically "captured" and influenced by the companies in the industry, with the consequence that the regulations often do not have the "teeth" they were intended to have.²⁴ Development of organizations such as the CWB that directly encourage competition often are a more effective way of addressing market power issues.

Reduced Competition among the Grain Companies

Primary grain handling on the Prairies is reasonably concentrated – in 2006, the top four grain handling companies (Agricore United, Saskatchewan Wheat Pool, Pioneer Grain, and Cargill) hold nearly 50 percent of the primary storage capacity in Western Canada. (This number is conservative, since a number of the producer-owned terminals are partially owned by members of the top four; as well, not all four companies have elevators at each delivery point – the result is that the spatial concentration is often much higher than the aggregate figures would suggest.)²⁵

This level of concentration, along with a lack of excess capacity (see discussion earlier in the paper), suggests that the grain handling firms have the potential to exert some degree of market power, i.e., to raise prices above the cost of providing the service. To encourage greater competition among the grain companies, the CWB has, since 2001, operated a tendering process for approximately 20 to 25 percent of the grain destined for export.²⁶ Under the tendering process, grain companies have to provide bids to the CWB for grain cars; the CWB then selects the best bid. By having the grain companies compete with each other over supply held by one seller (namely the CWB) rather than by a large number of sellers (namely farmers), a shift in market power from the grain companies can be obtained.

Disbanding the CWB would remove the ability of the CWB to bring additional competition to the primary grain handling sector in Western Canada through a tendering process. Assuming that a restructured CWB would own grain handling facilities (recall from the earlier discussion that without facilities a new CWB would be unlikely to survive), its presence at certain delivery points would increase com-

petition at these locations. Indeed, one of the key roles of farmer-owned businesses is to bring increased competition to the market place. However, the degree of competition that could be provided can be expected to be significantly less than if the CWB were to retain its single-desk selling powers.

The primary elevator system is not the only place where competition is important. Equally, if not more important, is the competition at port for terminal services. Port facilities are highly concentrated – the largest four grain handling companies (Agricore United, Saskatchewan Wheat Pool, Pioneer Grain, and Cargill) hold 85 percent of the terminal capacity at Thunder Bay, close to 100 percent of the terminal capacity in Vancouver, and 100 percent of the terminal capacity in Prince Rupert. This ownership structure is important because almost all grain destined for export from Western Canada has to go through one of these ports (a small amount of grain goes through the Port of Churchill), and at key times of the year the port capacity is not sufficient to handle all the grain that companies wish to export – this is particularly the case with Vancouver.

There are two consequences of the port terminal's limited capacity. First, the smaller grain companies have to rely on the largest four firms for port access. Without this access, these smaller companies would not be able to bid for grain at the primary elevator level. Thus, ownership at the terminal level effectively determines competition in the country. The second consequence is that the owners of the asset that is in short supply will be able to charge a premium for access to this asset. As a result, terminal charges can be expected to be set above the cost of providing the service.

The CWB has played an important role in addressing the market power held by the terminal owners. Since the CWB controls the wheat and barley that is exported through the ports, it has the power to negotiate better terms with the terminal owners. As well, through its car allocation policies, the CWB is able to ensure that all the grain companies have access to terminal facilities. This has enabled some of the smaller grain companies to continue operations, which in turn has increased competition at the primary elevator level. The removal of the CWB's single-desk selling powers would mean the loss of this countervailing force in the market; the most likely result would be higher terminal elevator charges.

The CWB has also played an important role in keeping the Port of Churchill open. Since none of the current large grain companies in Canada have a terminal at Churchill, they are reluctant to ship grain through that port since they then do not get the terminal charges.²⁷ The CWB has been able to move grain through Churchill by reducing rail car access to grain companies that do not ship grain to that port. This ability to influence grain export patterns would be lost if the CWB did not have its single-desk powers. While it is possible that one of the large grain companies might purchase the terminal at Churchill (Louis Dreyfus is a partner in the operation and ownership of the terminal), thus making export through that port attractive, such a purchase would be at fire-sale prices – without the CWB in place, a terminal in Churchill has little value and the owner of that terminal has little bargaining power.

Less Favourable Terms from the Railways

The argument presented above for grain handling services also applies to rail services. The railway industry is properly described as a duopoly – that is, there are only two main firms that compete in the provision of transportation services. With the exception of a few delivery points, however, the two railways are located in different geographical regions. This geographical separation means the railways often possess local monopoly power. This market power arises because a large percentage of customers are in some sense captive. If market forces were relied upon to establish freight rates, both railways would know they could raise their freight rates without losing too many customers to their competitor. There would also be no incentive for any railway to lower freight rates, since lower rates would be unlikely to attract many new customers, particularly if their competitor were to lower its rates at the same time.

The railways operate a transportation system that is often pushed to capacity. At such times, the railways have an incentive to move goods that have a high value rather than those that have a low value, since they will be able to charge higher rates for the movement of higher valued goods. Since grain is not a highly valued product from the railway's perspective, it is often pushed aside when rail capacity gets tight.

The CWB plays an important role in addressing both of these issues. Since the CWB has control over all export grain from Western Canada, it can often negotiate better freight rates than could a number of grain companies acting independently. Similarly, the CWB is in a position to negotiate better service terms from the railways.

The removal of the CWB would change the power balance between the grain handling companies and the railways. The railways can be expected to continue their current strategies of incentive rates for multi car loadings, investment in infrastructure, and various ancillary charges that shape the behaviour of the other players in the grain handling and transportation system. As well, freight rates can be expected to rise and the level of service can be expected to fall. This impact would not be universal, since a company like Cargill, with its wide range of products and transportation needs, might be able to negotiate better terms than would the other companies. Even so, these better terms would not likely be passed on to farmers, since this would only happen if all of the grain companies had access to these better terms.

Pressure on Producer Cars and Short Line Railways

Over the last five to ten years there has been a substantial increase in the number of producer cars and in the use of short line railways.²⁸ The removal of the CWB would threaten much of this activity. The reasoning is very similar to that presented in the previous two sections. For producer cars, the presence of the CWB has meant that these operations can obtain rail cars; once the grain is on these cars, the grain companies have an incentive to handle the grain at terminal position. In a similar

way, the CWB has allowed the short line railways to flourish, since they have been able to ensure that these companies obtain rail cars and that the two major railways handle the cars that are loaded on the short line.

The removal of the CWB would change this situation. Since the farmers that load producer cars do not have terminal facilities, they would find themselves at the mercy of the grain companies with terminal capacity. Simply put, these grain companies would rather handle the grain themselves through their systems and thus have no incentive to provide loaders of producer cars with access to terminal facilities. Without access to terminal facilities, there is no incentive to load a producer car.

The method of rail car allocation would also change if the CWB were to lose its single-desk selling power. Instead of the CWB allocating rail cars to the grain companies according to past deliveries and success in tendering, it is likely that a bid system would emerge in which the railways would allocate cars according to the grain shippers' willingness to pay. While the largest grain companies may be able to negotiate better rates and service, the small shippers – and this includes farmers loading producer cars – can be expected to pay higher fees and to receive poorer service. This differential service would provide a further reason why producer cars would suffer. The change in railcar allocation would also affect short line railways, in part through its impact on producer cars, which make up an important part of the volume carried on short lines, and in part because the railways would ensure through their pricing that they get the rail traffic – and hence the revenue – on their lines.

Elimination of an Advocacy Voice

Over the last five to seven years, the CWB has increasingly played an advocacy role, a development that can be directly linked to the new governance structure under which the CWB now operates. With ten of the fifteen CWB directors elected by farmers, the CWB has become much more vocal and involved in policy issues that are of concern to grain farmers. Among the items with which the CWB has been involved are the rail revenue cap, railway service issues, the merger between CN and B.C. Rail, U.S and international trade challenges, and the merger between Agricore and UGG.

The CWB's ability to play a role in these policy issues is not surprising. To be effective at policy intervention, organizations require the technical capacity to engage in analysis and to fully understand the issues (e.g., the ability to hire trade lawyers), enough resources to be able to engage in policy debates over an extended period of time, and the ability to network with other groups to bring them on side. All three of these factors were at work in the discussions around the revenue cap, for example.²⁹ The CWB was successful in obtaining a revenue cap on rail shipments because it had the ability to research the question, to engage the policy makers on the issue over a period of time, and to bring other farm organizations on side to support a policy position.

The elimination of the CWB as it now exists would mean an end to advocacy activities. While a large farmer-owned grain company with substantial market share and size can play an important policy role (witness the success of the Saskatchewan Pool in policy during the early 1980s), for reasons presented above it is unlikely that a new CWB would ever be able to reach the size required to be effectively involved in policy and advocacy. Moreover, a number of the situations where the CWB has been effective are ones where its single-desk selling power played an important role. For instance, the fact that the CWB was the sole exporter of Canadian wheat and barley gave its position on railway service added weight.

Removal of the Freight Cap

One of the distinctive features of the grain handling and transportation system in Canada is the presence of a freight revenue cap on railway grain shipments. Under the cap, the total freight rate bill for grain shipments cannot exceed a specified amount. An important consequence of the freight revenue cap is that freight rates in Canada are generally lower than those over comparable distances in similar geographic regions in the United States. For instance, the freight rate from Winnipeg to Thunder Bay is roughly \$15 per tonne lower than the freight rate from Grand Forks to Duluth, even though the distances are very similar.

One of the effects of this freight rate differential between Canada and the United States is that, without adjustments of one type or another, millers in Canada would be at a disadvantage to their U.S. counterparts. To see this, suppose the price at Duluth/Thunder Bay is \$200 per tonne. Assuming a \$25 per tonne freight rate to Winnipeg, millers in Canada are looking at a price of \$175 per tonne. If they do not pay this rate, the grain will flow to the more lucrative export market. Millers in Grand Forks, however, are looking at a price of \$160 per tonne (recall that the freight rate is higher in the United States than in Canada). This lower price puts them at a competitive advantage relative to their Canadian counterparts.

To rectify this situation and level the playing field, the CWB has been setting different prices to the Canadian and U.S. millers. Although this price discrimination results in somewhat lower revenues to the pool accounts, it does ensure that Canadian millers are able to be competitive. The CWB has been able to practice this price discrimination because of its single-desk selling powers.

If the single-desk selling powers of the CWB were removed, the grain market would arbitrage the price differential described above in a number of ways. One method of arbitrage would be for grain to flow from the United States into parts of Western Canada and then be exported through the Canadian system in order to access the lower freight rates.³⁰ This movement would tend to bid up the price of grain in the United States and lower it in Canada. Prices would eventually settle at a point where there is no incentive to move grain into Canada. Depending on the magnitude of the price changes, the Canadian millers might find themselves competitive with their U.S. counterparts; it is also possible they might find themselves at a disadvantage.

If this latter situation prevails, considerable political pressure can be expected to remove the freight revenue cap in an effort to restore a level playing field for domestic millers. Similar political pressure might emerge if grain shipments from the United States through Canada were to become large.³¹ While the outcome of this lobbying cannot be foretold with certainty, there is a real possibility that the freight cap would be removed.

A second method of arbitrage (this outcome and the previous one are not mutually exclusive) would be for the grain companies to increase the basis between terminal position and local elevator points in Canada so that the basis included the transportation cost differential. This strategy would have the effect of eliminating the cost penalty faced by Canadian millers; it would also effectively eliminate the revenue cap (in effect, the grain companies would capture the benefits of the cap). Since farmers would no longer receive the benefit of the revenue cap, they would have little incentive to lobby for its continuation. As well, the railways could be expected to argue vigorously that the cap should be removed, since doing so would allow them to capture additional revenue, albeit at the expense of the grain companies.

The removal of the revenue cap is all the more likely given that there would probably be significant pressure on the Canadian government generally to harmonize policies with the United States in the area of grain handling and transportation. Indeed, since the elimination of the CWB's single-desk selling powers would create very similar marketing systems in both countries, the major players in the grain and transportation industry can be expected to lobby for essentially the same system on both sides of the border. Removal of the freight cap would be an important element of this harmonization.³²

Discussion of Impacts

The structural changes described above are likely to have an impact on the value obtained for Canadian grain and on the quality of Canadian grain sold to millers.

Value of Canadian Grain

A number of studies have determined that the CWB is able to capture additional revenue in what are generally referred to as high quality markets because of its single-desk selling powers.³³ Millers in a number of markets (for instance, Japan) are willing to pay a premium for Canadian grain because of its quality and consistency. The single-desk selling powers allow the CWB to capture this willingness to pay – since no one else has a supply of Canadian wheat, the CWB is able to demand and receive a higher price than would otherwise be the case. This added revenue – which is often referred to as monopoly rent – flows back to farmers through the pool accounts.

If the single-desk selling powers of the CWB were removed, Canadian grain would now be sold by a few large exporters, most likely the multinationals.³⁴ The

presence of multiple sellers would mean that the monopoly rents would no longer be captured, since these firms can be expected to bid against each other to sell into particular markets, thereby lowering the price and the revenue that is obtained. However, since the sellers would still be relatively few in number, some rents can be expected to be captured; these oligopolistic rents, however, can be expected to be less than the monopoly rents captured by the CWB.

To see this more clearly, consider what a tender out of Japan, the EU, or Iran would look like without the CWB's single-desk selling powers. The multinationals would consider all the supply sources they have, calculate where the best deal could be made for their company, and then price and source supplies accordingly. In contrast, the Australian Wheat Board would make a bid based on the best interest of Australian farmers. The result is that Canadian wheat would be traded off with wheat from a variety of countries, while Australian wheat would not. The result is that fewer rents would be obtained for grain from Canada.

Moreover, in addition to generating less revenue from the sale of Canadian grain internationally – which would have a direct effect on the value available for farmers – the removal of the CWB's single-desk selling powers would have an additional impact on the price returned to farmers. Without the CWB, the extra rents generated in the export market would only be partially returned to farmers. The factors that would determine the portion of the oligopoly rents distributed to farmers include the degree of competition present at the country elevator level (the greater the competition, the more of the rents that would be returned) and the overall supply of the high quality grain that is in demand in the high quality markets.

In most years, the supply of high quality grain produced on the Prairies far exceeds the demand by the millers in the so-called high quality countries. In this situation, and without the CWB as it is currently structured, the grain companies would not need to pay farmers a premium for this grain – they would be able to access all the high quality grain at the going market price. Thus, in most years farmers would not see the extra rents returned to them. However, in years when high quality grain is in short supply, a portion of the oligopoly rents would be returned to farmers as the grain companies try to obtain a supply.³⁵ A good example of this situation is in malting barley. Most years malt barley is in oversupply relative to the demand by the maltsters. However, the CWB is able to obtain a premium for malt barley because it is able to constrain supplies via the single desk. In the absence of the CWB, malting barley in most years would sell for essentially the same price as feed barley (there would be some small premium to reflect the transaction costs associated with marketing). Only in years when supply is constrained due to poor weather conditions would a premium emerge.

To recap, the elimination of the CWB's single-desk selling powers can be expected to lower the rents generated in the market and to lower the proportion of these rents returned to farmers. The result is that farmers can be expected to see reduced returns from the sale of Canadian wheat.

Deterioration in the Quality of Canadian Grain

The argument presented in the previous section assumes that the quality of Canadian grain would be maintained if the single-desk selling powers of the CWB were removed. However, one of the probable consequences of changing the CWB's powers is that the quality of Canadian grain would fall.

There are a number of reasons why this outcome might occur. In the short run, quality would likely fall as a result of the competition between, and the independence of, the various grain traders that are now selling Canadian wheat. Grain quality is a function of many factors and is determined by many players in the supply chain. Varietal type is, of course, important, as is the manner in which grain is handled and stored as it moves through the marketing system from the farmer to the miller. For instance, a high quality grain shipment can easily become contaminated at a particular stage if sufficient care and attention are not provided.

Currently, the CWB has a particular incentive to monitor and to pay attention to quality of the product as it moves through the system. Since the CWB receives all the revenue and incurs all the costs from the sale of the grain, it has an incentive to ensure that the system is working in a manner that the net revenue from the system is maximized. The incentive facing multiple grain firms involved in handling and marketing the grain is different, however – each firm is only interested in the net revenue that it is able to obtain. The consequence of this different perspective is that the incentive to maintain quality at all steps along the process diminishes.³⁶ Concern over quality emerged as an issue in Ontario recently when grains of different classes were mixed to capture a premium; this outcome is one of the areas where the removal of the single-desk selling powers of the OWPMB had a direct impact.³⁷

Research and Development

The removal of the CWB's single-desk selling powers would also have effects in a number of other areas. One is research and development (R&D) activities. Because wheat and barley are open-pollinated crops that can reproduce each year, private seed companies have little incentive to develop private varieties. As a result, public and producer funding of R&D for new varieties is critical. As a major player with a view of the entire system, the CWB currently is in a position to strongly influence the magnitude and the direction of the research that is undertaken. The removal of the single-desk selling powers would leave the industry without a body that would have the overview the CWB currently provides.

More generally, the removal of the CWB would create a vacuum of leadership in the Canadian grains industry, at least in the short run. While a body such as the U.S. Wheat Associates could be developed in Canada to coordinate R&D and market development activities, such a body does not exist today. Moreover, given the CWB's focused commercial interest, it plays a more effective role in market development and R&D than could an industry association that has to meet the goals of

many groups. As a consequence, one of the outcomes of the CWB's removal could well be less R&D, or R&D directed to only the major issues – issues that clearly have widespread support throughout the industry.

Concluding Remarks

Since the 1920s and the introduction of the grain pooling co-operatives in Western Canada, the Canadian grain handling and transportation system has evolved in a very different direction from that in the United States. The CWB has been a key element of this evolution. The changes that are proposed for the CWB would transform the Canadian grains industry, with the impact of this change felt in virtually every part of the system. The changes that would accompany the loss of the CWB's single-desk selling power would make the Canadian system more and more like that in the United States.

The price pooling system that has been in place for over 60 years would disappear and would be replaced by an open market system. Although the people and groups that are calling for the reform of the CWB are arguing for marketing choice, the proposed changes to the CWB would not generate this outcome – instead, only one marketing structure would survive.

The proposed changes to the CWB are likely the precursors to additional policy changes, all designed to harmonize the Canadian grain handling and transportation system with that in the United States. The freight revenue cap, for instance, is a unique Canadian policy response to the issue of the market power possessed by the railways. Because the existence of this policy in Canada creates a disadvantage to the railways and the millers that is not experienced in the United States, considerable pressure will be exerted to have this policy changed so that it is more in line with U.S. practices. The outcome of this harmonization would be higher freight rates for farmers in Canada.

In short, the changes that are proposed for the CWB call for a very different vision for the grains and oilseed sector than has been in place for over half a century. It is important that all participants in the system have and take the opportunity to express their views on which vision is the most appropriate. As this paper has demonstrated, the choice of vision is not one that farmers can make each day independently of what other farmers do. If the decision is to retain the CWB, then all farmers have to operate under this system; similarly, if the decision is to remove the CWB, then all farmers have to operate under the resulting open market. Ideally, the choice is one that Western farmers should make democratically as a group. If the choice is to remove the single-desk selling powers of the CWB, it needs to be understood that this choice is likely irreversible. The likelihood of replacing an open market system with a single-desk selling system is very small, in part because of the cost of doing so and in part because the political will that would be required for such a change would be immense.

References

- Agriculture and Agri-Food Canada. 2006a. *Minister Strahl Announces Task Force On Implementing Marketing Choice For Wheat And Barley*. Press Release. September 19. Ottawa.
URL: http://www.agr.gc.ca/cb/index_e.php?s1=n&s2=2006&page=n60919c.
- Agriculture and Agri-Food Canada. 2006b. *Canada's New Government to Listen to Farmers With Plebiscite on Barley*. Press Release. October 31. Ottawa.
URL: http://www.agr.gc.ca/cb/index_e.php?s1=n&s2=2006&page=n61031.
- Attwood, D.W. and B.S. Baviskar, Eds. 1988. *Who Shares? Co-operatives and Rural Development*. Delhi: Oxford University.
- Baviskar, B.S. and D.W. Attwood. 1995. *Finding the Middle Path: The Political Economy of Cooperation in Rural India*. Boulder & London: Westview. New Delhi: Sage.
- Brandenburger, A.M. and B.J. Nalebuff. 1996. *Co-opetition*. New York: Doubleday.
- Canadian Grain Commission. 2006. *Grain Elevators in Canada*.
URL: <http://www.grainscanada.gc.ca/Pubs/GrainElevators/geic-e.htm>
- Canadian Wheat Board. 1995. *Grain Matters: A Letter from the Canadian Wheat Board*. September – October.
- CWB Board of Directors. 2006. *Harvesting Opportunity: Strengthening farmers' competitive advantage. Proposal to the Government of Canada*. Canadian Wheat Board: Winnipeg.
- Davies, Susanna. 1986. "The Grain Trading Companies." In *The International Grain Trade: Problems and Prospects*. Nick Butler, ed. London: Croom Helm.
- Dobson, C. and A. Duering. 2005. *Ontario's Wheat Industry With Direct Marketing*. Alberta Agriculture, Food and Rural Development. Economics and Competitiveness Division. Competitiveness Unit. October.
- Donville, C. 2006. "Saskatchewan Wheat Pool to Make Offer for Agricore." Bloomberg.com.
URL: http://www.bloomberg.com/apps/news?pid=20601082&sid=a_A.18Tc5teo&refer=canada
- Ewins, A. 2006a. "Decades of elevator closures at end." *Western Producer* June 22.
- Ewins, A. 2006b. "Producer car shipments becoming more common." *Western Producer* July 6.
- Fairbairn, G.L. 1984. *From Prairie Roots: The Remarkable Story of Saskatchewan Wheat Pool*. Western Producer Prairie Books: Saskatoon, Saskatchewan.
- Friedlaender, Ann E. 1969. *The Dilemma of Freight Transport Regulation*. Washington D.C.: The Brookings Institution.
- Fulton, M. 1996a. *Dual Marketing and the Decisions Facing Western Canadian Farmers for Wheat and Barley Marketing*. Submission to the CWB Charter Challenge Case. Federal Court of Canada T-2473-93.

- Fulton, M. 1996a. *Rebuttal to Dr. Colin Carter*. Submission to the CWB Charter Challenge Case. Federal Court of Canada T-2473-93.
- Fulton, M. 2005. "Producer Associations: The International Experience." (eds) Bernard H. Sonntag, Jikun Huang, Scott Rozelle and John H. Skerritt. *China's Agricultural and Rural Development in the Early 21st Century*. Canberra: Australian Centre for International Agricultural Research.
- Fulton, M., B. Larue, and M. Veeman. 1999. "The Impact of Export State Trading Enterprises Under Imperfect Competition: The Small Country Case." *Canadian Journal of Agricultural Economics* 47(4): 363-73.
- Furtan, W.F. and M. Fulton. 2000. *An Alternative Approach to the Resolution of Canada-United States Disputes Over the Canadian Wheat Board*. NDSU Conference on Agricultural Trade Under CUSTA, Fargo, North Dakota, October 27.
- Good, M. and G. Gilchrist. 2006. *A Discussion on the Choice of a Business Structure Facilitating Marketing Choice*. Alberta Agriculture, Food and Rural Development. April.
- Hyden, G. 1993. "Approaches to Co-operative Development: Blueprint Versus Greenhouse." Chapter 6 in D.W. Attwood and B.S. Baviskar (eds.), *Co-operatives and Rural Development*. Delhi: Oxford University Press.
- Hammonds, T.M. 1976. *Cooperative Marketing Pooling*. Circular of Information 657, Agricultural Experiment Station, Oregon State University (November).
- Hayenga, M. and R. Wisner. 1999. "Cargill's Acquisition of Continental Grains' Grain Merchandising Business." Staff Paper #312. Department of Economics, Iowa State University, Ames, Iowa.
- Hennessy, D.A., J. Roosen, and J. Miranowski. 2001. "Leadership and the Provision of Safe Food." *American Journal of Agricultural Economics* 83(4): 862-74.
- Hill, Lowell D. 1992. "Part Five – The United States: Grain Marketing, Institutions, and Policies." In *The World Grain Trade: Grain Marketing, Institutions and Policies*. Michael J. McGarry and Andrew Schmitz, eds. Boulder: Westview Press.
- JRG Consulting Group. 2006. *Canadian Wheat Board Transition Project*. Report prepared for Alberta Agriculture, Food and Rural Development. Contract # 378-06. Prepared by a consortium led by JRG Consulting Group. February.
- Kennett, J., M.E. Fulton, P. Molder, and H. Brooks, 1998. *Supply Chain Management: The Case of a UK Baker Identity Preserving Canadian Milling Wheat*. *Supply Chain Management: An International Journal*, 3(3): 157-166
- Kraft, D.F., W.H. Furtan, and E.W. Tyrchniewicz. 1996. Performance Evaluation of the Canadian Wheat Board. January.
- Lang, K. and M. Fulton. 2004. "Member Commitment and the Market and Financial Performance of the Saskatchewan Wheat Pool." *Current Agriculture, Food and Resource Issues*. 5: 238-252. Available at www.cafri.org.

- Lavoie, N. 2005. "Price Discrimination in the Context of Vertical Differentiation: An Application to Canadian Wheat Exports." *American Journal of Agricultural Economics* 87(4): 835-54.
- Lin, J. Y. 1990. "Collectivization and China's Agricultural Crisis in 1959-1961." *Journal of Political Economy* 98(6): 1228-58.
- Migie, H., M. Bast, B. Brindle, R. Davies, J. Groenewegen, B. Johnson, and P. Orsak. 2006. *Marketing Choice – The Way Forward. Report of Technical Task Force on Implementing Marketing Choice for Wheat and Barley*. October 25.
URL: http://www.agr.gc.ca/cb/index_e.php?s1=ip&page=ip61030a.
- Office of the United States Trade Representative. 2004. *U.S. Wins Key Issues in WTO Wheat Dispute with Canada*. Washington.
URL: www.ustr.gov/Document_Library/Press_Releases/2004/April/US_Wins_Key_Issues_in_WTO_Wheat_Dispute_With_Canada.html
- Posner, Richard A. 1975. "The Social Costs of Monopoly and Regulation." *Journal of Political Economy* 83: 807-27.
- Schmitz, A., R. Gray, T. Schmitz, and G. Storey. 1997. *The CWB and Barley Marketing: Price Pooling and Single-Desk Selling*. Canadian Wheat Board. January.
- Schmitz, A. and H. Furtan. 2000. *The Canadian Wheat Board: Marketing grain in the new millennium*. Regina: Great Plains Research Centre.
- Sexton, R. and H. Hariyoga. 2004. "The canning of Tri Valley: What went wrong at Tri Valley Growers, and what can other co-ops learn from it?" *Rural Co-operatives*. 71(5): 20–24.
- Smith, D.K. and Wallace, H.N. 1990. *Cooperatives in California Agriculture*. United States Department of Agriculture, Agricultural Cooperative Service, ACS Research Report Number 87, Washington, D.C.
- Stigler, G.J. 1975. *The Citizen and the State: Essays on Regulation*. Chicago, IL: University of Chicago Press.
- White, E. 2006. "Wheat board battle casts shadow over port of Churchill." *Western Producer*. October 26.
- WTO, 2006. *Canada – Measures Relating to Exports of Wheat and Treatment of Imported Grain*. World Trade Organization. Dispute DS276.
URL: http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds276_e.htm.

Appendix A³⁸

The operation of a successful or viable pool depends on the interaction of at least three factors: (1) the pool being able to attract a significant market share, (2) the market share being stable, and (3) the pool not operating with a deficit.

Market Share and Market Variability

The abilities of a pool to attract both a significant and a stable market share are closely related. Research shows that a co-operative's ability to attract a significant and stable market share can be linked to seven explanatory factors. Co-operatives are more likely to be successful when the following conditions are observed:³⁹

- (1) A large investment is required for preprocessing and processing
- (2) There are few growers with volumes large enough to capture processing economies of scale
- (3) Crop production requires fixed investments committed over several years
- (4) There is considerable flexibility in harvesting and storing the raw product
- (5) Useful grades can be defined and prices can be pooled over marketing periods
- (6) Costs of marketing can be spread over a longer season
- (7) Growers make marketing decisions infrequently and/or when individual marketing decisions cannot earn higher returns.

If a number of these factors are not present, then farmers will find it more advantageous to either sell or process their production as individuals, rather than on a group basis through a co-operative. The lack of these factors thus gives farmers little incentive to use a co-operative (thus translating into a low market share). In addition, when farmers do use a co-operative, it is because it is strategically advantageous to do so (thus translating into a variable market share).

A number of the factors required for successful pooling are not present in the case of wheat and barley in Western Canada. Most importantly, grain farmers are able to access markets (for example, at the local elevator or at a distant grain mill) without a significant investment and without having to have large volumes of grain. As well, wheat and barley production specifically do not require fixed investments committed over several years. Although crop production in general does require such investments, farmers can use these investments to produce a wide range of crops, including wheat, barley, oats, canola, lentils, peas, and other specialty crops.

Since grain farmers are able to access markets without a significant investment and without having to have large volumes of grain, there is little incentive for farmers to commit themselves to a price pooling organization. Hammonds makes the same point in his study of co-operative market pooling: "Any cooperative or other body initiating a market pool must be certain it can provide a special service or expertise that is truly beyond the reach of individual growers, if sustained success

is to be assured. Evidence is conclusive that merely combining the crop volume of a number of growers for marketing purposes is not enough. The successful operations studied capitalized on one or more special advantage(s) they developed to differentiate their role in the marketing of the agricultural commodities with which they are identified” (p. v). The special advantages identified by Hammonds include specialized grading services offered by the co-operative, brand-name products at the consumer level, quality control programs offered by the co-operative, and substantial vertical integration. The research on California co-operatives supports this conclusion, since California co-operatives have been uniquely successful in moving into processing, vertical integration, and brand-name products at the consumer level.

The opportunity for co-operatives to provide special services is, of course, highly dependent on the market share and market share stability the co-operative is able to achieve. A large and stable market share means the co-operative will be able to exploit economies of scale, thus enabling it to attract further market share. However, the opportunities for co-operatives to develop economies of scale differ from commodity to commodity.⁴⁰ For instance, since the sale of fresh vegetables involves very little processing, individual growers are in as much of a position to supply fresh vegetables to markets as is a collection of growers. As a result, it is expected co-operatives would have trouble attracting and maintaining membership, since they can offer very little in comparison to what individuals could provide acting alone. As the evidence from California shows, co-operative activity in fresh vegetable marketing is very low. In contrast, packing and advertising almonds or raisins is an activity that is costly to carry out by individual growers, but can be done much more inexpensively by a co-operative. Almonds and raisins are two commodities in which co-operatives have a significant market share (Smith and Wallace).

A wheat or barley pool in Western Canada is unlikely to provide any special advantage compared to what can be offered through other marketing channels. For instance, in the domestic market, farmers would be able to deliver directly to a flour mill without going through the pool; hence the pool is unable to provide any special service. As well, unless the pool could obtain a significant portion of the production, it would not be able to obtain any price premium in the international market relative to what other grain sellers would be able to obtain.

The result is that a wheat or barley pool would be unable to attract a significant or stable market share. The consequence is a vicious downward spiral, where the lack of opportunities for economies of scale means a low and variable market share, which in turn results in a lack of opportunities for economies of scale. With a low and variable market share, a wheat or barley pool is not viable.

An example of the importance of the need for market share stability is provided by the 1994/95 barley market experience in Canada. Lower than expected stocks, higher domestic usage, and lower than expected world production created a situation where the cash market was driven dramatically upward. The result was that deliveries to the pool were reduced. As a result of losing deliveries to the pool, the CWB was forced to forgo sales in a rising market environment. This, in turn,

resulted in a reduction of the pool price, as sales at the higher prices were forgone (Canadian Wheat Board). As was discussed above, market share variability gives rise to a vicious downward spiral.

Deficits

A grain pool operating in a dual market will also have a problem with deficits. A price pool can avoid a deficit by not providing farmers with an initial price. This strategy, however, will have the consequence of significantly reducing the volume of grain the pool can expect to receive. If farmers have to wait until the pool period is over to receive payment, they will bypass the pool and sell to the cash market, unless, of course, the pool can generate a substantially higher price. There is no reason to suspect that a new CWB will be able to attract a higher price than its competitors, particularly when these competitors include multinationals with marketing agents in virtually every market in the world.

To increase the likelihood of obtaining a sizable and stable market share, the pool can offer an initial price; the higher this initial price, the bigger and more stable the expected market share. However, if the initial price is set too high, the pool will run the risk of incurring a deficit. For instance, if market prices drop below the initial price, farmers can be expected to deliver to the pool. Unless the pool is able to hold the stocks they accumulate during this period and sell them later when the price has risen (such a strategy is extremely risky, however, for grain prices could fall, thereby increasing the deficit), the pool will run a deficit.

A new CWB operating a price pool would not be able to take the risk of running a deficit, even for a year. The reason has to do with the financing of the deficit. The deficit would not be financed by the government; if it were, strong objections would be raised by both the private grain trade and by other grain trading countries. The private grain trade would object because they would see such funding as the subsidization of the grain pool, thus making sales through them less attractive. Other grain trading countries would object because under the World Trade Organization (WTO) such funding would be viewed as a form of a direct agricultural subsidy. If funding for deficits were provided by check-offs on grain delivered to the pool, farmers would be that much less willing to deliver to the pool because the pool price would be reduced by the amount of the check-offs.

Conclusion

In a dual market, a wheat or barley pool in Western Canada would be unable to provide the special advantages that are required to make a pricing pool viable. This inability to offer special advantages gives farmers little incentive to deliver to the pool except when it is strategically advantageous to do so. This translates into a low and variable market share. Combined with a need to avoid deficits (which further weakens a co-operative's ability to operate a pool), the conclusion is that a dual market for wheat and barley would not be viable in Western Canada.

Endnotes

1. See Agriculture and Agri-Food Canada (2006a) for the announcement of the creation of the task force. See Migie et al. for the full report.
2. Section 47.1 of the *Canadian Wheat Board Act* reads:

47.1 The Minister shall not cause to be introduced in Parliament a bill that would exclude any kind, type, class or grade of wheat or barley, or wheat or barley produced in any area in Canada, from the provisions of Part IV, either in whole or in part, or generally, or for any period, or that would extend the application of Part III or Part IV or both Parts III and IV to any other grain, unless

 - (a) the Minister has consulted with the board about the exclusion or extension; and
 - (b) the producers of the grain have voted in favour of the exclusion or extension, the voting process having been determined by the Minister.
3. See Agriculture and Agri-Food Canada (2006b).
4. See CWB Board of Directors for an overview of the changes that the CWB has proposed.
5. This goal was outlined in the Minister of Agriculture's announcement of the task force. See Agriculture and Agri-Food Canada (2006a).
6. The CWB's single-desk selling powers are found in section 45 of the *Canadian Wheat Board Act*. This section reads:

45. Except as permitted under the regulations, no person other than the Corporation shall

 - (a) export from Canada wheat or wheat products owned by a person other than the Corporation;
 - (b) transport or cause to be transported from one province to another province, wheat or wheat products owned by a person other than the Corporation;
 - (c) sell or agree to sell wheat or wheat products situated in one province for delivery in another province or outside Canada; or
 - (d) buy or agree to buy wheat or wheat products situated in one province for delivery in another province or outside Canada.
7. Good and Gilchrist examine the use of a traditional co-operative, a new generation co-operative, and a business corporation as organizational vehicles for a new Canadian Wheat Board. The implicit assumption in their paper is that the CWB will be restructured as a new organization.
8. The list of countries where co-operatives were formed by government as part of a national policy to use this organizational form as a development tool is long; it includes the likes of India, Kenya, and Tanzania. The experience of China in the 1950s when Mao mandated the formation of village co-operatives (they

eventually became the village communes) would also fall into this category. In all instances the co-operatives that were formed failed. For a discussion of the East Africa case, see Hyden, Attwood and Baviskar, and Baviskar and Attwood examine the India case, while Lin examines collectivization in China. For a general overview of the conditions necessary for the formation of farmer-owned business organizations, see Fulton (2005).

9. For a discussion of the role of member commitment in co-operatives and particularly the Saskatchewan Wheat Pool, see Lang and Fulton.
10. JRG Consulting Group provides an overview of these various options. A new CWB that is formed to act as an agent for sellers of Canadian wheat or as an agent for buyers of Canadian wheat is unlikely to be owned by a group of farmers (unless these farmers are first and foremost strictly investors, in which case the organization would effectively be owned by a group of investors). The reason is that such organizations would provide very little, if any, direct benefit to farmers. As a result, there would be no incentive for farmers to create such organizations, other than as an investment vehicle.
11. This reluctance by companies to allow others to use their network/dealership even applies within a company. Case tractors, for instance, are not sold through New Holland dealerships, nor vice versa.
12. See Ewins (2006a) for an overview of the DBRS report and quotes from industry sources, including the one by Brian Hayward.
13. Even if there were excess capacity in the system, it is not a given that the grain companies would use sales through a new CWB as a way of competing. While competition can be expected to be stronger the greater is the excess capacity, the companies may try to attract grain to their elevators by using incentives such as better grades or trucking subsidies rather than by using the CWB.
14. There is historical evidence from the Canadian grain industry that a farmer-owned marketing agency cannot operate without grain handling facilities. The co-operative grain marketing companies that were formed in 1923 and 1924 (they eventually became known as Alberta Wheat Pool, Saskatchewan Wheat Pool and Manitoba Pool Elevators) were often denied handling agreements with existing elevator companies – even those that were co-operatively owned. As a result, the prairie Pools constructed and acquired their own elevators (Fairbairn, p. 58).
15. See Donville for details.
16. A possibility that needs to be mentioned is that one or more of the existing grain handling co-operatives in the United States might move northward and take on new members and new facilities. While there is some experience with international co-operatives (e.g., those with members in more than one country) in Europe, there is very little experience in North America, thus making this outcome problematic. If a U.S. co-operative were to come to

Canada, it would be expected to operate in a fashion similar to how it operates in its home country. The result, of course, would not be the creation of a new CWB. As well, even a large international co-op located in North America is unlikely to be able to compete effectively with the multinationals in the international market – the co-op would simply not have enough diversity of supply to play on equal terms with the multinationals. For more on the role of the multinationals in the international grain trade, see the discussion below.

17. The international grain trade is highly concentrated. Hayenga and Wisner, for instance, report figures that indicate that, in the 1990s, 81 percent of U.S. corn exports went through the facilities of the top four firms; these same firms accounted for 65 percent of U.S. soybean exports. For wheat, the top four firms handled 47 percent of U.S. exports. All multinationals operate extensive information and market intelligence networks. They also operate vast networks of storage, handling, and transportation facilities that allow them to co-ordinate various aspects of grain distribution and handling (Davies). Proprietary assets such as information networks and personnel with specialized knowledge of the international market provide incumbent trading firms with economies of scale and cost advantages, which in turn implies that these firms possess market power (Fulton, Larue and Veeman). Although multinationals dominate international markets, they compete in national markets with co-operatives, national trading companies, and on occasion, state trading enterprises (Hill, Davies). The result is that, at the country elevator level, competition ranges from very high to very low (Hill).
18. See Dobson and Duering.
19. The 1994/95 barley market experience in Canada is a good example of this problem. Lower than expected stocks, higher domestic usage, and lower than expected world production created a situation where the cash market was driven dramatically upward. The result was that deliveries to the pool were reduced. As a result of losing deliveries to the pool, the CWB was forced to forgo sales in a rising market environment. This, in turn, resulted in a reduction of the pool price, as sales at the higher prices were forgone (Canadian Wheat Board).
20. See Smith and Wallace for details on these pools. Tri-Valley Growers is no longer in operation; it filed for bankruptcy in 2000. The failure of the co-op was not due to its pooling practices, but rather to its inability to properly position its tomato processing operations to reflect changes in the industry (Sexton and Hariyoga).
21. For information on the Landmark/Ohio Farm Bureau pool, see Hammonds.
22. Dobson and Duering provide a more complete analysis of the OWPMB and the price pools.
23. For a detailed case study of Warburtons, see Kennett et al.

24. Articles by Stigler and by Posner are the classics in this literature. Friedlaender examines the impact of regulation on the rail industry in the United States and argues that railways were often able to use regulation to their benefit.
25. A CR4 ratio (the percentage of the total market represented by the four largest firms together) of 0.50 is indicative of a reasonable degree of concentration. For details on storage capacity of licensed primary elevators in Western Canada, see Canadian Grain Commission.
26. In the early years of the tendering process, the CWB tried tendering 50 percent of the grain movement. This amount was too high – the producer-owned terminals often found themselves unable to compete with the large grain companies such as Saskatchewan Wheat Pool and Agricore United, which were very aggressive in their bidding. As a consequence, the CWB dropped the tendering amount to the 20 to 25 percent range to ensure that the producer-owned terminals were able to remain viable and independent.
27. A recent article in the *Western Producer* examines this issue (White). In the article, Bill Drew, the executive director of the Churchill Gateway Development Corp., said the grain companies have shown little interest in using the port. “Most grain companies have their own facilities either in the St. Lawrence Seaway or in Vancouver. They have an economic incentive not to direct their sales through Churchill.”
28. As Ewins (2006b) reports, the number of producer cars shipped by prairie farmers could surpass 10,000 in 2005/06, the highest total in 13 years.
29. The revenue cap was proposed by CP Rail during the Estey Review (the Estey report was released in December 1998) as a policy instrument to replace the maximum rate cap. The CWB was instrumental on the revenue cap issue as a result of its work on railway productivity sharing during the Kroeger process (May to September 1999). The CWB study in June 1999 was important in getting the federal government to ask the Canadian Transportation Agency (CTA) to do a railway productivity sharing study (July 1999). The results of the CWB and CTA studies showed that the railways had achieved significant productivity savings since the last costing review in 1998, and had not shared enough of these gains with shippers. As a result of these studies, the federal government reduced freight rates \$5.92 per tonne when the revenue cap was introduced on August 1, 2000. This amounted to savings of \$178 million for Prairie farmers. The CWB also played a role in ensuring that revenue from bid cars was counted as revenue for purposes of calculating the revenue cap.
30. As a result of Canada’s compliance with a 2004 World Trade Organization (WTO) ruling, it would be legal for Canadian grain companies to source and handle U.S. grain separately, exporting it through the Canadian system at the rate cap (see WTO). See Office of the United States Trade Representative for the U.S. reaction to this ruling.

31. Grain shipments through Canada need not be large for arbitrage to occur, so it cannot be determined in advance if grain shipments would indeed increase.
32. There has been some discussion in policy circles of a much greater policy harmonization with the United States, one that would go beyond the establishment of uniform policies with respect to grain handling and transportation and involve Canada adopting a U.S.-style Farm Bill, complete with large subsidies that would be made available to farmers (see Furtan and Fulton for an examination of this policy option). Such a policy change would have major implications for the entire grain industry and might influence farmers' preferences regarding the structure of the CWB if they could be assured that this change would occur. However, such assurance is almost impossible to provide, particularly since the Government of Canada has shown no interest in linking this policy change with a change in the structure of the CWB.
33. These studies include Kraft, Furtan, and Tyrchniewicz; Schmitz, Gray, Schmitz, and Storey; and Lavoie. Schmitz and Furtan provide a good overview of the premium issue.
34. See the discussion above for more details on multinationals' role in the international grain trade.
35. The situation described here is explored in a more general framework in the book *Co-opetition* by Brandenburger and Nalebuff. Multiple sellers of a product will have equal bargaining power with a single buyer when the supply held by the multiple sellers just meets the demand by the single buyer. The bargaining power of the multiple sellers falls, however, when they have an excess supply of the product.
36. Hennessy argues that the overall quality of the food produced in food production systems that involve many interacting stages and multiple decision makers can be enhanced through leadership by one or more firms. This leadership can take the form of adherence to standards, for instance. Without leadership, it may be necessary to establish liability through legislation in order to generate a high quality output. In the current system, the CWB can be viewed as being the leader.
37. See Dobson and Duering.
38. The material in this section is taken from Fulton (1996a, 1996b).
39. See Smith and Wallace for further details.
40. See Smith and Wallace.

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