

Performance Evaluation
of the
Canadian Wheat Board

Daryl F. Kraft¹, W. Hartley Furtan², Edward W. Tyrchniewicz³

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¹ Professor, Department of Agricultural Economics and Farm Management, University of Manitoba

² Professor, Department of Agricultural Economics, University of Saskatchewan

³ Dean, Faculty of Agriculture, Forestry and Home Economics, University of Alberta

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Executive Summary

Purpose of the Study

This study is an attempt to document and analyze the Canadian Wheat Board (CWB) system of marketing wheat. An external analysis of the CWB's performance in the market place has not been conducted recently for presentation to producers. Nor has the CWB system of marketing been explained relative to a system of multiple sellers, i.e., voluntary pooling or no CWB.

The primary purpose of this report is to carry out a review of the economic performance of the CWB in the Hard Red Spring wheat market in order to answer some of the questions farmers have raised. The primary questions addressed in this report are as follows:

- 1) How well has the CWB done in pricing prairie wheat compared to the export competition from the United States, the European Union (EU), Argentina and Australia over the 1980/81 to 1993/94 crop years?
 - 2) What has been the value of single-desk selling to farmers over the 1980/81 to 1993/94 crop years? That is, if the CWB monopoly on exports had not been in place, what would have been the likely prices received by farmers relative to those achieved by the CWB?
 - 3) What is the economic efficiency of the CWB in terms of what is commonly called marketing costs? That is, what are the costs of marketing wheat through the CWB, relative to costs of non-CWB grains in Canada, specifically, canola and flax?
 - 4) What is the performance of the CWB in market development activities in a rapidly changing world trade environment? Specifically, how has the CWB performed in an import wheat market, like Brazil, which has liberalized its import regulations from a single import agency to unregulated imports?
 - 5) What is the institutional nature of the CWB and what does this infer for its stakeholders?
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CWB Marketing Premium

The report examined in detail the prices received by the CWB for Canada Western Red Spring (CWRS) wheat over the 1980/81 to 1993/94 crop years. The price for every CWB contract signed and executed was compared to the competitive price of similar wheat. Sales of all No. 1, 2, and 3 CWRS were examined to determine if a premium or discount was achieved by the CWB relative to the prices for comparable wheat. This was done for wheat sold to export customers, foreign aid donors, and domestic users. The results show that CWB marketing averaged an increase to the wheat pool account of \$13.35 per tonne, or \$265 million per year for the 14 year period, over what would have been realized by multiple sellers.

Premiums varied according to buyers, grades of wheat, available supplies and the timing of sales. Some buyers consistently paid higher premiums. A number of factors have a bearing on buyers willingness to pay more. They include, year to year reliability of supplies, not wanting to depend upon one dominant supplier, availability of technical support services and quality control in terms of the consistency of Canadian wheat. Premiums were largest for 1CWRS and declined with lower grades. Premiums increased when world stocks were relatively low and the offers for 1CWRS rose even more when North American supplies of higher quality wheat were low. Logistical constraints require the CWB to book more sales during some months and buyers seem to recognize this as one factor as premiums were smaller whenever more wheat was sold.

Some buyers of 1CWRS were unwilling to pay a premium above the cost of comparable wheat. Whereas the CWB can offer wheat for sale to these customers without a premium and receive a premium from other buyers, multiple sellers are unable to differentiate between buyers. Multiple sellers are capable of capturing a premium if all buyers are willing to pay more. When bids from some buyers are at prices equal to comparable wheat sold elsewhere in the world, and multiple sellers offer to sell Canadian wheat at this price, then all sales will be conducted at competitive prices. The average wheat premium of \$13.35 per tonne realized over the period 1980/81 to 1993/94 is linked primarily to single-desk sales at prices above comparable wheats.

Further analysis evaluated single-desk selling in an export subsidy environment. A second premium determine was made where the CWB marketing system was compared with the workings of a multiple-agent market during the Export Enhancement Program (EEP) period of 1985/86 to 1993/94. An assumption was made that if the multiple sellers exported Canadian wheat, they would offer wheat at prices necessary to complete sales to EEP markets. This is consistent with what happened in Argentina. Two scenarios with respect to the size of the EEP subsidy were analyzed; namely the maximum EEP subsidy, and the average EEP subsidy that were present in the market at the time of each sale. In the case of the average EEP, the CWB sold wheat for an additional \$27.84 per tonne over what multiple sellers would have realized. In the case of the maximum EEP, the CWB extracted an additional \$34.50 per tonne.

The premium linked to single-desk selling increased under an export subsidy environment because the CWB offer prices can account for the export subsidy a buyer is eligible

to receive. In most years, nearly half of the buyers were not eligible for an export subsidy. In these cases, the CWB tenders prices in relationship to the prices quoted for commercial sales. Multiple sellers are unable to differentiate between commercial and subsidized buyers. Assuming the law of one price, as long as some Canadian wheat is sold to markets eligible for export subsidies, the prices quoted to all buyers will be at the lower levels. Therefore, the additional premiums in the EEP period reflects the higher prices the CWB realized from the non-subsidized markets where multiple sellers are assumed to receive subsidy-reduced prices on all sales. These revenues were estimated to be between \$557 million and \$690 million per year for the period 1985/86 to 1993/94.

Marketing Costs

From the time grain is delivered to a Prairie country elevator until it is deposited in an ocean-going vessel, a number of marketing services are undertaken. While the services are essentially the same for wheat, barley, canola, flax and rye, the means of payment differs for wheat and barley. Neither farmers, nor the CWB, own handling or transportation facilities (with the exception of some hopper cars in the case of the CWB). Instead, these services are contracted directly. Each service performed involves a user fee. For most of the other grains and oilseeds (rye, flax, canola, etc.), grain companies buy the grain in the country and pay user fees for only the services they do not perform themselves.

A comparison of the marketing costs for western Canadian wheat relative to other grains in the Prairies is necessary in order to assess whether the costs would change if many grain companies bought and sold wheat compared to the single-desk management by the CWB. The primary difference between the single-desk and a multiple-agent setting, is not user fees versus imputed margins, but the nature of risk and the cost of managing risk under the two systems. To the extent that the nature of the financial risk borne by the marketing agency differs, the costs are likely to reflect any differentials.

In a multiple-agent setting, a grain business operates on the margin determined according to the prices for which grain is bought and sold. Unless purchases and sales can be matched immediately with a known margin, the organization must manage the price risk if the expected margin is to be realized. A commodity with more day-to-day price variation, as well as uncertainty in finding a buyer, will normally require a larger margin. Forward futures contracts are designed to share the price risk with another party. Their effectiveness in reducing risk to the grain company varies according to the efficiency of the futures market and the grain handling system.

The CWB acts as an agent for the farmer. While a majority of the value of the grain is paid to the farmer at the time of delivery, the CWB does not have to manage the price risk of the inventory purchased. The initial payment is underwritten by the Government of Canada and the

remaining value of the grain is effectively a form of equity capital transferred to the CWB by farmers. These monies can be thought of as a self insurance premium. If there are no unexpected claims (price and/or cost changes) the funds remaining upon the closing of the pool account are returned through a final payment. While the CWB must manage its exposure to risk in terms of currency prices and interest rates, it is not necessary to manage price uncertainty in terms of the inventory value of wheat and barley.

Risk management costs for canola and flax were determined after deducting visible marketing costs (handling, dockage, storage and carrying costs) from the country basis (nearby futures price less the price received by farmers). Between 1980/81 and 1993/94, the average risk management costs for flax and canola were \$17 per tonne and \$19 per tonne, respectively. Canola futures prices have tended not to converge with cash prices in the delivery months. Since the instore cash values have traded at a relatively higher discount to the nearby futures, the risk management premium determined for the four years from 1990/91 to 1993/94 was adjusted to reflect the lower instore price of canola. This adjustment reduced the risk management costs over the four years from \$16 per tonne to \$9 per tonne. The combined CWB risk management costs were \$1.03 per tonne, \$0.32 per tonne and \$2.50 per tonne for administration, demurrage and deficit allowance, respectively.

The differences in cost reflect the marketing systems. In one case, farmers and the government assume the risk of price variability. Day-to-day price risk is shared through pooling of sales revenues over the course of the year. In the case of flax and canola, the grain companies manage the price variability and demurrage risk through the margin between their purchase and selling prices. The amounts imputed for managing price risk suggest the business of buying and selling Canadian oilseeds is still risky in spite of forward contracts designed to mitigate the uncertainty. A precise measurement of the risk premium was not possible without knowing the actual values realized by the grain companies when flax and canola were sold to end users. These prices are not transparent. To the extent that the futures contract values exceed realized cash prices the imputed risk premiums are too large. The risk management costs for oilseeds, however, are unlikely to be below the CWB management costs because of the manner in which risk is shared in pool account.

Market Development Case Study - Brazilian Wheat Market

For 30 years, Brazil has been an important and regular purchaser of western Canadian wheat. When Brazilian wheat imports were privatized in May 1990, some market observers thought that Canadian sales could suffer, as private Brazilian wheat importers took advantage of the open market to increase purchases from private wheat trading companies. In the period following market liberalization, Canada has maintained its market share while U.S. sales have decreased.

This study uses two sources of information, namely quantitative and qualitative data. The quantitative data highlighted the following:

- 1) Wheat is the main Brazilian grain import and imports are expected to grow slowly.
- 2) Argentina, Canada, the United States and the European Union account for most Brazilian imports.
- 3) Argentina has a relative advantage supplying the Brazilian wheat market due to locational advantages and preferential tariff treatment; and
- 4) Canadian wheat sales to Brazil have averaged over one million tonnes per year, giving it roughly 20 to 25 percent of the market. In contrast, sales from the United States have declined to negligible levels.

The qualitative data collected through interviews show the following:

- 1) The Brazilian milling industry has passed through a period of significant rationalization in terms of size, location and industrial strategy.
- 2) Brazilian millers organized themselves into buying groups and the three largest buying groups account for over 80 percent of Brazilian wheat purchases.
- 3) The CWB has positioned western Canadian wheat in the Brazilian market as a premium-quality product, used primarily to improve milling quality; and
- 4) The CWB receives premiums relative to other importers because of consistency of quality from shipment to shipment, the predictable performance of wheat in terms of milling and baking, the year to year reliability of the CWB in sourcing supplies, and the technical support available to assist Brazilian customers.

The single-desk selling system in Canada is viewed as something that facilitates transactions and is regarded by Brazilian buyers as a key to the confidence and reliability of purchasing wheat from Canada. It should be emphasized these findings are related to the Brazilian market and perceptions of Brazilian buyers about the CWB and western Canadian wheat quality. It should not be interpreted as an overall endorsement of single-desk selling from other importers. It does, however, document the performance of the CWB in serving an important export market which has moved from a single-desk buyer to many buyers.

Institutional Framework for the CWB Marketing System

The Canadian Wheat Board Act is a form of collective action by government and farmers that provided the legislation required to operate the CWB.

Farmers are required by law to market through the CWB. In such situations, voice is important. Limited farmer input in setting the direction of the CWB could lead to a situation where the stakeholders, who would otherwise be strong supporters of the objectives and operations of the CWB, may want to exit the system. The issue of voice is essential to farmer support of the CWB. There are several models which, if applied to the CWB, would give farmers greater voice in setting the direction of the CWB. They are not explored in this study.

One of the important considerations in the operation of joint marketing services through the CWB, is whether the institution can be voluntary in nature. That is, can farmers choose to use the institution only when they perceive a clear benefit, and in other circumstances market outside the CWB? This is the classic case of the "free rider" problem in the provision of public, government and common pool goods.

For the CWB, the free rider problem takes many forms. Many farmers would like the ability to have the CWB operate and provide stability of returns and joint marketing for export and domestic human consumption markets, but when prices are perceived to be higher than the expected pool return, they would like to market outside of the pooling arrangement. For instance, some farmers have asked for the ability to sell directly to domestic mills outside the CWB. In this case, there are perceived benefits when the domestic price is higher than the expected pool return. However, there would be benefits to these individuals only if they could "freely ride" on the price structure established by the CWB, without decreasing the price paid by the mills. It seems clear that if all farmers could sell to the domestic mills, the mills would find sufficient willing sellers at prices at, or below, the expected pool return. The problem is thus twofold:

- 1) Farmers would not perceive it as equitable if some farmers were free riders on the CWB price structure to the domestic mills during periods of high prices, as these sales would then not contribute positively to their pool returns, i.e., some farmers are better off solely because they were not playing by the same rules; and
- 2) Farmers hoping to free ride on the system will only benefit if the activity is limited and not all farmers are allowed access to these sales.

This is essentially the same problem in farmers wanting to access higher prices in the United States or any offshore market.

The operation of a sustainable joint marketing operation through the CWB requires a high degree of equity among participants. As well, the ability of the CWB to extract the maximum price benefit for farmers through single-desk selling is a key product desired by farmers. A voluntary pooling system, or one with significant "free riders", would reduce both of these. It would also adversely impact the CWB's ability to be a reliable supplier, which is a crucial consideration to its customers. In short, under a dual market with multiple agents, the premiums identified earlier would not exist.

Conclusions

Single-desk selling of Prairie wheat has been estimated to add more sales revenues through brand loyalty. Besides high quality Hard Red Spring wheat, the CWB markets reliability, support services, credit, diversity of suppliers and a consistent product. Some buyers value some characteristics more than others. The CWB is capable of capturing some of a buyer's willingness to pay for the characteristics not available from other suppliers of wheat. Multiple sellers would not invest in adding some of the characteristics and, acting independently, are unable to capture the other distinguishing features. Revenues averaging \$265 million per year or \$13.35 per tonne are estimated to be lost if the single-desk was replaced by multiple sellers. This estimate only pertains to the wheat pool and not the durum and barley pools.

The single-desk premium increases further when export subsidies add another differential between buyers. When some buyers are willing to pay much less for Canadian wheat because they are eligible for a subsidy from another seller, while other importers do not qualify for the subsidy, the CWB can take the differential willingness of these two types of buyers into account. If many agents sold Prairie wheat, however, they could not uniquely assess each buyer's potential bid. Instead, they see one price. Because of the law of one price, the CWB was estimated to add between \$557 million and \$690 million per year or \$27.84 per tonne and \$34.50 per tonne over what multiple sellers would realize between 1985/86 and 1993/94. Again, this estimate does not measure the performance of the CWB for the durum and barley pools.

Risk management, through pooling wheat sales revenues and allowing the CWB to work with part of the sales revenue throughout the year, appears to be much less costly than managing a margin between selling and buying. In spite of forward contracts and futures markets, the risk management costs of buying and selling flax and canola appear to be higher than for wheat. Given the available information, the cost of buying and selling flax and canola on a margin basis appears to be at least \$5.53 per tonne higher than the cost of managing the transaction in the wheat pool account.

Furthermore, the CWB successfully maintained wheat sales to Brazil through market development and a focused marketing effort. Previous and ongoing market development expenditures have paid off through premiums realized in wheat sales as well as maintaining Canada's share of Brazil's wheat imports.

This study focused on an evaluation of single-desk selling. In addition it provided an institutional framework showing the CWB to be a form of collective action by farmers and government. As a consequence the authors wish to highlight the emerging need for farmers to have greater understanding of the workings of the CWB and in turn provide farmers with the confidence the CWB is accountable to them.

Estimation of Additional Wheat Revenue due to Operations of the CWB

Time Period	Wheat Sales	Marketing Costs	Total
	(CDN\$/Tonne)		
1980-94 ¹	13.35	5.53 ³	18.88
1985-94 ²	27.84	5.53 ³	34.47

¹ Premium realized from exports and domestic sales relative to sales of comparable wheat by multiple sellers.

² Premium realized from exports and domestic sales assuming prices in all markets decrease by the average EEP subsidy under multiple seller setting. This premium includes the revenues added from competitive sales plus the effect of export subsidies on the general price level.

³ Added costs of risk management in a multiple seller environment.

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Comments and constructive criticisms were provided by Dr. Richard Grey (University of Saskatchewan) and Ms. Brenda Chorney.

That the assignment undertaken turned out to be longer than expected is now history, but it did involve a greater commitment from several people than they originally anticipated. Three authors means three times as many drafts. Special thanks are extended to Ms. Bonnie Warkentine, who persevered through incorporating changes to the text which were often simultaneous rather than sequential.

The analysis and conclusions drawn are the responsibility of the review team, as are any errors of omission or commission.

1. Introduction

1.1 Introduction

The Canadian Wheat Board (CWB) has the mandate to sell wheat and barley into the domestic and world markets on behalf of western Canadian farmers. The geographic area of Canada served by the CWB includes the three prairie provinces and the Peace River region of British Columbia. This includes virtually all the grain growing area west of the Lakehead.

Notwithstanding the annual reporting by the CWB, the farmer elected Advisory Committee, and information such as pool return outlooks (PRO), there remains a number of unanswered questions and concerns on the part of some farmers. The most important is "how does the CWB perform in terms of returns to farmers relative to alternate marketing arrangements that are possible in Canada, as well as those used by competing exporters?" Related to this concern is the question of how cost effective is the CWB in comparison to other grain companies? Equally important, there is the issue of the institutional nature of the CWB and the degree to which farmers view the CWB as accountable to them, particularly since they are required as individuals to use the marketing agency.

The pressure for a performance and accountability review of the CWB grew during the grain trade war between the United States and the European Union (EU). Between 1985 and 1994/95, the landed offshore prices for wheat and barley were depressed by export subsidy competition. The Canada-U.S. Trade Agreement (CUSTA) in 1989 lowered the trade barriers in many sectors including agriculture. The pressure for review of the CWB increased with the emergence of the United States as a high-priced option readily available to farmers. This was of particular importance given that the U.S. domestic market prices were protected from the offshore subsidy competition and were higher than prices in the world market. Some Canadian farmers saw these higher U.S. prices as an indicator that the CWB was under-performing relative to the U.S. style of marketing system.

1.2 Purpose of Report

This study documents and analyzes the CWB system of marketing wheat. It is important to recognize that the workings of the CWB are reviewed internally and are annually audited. However, the performance of the CWB in the market place has not recently been reviewed

externally for presentation to farmers. Because the grain industry is very secretive (in fact most large grain companies are privately owned businesses), there is little public information on the economic performance of these corporations. The sales data on prices received and grades sold are guarded closely by all organizations, even though the trade itself has a fairly accurate idea of general price levels. This, of course, makes it difficult to do an outside analysis of the performance.

The primary purpose of this report is to carry out a complete review of the economic performance of the CWB in the Hard Red Spring wheat market in order to answer some of the questions farmers have raised. The primary questions addressed in this report are as follows:

- 1) How well has the CWB done in pricing prairie wheat compared to the export competition from the United States, the European Union, Argentina and Australia over the 1980/81 to 1993/94 crop years?
- 2) What has been the value of single-desk selling to farmers over the 1980/81 to 1993/94 crop years? That is, if the CWB monopoly on exports had not been in place, what would have been the likely prices received by farmers relative to those achieved by the CWB?
- 3) What is the economic efficiency of the CWB in terms of what is commonly called marketing costs? That is, what are the costs of marketing wheat through the CWB, relative to the costs for other Prairie crops, specifically, canola and flax?
- 4) What is the performance of the CWB in market development activities in a rapidly changing world trade environment? Specifically, how has the CWB performed in the Brazilian wheat market, that has liberalized its import regulations from a single import agency to unregulated imports?
- 5) What is the institutional nature of the CWB, and what does this infer for the organizational structure? Since the CWB is a form of collective action and places restrictions on farmers' abilities to market their own grain, it is important that farmers have input and voice in the CWB.

1.3 Organization of Report

There are six chapters in the report. Chapter two reviews the dynamics of the world grain market and Canada's response to these changes. The third chapter looks at the question of collective action and the CWB. This chapter suggests how and why farmers must understand CWB operations and view the organization as accountable to them.

The fourth chapter measures the performance of the CWB in the wheat market place. Arguments and evidence are presented on whether the CWB earns a premium when compared to a market characterized by many buyers and sellers of Canadian wheat, i.e., the voluntary pool or dual market scenario.

The fifth chapter of the report examines the cost of merchandising prairie wheat between the farm and customer. Comparisons of the wheat basis to other commodities are made.

The sixth chapter evaluates the CWB and market development. Brazil is offered as a case study.

The summary and conclusions of the study are contained in the Executive Summary at the beginning of this report.

1.4 Data and Information Sources

The data sources for this study are very important because grain trade data are so difficult to access. The CWB provided the authors with each contract for Hard Red Spring wheat for the crop years 1980/81 to 1993/94. Therefore, contractual terms such as prices, grades, shipments and customers were available. The authors received full cooperation from the CWB in terms of their data sources, including access to financial accounts and finance personnel. When questions arose, the sales staff at our request provided background information and particulars not evident in the contracts.

The contract data were compared against daily competitive export quotations for the 1980/81 to 1993/94 crop years. Where public data were available, they were used to verify the competitive quotes cited by the CWB. CWB sales were verified through aggregating the quantities and revenues to match the CWB annual reports.

Finally, informal discussions were held with individuals in the private grain trade and with other academics. In the Brazilian case study, a survey interview was carried out with major importers, including a non-CWB customer. While a number of sources were consulted, the authors remain responsible for the analysis and conclusions drawn.

2. Background on World Wheat and Flour Trade 1980-94

2.1 Introduction

The study period of 1980-1994 encompasses a time period in which considerable change has occurred in the grain industry both in the world and within Canada. Over the entire time period, the CWB's single-desk marketing operation extended to all Prairie wheat exports as well as sales for human consumption within Canada. However, while the CWB is the sole seller of western Canadian wheat, it is only one of many sellers in the world market.

In terms of the world market, the time period covered by this study can be divided into two distinctly different environments. The first would encompass the crop years from 1980/81 to 1984/85. The early to mid 1980s represented the end of an era which began in the early 1970s. It was a period of strong and growing demand and trade in cereal grains around the world. It was also a period over which, at least until the mid 1980s, world production had difficulty keeping up with the rapid expansion of consumption. As a result of this situation, the 1970s and early 1980s can be viewed as a bit of an anomaly in terms of the modern history of the grain trade. Over this period, export subsidies were not available generally. By 1985, it was clear that the tide had turned as stocks accumulated each year after 1981.

The second period dealt with in the study encompassed the crop years from 1985/86 to 1993/94. This is a period noted for the prevalent use of export subsidies by the United States and the European Union (EU). These subsidies reduced the landed prices in many countries around the world. During this period, explicit export subsidies were provided to importers through the U.S. Export Enhancement Program (EEP) and the EU export restitution system. In response to these programs, other major wheat exporters like Canada, Australia, and Argentina changed their trade and production patterns markedly.

The presence of the U.S. Export Enhancement Program and the European export restitution program over the 1985-1994 period added a new level of complexity to the world wheat trade. Both of these programs lowered the prices at which eligible importing countries could purchase grain. At the same time, importing countries not eligible for these subsidies, or unwilling to purchase lower quality European wheat, paid significantly higher prices which were unaffected by these export subsidies. In a sense, the EU restitution program and particularly the introduction of the U.S. EEP program in 1985 created a world wheat market in which three price levels prevailed. First, a price level influenced by export subsidies from the United States and

EU. Second, a commercial (non-subsidized) price level for higher quality wheats where export subsidies were not available. And third, markets where EEP subsidies were not available, however, wheat from the EU represented a significant market share.

This tiered pricing had a significant effect on the trade flows of grains. For instance, countries like Algeria, the People's Republic of China (PRC), and many others, have seen their landed import price from the U.S. fall as much as US\$60 per tonne in some years due to the EEP. However, while prices in these markets fell dramatically, prices in markets not eligible for subsidies (e.g., United States, Europe, Japan, Thailand and Malaysia) remained largely unaffected. Since the CWB exports approximately 75 percent of the wheat produced in western Canada, it reacted to these subsidies by lowering prices charged to selected markets eligible for export subsidies in order to meet the competition and sell Canada's exportable supplies of wheat. At the same time, the CWB increased sales to higher return markets in an attempt to minimize the impact of EEP and EU export restitutions on western Canadian farmers.

2.2 World Wheat and Flour Trade

The world trade in wheat and flour has varied from between 86 and 102 million tonnes over the 1980-94 period. While the trade did vary from year to year there has been no sustained growth in the trade (see Table 2.2.1). The components of the trade have changed due to the introduction of the U.S. EEP program in 1985. EEP has affected trade flows as shown in Table 2.2.1. In some years (for example, between 1986/87 and 1992/93), over half the world trade was completed in markets eligible for EEP subsidies. It is important to note that when markets eligible for EEP subsidies are added to those purchasing lower quality wheat and subject to European export restitutions, as much as 80 percent of world trade was impacted by export subsidies in some years. Only sales to markets with a preference for higher quality wheats were not subject to explicit export subsidies. Total exports to these markets were relatively stable and U.S. wheat constituted over half of the trade in the higher quality commercial trade of wheat.

Food aid also accounts for a sizeable portion of world trade in wheat. Over the study period, it has remained more or less constant at around 5-7 million tonnes per year.

Table 2.2.1: World Wheat & Flour Market, 1980-94¹

Crop Year (June/July)	Commercial Markets			Aid	Total Trade
	Lower Quality ²	Higher Quality ^{3,4}	EEP Eligible (000 T)		
1980/81	68,667	18,784	N/A	2,588	90,038
1981/82	72,725	17,976	N/A	5,691	96,392
1982/83	70,985	14,675	N/A	5,926	91,585
1983/84	72,716	16,949	N/A	6,834	96,499
1984/85	77,221	16,240	N/A	7,385	100,847
1985/86	46,428	15,236	10,706	6,667	79,038
1986/87	16,757	17,626	42,082	9,447	85,912
1987/88	16,070	16,753	58,952	9,779	101,554
1988/89	20,250	14,218	52,370	5,706	92,544
1989/90	22,029	13,357	47,756	6,287	89,429
1990/91	22,629	17,185	39,329	7,606	86,749
1991/92	19,793	18,708	57,514	6,361	102,376
1992/93	18,124	19,944	56,509	5,005	99,582
1993/94	27,116	22,515	32,113	4,729	86,473

¹ Excludes durum wheat sales.

² Price Basis FOB-EU-Arg & USA.

³ Includes European Union, Western Europe (Finland, Norway, Portugal (non-EEP years), Dominican Rep., Jamaica, Mexico (non-EEP years), Panama, United States, Colombia (non-EEP years), Ecuador, Israel, Hongkong, Japan, South Korea, Malaysia, Singapore, Taiwan, Thailand, South Africa, Australia, and New Zealand.

⁴ Price Basis USA.

Source: International Wheat Council, World Grain Statistics; USDA, Foreign Agric. Services

The share of the total wheat trade distributed between the major exporting countries showed an upward trend in Table 2.2.2 for the European Union (EU) in spite of having many of its importing customers eligible for EEP. Canada's wheat exports varied according to the exportable supply with no significant trend. The U.S. share of trade dropped in the early 1980s, and since 1985 it has recovered somewhat with the use of EEP subsidies. Higher shares of the world market for the EU and the United States have come primarily at the expense of Australia and Argentina. Neither Australia nor Argentina offset lower wheat prices significantly with additional income support to farmers. As a result, in contrast to the United States, the EU and Canada over this period, lower prices resulted in reduced acreage and reduced exports for Australia and Argentina.

Table 2.2.2: Market Share of Total World Wheat Trade¹

Crop Year (June/July)	Canada's Share (%)	Australia's Share (%)	Argentina's Share (%)	EU Share (%)	USA Share (%)	Total Trade (000 T)
1980/81	16.9	12.3	4.4	14.0	45.0	90,038
1981/82	16.3	11.8	4.5	14.4	48.6	96,392
1982/83	20.2	9.3	8.2	15.1	41.4	91,585
1983/84	19.5	12.0	10.0	15.5	38.3	96,499
1984/85	17.0	15.0	7.9	17.0	36.6	100,847
1985/86	19.7	20.3	6.7	17.6	29.1	79,038
1986/87	21.1	17.5	4.1	18.1	30.0	85,912
1987/88	20.2	12.1	3.8	13.7	42.8	101,554
1988/89	12.8	11.7	3.7	19.4	41.8	92,544
1989/90	16.0	12.2	6.5	20.3	35.7	89,429
1990/91	19.8	13.8	5.7	20.4	32.1	86,749
1991/92	20.7	8.1	5.6	17.6	32.9	102,376
1992/93	19.2	9.6	7.4	20.3	36.2	99,582
1993/94	17.8	14.7	5.2	20.8	36.8	86,473

¹ Excludes durum sales

Source: International Wheat Council, World Grain Statistics; USDA, Foreign Agric. Services

Following the introduction of EEP in 1985/86, the composition of sales shows that the United States held 30 to 50 percent of EEP eligible markets. By 1994, U.S. market share of EEP eligible markets was 50 percent (see Table 2.2.3). The EU, although the original target of the U.S. export subsidy program, maintained its share in the EEP eligible markets through their export restitution (subsidy) program. As a result, the EEP did little to affect the EU market share.

When examining the CWB reaction to the introduction of EEP in Table 2.2.4, it is clear that despite the CWB's intentions to target non-EEP markets, a significant proportion of western Canadian wheat exports still had to be made to EEP markets. The actual percentage of grain marketed to commercial and subsidized markets varied by year depending largely upon market circumstances at the time. For instance, with the relatively small Canadian and world wheat crops in 1988/89 and 1989/90, the CWB was able to reduce its share of sales to EEP competitive markets (Table 2.2.3). With the return of large Canadian and world wheat crops in 1990/91 and 1991/92, export subsidy levels increased considerably as did the percentage of Canadian grain sold to EEP competitive markets. Note that the percentage of western Canadian wheat marketed to EEP markets reached its second highest level in 1991/92 at 60.5 percent (see Table 2.2.4). This reflects the difficulty the CWB faced trying to sell more grain into non-subsidized markets, while still marketing 15 to 20 million tonnes of wheat per year. Excluding durum sales, Canadian wheat exports in 1990/91 and 1991/92 were 17.2 and 21.2 million tonnes, respectively.

Unlike other major exporters, such as Argentina and Australia, who responded to lower prices associated with export subsidies by shifting out of wheat, Canadian farmers continued to plant large wheat acreages due in part to federal government subsidies which favoured annual crop production (e.g., Farm Support and Adjustment Measures (FSAMI and II), Western Grains Stabilization Account (WGSA), Gross Revenue Insurance Program (GRIP), and Net Income Stabilization Account (NISA)). As a result, Canadian wheat exports were large in spite of low world prices and poor market returns to farmers. These low pool returns were a direct result of the large export subsidies being made available to importers. Also important is that with a large western Canadian wheat crop, a larger proportion of Canadian sales had to be made to markets where export subsidies were available.

The percentage of Canadian exports going to EEP markets dropped to 47.5 percent of total exports in 1992/93 and then to 19.6 percent in 1993/94, the lowest level since 1985/86. This drop can largely be attributable to reduced milling quality wheat supplies in western Canada. In both 1992/93 and 1993/94, western Canada produced large feed wheat crops as a result of early frosts and, in some areas, fusarium head blight. Over the course of these two crop years the CWB sold approximately 6 million tonnes of feed quality wheat to markets around the world at feed competitive values. While these sales were at lower values, reflecting the lower quality of the grain, they were made to commercial markets like the United States and South Korea. Whereas the CWB appeared reluctant to expand its quality wheat sales to export markets dominated by the United States, it merchandised much of its lower quality wheat as livestock

feed to the same markets. Feed wheat exports did not reduce sales of U.S. wheat to the milling industry. Expanding milling wheat exports to the higher quality markets dominated by the United States may have depressed commercial prices further, and/or reduced sales from the United States in turn may have led to an expansion of EEP. The CWB's approach to the commercial markets dominated by the United States appears to have been measured and cautious. On the surface it appears that all Canadian wheat should be exported to the commercial markets. The probability of this occurring without an expansion of EEP is unlikely. In which case the financial benefits would be temporary.

Table 2.2.3: Market Share of EEP Eligible Markets for Wheat Trade¹

Crop Year (June/July)	Canada's Share (%)	Australia's Share (%)	Argentina's Share (%)	EU's Share (%)	USA's Share (%)	Total EEP Eligible Trade (000 T)
1980/81	0	0	0	0	0	0
1981/82	0	0	0	0	0	0
1982/83	0	0	0	0	0	0
1983/84	0	0	0	0	0	0
1984/85	0	0	0	0	0	0
1985/86	6.0	28.2	0.1	27.7	34.4	10,706
1986/87	23.1	20.2	1.3	25.5	20.4	42,082
1987/88	22.5	10.4	3.3	12.2	47.0	58,952
1988/89	12.5	10.8	3.2	20.1	46.4	52,370
1989/90	17.3	10.1	3.9	24.5	37.2	47,756
1990/91	22.6	11.4	1.1	25.8	34.0	39,329
1991/92	22.3	4.3	5.2	19.0	35.6	57,514
1992/93	16.1	6.6	9.2	24.2	39.6	56,509
1993/94	9.4	9.5	0.0	24.2	51.3	32,113

¹ Excludes durum sales

Source: International Wheat Council, World Grain Statistics; USDA, Foreign Agric. Services

The United States used EEP subsidies in markets where they had lost market share in the early 1980s. In markets where the United States had a dominant position through to 1985, EEP was rarely used. However, through the early and mid 1980s, the United States lost significant market share in many markets due to increased EU presence. Following the introduction of the EEP, when an importer did not qualify for the subsidy (as was the case with China and the

U.S.S.R. initially), the export market share held by the United States in these markets fell dramatically. Obviously, the restitution payments made by the EU influenced the price levels in the remaining commercial markets not dominated by the United States and its EEP program. The net result was that many markets that were not eligible for EEP traded at values below U.S. commercial values but somewhat above full EEP subsidy levels. Furthermore, the growing EU presence in lower quality wheat markets not eligible for EEP meant the CWB had to compete against the EU, as well as Argentina and Australia, who were also pursuing customers not eligible for EEP.

Table 2.2.4: Composition of Wheat Exports for Canada¹

Crop Year	Commercial Markets		EEP Eligible Markets (%)	Aid (%)	Total (000 T)
	Lower Quality (%)	Higher ² Quality (%)			
1980/81	74.8	21.5	N/A	3.7	15,259
1981/82	76.3	20.0	N/A	3.8	15,691
1982/83	79.6	16.0	N/A	4.4	18,538
1983/84	78.0	17.7	N/A	4.3	18,843
1984/85	81.7	15.3	N/A	3.0	17,189
1985/86	71.0	19.8	4.1	5.1	15,563
1986/87	19.7	25.6	53.4	1.3	18,162
1987/88	15.7	17.7	64.6	2.0	20,559
1988/89	10.9	24.3	55.5	9.2	11,801
1989/90	18.1	18.7	57.8	5.5	14,324
1990/91	20.9	24.3	51.8	3.1	17,187
1991/92	13.3	24.4	60.5	1.8	21,214
1992/93	15.0	33.7	47.5	3.8	19,150
1993/94	29.1	47.3	19.6	4.1	15,402

¹ Excludes durum sales

² Includes European Union, Western Europe (Finland, Norway, Portugal (non-EEP years), Dominican Rep., Jamaica, Mexico (non-EEP years), Panama, United States, Colombia (non-EEP years), Ecuador, Israel, Hongkong, Japan, South Korea, Malaysia, Singapore, Taiwan, Thailand, South Africa, Australia, and New Zealand.

Source: International Wheat Council, World Grain Statistics; USDA, Foreign Agric. Services

2.3 Canadian Wheat Sales

While the domestic disappearance of milling wheat in Canada has remained constant at approximately 2.2 million tonnes per year, the CWB's share of the market has not been as stable (see Table 2.3.1). The CWB milling sales dropped in the mid 1980s as prices were raised under the domestic policy of two price levels. The Ontario Wheat Board captured more of the domestic market. In addition U.S. and EU export subsidies for flour reduced Canadian exports of flour to traditional markets like Cuba. Since the removal of the two-price policy, the CWB has regained the milling market share to where it was in the early 1980s.

Table 2.3.1: CWB Sales of Wheat to the Domestic Market

Account Period	Milling and Industrial (000 T)	Feed (000 T)
1980/81	1,783	201
1981/82	1,789	3
1982/83	1,724	51
1983/84	1,585	29
1984/85	1,419	11
1985/86	1,819	8
1986/87	1,250	22
1987/88	933	25
1988/89	1,688	8
1989/90	1,787	29
1990/91	1,812	12
1991/92	1,343	2
1992/93	1,945	113
1993/94	1,760	349

Source: CWB, Annual and Unpublished Reports

Consumption of feed wheat has depended primarily upon its availability. During years when harvest conditions lowered wheat quality, more feed wheat was available, such as occurred in 1992/93 and 1993/94. In 1980/81, wheat was sold as feed through a government program

requiring the CWB to offer wheat for sale at a corn competitive formula price. Formula prices were below imported corn prices and the feed industry exercised the option to purchase wheat from the CWB.

2.4 Prices in the Wheat Market

As has already been discussed, two distinct periods must be addressed when examining price data for wheat on the world market. The first is the period of 1980-1984. The second is the EEP period of 1985-1994. Regardless of the period, the reality is that price levels are determined and affected by the normal operation of supply and demand in the world market, particularly as this relates to production shocks and changes in consumption patterns. However, overlaying this in the EEP period, is the U.S. government policy of targeting certain import markets for EEP subsidies. Subsidized price levels existed in those markets eligible for and receiving U.S. or EU export subsidies. Generally speaking, prices available to EEP eligible markets were equivalent to U.S. domestic (i.e., commercial) price levels less the subsidy. Commercial prices existed in those markets which were not eligible for EEP and would not accept EU origin wheat for quality reasons. This latter point regarding some market's preference not to purchase EU wheat for quality reasons is important because over the study period the EU used export subsidies on every tonne of wheat exported. In this sense, their subsidy program is very different than the U.S. EEP because it is not targeted to specific importers.

The United States is the largest exporter of wheat in the world. In addition, the United States is also where the major commodity markets for cereal grains are located. While these markets are dominated to a large degree by domestic trade in the United States, it is also important to recognize that they are affected significantly by changes in world supply and demand, including the activities of other major exporters like the EU, Canada, Australia and Argentina. As a result, the U.S. wheat markets in Chicago, Kansas City and Minneapolis represent the most visible and apparent price discovery mechanism for wheat traded on the world market at commercial (non-subsidized) levels.

The United States produces different qualities of wheat that go into different markets and each quality of wheat has its own price level depending upon supply and demand conditions. Most wheat is substitutable at some price level. Exporters, however, tend to compete as much within qualities as between quality. This paper focuses upon the price relationship between similar qualities of wheat produced in different countries. For instance, what is the relationship between U.S. Dark Northern Spring (DNS) 14.0 percent protein and No. 1 Canada Western Red Spring (1CWRS) with 13.5 percent protein. Or alternatively, what is the price relationship between U.S. Hard Winter Ordinary (HWO) and No. 3 CWRS (3CWRS).

In terms of public data that is available, one can compare actual CWRS average sales revenue for each crop year with the daily DNS and U.S. Hard Winter Ordinary Wheat (HWO) offer prices. Figure 2.4.1 shows the comparison of these three series for the period 1980-94. It reveals that before the introduction of the EEP (i.e., before 1985/86), the CWRS pool return

moved between the DNS and HWO. An average price for all wheat sold in the pool that falls between DNS and HWO prices is consistent with the composition of wheat qualities making up the sales program. Some years the sales are predominantly 1 and 2 CWRS while in others more 3CWRS and feed wheat are sold.

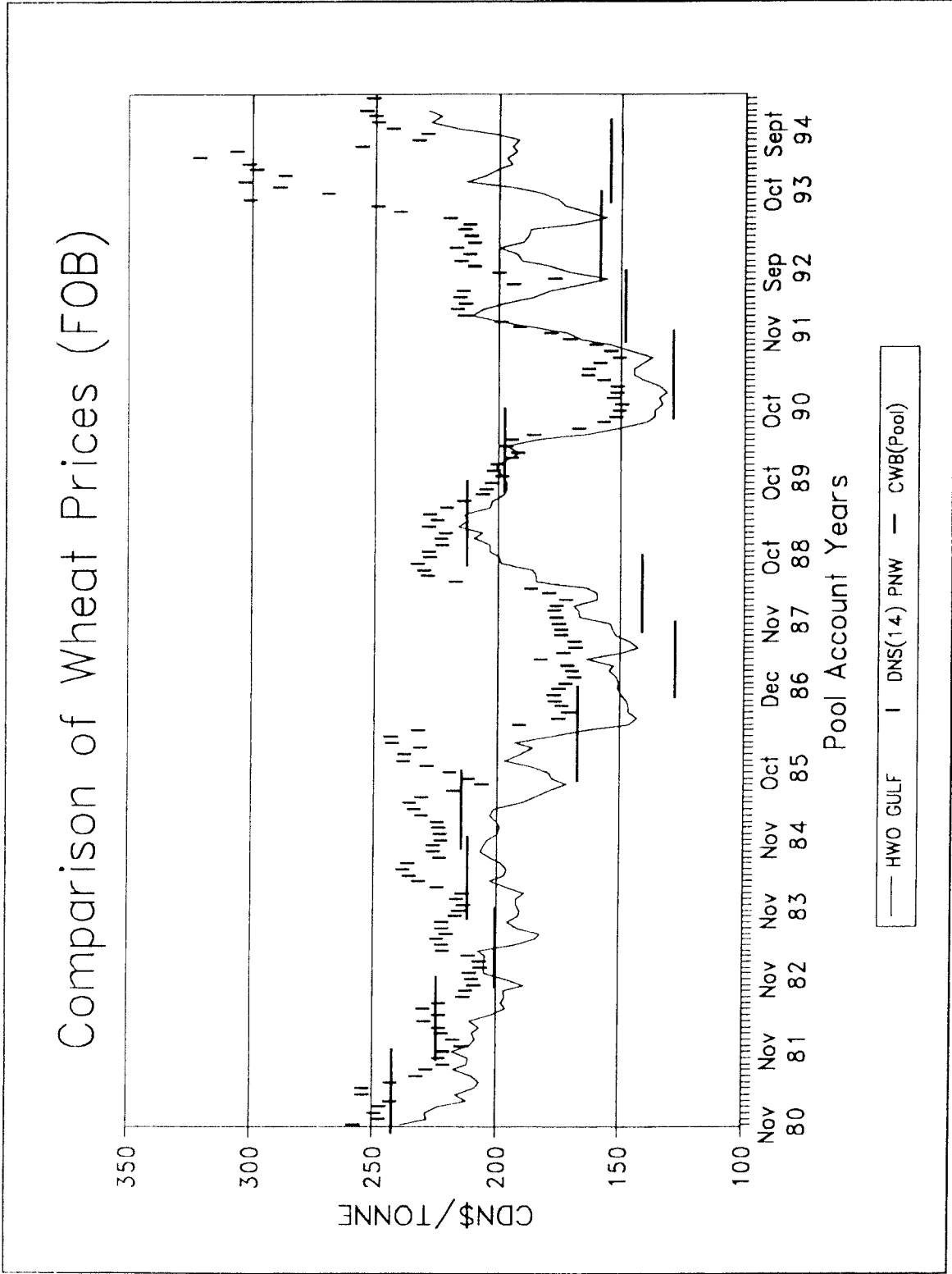
After the introduction of EEP, the CWRS pool return generally was below commercial DNS and sometimes below HWO values. While Table 2.4.1 shows the average EEP subsidy levels available in 1985/86 were \$41.35, average prices of all CWB wheat export sales did not fall substantially below commercial market prices since the CWB marketed a relatively small proportion of the wheat to the EEP eligible markets. After 1985/86 and until 1993/94, approximately half of the CWB wheat sales were to EEP eligible markets (see Table 2.2.4). When the subsidy levels exceed \$35 per tonne (see Table 2.4.1) the average price received was below the commercial quotes plotted in Figure 2.4.1. Another factor contributing to the relatively low average export price in 1986/87, 1992/93 and 1993/94 was the abnormally large volume of feed wheat sold in these pool accounts. In 1992/93 nearly all the 1CWRS wheat available was sold into the commercial markets. In spite of the higher prices, when little 1CWRS is sold it did not substantially raise the average export price for all wheat.

Figure 2.4.1 clearly shows that the introduction of the EEP depressed Canadian prices vis-à-vis U.S. commercial prices reflecting the fact that Canadian returns are a blend of sales to both commercial and subsidized markets. As a result, any analysis which directly compares FOB prices must address this issue given that the United States had an export subsidy program over this period while Canada did not.

Table 2.4.1: Average EEP Subsidies (CDNS/Tonne)

Wheat Pool Account	Average EEP
1985/86	41.35
1986/87	49.13
1987/88	35.44
1988/89	13.73
1989/90	22.51
1990/91	48.86
1991/92	42.94
1992/93	39.10
1993/94	59.53

Figure 2.4.1



3. Institutional Framework¹

3.1 Introduction

The purpose of this section of the report is to discuss some of the institutional aspects of the Canadian Wheat Board (CWB) and how the CWB, through this framework, interacts with farmers. The CWB is a federal crown corporation that operates under the Canadian Wheat Board Act of 1935. As such, it is an institution that operates according to legislation and reports to Parliament through the Minister responsible for the CWB.

An institution is defined to be a "set of constraints which governs the behavioral relations among individuals or groups". Institutions are predictable, essentially stable, and applicable in repeated situations, whether established, enforced and policed by an external authority, or voluntarily accepted as a result of custom or tradition. Institutions are legal entities that take on a life of their own and can play an important part in the economy of people. An institution can create economic incentives. An example of an institution is property rights, and the entitlements set forth in the property rights are the basis for the incentives.

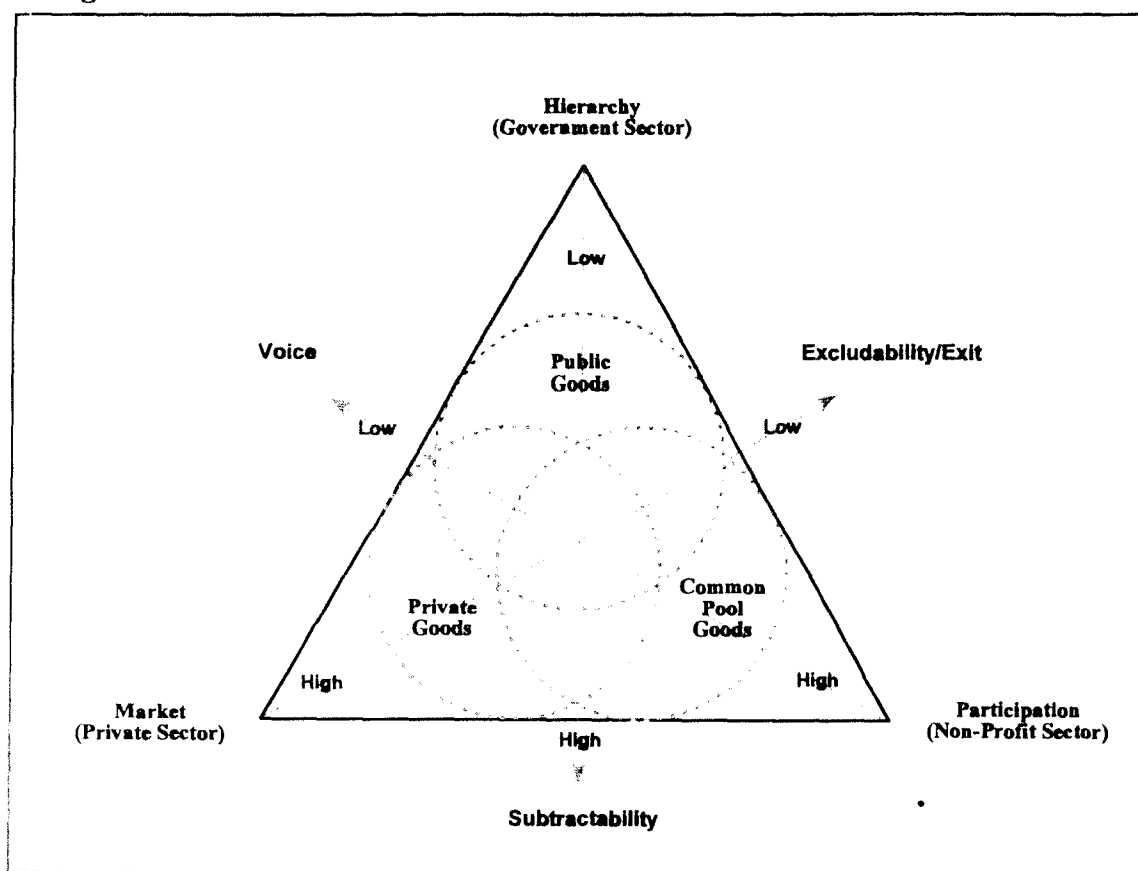
A systematic description is provided of what an institution is and how it should function if it is to meet the objectives of those who set it up. The overall characteristics of an institution are first discussed and then these characteristics are applied to the CWB.

3.2 Characteristics of Institutions

An analysis of institutions can follow the framework given in Figure 3.2.1. The diagram presents one way in which the role of institutions can be broken down. The topology of goods provided can be divided into at least three categories which will be called the market sector (private sector), hierarchy sector (government) and participation sector (non-profit). In the past, economists have focused on the market and government sector while ignoring the role of the non-profit sector.

¹ Some of this discussion is due to work by Chris Gerrard, EDI, World Bank.

Figure 3.2.1 The Efficient Provision of Different Kinds of Goods and Services



Source: Robert Picciotto, *Putting Institutional Economics to Work: From Participation to Governance*, *World Bank Discussion Paper 304*, 1995.

The non-profit or participation sector is that sector which brings individuals together around some general cause or action. The term "non-profit" does not imply they are fiscally unconcerned, but rather profits in and of themselves are not the reason for the formation of the group, as it is for example in the market sector.

Participation groups include organizations that form for a number of reasons, i.e., multiple objectives. Some examples are farm organizations, environmental groups, cooperatives, and political parties. Loosely formed, they may have a constitution, or set of rules, and often depend on volunteers and monetary gifts to keep them in financial solvency.

3.2.1 Different Allocation Mechanisms

The triangle shown in Figure 3.2.1 demonstrates a division in terms of the different allocative mechanisms in the economy. Each of these sectors has a comparative advantage in producing some types of goods and services. The characteristic of the goods and services must be matched with the type of institutional structure in the economy. If certain institutions are not available, then certain goods and services will not be produced at the lowest cost.

Within each of the different institutional structures there are different stakeholders. The government sector includes all stakeholders (all citizens of a country). With many stakeholders the allocation mechanism is very controlled. Examples of government goods are national defence and public infrastructure. These are "government goods" or "public goods" that are consumed by all citizens, whether an individual explicitly asked for the goods or not. The consumption of these goods by any individual does not diminish the ability of other citizens to benefit from the goods being provided. These are provided to stakeholders in a top-down fashion with any individual stakeholder having little say in the provision of the goods. The hierarchical sector produces economic organizations that are managed top-down like government bureaucracies. Control of the decision-making that is hierarchical implies a fairly rigid and isolated structure. This arises because of the large number of stakeholders and the amount of influence any one individual can have in such a structure. It would be unreasonable for any individual to have a large voice in the provision of, for example, armed forces or a major highway infrastructure, in that the process of providing the goods in the appropriate fashion and an efficient manner would be impaired.

In the market sector, the stakeholders are the people or individuals who own the property rights. This allows the firm to be very focused and produce certain types of goods very efficiently. An example is any privately owned firm producing market goods for profit. The market goods are consumed voluntarily by individuals who can choose to buy the goods. The private sector is characterized by the coming together of capital and other resources to make a profit. While there may be many or few stakeholders, their objectives are all the same, i.e., to make a profit. The market sector is the most efficient allocation mechanism for the production of "private goods and services".

Finally, the participatory sector has stakeholders who voluntarily join because they believe benefits can be obtained by collective action. The form of collective action can vary between lobbying groups, compulsory marketing boards and co-management of natural resources. This sector produces or allocates "common pool goods" most efficiently. Common pool goods are those which the stakeholders view as commonly held. Once the good is produced, all members benefit by its existence. For example, if a farm association is lobbying for a particular policy change, the stakeholders will all hold the same view on the key issues, otherwise they would withdraw from the organization. Other examples of common pool goods would be combined marketing services, or market development services. An important aspect

of the participatory sector is that control is bottom up. In producing lobbying goods, individuals who are supporting members want control. Many aspects of the co-operative movement in Canada are consistent with the participatory sector. Goods which are commonly held are most efficiently produced in this type of economic organization.

3.2.2 Different Motivations

Each of the three major sectors has a different type of incentive that governs their motivations and decisions. The incentive structure is extremely important and to a large part determines the efficiency of the economic organization in achieving the desired outcomes. If the incentives are not correct, the outcomes will not occur in a manner that is considered desirable by the stakeholders.

The government sector has the objective of re-election so that the politicians may remain in power, i.e., control the legislative process and the budget. It is also true that politicians want to put forward the particular public policy they feel is in the best interest of society. The incentive is for politicians to maintain their political base with the citizenry that elects them.

The private sector has the clear objective to be the most efficient in maximizing profits from voluntary economic activity. If a private firm does not make a profit it will cease to exist in the economy. Any other objective, such as support for the arts, is secondary, as it can only be met if the firm makes a profit.

The participatory, or non-profit sector, has the most complex form of objectives. In many cases there are a multitude of objectives that are put forward by the membership. Equity issues often play a role in the motivation of the participatory sector. In the case of advocacy groups, the objective may be to influence public opinion. In the maintenance of participatory groups, individual members must have a form of control in input, and share reasonably in the outputs of the sector to be encouraged to continue providing the services.

3.2.3 Different Kinds of Goods and Services

One of the defining features of this framework is that it describes the kinds of goods and services each type of institution is best at producing. What is important is the characteristics of the goods.

Governments produce goods most efficiently when the goods have low subtractability (low rivalry). Goods shared by all people where no one individual can influence them directly is where government shines. One person's consumption of the laws of a country does not affect the usage of another individual. Similarly, the military provides the same defense to all citizens of the country. Laws and legislation are produced through a slow and difficult process often requiring years to complete. In most democratic countries politicians consult with their

stakeholders before they instruct the bureaucracy to prepare legislation. The only way not to consume government goods is to leave the country.

Excludability/exit means the ability of institutions to exclude individuals from the consumption or production of goods and services. Excludability/exit on the producer side means the ability to exclude those who do not pay. On the consumer side this relates to the ability of a consumer to exit from the consumption of the good or service. Market goods have a high level of excludability. For example, individuals can choose if they wish to purchase a particular good. Individual consumers of public goods, however, cannot choose to exclude themselves from the provision of military services or other public works.

Voice means the ability of members in an organization to have their opinion heard by those who make decisions. Voice is low in the case of government goods because it is not desirable that any one individual would have much say in the production of government goods and services. In a lobby group, however, if an individual's voice is not heard, that individual is most likely to leave.

There are also intermediary goods produced by the overlap of the above cases. "Toll goods" are the joint product of government and the market sector. These are goods which no one entity will supply in sufficient quantity without help from government but which can be charged for in the market place. Examples may be postal service, or transportation services. "Civil goods", like clubs or professional associations, are a joint product of the private sector and the participatory sector. "Public policy" is jointly produced by the participatory and hierarchical sector. Public policy here is defined as policy that is put in place by governments. For example, the Canadian Wheat Board is a type of public policy and is the joint product of the hierarchy and participatory sector.

3.2.4 Conclusions

Each of the three sectors has different motivations and different operations, and so each has a comparative advantage in the provision of different kinds of goods and services.

The hierarchy sector has the advantage of producing government type goods like laws and the justice system. Laws are made by government that has a rigid structure and is governed top down. The market sector is the most efficient at producing private goods where individuals voluntarily come together in the pursuit of profits. The participatory sector is most efficient at providing those goods and services that are common property or common pool goods. These goods are where a group of individuals have some collective interest in managing a common property such as natural resources, or associations (e.g., unions and bargaining associations).

3.3 Application to the Canadian Wheat Board

3.3.1 Collective Action and the CWB

The Canadian Wheat Board Act is a form of collective action to jointly produce marketing services and countervailing power for western Canadian wheat and barley farmers. In terms of the diagram presented in Figure 3.2.1, the CWB is a joint product of the hierarchical sector and the participatory sector. That is, it is a product of public policy. To actually create the public good, the CWB required legislation that gave it the powers to operate. The government of Canada has put in place for western Canadian farmers, through the CWB, the following powers:

- to jointly market wheat and barley to obtain the largest benefit for all farmers delivering to the marketing body,
- to allow the joint marketing body to have sole jurisdiction over the sale of wheat and barley for export or domestic human consumption (countervailing power),
- to pool returns from sales such that each individual farmer is insured against the risk of the lowest return sales during the marketing period (risk management),
- to reveal the cost of marketing services utilized by farmers,
- to manage access to constrained handling and transportation services through assigned quotas and contracts, and
- to utilize the security and credit worthiness of the government of Canada in borrowing monies to finance the operation of the marketing services (lower interest expenses).

The vehicle for the provision of these services for wheat and barley farmers in western Canada is the CWB. Other examples of this in Canada would be the Ontario Wheat Producers' Marketing Board and other commodity marketing boards and agencies.

3.3.2 Concerns Over Voice

The stakeholders have at least two important roles in public policy. First, the stakeholders are involved with politicians in developing the policy objectives. Often the policy results in individuals being denied certain freedoms in order for the public goods to be produced. In this instance all stakeholders must be consulted. This may result in a political debate which can turn into an election issue. In the setting of operational objectives, the participatory sector also has an important role in a public policy institution like the CWB. Farmers need to have their voice heard on how access to services are determined (i.e., how quotas are set or how the CWB car allocation policy operates) and how senior management operates the institution. These are all important stakeholder issues that are outside legislation but are very important to grain farmers.

In the case of a government good, such as managing courts, or managing wartime activity by the military, stakeholders do not get involved in establishing policy. It would be inefficient and is better left to top down management. At the other extreme, the management of common property goods, such as community pastures and fisheries, can be most efficiently done by the stakeholders. Here they set up their own management and run the operations in line with their legislative authority. It is simply more efficient to let the micro decisions be made and implemented by those closest to the day-to-day action.

Of course, all the grain handling and transportation could be turned over to the market sector as it is for other commodities such as coal and potash. In this case, the stakeholders would be the owners of capital and their success would depend upon their performance in the market place. The major difference would be how issues such as equity of deliveries would be treated. The market place would not provide all grain farmers with the same access to the grain handling and transportation system. Rather, it would sell the service to the highest bidder, which is another way to allocate the scarce resource.

Both the government and farmers have a financial stake in the CWB. The federal government guarantees the initial payment paid to farmers when they deliver their grain to the CWB at the elevator. In the past, these borrowing guarantees have cost the federal government money when the final price was below the initial payment, for example wheat in 1985. While this has been a relatively minor government outlay over the history of the CWB, it is a consideration. The federal government also provides export credit guarantees to the CWB or other financial institutions when an importer is deemed to be a worthy borrower. The cost of running the CWB however, is paid totally by farmers with sales revenue from wheat and barley.

The CWB is financed by the grain farmers for whom the CWB markets grain, with ancillary support provided by the government. Both groups are financial stakeholders and should have voice in the financial matters of the corporation. Farmers appear to be asking for this input when they request evidence as to how well the CWB is doing on its sales program. Due to the structure of the international grain trade and the requirements for commercial confidentiality, the CWB has not found an effective mechanism to fully accommodate this need. It is difficult to give farmers an ongoing meaningful voice in day-to-day operations if they do not have adequate information as to the performance of the corporation.

Many of the policy changes that resulted in the publication of the "expected pool returns", etc., are designed to address these issues of voice and performance feedback. While this information helps farmers plan their deliveries and make better personal financial plans, it does not seem to fully satisfy all farmers' current requirements for voice in the CWB.

An interesting comparison for the CWB is the way public universities are governed. The board of governors are made up of some government appointees and some stakeholder groups. All of this is done to give the community which the university serves a voice in setting direction and establishing the level of services provided.

The governance of the CWB is not shared between the stakeholders. The commissioners are appointed by the Federal Minister responsible for the CWB and they, in turn, report to Parliament through the Minister. There is no direct governance between farmers and the CWB. The CWB Farmer Advisory Committee, which is elected by farmers, does provide ongoing feedback and advice to the operational side of the CWB. The Advisory Committee, however, has no direct control over the activities of the CWB, and their advice may not necessarily be followed by the Minister or the CWB.

The current concern of many farmers is that they have no direct farmer voice, yet are required by law to deliver their grain through the CWB. This could lead to a situation where the stakeholders, who would otherwise be strong supporters of the objectives and operations of the CWB, want to exit the system. The issue of voice is essential to the running of the CWB.

There are several management models which, if applied to the CWB, would give farmers greater voice in setting the direction of the CWB. These were not explored in this study.

3.3.3 Equity Concerns

Public policy objectives can take the form of equity. For the CWB, this amounts to providing farmers equity in marketing opportunities and risk sharing, and in providing farmers with some countervailing power in the marketplace. Equity in the grain system has had a particular meaning to prairie farmers. The transportation and handling system is limited in capacity. The railways, grain terminals on the west coast, and the primary elevator system, can not handle all the grain at one time. These important services must be allocated between farmers who wish to use them.

One way to allocate such service is through the price system. Farmers could bid for such services from the private sector through increasing the "basis" between the export price and their farmgate return. In such a case, those farmers willing to pay the most at a point in time would get access to the transportation and handling system and others would store their grain longer on the farm to realize a smaller cost in the future. An alternative mechanism is to manage the allocation through the use of quotas and contracts, where every farmer gets a portion of the system and farmers do not have to bid against one another for the system's services.

Equity in the grain transportation and handling system is one piece of public policy in the Canadian grain system. In order to achieve this policy objective, the governments of the day have created and given legislative authority to institutions such as the CWB. The historic Western Grain Transportation Act (WGTA), the Canada Grains Act (CGA) and the current Canadian Transportation Act (CTA) were also intended to provide protection to grain shippers from unwarranted high charges, and/or to provide access to transportation and handling services. The Grain Transportation Agency was created through the WGTA and the Canadian Grain Commission (CGC) through the CGA.

3.3.4 *The Problem of Free Riders and Equity*

Public goods are plagued by free rider problems, which is why they can not be efficiently supplied by the private sector. In examining the triangle in Figure 3.2.1, all goods provided by the government and participatory sector have free rider problems.

The government raises money through taxation and supplies goods which everyone consumes. Most often when demand exceeds supply, some form of queuing is used to ration the goods. In common pool goods, farmers may form lists which they add names to and when an opening arises the next on the list gets the spot. This was the historic reasoning behind many features of the Canada Grains Act, which guarantees farmers access to railcars and elevator facilities.

One of the important considerations in the operation of joint marketing services through the CWB is whether it can be voluntary in nature. That is, can farmers choose to use the CWB only when they perceive a clear benefit, and in other circumstances market outside of the CWB? This is the classic case of the "free rider" problem in the provision of public, government and common pool goods. If given the choice, most participants would only choose to contribute towards public goods, such as the military, when they were direct and clear beneficiaries, i.e., wartime. A "free rider" may still choose to benefit from the production of these services and avoid any contribution towards their payment. Because this is not seen as equitable, all citizens are required to pay for public goods.

For the CWB, the free rider problem takes many forms. Many farmers would like the ability to have the CWB operate and provide stability of returns and joint marketing for export and domestic human consumption markets, but when prices are perceived to be higher they would like to market individually. For instance, some farmers have asked for the ability to sell directly to domestic mills outside of the CWB. In this case, there are perceived benefits when the domestic price is higher than the expected pool return. However, there would only be benefits to these individuals if they could "freely ride" on the price structure established by the CWB without decreasing the price paid by the mills. It seems clear that if all farmers could sell to the domestic mills, the mills would find sufficient willing sellers at prices at, or below, the expected pool return—the mills would never have to pay higher than the expected pool return. The problem is thus twofold:

- 1) Farmers would not perceive it as equitable if some farmers were free riders on the CWB price structure to the domestic mills during periods of high prices, as these sales would then not contribute positively to their pool returns, i.e., some farmers are better off solely because they were not playing by the same rules, and
- 2) The farmers hoping to free ride on the system will only benefit if the activity is limited and not all farmers are allowed access to these sales.

This is essentially the same problem in farmers wanting to access perceived higher prices in the United States or any offshore market. During the course of a selling period prices will fluctuate, and in any upward trending market the current price levels will always look attractive compared to the pooled returns of sales from the lower and higher price periods. "Free riders" would benefit if allowed preferential access to markets that were trading above the expected pool returns. However, allowing all farmers access to the markets at these times would lower the price that buyers would have to pay for Canadian grain (as farmers would be willing sellers at any price above the expected pool return) and farmers who had already delivered into the pool account would not perceive this as equitable.

Some farmers have suggested they would sign agreements or contracts that would exclude them from using the CWB, however these contracts would again be very difficult to monitor and enforce.

The operation of a sustainable joint marketing operation through the CWB does require a high degree of equity among participants. As well, the ability of the CWB to extract the maximum price benefit for farmers through single-desk selling is a key product desired by farmers. A voluntary pooling system, or one with significant "free riders", would eliminate or reduce both of these.

3.3.5 Conclusions

The CWB, as a form of economic organization, falls into the category of being a common pool good that farmers are not allowed to exit because of free rider problems. The framework presented explains the rationale for the joint government and farmer sector cooperation in providing marketing services that work for the benefit of farmers in western Canada.

The government and farmers have created an entity which grants certain powers to farmers that should create higher returns for farmers than otherwise would result. The products of this institution include the single-desk marketing of wheat and barley for higher returns, risk management through pooling, lower financing costs through government guaranteed borrowing, market development activities, the control of the basis between export values and farmgate returns to costs actually incurred, and management of access to constrained handling and transportation facilities.

A major attribute of this form of institutional arrangement is the need for a farmer voice in setting the direction and establishing the type and level of services offered by the CWB. This issue is at the forefront of the current debate as farmers evaluate the future role of the CWB.

4. Canadian Wheat Board Marketing Premiums

4.1 Introduction

This chapter compares the price the CWB received for wheat in export markets relative to what would have been received in a multiple agent setting, i.e., multiple sellers of Canadian wheat. The chapter is divided into four parts. The first part describes the market environment as it now exists. The second part compares the performance of the single-desk CWB to prices received in other observable public markets within the current environment. This includes a description of the methodology employed as well as a summary of the results of the analysis. The third section of the chapter compares the historical performance of the CWB to the prices that would have been received with multiple sellers in the Export Enhancement Program (EEP) environment. The fourth section of the chapter briefly summarizes the results.

The CWB is a single-desk seller for the export of barley, wheat and durum from the CWB designated area of Canada. Within the Canadian domestic market the CWB is a single-desk seller for western Canadian malt barley, wheat and durum used for human consumption, as well as all foreign aid wheat, durum and barley purchased from the CWB area. Canadian flour mills have been free to buy wheat from outside the CWB area including imported wheat since 1991. In the domestic feed wheat and barley market, the CWB competes with other buyers and sellers.

In terms of exports, the CWB competes with all other merchandisers in the international market place including the large transnational firms (e.g., Cargill, Louis Dreyfus and Continental Grain) and state trading marketing boards and entities (e.g. the Australian Wheat Board, EU Cereals Management Commission, U.S. Commodity Credit Corporation (EEP)). The CWB can sell directly to foreign end-user markets, or utilize CWB accredited export merchants who act as principals in their own right. The CWB uses weather analysis to forecast the production of grain in all producing regions, enabling it to forecast world supplies. By monitoring sales and stocks, the CWB can then estimate which countries will be in the market.

One of the central questions for farmers is whether the CWB is an effective marketer of grain. In particular; "Has the CWB been able to earn a price premium for farmers through its central-desk selling activities?" For the purposes of presentation, the question is divided into two parts. Examined first is the performance of the CWB in terms of the prices realized relative to the prices offered by Canada's competitors. The second part of the question is more complex.

4.2.1). Also important in these discussions was an understanding of what the appropriate port of comparison was in terms of these price comparisons.

Table 4.2.1: Grade Distribution of Canadian Wheat Exports¹ (Percent)

Crop Year	1CWRS	2CWRS	3CWRS	Feed	Other
1980/81	40.1	20.8	28.5	3.6	3.6
1981/82	62.2	14.3	14.5	1.1	6.7
1982/83	51.8	14.7	17.9	3.0	9.6
1983/84	51.4	14.8	20.2	0.7	12.3
1984/85	72.3	5.4	12.9	1.3	6.7
1985/86	39.8	16.1	22.1	8.5	5.0
1986/87	21.0	12.3	25.7	18.4	4.2
1987/88	29.9	32.6	21.9	6.1	3.4
1988/89	60.5	26.3	9.5	0.4	2.9
1989/90	42.3	20.8	28.1	1.4	5.9
1990/91	66.4	8.5	2.7	5.4	11.6
1991/92	75.0	5.2	3.7	3.3	9.7
1992/93	49.2	7.2	31.4	7.2	5.1
1993/94	32.1	22.8	17.9	22.8	4.4
Average	49.6	15.8	18.3	5.9	6.5

¹ Excludes Eastern and Durum Wheat

Source: Canadian Grain Commission; Canadian Grain Exports

This was an important element in light of the fact that Asian customers, with the exception of China, purchase their U.S. wheat requirements predominantly out of U.S. Pacific North West (PNW) ports, while Latin American customers purchase their U.S. requirements out of the U.S. Gulf of Mexico (Gulf). In general, the approach used was as outlined in Table 4.2.2. Variations on these rules could exist for specific countries and time periods. For example, in Table 4.2.2 Canadian Western Red Spring (CWRS) wheat grading 1 or 2 with 14.5 percent protein originating from ports at Thunder Bay, St. Lawrence or Atlantic are comparable to the U.S. Dark Northern Spring with 15.0 percent protein originating from Duluth/Superior or Gulf ports.

Table 4.2.2: Benchmark Comparable Wheat and Originating Ports for Canadian Wheat Exports

Grade	Protein	Port	FOB Indicators
1/2 CWRS	14.5%	SL/AT	DNS 15.0% Gulf ¹
		TB	DNS 15.0% Duluth/Superior
		WC	DNS 15.0% PNW
1/2 CWRS	13.5%	SL/AT	DNS 14.0% Gulf
		TB	DNS 14.0% Duluth/Superior
		WC	DNS 14.0% PNW
1/2 CWRS	13.0%	SL/AT	DNS 13.0% Gulf
		TB	DNS 13.0% Duluth/Superior
		WC	DNS 13.0% PNW
1/2 CWRS	12.5%	SL/AT	HRW 13.0% Gulf
		TB	HRW 13.0% Duluth/Superior
		WC	HRW 13.0% PNW
1/2 CWRS	11.5%	SL/AT	HWO Gulf/EU French Soft/Argentine
		TB	HWO Duluth/Superior
		WC	HWO PNW/EU French Soft/Argentine
3 CWRS		SL/AT	HWO Gulf/EU French Soft/Argentine
		TB	HWO Duluth/Superior
		WC	HWO PNW/EU French Soft/Argentine

Where SL = St. Lawrence, TB = Thunder Bay, AT = Atlantic, and WC = West Coast, PNW = Pacific North West and as applicable, Duluth/Superior and SL quotes were used in place of the Gulf (e.g., for the UK). And where CWRS = Canadian Western Red Spring, DNS = U.S. Dark Northern Spring, HRW = U.S. Hard Red Winter, HWO = U.S. Hard Winter Ordinary.

It is worth noting that, in virtually every case, the protein content of the comparable high protein grades equalled, or exceeded, the specification of Canadian wheat. As a result, rather than understate the quality attributes of the comparable grade of the U.S. Dark Northern Spring (DNS), the approach used attempted to identify wheat specifications which were equal to or better than the Canadian grades except for end use parameters unique to varieties. It is important to note that in some years the differential protein levels between Canada and the United States were inconsequential in terms of value. However, protein premiums in some years have been as high as \$7.00 per tonne for every additional tenth of a percent protein.

To be included within the CWRS class a variety must equal or exceed the milling and baking properties of a variety called Neepawa. In order for a variety to be licensed it must be visually distinguishable if it does not have the same milling and baking characteristics as CWRS. The end use parameters associated with CWRS provide millers and bakers with a product which is more predictable than wheats graded under other standards.

Low protein 1 and 2 CWRS and 3 CWRS were compared directly to Hard Winter Ordinary (HWO) wheat out of the appropriate port. However, in certain instances, based on the competitive environment at the time, these sales may have been compared to Australian, Argentine Trigo Pan or French Soft wheat. A case in point in this regard would be sales to Latin America where Argentine Trigo Pan is highly competitive through much of the study period. The criteria used to determine the appropriate competitor was based on the time of year and the volume of imports from that country.

4.2.2 Location

Another important issue, which this study does not address directly, is the importance of location as it affects ocean freight costs vis-à-vis Canada's competitors. For instance, in Canadian sales to Asia relative to U.S. competition, ocean freight differentials should not be an issue with the exception of China. Ocean freight rates for similar size vessels are virtually the same whether you ship out of the U.S. PNW or the Canadian West Coast. When Canadian West Coast freight to Asia is compared to freight from Australia however, Canada is at a significant disadvantage, particularly in markets like Indonesia and Malaysia.

Similarly, Canadian ports (both St. Lawrence and the West Coast) have an ocean freight disadvantage to many Latin American markets relative to sales out of the U.S. Gulf and certainly for sales from Argentina. Another example of this would be the freight advantage enjoyed by Europe to North African markets.

One advantage of a single-desk seller is the capability to evaluate buyers options in terms of competitor FOB prices plus freight, and determine the landed price that a buyer may receive from different suppliers located throughout the world. In this situation, the CWB is able to price competitively when faced with higher freight costs than its competitors, and still maintain higher prices in markets where it has an ocean freight advantage relative to its competition.

This differs from a multiple seller environment where the FOB price represents the highest value the most distant buyer is willing to pay, given the comparative landed cost of acquiring wheat from another origin. At any given location and point in time, a number of grain importers may be willing to bid a higher FOB price given their next best alternative has a greater landed cost. They do not, however, have to reveal their reserve bid whenever sellers at a specific site have sufficient supplies and have a lower asking price. In a wheat market with many sellers as well as buyers, the sellers are unable to differentiate between importing buyers in terms of whether the buyers would pay more, when their next best source of wheat represents a higher landed cost.

For example, if a U.S. grain merchant can originate wheat in the Gulf and ship it to any importer for say US\$200 per tonne, Canadian wheat must compete with this landed cost of US\$200 per tonne. If ocean freight to the import market is US\$20 per tonne, then the FOB price is US\$180 per tonne in Canada. This means that Canadian grain merchants, competing against each other, must be able to originate wheat at country elevators, and move it to export position for US\$180 per tonne or under. These same merchants competing for business would be willing to sell to all buyers at US\$180 per tonne FOB. No buyer would need pay higher, as competition amongst the sellers would keep the FOB prices the same.

In conclusion, the methodology did not standardize the FOB quotes in other locations to account for any freight advantage or disadvantage inherent in the origin of Canadian shipments. If the CWB price exceeds the highest price quoted for a comparable wheat the premium could in part be due to a freight advantage. Conversely, the premium could be lower or become a discount as the result of an ocean freight disadvantage.

4.2.3 Time and Shipment Period

After accounting for location and quality, the last remaining issue is ensuring that the sales made by the CWB are compared to sales or potential sales of competitors at the same time and for the same shipment position. Even on the same day, it is important to recognize that the same wheat quality may have different values for different shipping positions, which reflect the cost of carry and other factors. In this analysis, each CWB sale was compared to the appropriate competitor quote for the same shipment position for the same date of sale. This methodology reflects the approach the CWB uses in evaluating and making each of its sales decisions. The CWB sales department continuously surveys the world wheat market with particular emphasis on the terms of trade available from Canada's competitors.

In terms of operationalizing this approach, the prices available from competitors were taken from CWB records at the time of sale. If a quote was available on the same day for the comparable port, it was used. In some circumstances, the price on the previous or following day was substituted if a quote was unavailable. Similarly, a quote for a specific level of protein in #1 DNS may not be cited on a given day, while prices were available for wheat containing a half

of a percent more or less protein. In these instances, the price quoted for the higher protein was selected. Finally, when a comparable quote was unavailable within the week of the CWB transaction, a price was estimated from the nearby futures price plus the average basis during the period of the study. Substitution for missing data represented fewer than one percent of the comparable prices.

To verify whether the CWB price quotes consistently reflected wheat prices cited in trade publications, the two price series were compared to each other. Statistical tests indicated the CWB quotes accurately reflected the published market offer prices. The estimated simple regression was:

$$Y = b_0 + b_1 X + e \quad (4.2)$$

Y = CWB quote for DNS 14% FOB PNW
 X = monthly average market quote for DNS 14% FOB PNW.

If the CWB was unbiased in reporting the market quote at the time of each particular sale we would expect that $b_0 = 0$ and $b_1 = 1$. Equation 4.2 was estimated from data for the period 1980 to 1985 and found that:

$$Y = -5.33 + 0.99X$$

(-.32)^{ns} (1.10)^{ns} $R^2 = 0.74$ D.W. = 1.96.

^{ns} Statistically insignificant. t-values in parentheses.

These results showed no statistical evidence of bias in reporting.

4.3 Comparing CWB Sales to Competitor Prices

The difference between what the CWB sold its grain for compared to the competitive benchmark was defined to be the premium:

$$\text{Pre} = \text{CP} - \text{BP}$$

where;

Pre = premium;
 CP = selling price for the CWB on the contract date;
 BP = benchmark price of CWB wheat on contract date.

In order to calculate this premium, every contract signed by the CWB was reviewed. For example, on May 26, 1981 the CWB sold 45 thousand tonnes of 1CWRS 13.5% at a price of US\$229 per tonne FOB Canadian West Coast ports. On that same day the market offer for #1 DNS 14% FOB the U.S. Pacific Northwest (PNW) ports was US\$205 per tonne for the same shipping period. Therefore the premium was calculated to be:

$$\begin{aligned} \text{Pre} &= \text{US\$229 per tonne} - \text{US\$205 per tonne} \\ &= \$24 \text{ per tonne.} \end{aligned}$$

In this example the price is standardized for location, time and grade. What should remain are the intrinsic market values that flow to Canadian grain and the marketing system (costs or benefits).

In measuring the performance of the CWB, the prices received by the CWB are compared to these benchmark prices. The benchmark in the pre-EEP period of 1980-85 is based upon competitive prices for each of the grades 1, 2 and 3 CWRS. In this report, the premium for all three grades are determined and reported. The discussion, however, primarily focuses on 1CWRS. Table 4.3.1 summarizes the average annual premiums determined for 1CWRS for each pool account since 1980/81, while Figure 4.3.1 plots the average monthly premium realized from sales of 1CWRS in relation to the price offered for comparable wheat. Table 4.3.2 reports the CWB Premium (Discount) on the average 1, 2 and 3 CWRS exports.

A number of important observations about the performance of the CWB can be made from this data. First, the CWB earned a positive monthly premium from the market place for 1CWRS in every month (see Figure 4.3.1). The CWB was able to sell at a higher price than other organizations offering comparable wheat for sale. Since these grain sellers in the United States in turn purchased wheat from U.S. farmers, the price they are able to offer is limited by their selling price. In all crop years, the revenue contributed from sales of CWRS to the wheat pool account exceeded the monies which would potentially have been available in a multiple seller setting. It is possible and quite likely that in some months individual sellers would be able to outperform the average pool price. If many sellers, however, had the opportunity to access these premiums they would be bid away through arbitrage.

Table 4.3.1: Premium (Discount) on No.1 CWRS Export Sales

Pool Year	Competitive Market ¹ (CDN\$/Tonne)
1980-81	22.50
1981-82	16.26
1982-83	13.85
1983-84	10.88
1984-85	10.51

Average (1980-85)	14.80

1985-86	25.30
1986-87	18.47
1987-88	19.96
1988-89	31.23
1989-90	21.81
1990-91	13.34
1991-92	12.42
1992-93	33.85
1993/94	34.34

Average (1985-94)	23.41

¹ Assumes the Canadian prices realized by multiple sellers equal those quoted for comparable wheat in the United States, EU and Argentina.

Figure 4.3.1

Average Monthly Premium for 1 CWRS Relative to Comparable Wheat

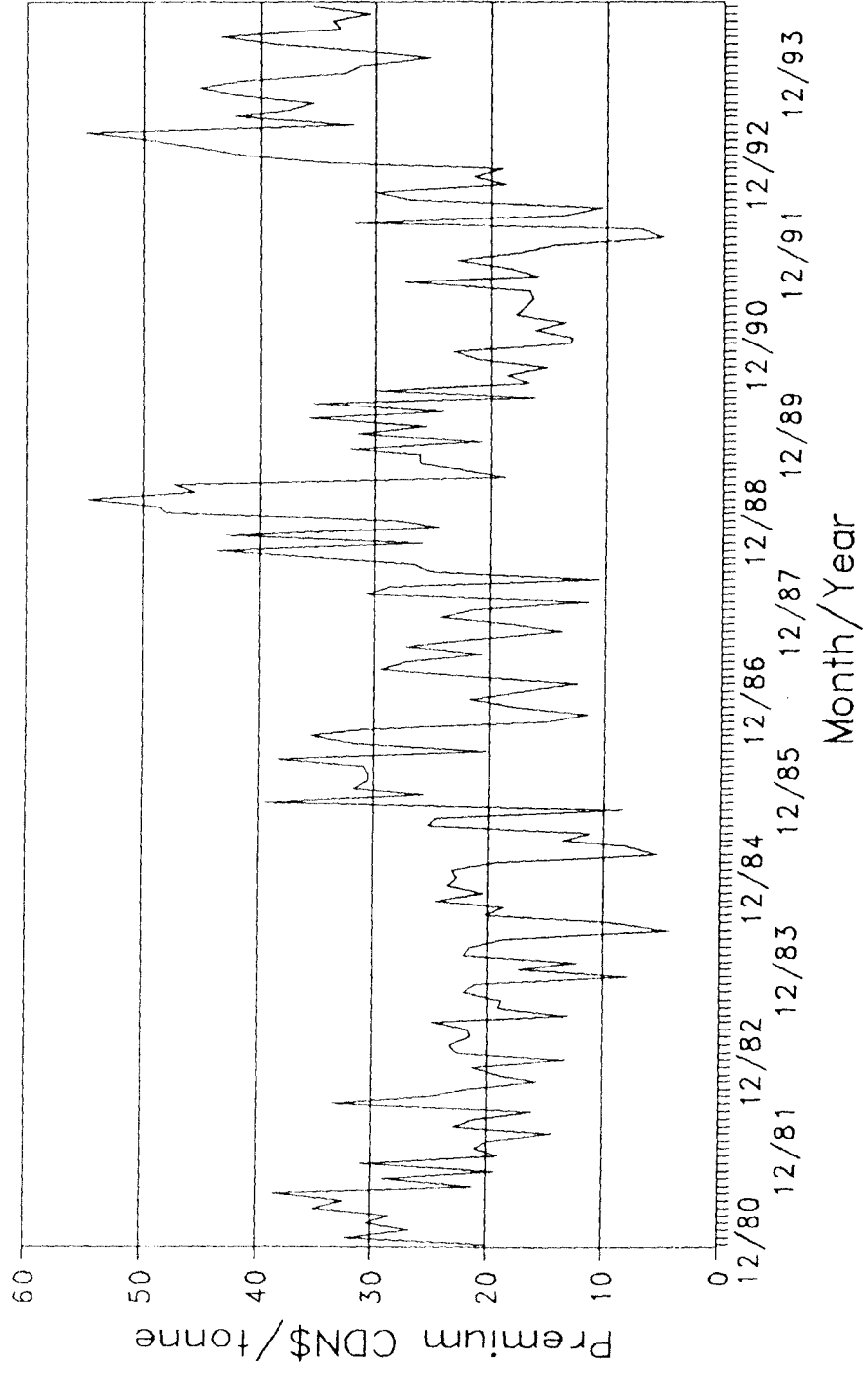


Table 4.3.2: CWB Premium (Discount) on No. 1, 2 and 3 CWRS Exports

Pool Year	Exports Competitive Markets ¹ (CDN\$/Tonne)
1980-81	16.93
1981-82	13.36
1982-83	12.86
1983-84	9.10
1984-85	8.86
<hr style="border-top: 1px dashed black;"/>	
Average (1980-85)	12.22
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1985-86	13.58
1986-87	12.08
1987-88	15.18
1988-89	21.25
1989-90	14.68
1990-91	12.49
1991-92	10.10
1992-93	13.70
1993-94	12.39
Average (1985-94)	13.94

¹ Assumes the Canadian prices realized by multiple agents equal those quoted for comparable wheat in the United States, EU and Argentina.

A second important observation is that the CWB appears to perform better in periods when ICWRS is in short supply. Starting in 1980 the premium on ICWRS was about \$22.50 per tonne and fell to about \$10.51 per tonne by 1985 (see Table 4.3.1). As shown in Figure 4.3.1 the month to month variation in the premium is attributed more to whom the buyers were during the month rather than erratic changes. Despite the volatility of the monthly premiums, all trended downward between 1980 and 1985, as world stocks of all wheat increased. The premiums rose once again in 1988 as a North American drought reduced wheat supplies and peaked in 1992 and 1993, as growing and harvesting conditions diminished the availability of high quality wheat from North America.

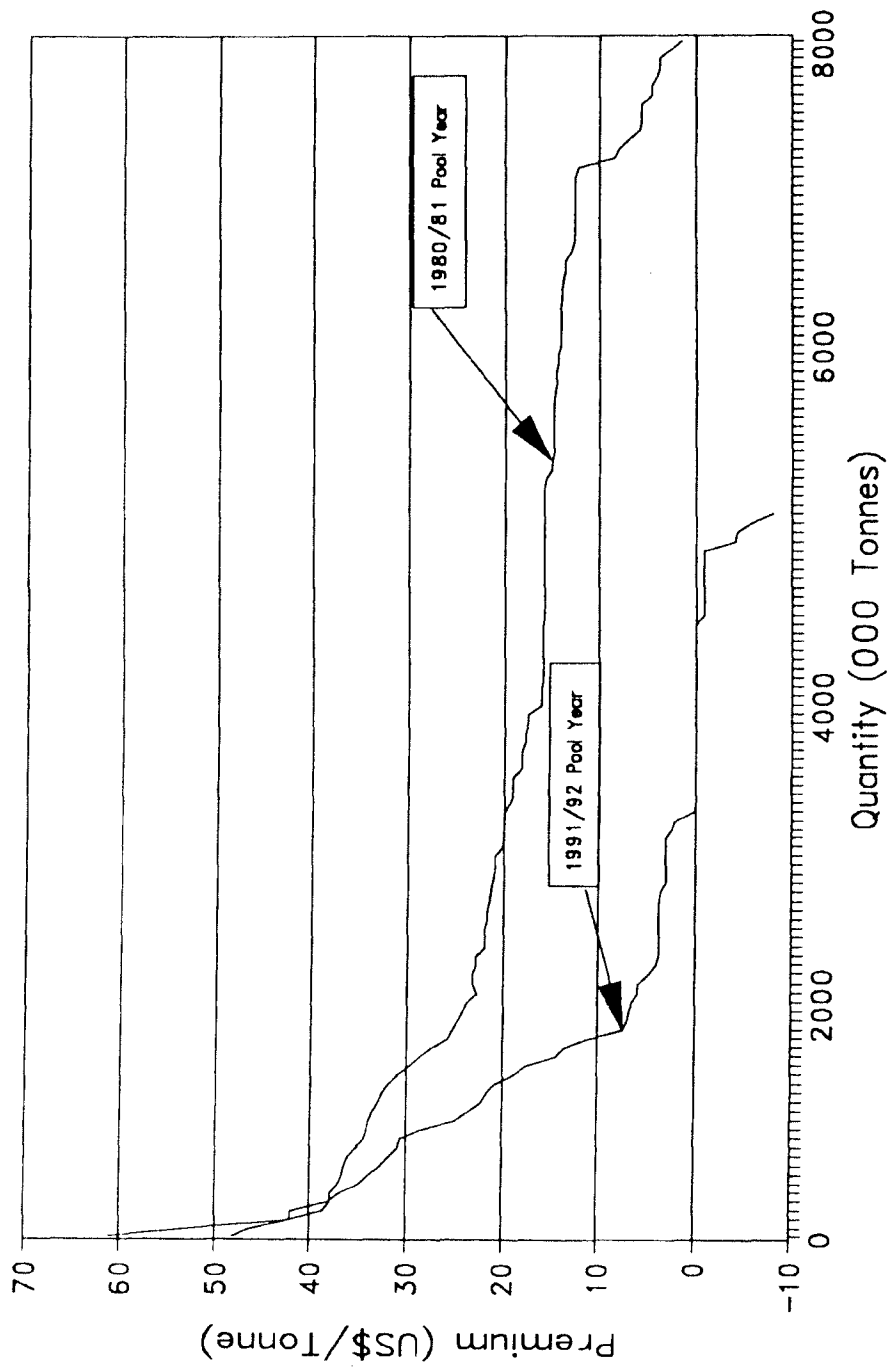
The pool year 1980/81 also saw relatively high premiums. Figure 4.3.2 plots the premium (Discounts) attributed to each contract in descending order. During this time period the CWB found itself with relatively more high quality wheat when the world stocks were relatively low. Premiums between US\$40 per tonne and US\$60 per tonne were received for the first 100 thousand tonnes sold. (See Figure 4.3.2.) European buyers generally expressed their preference for Canadian high quality wheat by offering the highest price. Asian buyers tended to pay premiums in the range of US\$20 per tonne while the US\$10 to US\$15 per tonne premiums were realized on some of the larger volume sales.

Figure 4.3.2 shows that in 1991/92 a premium was realized on 3 million tonnes while one and a half million tonnes were sold at par with the competition. The highest premium recorded was for a sale where the buyer nearly paid US\$50 per tonne more for ICWRS than #1 DNS 14%. Less than 50 thousand tonnes were sold at this premium level. The next highest premiums were for sales at prices US\$30 per tonne to US\$40 per tonne over competitive prices. About one million tonnes were sold at this level. Not all sales were at premiums as nearly four hundred thousand tonnes were sold at a discount to the competition. Discounts could arise as a result of ocean freight differentials.

Many of the 1991/92 sales with low or no premiums were to U.S. buyers. This suggests the CWB has minimal U.S. buyer loyalty or preference for Canadian grain other than price. The premiums were predominantly realized from Asian and European sales. It is noteworthy that the 1991/92 average premium for ICWRS was determined to be \$12.42 per tonne. This was the lowest premium year for ICWRS and reflects the relatively larger Canadian supply available that year. (See Table 4.2.1.)

Figure 4.3.2

Export Premiums of 1CWRS By Cumulative Volume of Sales



Premiums realized by the CWB relative to comparable wheats increase with quality. Besides the desirable characteristics of protein, hardness, colour and moisture content, the CWRS grades are consistent from shipment to shipment. This raises the question whether the premiums are linked to the grading system and could be realized by any seller of Canadian wheat. The nature of the market is that not all of the CWB customers are willing to offer premiums. Figure 4.3.2 represents one year with higher average premiums and another with lower premiums. Most buyers were willing to offer the CWB prices exceeding those of comparable wheats. When some of the CWB sales of 1CWRS realize no premiums and occasionally are at a discount, then multiple sellers would have to tender similar prices in order to do the business. They, however, would in turn offer the same prices to buyers who in the past have paid a premium. Multiple sellers are extremely limited in their ability to differentiate between buyers in terms of their willingness to pay and would only capture a premium if all buyers paid more. The fluctuation in the month to month average premiums in Figure 4.3.1 is associated primarily with the composition of buyers. Premiums peak in one month when relatively more sales are made to buyers paying a higher premium while they fall next month when sales are to buyers offering lower premiums. At any point in time the most of the buyers are active in the wheat market. A single-desk seller is capable of making selective offers to each buyer while a multiple seller cannot do the same.

The emphasis upon the CWB selling all the wheat farmers produce in a given year, within the transportation and logistic constraints, was evident in the premiums analyzed. The monthly premiums earned by the CWB dropped as they sold more wheat. If farmers had produced less wheat the CWB could have reduced sales and with fewer logistical limits realized a higher average price.

Following EEP premiums for 1CWRS were maintained or increased as the United States moved more wheat into the EEP eligible markets. Even when the importer was eligible for EEP, the CWB on many occasions merchandised wheat to these markets below the competitive commercial price, but above the EEP subsidized price and was deemed to receive a premium.

The weighted aggregate premium realized from export sales of 1CWRS, 2CWRS and 3CWRS is less than the premium for 1CWRS (see Tables 4.3.1 and 4.3.2). The aggregate premiums reflect the share of each grade sold and the average premium per tonne sold. For example, when relatively more 3CWRS was sold in 1993/94 at a lower premium than 1CWRS (see Table 4.3.1) the weighted average export premium measured in terms of competitive prices was \$12.39 per tonne, while 1CWRS registered a premium of \$34.34 per tonne. The opposite held in 1983/84 where the aggregate premium of \$9.10 per tonne was nearly equal to the average realized from exports of 1CWRS of \$10.51 per tonne.

Export premium contributions from the sales of 1, 2 and 3 CWRS to the overall wheat pool account are shown in Table 4.3.2. In essence, Table 4.3.2 can be viewed as follows: when CWB sales of Canadian wheat are compared dollar for dollar against sales, or offers for sale, by Canada's competitors, whether they be at EEP competitive levels in EEP markets or at

commercial levels in non-EEP markets, the CWB added an average premium of \$12.22 per tonne for 1980 to 1985 and \$13.94 per tonne for 1986 to 1994. While these values are relatively large, they do not represent the total value of the CWB single-desk authority relative to a multiple seller environment in western Canada. The major factor not yet dealt with is how the U.S. EEP and European export restitution would affect FOB prices in a multiple seller environment in Canada.

4.4 Single-Desk Selling Premiums in an Export Subsidy Environment

In analyzing the EEP period (1985/86 to 1993/94) it is not necessary to modify the analytical model. The question becomes "what is the appropriate benchmark to compare against the sales of the CWB?" Competitive multiple sellers in an EEP environment would be willing to lower the Canadian price to importers until all the supplies were sold, i.e., at the market clearing price. At this point, all exporters would be sourcing grain at primary elevators at "street prices" that allowed them to transport it for sale to the lowest priced market and still make money. If any seller tried to raise the price in any other market, a competitor would get the business instead. This results in all buyers paying the same price, i.e., the "law of one price" holds. If this is the case, then the CWB premium should be determined by comparing the CWB price against the price in the most highly subsidized market into which Canadian wheat would be sold.

Assuming Canadian supplies continue to be available for export, multiple sellers would establish a "street price" in primary elevators that would attract deliveries from farmers and allow them to make sales out of an export port at a profit. Sellers would immediately realize whether they would be required to export volumes of wheat that would place them in markets where EEP and EU restitutions were available. The exporters would know that in order to compete, they would need to price competitively with United States and EU grain supplemented with subsidies. Thus, they would have to establish their street prices and export prices such that they were competitive with the EU and U.S. grain at seaboard position. All buyers would have access to Canadian wheat at the resulting export price ("street price" plus transport, handling and carrying). Even buyers who had been paying the commercial price for Canadian wheat would find willing sellers at the prevailing export price competitive to EEP. If any exporter tried to extract a higher price from any particular buyer, he would find that his competitor would receive the business instead. Assuming a perfectly price inelastic demand for wheat from all commercial importers results in all commercial export prices falling to EEP subsidized levels with no added sales.

After 1986, the annual world wide commercial (i.e., non-subsidized) trade of wheat averaged 38 million tonnes (Table 2.2.1) while Canada exported 9 million tonnes to EEP eligible markets (Table 2.2.4). This study assumes that not all the Canadian exports to EEP eligible

markets could in turn be sold to the commercial markets without depressing the prices to the EEP subsidized level.

Therefore, this study had to make the additional assumption that the United States would have restricted Canadian imports once multiple Canadian sellers expanded sales to the United States. (In fact the United States did negotiate a cap on Canadian wheat in the 1994-95 crop year.) The pressure to move western Canadian wheat into the U.S. market, when street prices reflect the EEP markets would be too large to be politically acceptable in the United States. As well, the United States would have to expand the eligibility for EEP, as Canadian wheat would now be sold in formerly commercial markets at prices prevailing in EEP markets. The United States Department of Agriculture (USDA) would not have been able to maintain exports and keep the domestic wheat prices above world levels, without restricting Canadian imports and expanding EEP subsidies, if multiple sellers exported Canadian wheat. Certainly, under the multiple Canadian exporter case, the price to farmers would have been lower and supplies would have declined as they did in the case of Argentina. In this analysis, the assumption is that the Canadian government would have intervened to keep farm income stable through increasing production related income support. This is consistent with the government programs in place over the study period (GRIP, NISA, WGSA, and FSAMI and II).

4.4.1 The Average EEP Benchmark

Benchmark prices depicting the commercial market sales during the months following EEP were adjusted to lower levels to reflect EEP subsidies. As long as multiple sellers of CWRS were exporting wheat to EEP eligible markets, they would have to offer comparable prices to all buyers. Two price adjusted benchmarks were determined. Scenario one assumes the monthly commercial prices available during the EEP period would fall by the average subsidy offered by the United States. If the generated price level of wheat fell by just the average EEP, this new equilibrium implies the multiple agents would not attempt to offer wheat to the buyers eligible for the larger EEP subsidies. Instead, the exportable supplies of wheat would be depleted through sales to historical commercial buyers and importers qualifying for subsidies at or below the average. The monthly average EEP subsidies reported in Table 4.4.1 range from less than Cdn\$4.39 per tonne in the summer of 1989 to over Cdn\$65 per tonne in the fall of 1993. Figure 4.4.1 shows the prices that 1CWRS and 3CWRS are assumed to move to in an average EEP multiple agent environment. The price levels for 1CWRS (DNS 14%) and 3CWRS (HWO) drop as low as Cdn\$80 per tonne in 1990/91 and in 1988/89 return close to the commercial levels shown in Figure 2.4.1.

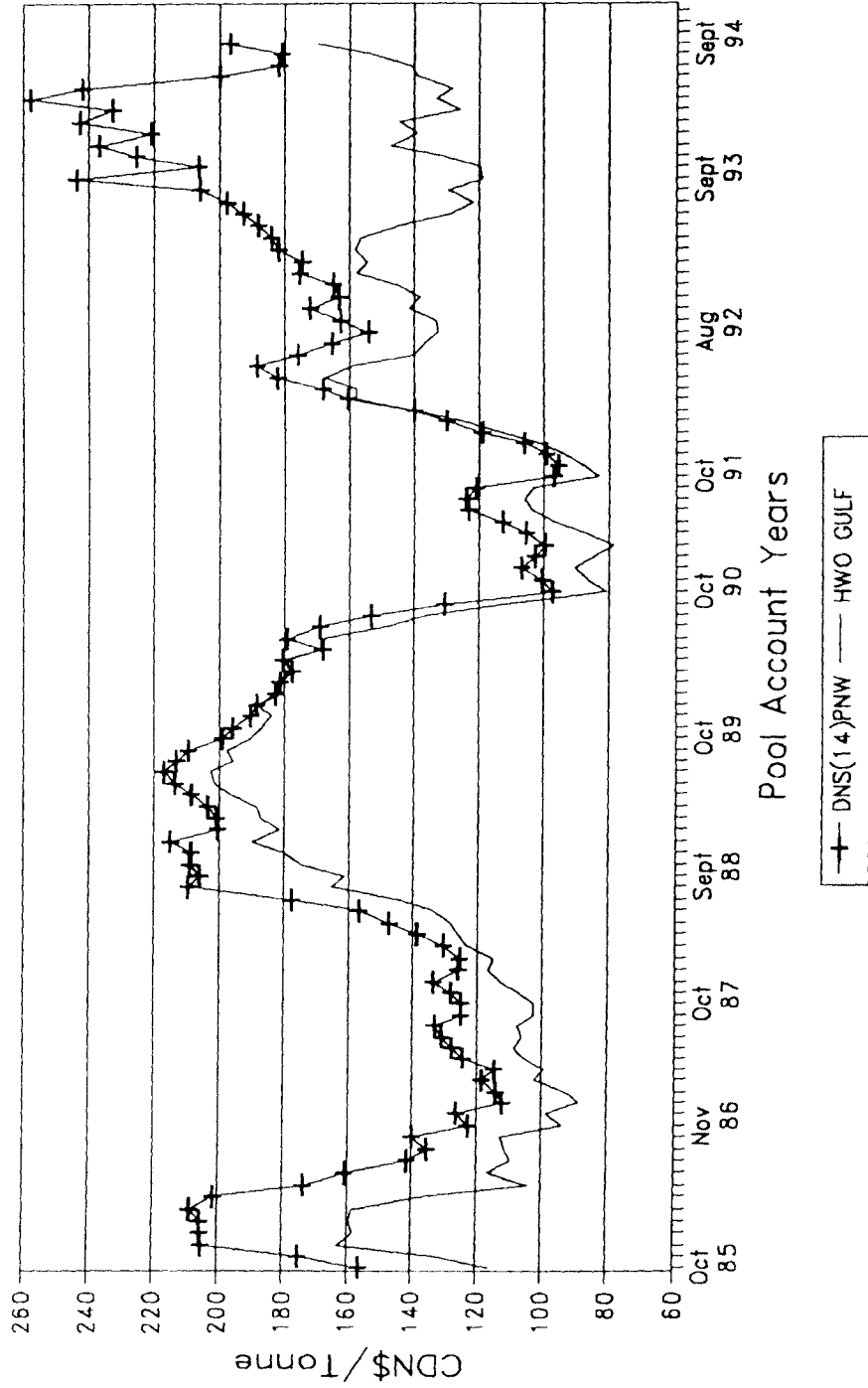
Table 4.4.1: Export Enhancement Program Subsidies (CDN\$/Tonne)

Month	Wheat Pool Account								
	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
Sept								40.26 (45.36)	
Oct	62.97 (62.97)			19.27 (27.20)	11.95 (15.29)			37.78 (80.49)	62.77 (83.41)
Nov	53.52 (53.52)		41.15 (53.34)	13.65 (23.79)	9.64 (17.98)	42.43 (52.92)	58.99 (70.92)	52.26 (56.57)	63.72 (84.85)
Dec	33.58 (35.87)	62.29 (66.41)	49.73 (58.93)	22.07 (27.30)	18.77 (22.96)	49.94 (56.25)	61.25 (63.56)	46.79 (80.72)	66.24 (83.74)
Jan	32.16 (33.76)	57.83 (62.78)	51.69 (59.58)	22.60 (27.82)	19.33 (22.8)	52.16 (60.53)	59.16 (63.31)	41.75 (57.93)	66.57 (86.57)
Feb	25.74 (36.03)	49.41 (57.99)	45.67 (59.01)	17.74 (26.97)	16.64 (38.78)	45.84 (53.69)	53.22 (60.00)	35.60 (41.11)	55.93 (76.76)
Mar	34.46 (40.71)	54.77 (61.82)	33.02 (43.99)	19.41 (27.07)	11.82 (21.4)	44.25 (50.10)	48.72 (54.40)	29.53 (42.97)	68.97 (79.80)
Apr	41.77 (57.08)	46.86 (51.62)	31.32 (44.03)	11.16 (16.58)	28.55 (38.32)	40.54 (54.94)	30.91 (49.09)	29.94 (39.59)	63.67 (75.93)
May	58.28 (64.62)	54.69 (56.95)	29.40 (38.38)	11.06 (15.63)	15.28 (24.49)	28.54 (47.53)	26.86 (33.96)	23.77 (38.89)	64.74 (76.17)
June	30.05 (35.52)	42.17 (55.30)	39.92 (46.16)	7.46 (8.18)	15.90 (30.35)	37.30 (53.86)	38.83 (44.44)	27.19 (37.37)	55.69 (75.71)
July	33.65 (37.16)	34.86 (43.64)	19.40 (33.14)	4.39 (4.40)	13.77 (33.98)	53.80 (68.16)	28.38 (42.14)	42.84 (63.62)	51.19 (70.12)
Aug	35.17 (35.14)	43.16 (49.35)	24.60 (27.63)	6.98 (9.35)	26.23 (36.14)	58.43 (73.80)	23.04 (29.46)	43.50 (77.63)	48.34 (64.05)
Sept	33.34 (46.60)	48.89 (53.97)	23.92 (29.89)	9.02 (13.01)	54.97 (59.60)	59.70 (68.45)		57.04 (76.98)	46.52 (59.96)
Oct	53.71 (60.11)	45.53 (54.77)			49.78 (64.02)	63.51 (74.90)			
Nov	50.43 (63.43)								
Average	41.35 ¹ (47.15) ²	49.13 (55.87)	35.44 (44.92)	13.73 (18.94)	22.51 (32.01)	48.86 (58.84)	42.94 (51.13)	39.10 (57.63)	59.53 (76.42)

¹ Average EEP expenditures² Maximum EEP expenditures

Figure 4.4.1

Wheat Price (FOB) Reduced by Average EEP Subsidy



4.4.2 The Largest EEP Benchmark

The second scenario is based upon the general price level for Canadian wheat falling by the largest EEP subsidy granted during a month. This assumes that when there are many Canadian sellers actively pursuing all export opportunities, they will match offers to importers eligible for the largest EEP subsidy. An implicit assumption is that the same quantity of exportable supplies remain available from the Prairie provinces and the quantities demanded from importers will not change. The maximum EEP subsidies available over the 1985-1994 period under review ranged from Cdn\$4.40 per tonne to Cdn\$86.57 per tonne (see Table 4.4.1).

The premiums shown in Table 4.4.2 may be overstated for the years 1986/87 and 1990/91 due to the assumption that prices in the commercial markets would fall by the EEP subsidies (see Figure 4.4.1). Corn prices exceeded the subsidy reduced wheat prices for a number of months within 1986/87 and 1990/91. In this market setting, milling wheat could be included in livestock rations instead of higher priced corn. However, the willingness of the feed industry to substitute wheat as a ration component limits the share of the feed grain market that could be realized. Therefore assuming the premiums measured in 1986/87 and 1990/91 are the DNS and HWO prices less the EEP subsidy overstates the premium when some wheat could be sold as feed and command a higher price. Feed wheat prices were below subsidy reduced 1, 2 and 3 CWRS in the remaining EEP years and the premiums measured in Table 4.4.2 are reasonable estimates given the assumptions of the analysis.

4.4.3 The Results

The results of comparing CWB 1, 2 and 3 CWRS price levels to the average EEP benchmark and the maximum EEP benchmark are shown in Table 4.4.2. The results show that the ability of a single-desk seller to keep prices from falling to the lowest marginal market price is significant. In the absence of the CWB, all Canadian wheat prices would drop to the level necessary to make sales to the average EEP market. Between 1985 and 1994 exporters would have averaged between \$13.58 per tonne to \$35.91 per tonne less for 1, 2 and 3 CWRS exports. If the prices were driven down even further to reflect the worst EEP markets, then the loss in value is between \$13.58 per tonne and \$53.77 per tonne. Table 4.4.2 shows the premium realized on 1, 2 and 3 CWRS exports when spread over sales to both commercial and EEP eligible markets averaged \$28.39 per tonne for average EEP and \$36.39 per tonne for maximum EEP. Since sales to EEP eligible markets were already negotiated at subsidized price levels the added revenue lost in a multiple agent setting would be sales to commercial markets where the CWB was able to maintain higher prices. Approximately half of all CWB exports were to commercial markets (see Table 2.2.4). Assuming all these commercial sales would be negotiated at prices reflecting an average or maximum EEP subsidy this reduced the 1, 2 and 3 CWRS prices realized by multiple agents by an average of \$28.40 per tonne (average EEP) and \$36.41 per tonne (maximum EEP). A single-desk seller like the CWB is an effective marketing

structure when other countries introduce export subsidies like EEP and the EU export restitution. This analysis shows that this effect results in a higher estimate of the premiums earned by the CWB relative to the multiple agent benchmark.

Table 4.4.2: CWB Premium (Discount) on No. 1, 2 and 3 CWRS Exports

Pool Year	Competitive Markets ¹	Average EEP ²	Maximum EEP ³
(CDN\$/Tonne)			
1980-81	16.93	N/A	N/A
1981-82	13.36	N/A	N/A
1982-83	12.86	N/A	N/A
1983-84	9.10	N/A	N/A
1984-85	8.86	N/A	N/A
Average (1980-85)			
	12.22	N/A	N/A
1985-86	13.58	13.58 ⁴	13.58 ⁴
1986-87	12.08	27.51	32.12
1987-88	15.18	30.08	39.72
1988-89	21.25	31.94	36.16
1989-90	14.68	24.51	32.01
1990-91	12.49	25.66	34.42
1991-92	10.10	35.65	43.36
1992-93	13.70	35.91	53.77
1993-94	12.39	30.64	42.34
Average (1985-94)			
	13.94	28.39	36.39

¹ Assumes the Canadian prices realized by multiple agents equal those quoted for comparable wheat in the United States, EU and Argentina.

² Assumes the Canadian wheat prices equal those quoted in the United States less the average EEP subsidy for the month of the sale.

³ Assumes the Canadian wheat prices equal those quoted in the United States less the largest EEP subsidy in month.

⁴ EEP adjusted prices were not calculated as the CWB sold only 700 thousand tonnes to EEP eligible markets in 1985-86.

4.5 Premiums from Foreign Aid and Domestic Sales

Wheat purchased from the CWB for donation to foreign countries ranged from 247,317 tonnes in the 1980/81 pool account to 793,532 tonnes in 1986/87. Given that the donor is obligated to acquire wheat from Canada, the only other source would be eastern Canadian wheat. The benchmark price of a competitive market assumes that when multiple agents are bidding to supply wheat to a donor, the price would not differ from quotes necessary to be competitive in the international market. In other words, Canadian donors would be able to acquire wheat at the same price as importers and the domestic users. To the extent that the CWB is able to maintain a price structure that is higher than would exist with many Canadian exporters, it earns a premium on such sales.

CWB sales to Canadian flour mills, other industrial and feed grain users over the 1980 to 1994 time period were subject to changing policies. Between 1980 and 1989 Canadian flour mills and other industrial users did not have access to United States wheat supplies without import permits. Supplies of Ontario winter and spring wheat were available. Their milling characteristics, however, limited the amount of these grains that could replace Hard Red Spring from western Canada. The analysis assumed that if multiple grain companies were selling prairie wheat to Canadian industrial users between 1980 and 1989 the maximum price the Canadian multiple agents could ask would be the street price at which comparable U.S. wheat was selling. Since 1990, following the Free Trade Agreement between Canada and the United States, this is the nature of price competition the CWB has encountered.

Between 1980/81 and 1989/90 the CWB was obligated by federal legislation to offer 1CWRS 13.5% to domestic users for between \$183.72 per tonne and \$257.21 per tonne, basis instore Thunder Bay. Given the only other wheat supplies available to the Canadian domestic users were from Ontario, the CWB should have been able to earn a premium over the prices realized by comparable U.S. wheat. Whereas the premium in the international market is associated with grade factors (cleanliness, consistency, and milling attributes), technical service, security of supply, and credit, part of the domestic premium would be attributed to the CWB's dominant share of the market. Canadian millers primarily supply flour for domestic consumption. While millers would attempt to secure wheat supplies at the lowest price possible, they in turn were also merchandising flour in a protected domestic market. Any premium realized on CWB sales was in turn likely passed on in terms of higher flour prices.

The volume of wheat sold to foreign aid donors and domestic millers is small compared to the export of wheat into foreign markets. Table 4.5.1 summarizes the average premiums on CWRS wheat sales to Canadian users for the period before and during EEP. The per tonne premiums exceed those realized in the export market. Prior to EEP (1980-85), the premiums on domestic sales of 1, 2 and 3CWRS were close to double the values estimated for the export sales (Table 4.3.2). Following EEP (1985-1993), the wheat sales to Canadian buyers continued to realize a larger premium on a per tonne basis. Assuming multiple sellers would not differentiate

domestic wheat buyers from export customers, the average price per tonne would fall to one common level. During EEP, this level would reflect the prices available to export customers qualifying for EEP.

Table 4.5.1: CWB Premium (Discount) on 1, 2 and 3CWRS Sales to Canada

Time Period	Domestic Millers and Industrial Users		
	Competitive Market	Average EEP CDN \$/Tonne	Maximum EEP
1980/85	24.37	N/A	N/A
1985/94	34.06	68.53	77.92

The CWB was able to realize a positive premium into the pool account from sales to foreign aid donors. This was not always the case from domestic milling. Throughout the two-price wheat policy the CWB realized a higher average price from Canadian industrial users than from most of its international customers. As world prices fell from 1980/81 through to 1987/88 the gap between prices charged to the domestic market over the international market widened. Domestic prices by the end of the two-price policy were bumping up against the maximum the CWB could charge. However, Table 2.3.1 shows the Canadian mills were able to reduce their reliance on western Canadian wheat, and Ontario farmers were able to capture a larger share of the Canadian market as the CWB raised the prices to domestic industrial users.

Once the two-price system was discontinued and wheat prices to Canadian millers were based upon comparable prices to U.S. mills the premiums disappeared. Canadian millers paid no more than their American counterparts after 1990/91. Since 1990/91 the Canadian milling industry has benefited through CWB pricing relative to acquiring comparable wheat from the United States. With the relatively lower prices, sales to domestic millers returned to levels in the early 1980s.

4.6 Overall Wheat Pool Account Premiums

The assessment of combining the premiums realized in terms of the revenue added to the CWB pool accounts from exports, foreign aid, and domestic sales requires the inclusion of sales from feed and other wheat. The study assumed the CWB did not receive a premium or discount

on their sales of feed and other wheat. This assumption underestimates the premiums on strong and semi-strong wheat sales in the pool account. The average volume of these exports together represents 12 percent of total exports and ranged as low as 3.3 percent to a high of 27.2 percent. (See Table 4.2.1.) Tables 4.6.1 and 4.6.2 and 4.6.3 determine the added premium revenue from each market and divide it by all wheat sold in the pool account, i.e., the average pooled benefit.

In Tables 4.6.1, 4.6.2 and 4.6.3, the overall wheat pool account premium is tied solely to sales of 1, 2 and 3CWRS. The relative amounts added to the wheat pool from the export, foreign and domestic sales show that exports, because of their share of total sales, contributes most of the premiums to the overall account.

For example, in Table 4.6.1 the CWB was estimated to return \$10.79 per tonne in 1982/83 to prairie farmers because of its ability to secure a premium over multiple sellers. Over 80 percent of the combined premium was from the export market. Only during the latter 1980s was the domestic market relatively important in adding to the overall higher pool prices. During this period (1985/86 to 1988/89), the CWB raised prices to Canadian millers well above those charged to foreign customers, and although the volume was relatively lower, the added revenue raised the overall price realized by Prairie farmers by between \$2.11 per tonne and \$7.92 per tonne. Foreign aid sales contribute relatively less to the overall price the CWB passes on to farmers when compared to the contribution of export markets. If the CWB is judged merely in terms of the prices it realized relative to the prices competitors were offering to sell comparable wheat, the average price was \$12.13 per tonne higher for the period 1980/81 to 1984/85 and \$14.16 per tonne higher during EEP. Over the 14 years, the average wheat sales in the pool accounts were 19.9 million tonnes. The average revenue added to the pool because of single-desk selling was \$13.35 per tonne or \$265 million per year.

Table 4.6.1: CWB Premium (Discount) on all CWB Wheat Sales when Compared to Multiple Sellers offering Wheat at Competitive Prices

Pool Year	Export	Foreign Aid	Domestic	Total
	(CDN\$/Tonne)			
1980/81	13.98	0.40	1.93	16.32
1981/82	11.10	0.67	1.68	13.45
1982/83	8.80	0.73	1.26	10.79
1983/84	7.38	0.54	1.48	9.41
1984/85	7.18	0.79	2.73	10.71
Average 1980-85	9.69	0.63	1.82	12.13
1985/86	8.20	0.85	7.92	16.96
1986/87	9.12	1.25	5.54	15.91
1987/88	11.83	2.65	7.75	22.23
1988/89	17.18	1.15	4.09	22.41
1989/90	11.64	1.45	2.11	15.21
1990/91	10.71	1.20	(0.04)	11.87
1991/92	7.35	0.72	(0.11)	7.97
1992/93	7.40	0.54	(1.20)	6.75
1993/94	7.01	1.42	(0.28)	8.15
Average 1986-94	10.05	1.25	2.87	14.16
Average 1980-94	9.91	1.00	2.45	13.35

Table 4.6.2: CWB Premium (Discount) on all CWB Wheat Sales when Compared to Multiple Sellers and Average EEP Subsidies

Pool Year	Export	Foreign Aid	Domestic	Total
(CDN\$/Tonne)				
1980/81	N/A	N/A	N/A	N/A
1981/82	N/A	N/A	N/A	N/A
1982/83	N/A	N/A	N/A	N/A
1983/84	N/A	N/A	N/A	N/A
1984/85	N/A	N/A	N/A	N/A
1985/86	8.20 ¹	0.85 ¹	7.92 ¹	16.96
1986/87	20.88	1.76	8.02	30.67
1987/88	23.35	3.42	10.83	37.60
1988/89	25.78	1.29	6.06	33.13
1989/90	19.37	1.99	4.74	26.10
1990/91	21.99	1.55	2.77	26.31
1991/92	26.09	2.23	4.16	32.48
1992/93	19.34	0.99	2.89	23.22
1993/94	17.45	1.96	4.70	24.11
Average	20.27	1.78	5.79	27.84

¹ EEP adjusted prices were not calculated as the CWB sold only 700 thousand tonnes to EEP eligible markets in 1985/86.

Table 4.6.3: CWB Premium (Discount) on all CWB Wheat Sales when Compared to Multiple Sellers and Maximum EEP Subsidies

Pool Year	Export (CDN\$/Tonne)	Foreign Aid	Domestic	Total
1980/81	N/A	N/A	N/A	N/A
1981/82	N/A	N/A	N/A	N/A
1982/83	N/A	N/A	N/A	N/A
1983/84	N/A	N/A	N/A	N/A
1984/85	N/A	N/A	N/A	N/A
1985/86	8.20 ¹	0.85 ¹	7.92 ¹	16.96
1986/87	24.39	1.92	8.35	34.66
1987/88	30.84	3.87	11.62	46.34
1988/89	29.19	1.52	6.82	37.52
1989/90	25.29	2.46	5.86	33.61
1990/91	29.49	1.66	3.37	34.52
1991/92	31.72	2.61	5.01	39.34
1992/93	28.95	1.23	4.82	35.01
1993/94	24.12	2.26	6.12	32.49
Average	25.80	2.04	6.65	34.50

¹ EEP adjusted prices were not calculated as the CWB sold only 700 thousand tonnes to EEP eligible markets in 1985/86.

Wheat pool account revenues were estimated to be an average of \$27.84 per tonne (Table 4.6.2) higher during the 1985 to 1994 period would have been generated if many agents were selling Canadian wheat. If these revenues were not realized by sellers they certainly would not be available to farmers. Instead, the primary beneficiaries of a multiple seller environment are wheat buyers. During the EEP period in a multiple seller environment, the major benefactors would have been importers living in countries not eligible for EEP. As long as some Canadian wheat is being sold to EEP eligible customers, then buyers in the commercial markets will be able to acquire wheat at comparable prices. Tables 4.6.2 and 4.6.3 show that when the added export revenues realized by the CWB are spread across all wheat sales average prices increase between \$20.27 per tonne (average EEP) and \$25.80 per tonne (maximum EEP). Since the volume of exports to non-subsidized markets are relatively much larger than domestic sales, most of the overall increase in the pooled price is attributed to exports. When the added revenues from domestic and foreign aid sales are included in the 1985-94 time period, the single-desk system of selling Prairie wheat is estimated to have increased the average pooled price between \$27.84 per tonne and \$34.50 per tonne. Given the average sales throughout the nine years (1985/86 to 1993/94) were 20 million tonnes (see Table 5.3.6), the annual revenue added by single-desk selling ranged between \$557 million and \$690 million per year.

4.7 Summary

This chapter has examined in detail the premiums earned by the CWB from the wheat market. The chapter concentrated on the sale of 1, 2 and 3 CWRS. Two benchmarks were set up to measure the CWB against. First, the competitive markets were used, where the CWB was measured against the competition in like markets. Second, the effectiveness of the CWB in a world market dominated by EEP subsidies and EU export restitution was examined. Finally the chapter examined the three separate markets of export sales, domestic market, and the foreign aid sales and the contribution each of these sales have made to create premiums in the pool account.

If multiple sellers were merchandising Prairie wheat, they would have to match some of the EEP subsidized prices available to importers if past production levels were sold. Assuming the price level for all sales (exports, aid and domestic) fell to the average subsidized price, then by having the CWB, Prairie farmers were able to realize more than through multiple sellers. The benefits of the CWB clearly rose in a world market characterized by differential subsidies to each importer. A single-desk agency is capable of maintaining higher prices in the non-subsidized market, and selectively targeting which subsidized market to merchandise the remaining supplies of wheat. Over the fourteen years, the average premium was \$13.35 per tonne (see Table 4.6.1) on annual sales of 19,867,772 tonnes (see Table 5.3.6). On average then, the premiums contributed \$265 million per year to CWB wheat pool accounts relative to a setting with many sellers merchandising Prairie wheat.

The conclusion to be drawn from this chapter is that the CWB did return to prairie farms a minimum of \$265 million additional revenue per year on sales over the period 1980-94. This estimate was made using a high benchmark for the CWB. Using the second benchmark, which incorporates the average EEP bonuses and assumes that the law of one price holds, then the premiums go as high as \$557 million per year over the period 1985-94. The third benchmark of prices falling by the largest EEP subsidy estimates the CWB realized \$690 million more per year. Most likely the actual return falls between these two latter estimates. Again, these estimates only include the premium earned on CWRS in the wheat pool accounts. Premiums associated with the durum and barley pools are not addressed in this study and would be in addition to the above estimates.

5. Cost of Marketing Grain

5.1 Introduction

From the time grain is delivered to a prairie country elevator until it is deposited in an ocean-going vessel, a number of marketing services are undertaken. While the services are essentially the same for wheat, barley, canola, flax and rye, the means of payment differs for wheat and barley. Neither farmers, nor the CWB, own handling or transportation facilities (with the exception of some hopper cars in the case of the CWB). Instead, these services are contracted directly. Each service performed involves a user fee. For most of the other grains and oilseeds (rye, flax, canola, etc.), grain companies buy the grain in the country and pay user fees for only the services they do not perform themselves. While the marketing services are similar, a comparison of the marketing costs between CWB grains and all other grains and oilseeds is not a straight forward exercise.

The marketing services performed can be grouped into the general categories of handling, storage, finance, transportation and risk management. Since the average distance between the prairie farm and the ports on the West Coast or in the St. Lawrence is approximately 2,500 kilometers, all grain must be assembled and shipped. This requires time to move the product from origin to destination and assemble homogeneous shipments. Therefore, besides the handling, storage, and transportation facilities, resources must be committed to financing the inventory and managing the risk associated with unforeseen changes in commodity prices.

A comparison of the marketing costs for western Canadian wheat relative to other grains in the Prairies is necessary in order to assess whether the costs will change if many grain companies bought and sold prairie wheat compared to the single-desk management by the CWB. The primary difference between the single-desk and a multiple agent setting, is not user fees versus imputed margins, but the nature of risk and the cost of managing risk under the two systems. To the extent that the nature and methods of managing the financial risk borne by the marketing agency differs, the costs are likely to reflect any differentials.

In a multiple agent setting, a grain business operates on the margin determined according to the prices for which grain is bought and sold. Unless purchases and sales can be matched immediately with a known margin the organization must manage the price risk if the expected margin is to be realized. A commodity with more variation in both day-to-day price and uncertainty in finding a buyer will normally require a larger margin. Forward futures contracts

are designed to share the price risk with another party. Their effectiveness in reducing risk to the grain company varies according to the efficiency of the futures market and the grain handling system.

The CWB acts as an agent for the farmer. While a majority of the value of the grain is paid to farmers at the time of delivery, the CWB does not have to manage the price risk of the inventory purchased. The initial payment is underwritten by the Government of Canada and the remaining value of the grain is effectively a form of equity capital transferred to the CWB by farmers. These monies can be thought of as a self-insurance premium. If there are no unexpected claims (price and/or cost changes) the funds remaining in the pool account are returned through the final payment. While the CWB must manage its exposure to risk in terms of currency prices and interest rates, it is not necessary to manage price uncertainty in terms of the inventory value of wheat and barley.

The following sections introduce a brief discussion on the economic setting in which a business provides grain marketing services. This is followed by a description of grain marketing services and then a comparison of costs. The chapter concludes with a discussion on the marketing cost implications of multiple agents buying and selling western Canadian wheat.

5.2 Economic and Institutional Framework for the Provision of Grain Marketing Services

A grain marketing business primarily assembles commodities with a range of grade specifications, and organizes shipments of homogeneous grains, pulses or oilseeds. Whether these shipping lots are loaded on ocean-going vessels, or are containers filled for a local processor, the difference is merely one of magnitude. Volume, however, is an important consideration in the cost of handling, storage and transportation. These marketing activities are capital intensive and total costs increase at a lower rate than the volume of grain moved.

Literature reviewed by Chase et al., as well as their own study on the cost structure of country elevators, showed that the average cost per unit of grain handled declines as volume increases. For most country elevators, direct expenses such as salaries, electricity and interest did not increase out of proportion to grain volume handled. In some instances, variable costs even grew slower than the increased volume. Depending upon the volume handled, variable costs represented between 15 percent and 30 percent of total costs. The majority of the costs, such as property taxes, bonds, depreciation and long term debt, were unaffected by the volume handled.

The declining cost structure of operating a country elevator would suggest a trend toward fewer, but larger facilities. This has occurred. Consolidation continues in the prairie provinces as the number of country elevators have dropped from over 5,000 in 1965 to less than 1,300 operating units in 1995. By itself, the cost structure of the primary elevator suggests this trend could continue until just one facility remained. This is not possible when the collection costs

of delivering the grain to a country facility are taken into consideration. The optimal catchment area served by a country elevator depends upon crop yields and farm to elevator shipping costs. When the grain collection costs are combined with the costs of operating a country elevator, the average cost per tonne eventually increases and a number of country elevators are required to minimize the handling costs for all farmers. The cost structure for grain handling is consistent with a "contestable" market. (See Baumol, Panzar and Willig, 1982.) The value of grain handling services could be determined in an unregulated market where farmers, or their agents, are able to shop around for the best deal offered by grain handling companies.

Grain terminals exhibit a cost structure not unlike country elevators. The only difference is that the economies of scale extend over a much larger volume and, as such, the optimal catchment area is larger. The spatial distribution of the grain terminal elevators on Canada's West Coast, Churchill, Thunder Bay, and along the St. Lawrence and Halifax are linked primarily to historical transportation costs of accessing prairie grain as well as the shipping costs to importers. The dispersed spatial configuration of grain terminals should not be misread as a natural monopoly. Grain services performed by a terminal elevator, such as dockage removal, storage and handling, are contestable and their value can be effectively determined through an unregulated market.

Rail transportation, like grain handling, is capital intensive and exhibits economies of scale. For a long time, a railway's declining cost structure was sufficient rationale to regulate freight rates, since a natural monopoly could charge user fees which exceeded its costs. Given the expanded transportation network that includes highways, rivers and lakes, a given railway encounters more competition from other modes as well as from other railways. Regulations on rail freight rates were first removed in the United States in 1980. Canada followed suit in 1987 with the National Transportation Act on all commodities except grain. Prairie grain shipments to the West Coast, Churchill and Thunder Bay will be subject to maximum rates under the Canada Transportation Act until the year 2000 and then, they too, will fall under the umbrella of the Canada Transportation Act rate provisions.

The complementarity of bulk grain shipments on unit trains, along with increased handling in country elevators, has yet to be realized in the Prairies to the same extent as in the United States. According to Cobia et al., unit train rail rates created a dynamic impetus for major changes in the country elevators in the United States. Elevators using unit trains were able to pay more for grain given the lower rail rates. Depending on the distance, discounts in the U.S. northern plains for 52-car shipments relative to single car rates range between 16 percent and 20 percent. This in turn attracted larger volumes, which lowered handling costs. In the U.S. midwest plains, the potential profitability of multi-car facilities saw many companies invest in these structures. Multicar facilities added fixed cost with little alternative use. Excess loadout capacity led to increased competition and handling margins too low to sustain some country elevators with relatively higher total costs. Structural changes are ongoing as the U.S. grain handling continues to realize economies of scale.

Canadian country elevators, railways and terminals have been subject to extensive government regulations throughout the period of the study (1980-94). The statutory grain rail rates passed in 1925 remained unchanged until 1983 when the Western Grain Transportation Act (WGTA) replaced the former Crow's Nest Grain rail rates with a new set of regulations. Prior to explicitly subsidizing grain freight rates in 1984 under the WGTA, the Federal government indirectly subsidized grain shipments through financing hopper cars and the rehabilitation of box cars and grain dependent branchlines. Public intervention in the transportation of Prairie grain was pervasive.

Railway regulations and the limited capacity to move grain extended government involvement into the allocation of hopper cars between grain companies. Companies further decided to cooperate through the pooling of cars when they reached terminal elevators. The amount of grain handled by a terminal elevator was largely a function of the country elevator market share, i.e., country grain originations. A grain handling organization entitlement to rail cars was determined by sales for non-CWB grains by the Grain Transportation Agency. Access to railcars for CWB grains was determined by an industry agreed formula on a train-run basis, and is determined principally by the company's ability to originate grain on the train run and demonstrated need for cars through low space relative to capacity. Given the logistical constraints, these procedures attempted to maximize throughput. A grain company's share of the handle could be increased by competing for farmer deliveries. In recent years, companies' market shares have been highly variable and competition for deliveries was a primary determinant of company profitability.

Another set of government regulations comes under the auspices of the Canada Grain Act. Until 1995, the Canadian Grain Commission (CGC) established maximum tariffs for grain handling services provided by licensed primary and terminal and transfer elevators. Tariffs were set for handling, storage, cleaning, drying and a number of special services. In accordance with procedures developed to price services of public utilities, the CGC determined the maximum rates based upon a targeted return to assets. Given the capital intensive nature of grain handling, the definition of assets and the volume of grain handled were key assumptions. The grain handling businesses were free to decide on how much capital was invested in the industry and the aggregate volume was linked primarily to grain production and exports. Given the economies of scale available, the industry could lower its cost by reducing total investment through consolidating facilities, or increasing the volume handled. In either case, the outcome pointed to lower tariffs. The CGC could not, however, set rates based upon the most cost efficient system. Instead, they had to base the maximum tariffs on the facts of the day. By the 1970s, the CGC changed the maximum tariffs, and the companies were allowed, and to some degree encouraged, to file rates below the published maximums. The maximums, however, provided a benchmark. Unless a grain handling business could increase its handle through lowering user fees and in turn lower costs, the published rates became the guidelines that were adhered to. Differential rates for elevators with lower costs required a company to file these rate schedules with the CGC.

Adding CGC constraints to the regulations on grain transportation resulted in a grain handling system that was integrally tied together from the farm to the export terminal with government regulations. The realized marketing costs of any one part, namely, cleaning, storage, transportation, carrying costs, and risk management, are a function of the system as well as the activities required to carry out the task.

5.3 Costs of Grain Marketing Services

5.3.1 Introduction

Grain marketing costs for Canadian wheat and barley are transparent, while prices negotiated for export and domestic sales are not. Prices paid by multiple agents buying and selling nonboard grains are relatively transparent, but the marketing costs are not. Whether the single-desk or multiple agent system is able to realize lower marketing costs cannot be demonstrated clearly from the available evidence. In the case of the multiple companies, the costs are imputed, while the farmers and the CWB explicitly account for most of the marketing services required. This section discusses the framework for comparing marketing costs and brings forward some evidence that sheds some light on the issue.

5.3.2 Futures Markets, Basis and Marketing Costs

Futures markets provide a means of shifting the risk of day-to-day price changes from relatively risk averse individuals to those more willing to accept uncertainty. Differences between a cash price and futures price at the same location represent the costs incurred to carry the product (storage, interest, insurance) until the futures contract expires. This price difference between the cash and futures market is called the "basis". For the same location, the basis primarily reflects carrying costs. Carrying costs change relatively slowly and the basis tends to remain constant unless the expected market conditions in the future differ from the actual market conditions of today. In some instances, the cash price exceeds the futures price because of current shortages relative to future expected supplies.

Cash prices quoted at a different point of delivery than cited in the futures contract reflect the spatial and the time difference. Assuming the quality attributes of the commodity are identical, the basis measures not only carrying costs, but the cost of additional marketing services such as transportation and handling. Cash transactions reported for grains or oilseeds purchased in the country also reflect quality differences between the commodity bought and that called for in the futures contract. As an example, this may include grade, dockage, protein content and variety. When institutional uncertainty, such as the availability of hopper cars disrupts the flow of oilseeds, the basis will tend to widen. The basis will also widen when farmers want to deliver more product than what a grain company can handle. Lower prices and the larger basis

discourage deliveries. Therefore the size of the country basis reflects the marketing costs, institutional rigidities and factors affecting supply and demand for the commodity.

5.3.3 Basis for Canola and Flax

Primary delivery locations for some futures contracts are elevator terminals servicing the export trade. This is the case for flax and is currently the case for canola until 1996/97. In these cases, the cash markets in the delivery location and the country are tied into the futures contracts traded on the Winnipeg Commodity Exchange. A basis, defined in terms of the difference between the nearby futures contract price and the average price paid for canola and flax in the country, should, over the course of a crop year, indicate the funds an oilseed trading business has available to pay for marketing services. Figure 5.3.1 shows that the average weekly prices of the nearby canola futures contracts are correlated closely to the weekly cash prices paid to Prairie farmers. Prices declined throughout the 1985/86 crop year and both the nearby futures and country cash prices fell by approximately \$100 per tonne. The weighted average country basis during the 1985/86 crop year was \$42 per tonne. Similar patterns to Figure 5.3.1 exist for the other years in the study.

The relationship between the nearby flax futures contract prices and the average price paid in the Prairies is displayed in Figure 5.3.2. Flax cash prices in the country rose from \$200 per tonne in August and September, 1993 to \$235 per tonne by the summer of 1994. Futures prices moved from \$250 per tonne in the fall of 1993 to \$280 per tonne by July of 1994. The weighted average country basis over the 1993/94 crop year was \$45 per tonne.

The flax and canola basis were determined and appear in Table 5.3.1 for the study period 1980/81 to 1993/94. The canola country basis ranged between \$40 per tonne and \$66 per tonne, while the flax country basis ranged between \$33 per tonne and \$61 per tonne. For the crop year, the country basis was merely a weighted average of the difference between the daily nearby futures closing price and the weekly average country price. If more canola was delivered in week 20 than in week 40 the weighted average country basis for the crop year took this into account. The unanswered question concerning the country basis reported in Table 5.3.1, is "how well does it reflect the marketing costs incurred between the country and the export terminals?"

The relatively higher country basis in the early 1980s is attributed partly to higher carrying costs. Both interest rates and the volume of canola and flax instore were at record highs. Shortages of hopper cars, locomotives, and an over taxed rail infrastructure led to growing stocks of grains and oilseeds. To remedy the situation along with concerns in terms of meeting export commitments, access to the grain handling system was rationed through delivery quotas, and a governmental agency was set up to oversee how the transportation system was allocated between wheat, oats and barley and non-CWB grains and oilseeds.

Table 5.3.1: Weighted Average Difference between the Nearby Futures Contract Price and the Price Paid to Prairie Farmers

Crop Year	Canola ¹ \$/Tonne	Flax \$/Tonne
1980/81	66	60
1981/82	46	51
1982/83	53	55
1983/84	40	58
1984/85	41	45
1985/86	42	33
1986/87	48	45
1987/88	50	61
1988/89	46	36
1989/90	47	39
1990/91	40	36
1991/92	44	54
1992/93	49	53
1993/94	64	45

¹ Includes a discount for No. 2 canola and flax in relationship to it's share deliveries in the 1980/81, 1981/82, 1982/83, 1983/84, 1985/86, 1986/87, 1987/88, 1988/89, 1989/90, 1992/93, and 1993/94.

Source: CGC, Economics and Statistics Division: Average Grain Prices; Data Vendor Technical Tools.

Figure 5.3.1

1985/86 Crop Season Canola Prices

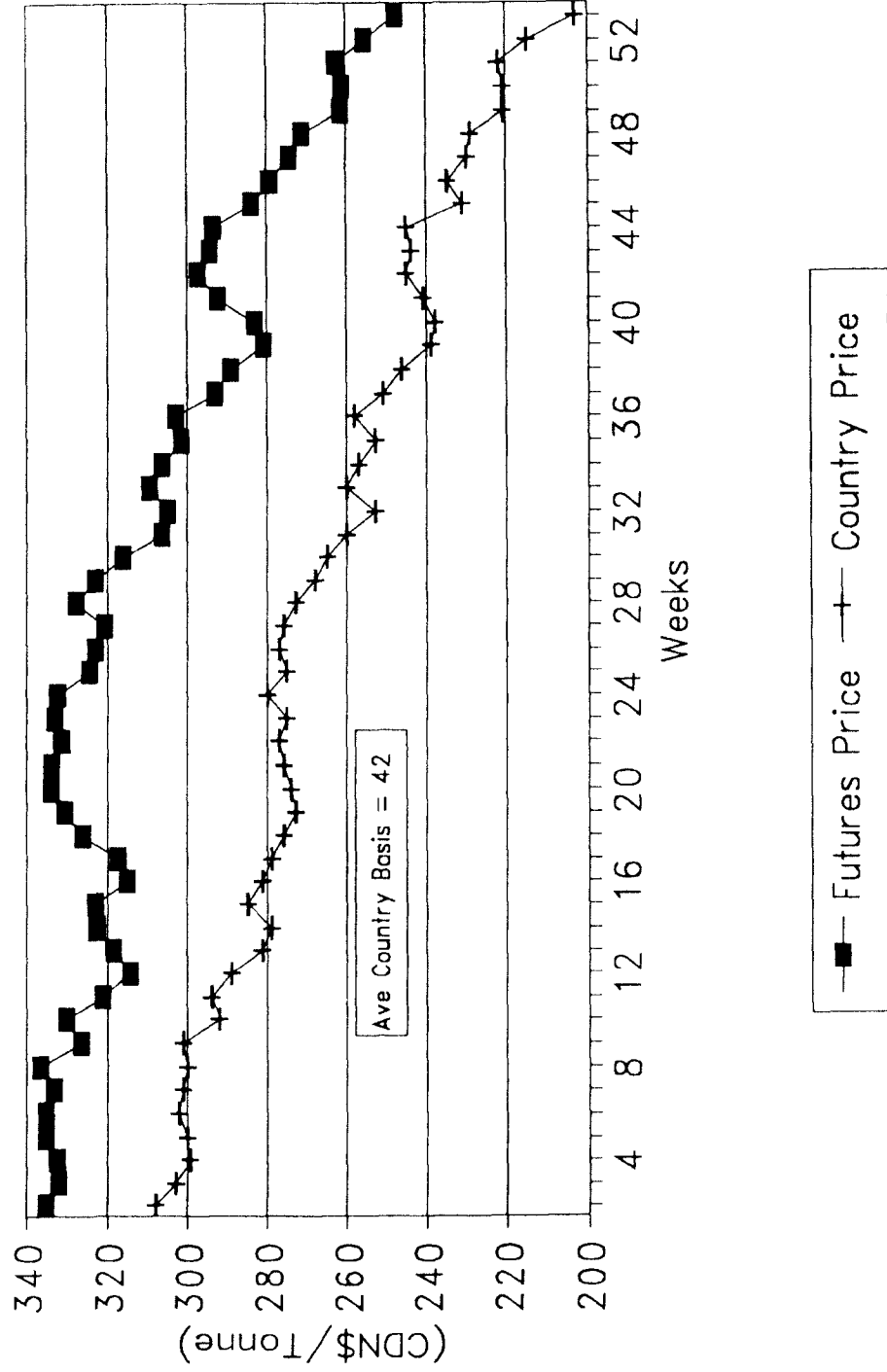
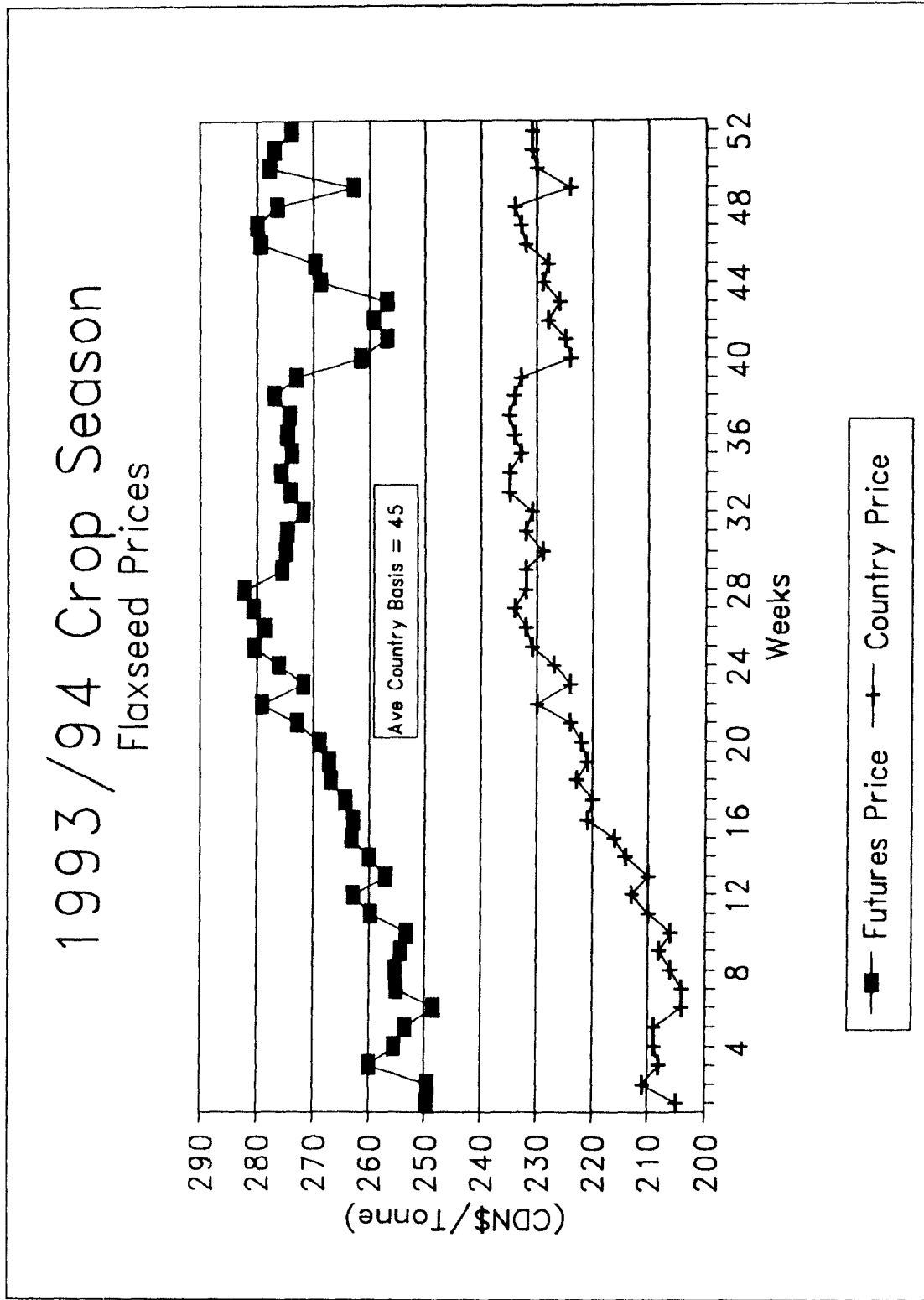


Figure 5.3.2



5.3.4 Handling, Carrying and Shipping Costs

Marketing costs estimated for flax and canola assume the grain companies buying oilseeds would attempt to recoup their opportunity costs from elevation, dockage and storage. Elevation charges include receiving, elevating and shipping grain as well as dockage removal, administration, weighing and inspection. Every year the average tariffs filed with CGC were imputed as the marketing costs. In the case of storage, the number of days the oilseed was instore in the country and terminal were estimated from the commodity disappearance and stocks in each location. Table 5.3.2 shows the estimated storage time ranged from a high of 151 days for flax in a country elevator in 1980/81 to a low of 15 days for canola in a terminal elevator (1991/92). The average time wheat, flax and canola spent in country elevators declined over the fifteen years. In the early 1980s, wheat spent 60 days in country elevators and ten years later the time was down to less than 45 days. Flax storage dropped from approximately 100 days in the early 1980s to 40 days in the 1990s. Over the fourteen years (1980/81 to 1993/94) wheat and canola averaged the same time in terminal elevators. However, the wheat average overstates a direct comparison with canola because wheat was stored longer in the eastern elevators than on the West Coast. Logistically, the larger volume of wheat should allow for greater efficiencies in storage to be realized but an offsetting factor is the relatively larger number of wheat grades than for flax and canola. The management of stocks, in terms of storage time, which has direct bearing on carrying costs, shows the CWB to be as efficient as the agents marketing flax and canola. If anything, managers of flax inventory tended to use space for longer periods of time than both wheat and canola.

Time that wheat, canola, and flax, spent moving from country elevators to export terminals was not available for every year. Instead a recent study by the Grain Transportation Agency on cycle times for grain shipments provided estimates for 1991 intransit times and they were assumed for all other years. Intransit times have been reduced over the 1980/81 to 1993/94 period and therefore the carrying costs will be somewhat understated for the earlier years.

Whenever a commodity does not move, the storage bill builds up along with an interest expense. Because of their higher value per tonne, flax and canola exceed the carrying cost of wheat. During the early 1980s, the carrying costs constituted up to one-half of the combined handling, transportation and carrying costs of exporting oilseeds. (See Appendix Tables A5.1 to A5.14.) Interest costs are estimated to be one-half a percent above the prime interest rate, except for the CWB where a rate one-half percent below the prime interest rate was assumed on wheat stored in the terminal. By the 1990s, because of lower interest rates and a more rapid turnover of oilseeds, handling costs for canola surpassed carrying costs for the first time.

Because of its relatively lower value per tonne, wheat has a lower carrying cost. Handling and transportation represent a larger share of the marketing bill for wheat than for flax and canola. In the case of primary elevation and dockage, these charges are collected directly from the farmer, while the CWB pays the grain organization for country storage and carrying costs until the wheat is unloaded in a terminal. The costs reported in Tables A5.1 to A5.14 are

those incurred by the CWB, except for terminal carrying costs. Depending upon the year and capital flows, the CWB is able to finance the terminal carrying costs with varying levels of borrowed funds. Since the interest costs imputed for flax and canola assume one hundred percent debt financing, the carrying costs for wheat are estimated on a comparable basis.

Freight rates were subsidized throughout the 1980/81 to 1993/94 time period and constitute a small share of the marketing cost realized by the shipper. The differential rates for wheat, canola and flax reflect that wheat was shipped east and west, flax east and canola west to Vancouver.

Table 5.3.2: Estimated Commercial Storage Time for Grains & Oilseeds (Days)¹

Crop Year	Primary Elevator			Terminal Elevator		
	Wheat	Flax	Canola	Wheat	Flax	Canola
1980/81	57	151	72	38	75	58
1981/82	61	126	60	35	69	44
1982/83	51	80	36	38	52	41
1983/84	67	90	35	40	49	31
1984/85	63	71	36	51	76	69
1985/86	50	65	48	51	51	47
1986/87	49	64	38	40	53	38
1987/88	38	67	43	34	82	36
1988/89	41	64	39	45	89	37
1989/90	50	50	42	41	29	38
1990/91	54	35	31	31	25	21
1991/92	42	51	31	28	42	15
1992/93	44	47	38	31	79	39
1993/94	46	34	31	26	59	29
1994/95	41	28	24	22	39	25
Average	50	68	40	37	58	38

¹ In 1991 the respective intransit times for wheat, canola and flax were 9.6, 13.2 and 11.8 days.

Source: Grain Transportation Agency, 1991 Cycle Times; CGC, Weekly Grain Statistics

The actual or imputed marketing expenditures shown in Table A5.1 through Table A5.14 take no account of risk management. For the oilseeds, the country basis includes a risk management component. Differences between the country basis and the marketing costs in Table A5.1 and A5.14 represent the funds available for risk management and a return to capital.

When a grain agent buys oilseeds in the country and hedges the purchase by selling a nearby futures contract, there is the option of buying the futures contract back when ownership of the crop is transferred or delivering the commodity to fulfill the contract. Both oilseeds futures contracts allow the owner of the short position to meet the obligations of the forward sale by delivering the commodity. Being able to deliver canola to Vancouver, or flax to Thunder Bay, is conditional upon having a hopper car. Given the limited and valued throughput capacity in Vancouver, a hopper car was available on the condition the canola was being exported shortly not merely delivered to be stored indefinitely. Uncertainty with respect to the availability of rail transportation for delivery to Vancouver or Thunder Bay increases the time grain is stored in the country. The added carrying cost, however, is already accounted for in estimates of marketing costs. Unexpected transportation delays may require rolling the futures contract over to the next delivery period.

Transaction costs incurred with every trade involve wages, commissions and market imperfections, as orders are not always filled at the bid or offer. Futures contract prices do not always move in a one-to-one relationship with the instore cash and country prices. In these instances the owner of the grain is exposed to the possibility the basis may become larger. Risk management involves strategies and expenditures to minimize these costs. Because of their nature, these costs are less predictable than handling and storage.

5.3.5 Risk Management and Administration Costs

The difference between the country basis and the identifiable marketing costs are the costs attributed to risk management. This cost is identified as the amount of money not accounted for in the country basis after deducting transportation, storage and handling. The variation in the risk management cost is illustrated in Table 5.3.3. Both the variability and magnitude are surprising. The respective fourteen year average of \$17 per tonne for flax and \$19 per tonne for canola, infers that risk management is a costly operation and grain companies require a margin of this magnitude to buy and sell oilseeds. In the case of canola, Martin and Cousineau observed the futures prices do not reflect the underlying instore cash market in Vancouver. They claim the nearby futures price exceeds the instore Vancouver cash price even as delivery approaches. The lack of a threat of delivering canola against a short futures contract severs the linkage between the Vancouver instore cash price and the futures contract. Martin and Cousineau cited anecdotal evidence that the instore cash price ranged between \$10 per tonne to \$20 per tonne below the March futures during the second week in March of 1995. Deloitte and Touche estimated the difference to be \$10 per tonne between the instore cash and futures contract in the delivery month. These studies, however, suggest that the canola futures prices

overstate the value of the instore price in Vancouver. To the extent this is true, then the methodology followed in this report will overestimate the risk management costs.

Table 5.3.3: Risk Management Cost Estimated for Flax and Canola

Crop Year	Flax			Canola		
	Weighted Country Basis	Handling and Carrying Cost ¹	Risk Management Cost	Weighted Country Basis	Handling and Carrying Cost ¹	Risk Management Cost
	(CDN\$/Tonne)			(CDN\$/Tonne)		
1980/81	60	42	18	66	27	39
1981/82	51	41	10	46	30	16
1982/83	55	27	28	53	24	29
1983/84	58	30	28	40	25	15
1984/85	45	31	14	41	28	13
1985/86	33	27	6	42	26	16
1986/87	45	24	21	48	24	24
1987/88	61	25	36	50	25	25
1988/89	36	31	5	46	28	18
1989/90	39	33	6	47	32	15
1990/91	36	30	6	40	32	8
1991/92	54	31	23	44	32	12
1992/93	53	31	22	49	33	16
1993/94	45	32	13	64	34	30
Average	48	31	17	48	29	19

¹ See Appendix Tables A5.1 to A5.14.

Information on the instore cash price of canola and export cash trade in Vancouver was reported through the Canola Price Review Committee (CPRC) by CGC. Weekly cash bids/offers relative to the nearby futures contracts were reported. The cash market for canola is not relatively active or transparent. Market intelligence on the Vancouver cash canola trade is gathered for the CPRC by a local market analyst and reviewed prior to publication. The crop years 1990/91 to 1993/94 are summarized in terms of the average weekly premiums (discounts) at which the instore prices of canola traded relative to the nearby futures contract. Table 5.3.4 indicates the instore prices of canola traded between \$9.39 per tonne in 1991/92 and \$3.37 per tonne in 1992/93 below the nearby futures prices. Within the year, the week to week variation is characterized by the standard error. It shows that in 1993/94 the discount ranged between plus or minus \$1.54 per tonne 67 percent of the time. Cash sales to the export canola market closely followed the instore cash sales, and are presented in Table 5.3.4. Albeit the cash value, because of carrying costs, should trade at a discount to the nearby futures, the failure of the cash and futures to converge in the delivery month indicates the canola futures market has some contractual shortcomings.

The lack of convergence of the nearby canola futures contracts and the cash price requires the risk management costs determined with the nearby futures price adjusted. For the years 1990/91 to 1993/94 the average cash discounts reported in Table 5.3.4 were deducted from the canola risk management costs. The adjusted risk management costs appear in Table 5.3.5. For the period 1990/91 to 1993/94 the instore discount adjustment reduced the risk management cost by \$7.04 from \$16.41 per tonne to \$9.38 per tonne.

Delivery is an option to fulfil the obligations in a flax futures contract. Since 1988, the GFA has not been involved with rail car allocation for flax. Rail services for flax are negotiated directly between the grain companies and the railways. Besides the threat of delivery, the stocks of flax instore in Thunder Bay are relatively much larger in relationship to the exports than canola stocks are in Vancouver. These stocks potentially provide a source of product to complete an export sale without having to draw upon supplies in the country. Unlike canola where the "cash market" represents between 10 and 15 percent of the product procured for exports, supplies of flax in Thunder Bay potentially allow for an active market. Assuming the nearby futures prices converge with the instore flax cash prices, then the country basis, and the average risk management costs, should not be overstated.

Over the 1980/81 to 1993/94 time period the country basis for flax averaged \$48 per tonne while the handling, storage and carrying costs equalled \$31 per tonne. The difference of \$17 per tonne remains to meet the cost of managing the risk of buying and selling flax.

Table 5.3.4: Average Canola Cash Premiums (Discounts) to the Nearby Futures Contract

Crop Year	Instore	Export
(CDN\$/Tonne)		
1990/91	(6.80) ¹ 0.24 ²	(7.22) 0.11
1991/92	(9.39) 2.36	(11.05) 3.94
1992/93	(3.37) 3.66	(1.89) 5.22
1993/94	(8.58) 1.54	(8.27) 1.16
Average	(7.04)	(7.11)

¹ Premium (Discount)

² Standard Deviation

Source: Grain Statistics Weekly, Canadian Grain Commission

Table 5.3.5: Adjusted Risk Management for Canola

Crop Year	Risk Management Cost	Instore Cash Discount	Adjusted Risk Management Cost
(CDN\$/Tonne)			
1990/91	8.11	(6.80)	1.31
1991/92	11.62	(9.39)	2.23
1992/93	15.66	(3.37)	12.28
1993/94	30.26	(8.58)	21.68
Average	16.41	(7.04)	9.38

Source: Grain Statistics Weekly, Canadian Grain Commission

Risk management, in the context of a pooled account of all wheat sales, has a different focus than managing a grain company's inventory value of grain. In the case of the pool account, farmers and the Government of Canada have assumed the risk of price uncertainty. The Government underwrites any pool account deficits while farmers accept partial payment at the time of delivery. Funds from sales that are retained by the CWB and eventually paid to farmers when the pool account is closed, serves as a source of risk capital. While the intentions of the CWB are to maintain and add to this residual sum of money, it also acts as an equity buffer whenever prices drop or costs rise. Revenues from sales during periods of relatively higher prices, or to premium markets, are available to offset lower prices. Underwriting any deficit in the pool account effectively provides the CWB with a letter of credit that under no circumstances will the organization have to concern itself with questions of liquidity or solvency in developing a sales strategy.

Risk management to the CWB is the all inclusive administrative function. It involves the divisional activities of sales, transportation, country services, planning, finance and human resources. Over 1980/81 to 1993/94 these costs, when prorated to the wheat pool account, ranged from a high of nearly \$30 million per tonne in 1993/94 to just under \$13 million in 1980/81 (see Table 5.3.6). Besides the administrative activities, the CWB bears the costs of demurrage. Over the course of the 14 years analysis the average demurrage cost was 32 cents per tonne. When revenues from wheat sales fell short of expenditures in 1985/86 and 1990/91, farmers did not bear the costs of underwriting initial payments. This is a risk management cost. Without the guarantee from the Government of Canada, the CWB would have to set aside some money every year as an allowance for deficits in the pool accounts. Over the 14 pool accounts analyzed in this study the two shortfalls could have been offset by setting aside \$2.50 per tonne of wheat sold (see Table 5.3.6). Combining the administrative, demurrage and pool deficit costs for the period 1980/81 to 1993/94 equals \$3.85 per tonne.

A comparison of the costs imputed to grain companies for risk management of canola and flax relative to the funds required by the CWB for wheat indicates that private agents required a larger risk management premium. Over the period 1990/91 to 1993/94 the adjusted risk management for canola was \$9.38 per tonne (Table 5.3.5). Flax was much higher at \$17 per tonne (Table 5.3.3). While the CWB risk management costs of \$3.85 per tonne explicitly have an allowance for administration, the oilseed risk management costs have, for the most part, previously been accounted for in the handling fees deducted from the country basis. The differences reflect the marketing systems. In one case farmers and the government assume the risk of price variability. Day-to-day price risk is shared through pooling of sales revenues over the course of the year. In the case of flax and canola, the grain companies manage the price variability through the margin between their purchase and selling prices.

The amounts imputed for managing price risk suggest the business of buying and selling Canadian oilseeds is still risky in spite of forward contracts designed to mitigate the uncertainty. A precise measurement of the risk premium was not possible without knowing the actual values realized by the grain companies when flax and canola were sold to end users. These prices were

not transparent. The adjusted futures prices may or may not exceed realized prices and the imputed risk premiums may or may not be too large. The risk management costs for oilseeds, however, are unlikely to be below the CWB management costs of \$3.85 per tonne.

Table 5.3.6: CWB Administration, Demurrage and Deficit for the Wheat Pool Account

Pool Year	Admin. Costs CDN\$	Demurrage Charges CDN\$	Deficit CDN\$	Total Sales Tonnes
1980/81	12,892,144	220,503		17,810,019
1981/82	14,169,015	4,098,946		18,658,871
1982/83	17,305,075	9,094,749		22,585,503
1983/84	17,750,708	2,422,929		21,117,075
1984/85	18,834,592	12,300,778		16,768,797
1985/86	19,160,741	6,530,228	22,994,777	21,728,221
1986/87	17,130,832	1,770,643		20,596,221
1987/88	20,007,806	10,542,410		16,103,700
1988/89	17,943,259	9,266,321		14,353,863
1989/90	20,889,909	66,282		18,401,822
1990/91	23,977,312	2,214,134	673,375,122	24,186,953
1991/92	26,395,362	859,482		21,057,691
1992/93	29,614,902	4,990,216		23,476,607
1993/94	29,995,558	23,986,030		21,302,809
Total	\$286,067,215	\$88,363,651	\$696,369,899	278,148,152
Average	\$1.03/Tonne	\$0.32/Tonne	\$2.50/Tonne	\$3.85/tonne

Source: CWB, Annual Reports

5.3.6 *Financial Operations of the CWB*

Besides managing the receipts and disbursements of funds from the sales of wheat and barley, which is no different than to any other grain company, the CWB also administers loans (disbursement and payments) under the cash advance program and credit grain sales. The scope of the credit operations is very large and reached nearly \$7 billion in 1993/94. The growth in loans associated with credit sales are reported in Table 5.3.7. They show a three fold increase between 1980/81 and 1993/94. This operation resembles more the activities of a commercial bank than a private grain organization. The ability to underwrite these loans and maintain a margin between the cost of borrowing and lending is due partly to the Government of Canada guarantee. The CWB maintains the same rating on its debt as the Government of Canada. No other Canadian commercial entity has access to debt capital at a lower cost.

CWB export credit operations must be competitive with commercial banks, or grain importers would obtain the credit elsewhere. While these loans to importers are also guaranteed by the federal government, the CWB receives no more special consideration than any other lender seeking an export credit guarantee from the government. The rates an importer and borrower pays on the credit sales are commercially competitive but exceed the CWB cost of raising the money. Funds realized from the difference between raising and lending capital are available to finance ordinary operations. Operational cash flow shortfalls occur in the first months of the crop year as sales revenues do not coincide exactly with initial payments and other operational expenses. At any point in time the balance on the operations account may be negative or positive. Table 5.3.7 reports these balances as of July 31. When payments from credit sales exceed disbursements, these funds are available to finance operations and reduce the overall interest cost of the CWB. In fact, for most of the years since 1980/81, the interest earned exceeded interest expenses and the wheat pool account was credited. Accordingly, Table 5.3.7 shows the interest credits ranged as high as \$61 million to a debit of \$35 million.

What would happen if sales were conducted in a multiple agent setting, i.e., by the grain companies without the benefit of the government guarantee? The private grain trade would be at a disadvantage to the Canadian commercial banks in raising capital and the lending function would be delegated to the banking sector. The beneficiaries of the low cost of capital currently available to the CWB are the farmers. These earnings would be transferred to commercial banks and not reflected in the price of wheat paid to farmers by multiple agents.

To farmers delivering grain to the CWB, the financial importance of the Government of Canada guarantee is that it lowers the cost of capital to the CWB. If the pool account deficits were not underwritten by the government the CWB finance department estimated their borrowing costs in 1995/96 would increase between \$35 million and \$60 million. The range depends upon the assumptions relating to the money market and the financial circumstances of the CWB. In all likelihood the CWB would be able to maintain its credit program. However, the margins would be much smaller. Instead of adding value to the pool accounts the realized interest is likely to be debited as often as it is credited. In effect, the loss of the credit guarantee

on the pool accounts would cost the CWB wheat pool account between one and two dollars per tonne. Wheat prices to farmers under a multiple seller environment would drop even further because none of the profits realized from credit sales would be returned to farmers.

Table 5.3.7: Financial Records of the CWB (July 31)

Pool Year	Credit Sales (CDN\$)	Ordinary Operations ¹ (CDN\$)	Interest Charges ² (CDN\$)
1980/81	1,826,039,842	(149,636,389)	35,482,063
1981/82	2,446,490,182	(15,451,644)	9,736,167
1982/83	2,350,452,449	82,219,221	(18,084,165)
1983/84	3,012,037,450	150,914,705	(3,463,630)
1984/85	3,683,799,803	224,554,171	12,300,778
1985/86	3,516,739,651	367,538,849	(2,674,500)
1986/87	3,465,262,727	386,636,692	(6,375,164)
1987/88	3,581,450,759	29,342,978	(17,785,610)
1988/89	3,707,960,437	(88,352,406)	(33,651,756)
1989/90	4,648,568,719	(141,351,592)	(24,312,632)
1990/91	5,424,806,942	1,111,185,206	8,255,844
1991/92	6,213,624,154	135,258,369	(38,747,835)
1992/93	6,772,098,971	77,298,472	(61,465,661)
1993/94	6,996,544,471	(169,922,918)	(49,583,506)

¹ A negative value indicates funds on deposit
Prorated to the pool account for wheat

Source: CWB Annual Reports.

Appendix A5

Table A5.1: Estimated Grain and Oilseeds Marketing Costs for 1980/81

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	5.32	7.50	7.38
Docage	1.01	2.70	2.70
Storage ¹	1.10	3.53	1.68
Carrying Cost ¹	4.68	21.45	8.66
In-Transit Carrying Cost	0.82	1.93	1.46
Rail	4.85	4.85	5.47
Sub-Total	17.78	41.96	27.35
Terminal Elevator			
Storage ¹	0.50	1.80	1.39
Carrying Cost ¹	3.17	10.94	7.18
Elevation	3.16	4.48	5.02
Sub-Total	6.83	17.22	13.59
Total	24.61	59.18	40.94

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.2: Estimated Grain and Oilseeds Marketing Costs for 1981/82

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	5.88	8.93	9.08
Dockage	1.04	2.96	3.01
Storage ¹	1.30	3.20	1.53
Carrying Cost ¹	4.57	19.16	8.24
In-Transit Carrying Cost	0.74	2.06	1.65
Rail	4.85	4.85	6.02
Sub-Total	18.86	41.16	29.53
Terminal Elevator			
Storage ¹	0.93	2.42	1.58
Carrying Cost ¹	2.95	10.75	6.15
Elevation	3.48	5.12	5.58
Sub-Total	7.36	18.29	13.31
Total	25.74	59.45	42.84

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports, Bank of Canada Review

Table A5.3: Estimated Grain and Oilseeds Marketing Costs for 1982/83

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	6.23	9.32	9.37
Dockage	1.11	3.11	3.14
Storage ¹	1.13	2.11	0.95
Carrying Cost ¹	2.74	6.59	3.22
In-Transit Carrying Cost	0.54	1.11	1.09
Rail	4.85	4.85	6.02
Sub-Total	16.60	27.09	23.79
Terminal Elevator			
Storage ¹	0.87	1.92	1.56
Carrying Cost ¹	2.16	4.39	3.77
Elevation	3.90	6.10	6.06
Sub-Total	6.93	12.41	11.39
Total	23.53	39.50	35.18

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariff and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.4: Estimated Grain and Oilseeds Marketing Costs for 1983/84

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	6.36	9.68	9.77
Dockage	1.16	3.25	2.97
Storage ¹	1.58	2.52	0.99
Carrying Cost ¹	2.84	8.25	4.09
In-Transit Carrying Cost	0.42	1.25	1.42
Rail	5.33	5.33	6.02
Sub-Total	17.69	30.28	25.26
Terminal Elevator			
Storage ¹	1.32	1.91	1.24
Carrying Cost ¹	1.98	4.64	3.72
Elevation	4.10	6.41	6.38
Sub-Total	7.02	12.96	11.34
Total	24.71	43.24	36.60

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.5: Estimated Grain and Oilseeds Marketing Costs for 1984/85

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	6.33	9.44	9.31
Dockage	1.31	3.53	3.50
Storage ¹	1.55	2.07	1.05
Carrying Cost ¹	3.34	6.71	3.78
In-Transit Carrying Cost	0.52	1.28	1.27
Rail	7.57	7.57	8.58
Sub-Total	20.63	30.60	27.49
Terminal Elevator			
Storage ¹	1.73	3.12	2.90
Carrying Cost ¹	2.64	7.39	7.45
Elevation	4.19	6.61	6.57
Sub-Total	8.56	17.12	16.92
Total	29.19	47.72	44.41

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.6: Estimated Grain and Oilseeds Marketing Costs for 1985/86

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	6.29	9.28	9.00
Dockage	1.67	3.97	4.03
Storage ¹	1.27	1.95	1.46
Carrying Cost ¹	2.33	4.59	3.48
In-Transit Carrying Cost	0.45	0.96	0.87
Rail	5.90	5.90	6.69
Sub-Total	17.52	26.65	25.53
Terminal Elevator			
Storage ¹	1.43	2.09	1.97
Carrying Cost ¹	2.08	3.72	3.48
Elevation	4.31	6.82	6.83
Sub-Total	7.82	12.63	12.28
Total	25.73	39.28	37.81

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.7: Estimated Grain and Oilseeds Marketing Costs for 1986/87

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	6.38	9.49	9.41
Dockage	1.67	3.96	4.04
Storage ¹	1.22	1.92	1.15
Carrying Cost ¹	1.28	2.62	1.82
In-Transit Carrying Cost	0.27	0.56	0.58
Rail	5.87	5.87	6.63
Sub-Total	16.69	24.42	23.63
Terminal Elevator			
Storage ¹	0.89	2.17	1.60
Carrying Cost ¹	1.15	2.24	1.86
Elevation	4.31	6.82	6.85
Sub-Total	6.35	11.23	10.31
Total	23.04	35.65	33.94

See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.8: Estimated Grain and Oilseeds Marketing Costs for 1987/88

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	6.38	8.87	8.78
Dockage	1.67	3.96	4.03
Storage ¹	0.96	2.02	1.30
Carrying Cost ¹	1.06	3.33	2.86
In-Transit Carrying Cost	0.27	0.68	0.80
Rail	6.23	6.23	7.07
Sub-Total	16.57	25.09	24.84
Terminal Elevator			
Storage ¹	1.19	3.36	1.51
Carrying Cost ¹	1.04	4.21	2.45
Elevation	4.31	6.82	6.82
Sub-Total	6.35	14.39	10.78
Total	22.92	39.48	35.62

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.9: Estimated Grain and Oilseeds Marketing Costs for 1988/89

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	7.27	9.63	9.61
Dockage	1.84	4.11	4.07
Storage ¹	1.16	2.11	1.33
Carrying Cost ¹	1.80	6.96	3.59
In-Transit Carrying Cost	0.43	1.48	1.12
Rail	7.15	7.15	8.11
Sub-Total	19.65	31.44	27.83
Terminal Elevator			
Storage ¹	1.00	4.09	1.74
Carrying Cost ¹	2.38	9.99	3.50
Elevation	4.62	7.26	7.05
Sub-Total	8.00	21.34	12.29
Total	27.65	52.78	40.12

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.10: Estimated Grain and Oilseeds Marketing Costs for 1989/90

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	7.64	10.24	10.42
Dockage	2.02	4.32	4.41
Storage ¹	1.57	1.86	1.56
Carrying Cost ¹	2.77	6.16	4.03
In-Transit Carrying Cost	0.55	1.66	1.16
Rail	8.86	8.86	10.00
Sub-Total	23.43	33.10	31.58
Terminal Elevator			
Storage ¹	1.51	1.39	1.86
Carrying Cost ¹	2.39	3.65	3.73
Elevation	4.94	7.79	7.97
Sub-Total	8.84	12.83	13.56
Total	32.25	45.93	45.14

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.11: Estimated Grain and Oilseeds Marketing Costs for 1990/91

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	8.33	11.29	11.72
Dockage	2.30	4.56	4.62
Storage ¹	1.86	1.43	1.26
Carrying Cost ¹	1.98	2.23	2.49
In-Transit Carrying Cost	0.36	0.87	0.98
Rail	10.03	10.03	11.38
Sub-Total	24.86	30.41	32.45
Terminal Elevator			
Storage ¹	1.01	1.33	1.13
Carrying Cost ¹	1.36	1.64	1.74
Elevation	5.42	8.52	8.67
Sub-Total	7.79	11.49	11.54
Total	32.65	41.90	43.99

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.12: Estimated Grain and Oilseeds Marketing Costs for 1991/92

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	8.54	11.65	11.94
Dockage	2.43	4.79	4.86
Storage ¹	1.48	2.15	1.32
Carrying Cost ¹	0.70	1.64	1.54
In-Transit Carrying Cost	0.17	0.43	0.61
Rail	10.37	10.37	11.73
Sub-Total	23.69	31.03	32.00
Terminal Elevator			
Storage ¹	0.96	2.35	0.86
Carrying Cost ¹	0.66	1.38	0.77
Elevation	5.58	8.78	8.93
Sub-Total	7.20	12.51	10.56
Total	30.89	43.54	42.56

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.13: Estimated Grain and Oilseeds Marketing Costs for 1992/93

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Primary Elevation	8.39	11.20	11.38
Dockage	2.65	4.79	4.86
Primary Storage ¹	1.59	1.98	1.63
Carrying Cost ¹	0.68	1.68	1.76
In-Transit Carrying Cost	0.15	0.48	0.56
Rail	11.23	11.23	12.73
Sub-Total	24.69	31.36	32.92
Terminal Elevator			
Storage ¹	1.46	4.42	2.22
Carrying Cost ¹	0.61	2.88	1.86
Elevation	5.69	8.95	9.11
Sub-Total	7.76	16.25	13.19
Total	32.45	47.61	46.11

See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

Table A5.14: Estimated Grain and Oilseeds Marketing Costs for 1993/94

Marketing Service	Crop		
	Wheat	Flax	Canola
	(\$/Tonne)		
Primary Elevator & Transportation			
Elevation	7.96	11.19	11.41
Dockage	3.10	4.89	4.97
Storage ¹	1.71	1.45	1.35
Carrying Cost ¹	0.68	1.11	1.45
In-Transit Carrying Cost	0.14	0.45	0.57
Rail	12.86	12.86	14.55
Sub-Total	26.46	31.95	34.30
Terminal Elevator			
Storage ¹	0.58	3.36	1.68
Carrying Cost ¹	0.47	1.99	1.41
Elevation	5.80	9.13	9.29
Sub-Total	6.85	14.48	12.38
Total	33.31	46.43	46.68

¹ See Table 5.3.2 for average time.

Source: CGC, Weekly Grain Statistics and Historical Tariffs and Fees; Grain Transportation Agency, Rail Rates; CWB, Annual Reports; Bank of Canada Review

6. Performance of the Canadian Wheat Board in Brazil

6.1 Introduction

Central-desk selling agencies like the Canadian Wheat Board (CWB) are generally thought to facilitate the development and maintenance of sales into countries where there is a single buyer of wheat. The logic underlying this supposition is that central-desk agencies prefer dealing with each other; they can develop institutional linkages more easily. For many years, the success Canada achieved in wheat sales to *Junta Deliberativa do Trigo* (the Brazilian Wheat Board) provided strong evidence of this institutional advantage. Throughout the 1970s and 1980s, Canada maintained close to a 30 percent market share of Brazilian wheat imports.

Thus, when Brazilian wheat imports were privatized in May 1990, some market observers expected that Canadian sales would suffer, as private Brazilian wheat importers took advantage of the free market to increase purchases from private wheat trading companies. However, the CWB targeted Brazil with a market development program that included technical support and education (in conjunction with the Canada Grain Commission and the Canadian International Grains Institute), in addition to direct sales activities. In the period following the privatization of Brazilian wheat imports, Canada maintained its share of that growing market.

Contrary to the belief that Canadian wheat sales to Brazil would suffer with market liberalization, it was United States sales that decreased. Total U.S. sales and market share in the Brazilian wheat market have fallen to almost zero during the 1990s. This decline was primarily the result of the Brazilian government's reaction to subsidized U.S. exports. Brazil was targeted for Export Enhancement Program (EEP) subsidies by the United States during the late 1980s and early 1990s. However, in November 1992, the Brazilian government announced a countervailing duty on EEP shipments that roughly counteracted the EEP bonus at that time, causing the United States to stop targeting Brazil for subsidized exports.

Has the CWB contributed to Canada's success in selling wheat to a liberated Brazilian market? This question is not easily answered for several reasons. First, Brazil has been a traditional market for Canadian grain, so it is difficult to look at events since liberalization (particularly the market development activities of the CWB) independently from the overall reputation of Canadian grain and the Canadian grain marketing system. Second, grain sales and market share both reflect a combination of influences, each of which could explain Canada's success to varying degrees, including: (1) pricing strategies adopted by competing exporters; (2) domestic and international policies, including formal trade pacts; (3) wheat quality of

competing exporters; and (4) market development and maintenance practices of competing exporters.

This study is organized as follows. The next section outlines the Brazilian market and includes the key policies and programs influencing the wheat market. The data in this section are primarily public, but some confidential CWB data is used. This section also includes a summary of the market development activities of the CWB in Brazil. Section 3 assesses the marketing program utilized by the CWB. Much of the information presented in this section was collected in interviews with principal wheat buyers in Brazil. All interviews followed a structured but open-ended questionnaire format and were conducted in Portuguese. An English translation of the questionnaire is provided in the appendix at the end of this chapter. Section 4 provides a summary and conclusion.

6.2 Brazilian Wheat Market Profile

Wheat is an important crop in southern Brazil, where it is typically rotated with soybeans. Other important crops in that region include rice and coarse grains (mostly corn).

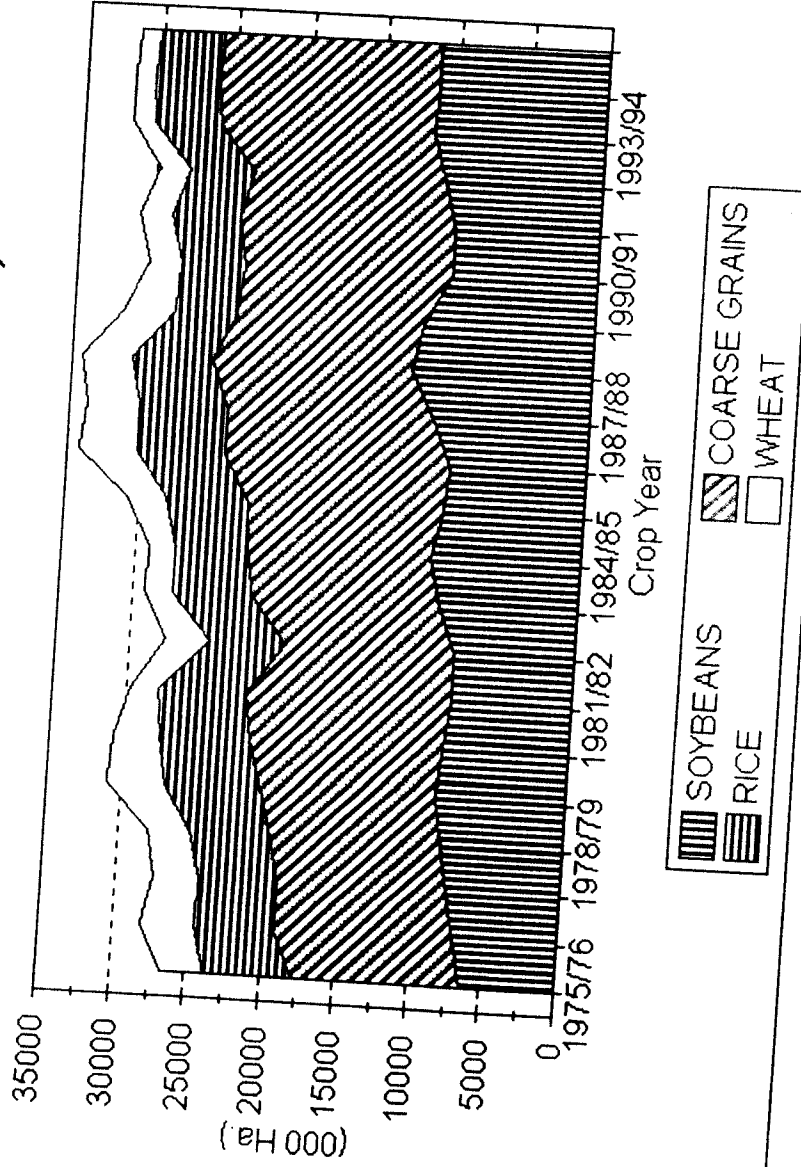
Total acreage dedicated to these four crops has increased over the past twenty years, from about 26.7 million hectares in 1975 to 31.8 million hectares in 1994 (Figure 6.2.1). However, during that period, wheat acreage decreased from 2.9 to 1.4 million hectares. Total acreage, including wheat acreage, peaked in the late 1980s as a result of Brazilian agricultural support programs designed to encourage production and reduce imports. Support included a minimum price program and credit subsidies.¹ In the 1990s, Brazil has trimmed back on subsidy programs so wheat acreage has returned to pre-program levels.

Total production increases during this period were driven by soybeans and coarse grains (Figure 6.2.2). Wheat production jumped between the 1985 and 1989 crop years, then returned to previous levels. In 1995, wheat production represented an estimated 2.2 percent (1.5 million tonnes) of total grain production, or 18 percent of total wheat use (8.2 million tonnes). Relative to the other three main grain/oilseed crops, the proportion of wheat production is small and declining.

¹ *Western Hemisphere Situation and Outlook Series*. United States Department of Agriculture, International Agriculture and Trade Reports, Publication WRS-94-2, Economic Research Service, June, 1994. See also Michael J. McGarry and Andrew Schmitz, eds. *The World Grain Trade, Grain Marketing, Institutions, and Policies*; Boulder, The Westview Press, 1992.

Figure 6.2.1

Brazil Crop Acreage By Crop Year (000 Hectares)

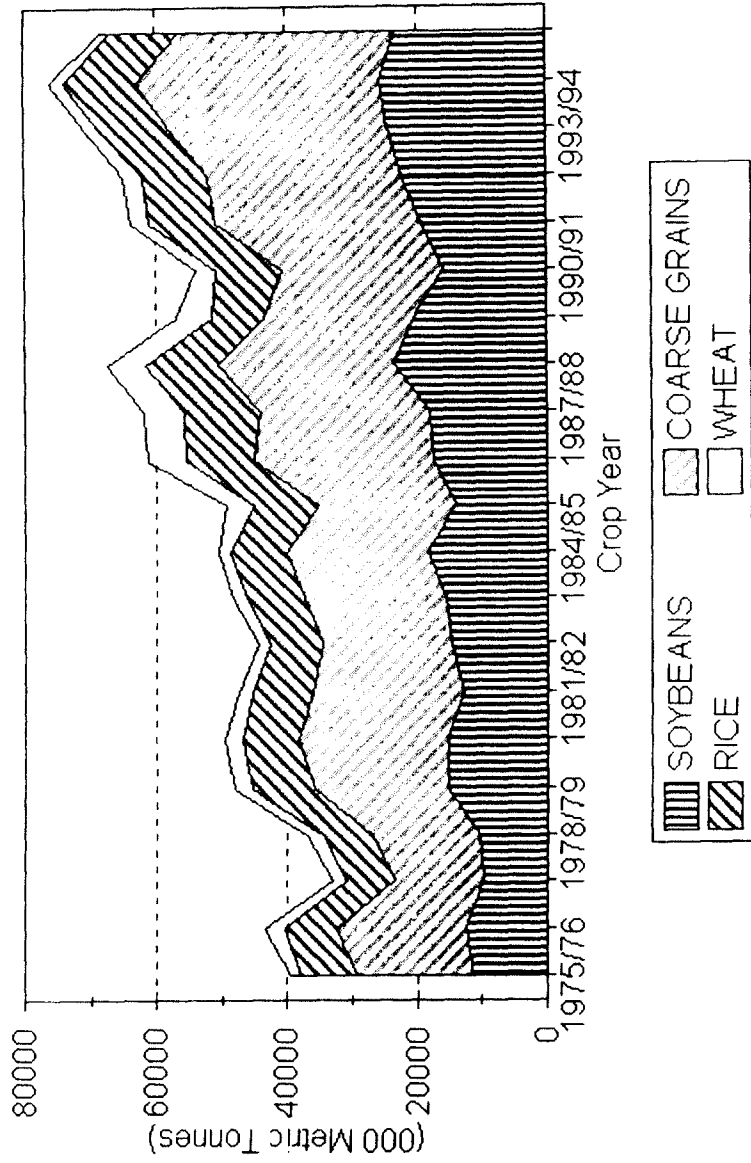


Source: Canadian Wheat Board Data

Figure 6.2.2

Brazil Crop Production

By Crop Year (000 Metric Tonnes)



Source: Canadian Wheat Board Data

6.2.1 Trade

Wheat is the main Brazilian grain import, although corn imports are also large in certain years (Figure 6.2.3). Annual Brazilian wheat imports between 1975/76 to 1984/85 fluctuated around the four million tonne mark, then declined to less than one million tonnes in 1988/89 before rising to nearly six million tonnes in the 1990s. The low import level in the late 1980s can be viewed as a function of the same economic factors that resulted in a large increase in production, and is unrepresentative of the long-term Brazilian situation. Precluding another major shift in Brazilian policy towards wheat self-sufficiency, such as that which occurred in the late 1980s, Brazilian import needs can be expected to stabilize around current levels (six million tonnes per year) or increase slowly, depending primarily on population and salary increases for the lower income classes.

Since 1991, wheat imports have been subject to a schedule of declining tariffs which are origin-dependent. Brazil belongs to the Mercosul² trade-bloc and as a result, gives preferential treatment to Argentine origin wheat. When the Brazilian market liberalized, non-Mercosul countries such as Canada paid a tariff of 25 percent, while Mercosul countries paid only 13.25 percent. Tariffs have fallen and as of January 1, 1995 wheat from Canada and other non-Mercosul exporters face a tariff of 10 percent while Argentine wheat enters Brazil tariff free. In addition, Brazil charges a Merchant marine Renewal Tax on ocean freight amounting to 25 percent of the cost of ocean freight (approximately \$5.00 to \$6.00 per tonne). Argentina is exempt from this charge.

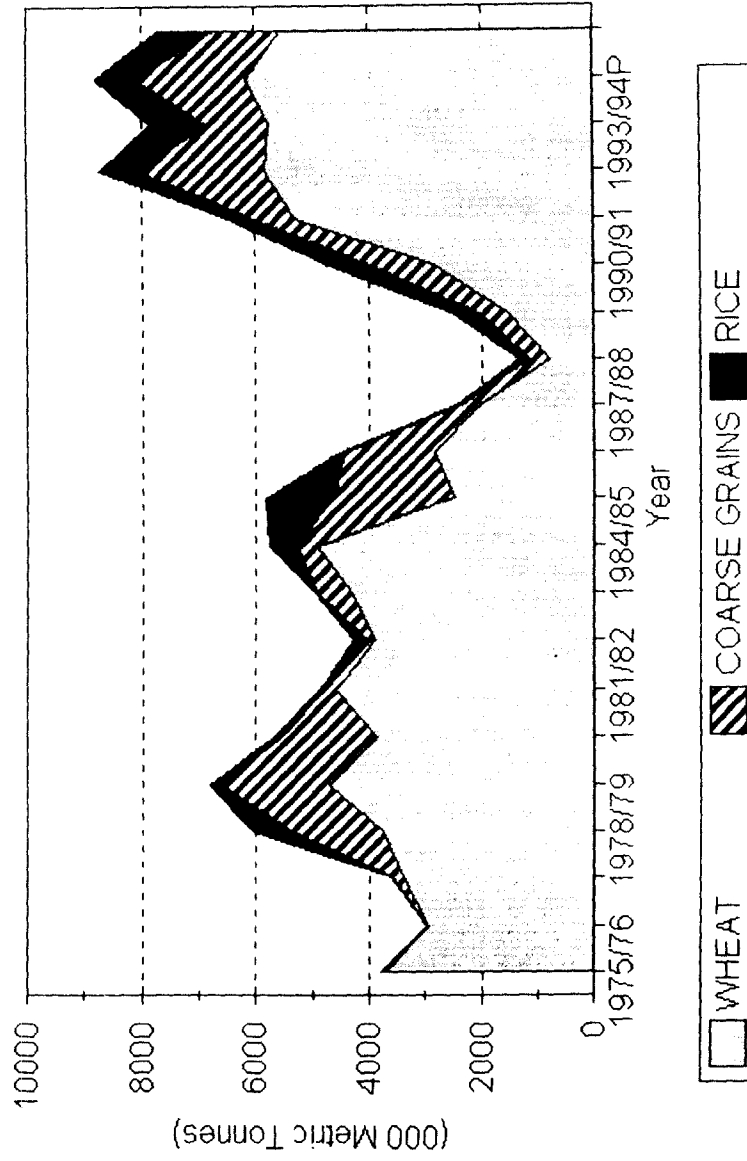
In sum, due to locational advantages and preferential tariff treatment under the Mercosul trade agreement, Argentina has a considerable advantage in the Brazilian wheat market. The components of this advantage can be seen in Figures 6.2.4 and 6.2.5, which show the total landed value for actual sales of Canadian and Argentine wheat in Sao Paulo for two representative periods. These periods include: (1) 1989/90 (average for the marketing year), providing an observation for the period prior to differential tariff application; and (2) 1992/93 (March to February), providing an observation in tariff-differentiated period. The five components of landed value in these two figures include:

- *average price* is the FOB price averaged across all sales for the time period;
- *ocean freight and insurance* is the cost of shipping wheat from the country of origin (free on board) to Sao Paulo;
- *import duties* are tariff levies calculated on the basis of ad valorem rates for imports in each time period;

² The Mercosul (Common Market of the South) is a free trade area encompassing Brazil, Argentina, Uruguay and Paraguay. The Mercosul agreement was signed in March, 1991, and provides preferential access for imports between members. In the case of wheat, the tariff is zero for members of the Mercosul agreement and 10 percent for non-member countries.

Figure 6.2.3

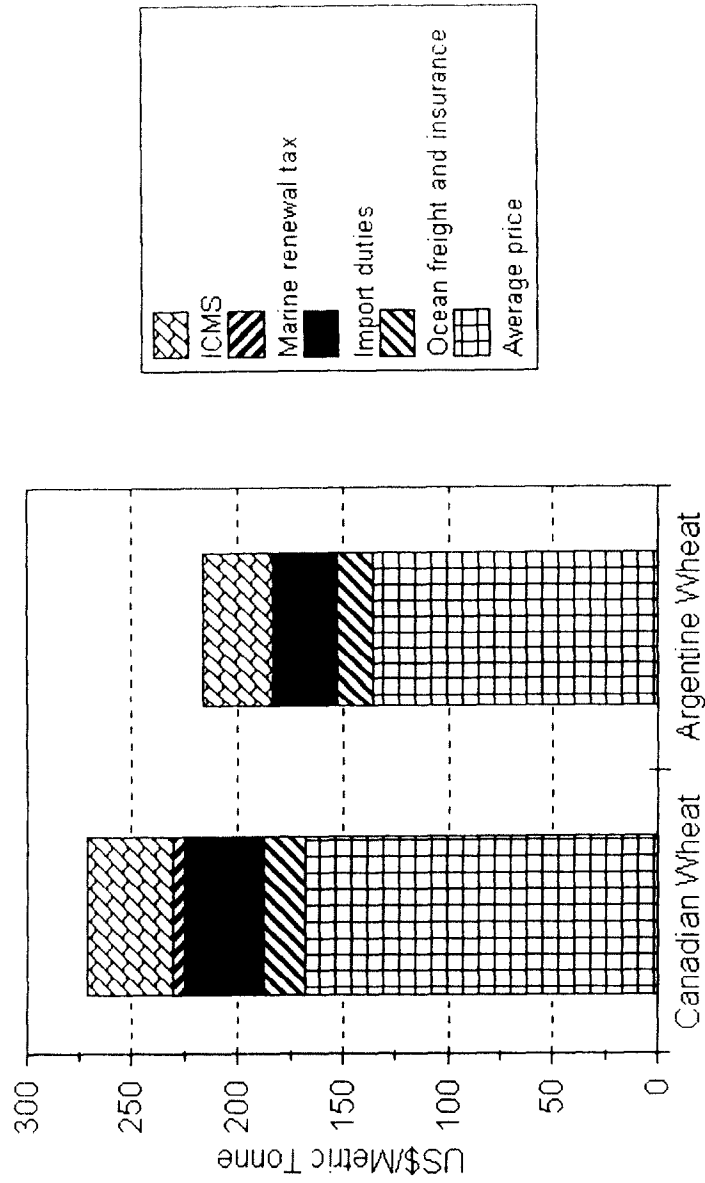
Brazil Grain Imports By Crop Year (000 Metric Tonnes)



Source: Canadian Wheat Board Data

Figure 6.2.4

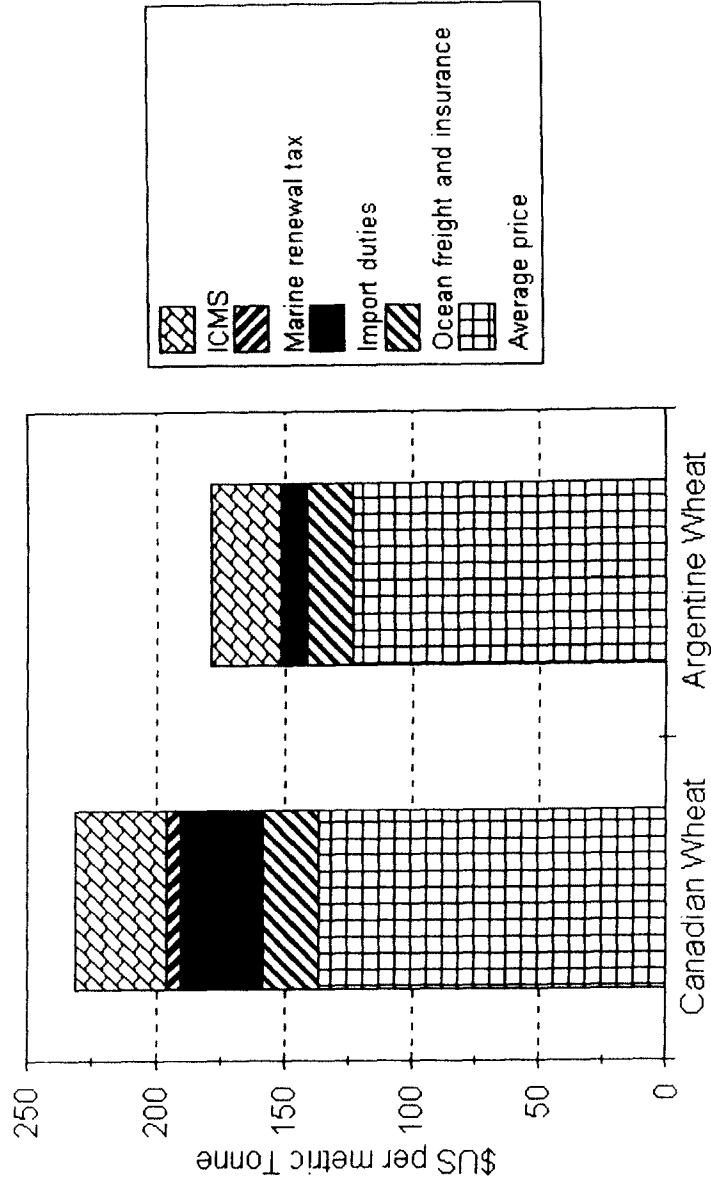
Landed Value Components Canada and Argentina, Avg. 1989/90



Source: Canadian Wheat Board Data

Figure 6.2.5

Landed Values Canada and Argentina, 1992/93



Source: Canadian Wheat Board Data

- *marine renewal tax* is 25 percent of ocean freight charges; and
- *ICMS* is a Brazilian value-added tax levied on all commercial transactions (it is built into price levels but remains invisible to final consumers).

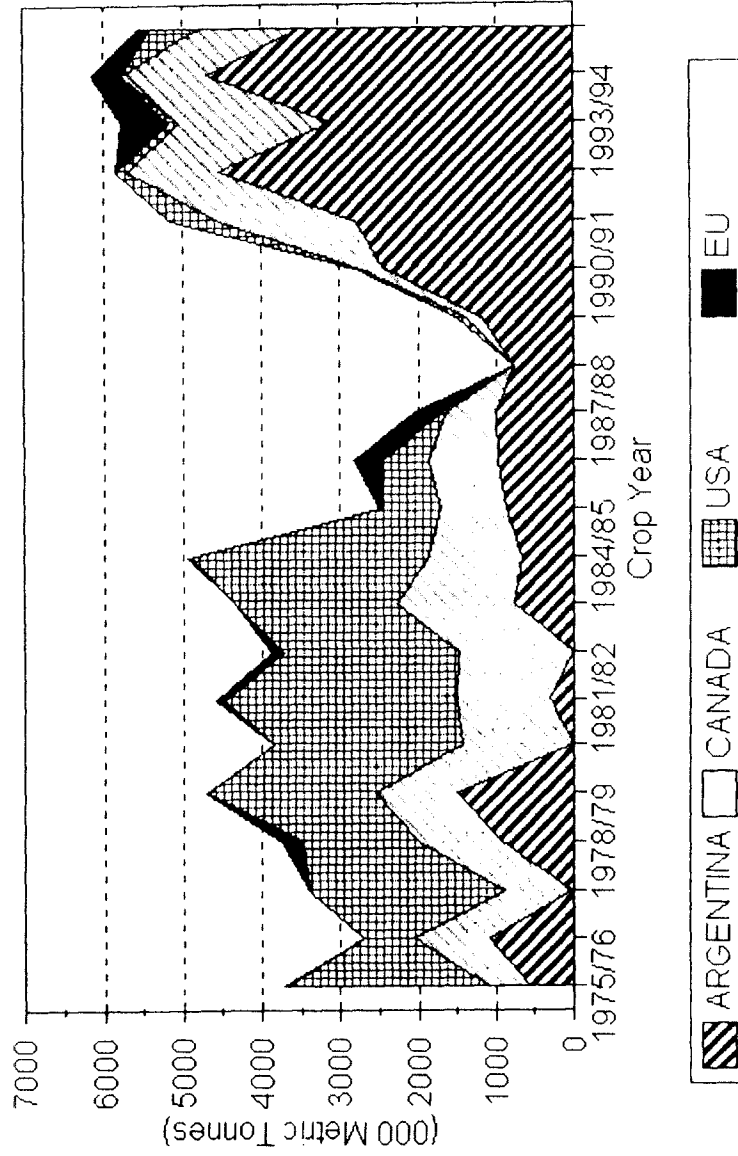
The advantage that Argentina enjoys in the Brazilian wheat market is apparent. In 1989/90, the landed value of Canadian wheat was US\$60 per tonne higher than Argentine wheat. About \$33 of this difference is due to price differentials while the remainder is the result of lower Argentine freight and insurance costs (\$2 per tonne), lower import duties for Argentine wheat (\$7 per tonne), no Marine Renewal Tax on Argentine shipments (\$5 per tonne) and a lower ICMS on Argentine wheat, because the overall base value is less (\$8.50 per tonne). In 1992/93, the gap between Argentine and Canadian wheat prices is US\$50 per tonne. While the price differential had narrowed considerably, the difference in marketing and tax charges had widened. The freight and insurance differential had grown to almost \$5 per tonne and the import duty differential increased \$20 per tonne due to tariff rate preferences to Argentina. The Marine Renewal Tax and ICMS effects remained about the same for the two periods. As is shown in the next section, Canada has been able to maintain its market share, notwithstanding the price disadvantage facing Canadian wheat.

Figure 6.2.6 shows Brazilian wheat imports by source. Four exporters (Argentina, Canada, United States and EU) account for virtually all Brazilian imports between 1975/76 and 1994/95. Until the mid-1980s, Argentine exports were extremely erratic—the U.S. and, to a lesser extent, Canada, dominated the Brazilian market. The increase in Brazilian wheat production through the mid-1980s resulted in greatly diminished imports and the virtual elimination of the United States and Canada in that market. However, imports from Argentina stabilized through this period at just under one million tonnes per year, with its market share increasing to almost 100 percent in the late 1980s. Imports have risen in the 1990s after Brazil abandoned its policy of self-sufficiency and began to liberalize its wheat market. Argentine exports have risen quickly, fluctuating between 3 and 4.5 million tonnes per year, while its market share has ranged between 60 and 80 percent.

The relative performance of each of the major wheat exporters to Brazil is clearly illustrated in Figure 6.2.7. This summarizes market shares by exporter for three average periods (1975/76 to 1984/85, 1985/86 to 1989/90 and 1990/91 to 1994/95). The average for 1975/76 through 1984/85 summarizes relative performance in a period when Brazil has had fairly stable wheat import needs and a central buying agency, the average for 1985/86 through 1989/90 reflects the time period in which Brazil aggressively pursued a policy of wheat self-sufficiency and diminished imports, and the average for 1990/91 through 1994/95 is representative of the period of Brazilian market liberalization. In summary, Argentina has gained market share (16 to 68 percent), Canada has maintained its market share (about 25 percent) and the United States has lost market share (56 to 4 percent) during the three periods. The United States is the big loser in the Brazilian market over this twenty-year period, with sales and market share falling to minuscule levels. Throughout, EU sales are a small (but increasing) component of Brazilian imports, with market share never averaging above 10 percent.

Figure 6.2.6

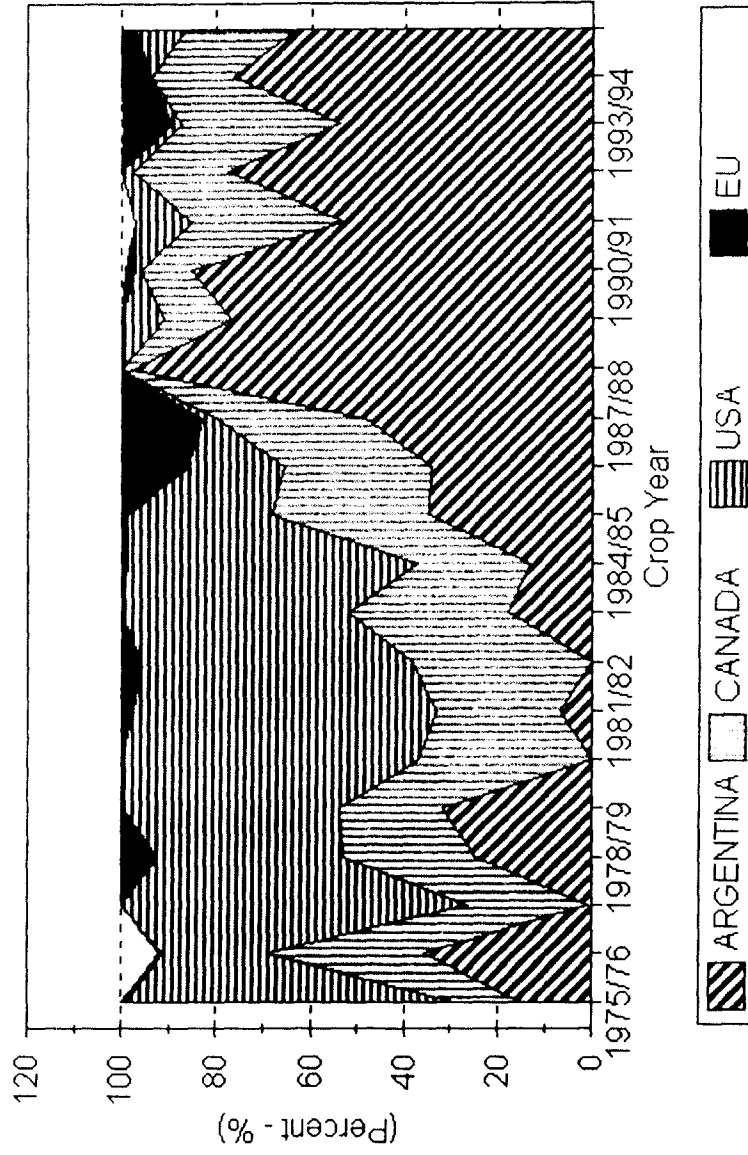
Brazil Import Sources Wheat (000 Metric Tonnes)



Source: Canadian Wheat Board Data

Figure 6.2.7

Supplier Market Share Brazil Wheat Imports (Percent)



Source: Canadian Wheat Board Data

For Canada, maintaining a constant market share in the Brazilian market translates into more than a one million tonne increase in exports to this country from 1990/91 to 1994/95. This period corresponds to the decline of Soviet Union as a major customer for Canadian wheat.

6.2.2 Milling Industry Organization

The Brazilian milling industry has passed through a period of significant rationalization in terms of size, location and industrial strategy. Between 1967 and early 1995 the number of mills decreased from 400 to 178. Most of this decrease occurred after market liberalization. During this same time period, mill capacity increased from 4 to 12 million tonnes per year, creating considerable over-capacity in the industry. Following the same trend in countries such as Canada, new high capacity mills were built in major consumption centres, not near production points, as had occurred formerly. Most remaining small mills are located in Rio Grande do Sul and Parana, where Brazilian wheat is produced. Wheat sector deregulation created another important change. Brazilian millers organized themselves into buying groups which contain most of the major mills in the country. The three largest buying groups account for over 80 percent of Brazilian wheat purchases and also buy for most of the newer more efficient mills.

The *Santista Group* (part of Bunge y Born) is the largest buying group in Brazil. With 13 mills (including five with over 1,000 tonnes per day capacity and several with a capacity of more than 2,000 tonnes per day), this group accounts for 40 percent of Brazil's total milling capacity.³ Currently, the group processes more than 2 million tonnes of wheat per year. Mills associated with this group are located all over the country. A representative of the group reported that in recent years they have purchased roughly 25 percent (500,000 tonnes) of their wheat needs from Canada. Their purchases of Canadian wheat are primarily CWRS (Canada Western Red Spring), used for blending. Brazil normally uses bread flour to make pasta, although there is a small but growing interest in durum.

The *J. Macedo Group* has nine mills dispersed throughout the country and represents about 35 percent of Brazilian milling capacity. Two of the mills have a capacity of 1,000 tonnes per day. The group buys 1.2 million tonnes of wheat annually, and Canadian wheat represents about 25 percent of their purchases, or roughly 300,000 tonnes per year. However, purchases of Canadian wheat have ranged considerably in recent years from 250,000 to 600,000 tonnes. They report purchasing primarily CWRS.

The third largest is the *Pena Branca Group* with six mills and over seven percent of Brazil's milling capacity. Imports of Canadian wheat have averaged 100,000 tonnes (out of a total 650,000 tonnes) during the past three years. They report buying primarily CWRS.

³ Bunge is an accredited exporter for the CWB.

In addition to these three, there are a number of smaller groups, including OCRIM, BUAIZ, Moinho Dias Branco, and Grande Moinho Cearense/Moinho Paulista. The *Grande Moinho Cearense/Moinho Paulista* was selected to represent these groups. Their focus is on high-quality flour and flour products, including pasta. The group purchases about 350,000 tonnes of wheat annually, and about 40 to 50 percent of that is Canadian. They report purchasing all grades of CWRS.

Interviews were conducted with those senior personnel normally in charge of wheat purchases for each of the three largest buying groups (Santista, J. Macedo, Pena Branca) plus the Grande Moinho Cearense/Moinho Paulista Group. In total, these buying groups account for over 85 percent of Brazilian milling capacity and most of the country's modern and large flour mills. These mills use CWRS wheat for two primary purposes: (1) as a quality improver for bread flour; and (2) to produce pasta. Only a small amount of pasta is produced with durum in Brazil. Interestingly, buyers reported a preference for 1CWRS and 2CWRS, even though Brazil is traditionally considered a 3CWRS purchaser. 1CWRS is highly regarded in Brazil. One respondent called it "the filet mignon of world wheat."

6.2.3 Promotional Activities

The CWB, often together with the Canadian Grain Commission (CGC) and the Canadian International Grains Institute (CIGI), has shown its commitment to the Brazilian market in a number of ways. These include: daily contact with customers via telephone and fax; the Contact Newsletter;⁴ formal training programs; participation in trade shows; and technical support through after sales service. As will be documented below, the CWB made a concerted effort to maintain market share in the face of the changes resulting from Brazil's market liberalization.

Formal training programs are the key to the CWB's service commitment. Programs, provided jointly through the CGC and CIGI include: (1) Canadian missions providing programs in the target country; (2) buyer missions to Canada, where buyers and processors come to Canada; and (3) technical training, where technicians are brought to Canada.

All of these market development activities have been used for Brazilian buyers. The CIGI courses have involved Brazilians since 1985. The activities shown below were targeted specifically at Brazil and illustrate the CWB's strategic approach to the Brazilian market both before and after the liberalization of this market. These include:

⁴The CWB initiated a quarterly newsletter called *Contact* for the Latin American and Caribbean markets in August, 1992. The newsletter is designed to provide Latin American and Caribbean customers with information on the Canadian system of grain marketing, CWB initiatives in the region and factors that influence the marketing of Western Canadian wheat and barley.

- the Brazilian Baking Industry Program involved 15 technicians and was held in Winnipeg between July 31 and August 12, 1989, the year before the removal of the central-desk marketing system in Brazil;
- the Brazilian Miller's Program held in Winnipeg July 2-12, 1991, was attended by 20 Brazilian grain buyers and managers;
- the Durum Wheat Milling and Processing Program for Brazil held in Winnipeg August 17-27, 1992, involved 19 Brazilian grain buyers, managers and pasta processors.

In addition to technical training and support, the CWB also maintains personal contact with buyers through the use of outgoing and incoming missions. These missions can range from direct sales missions to "goodwill" visits. Table 6.2.1 below summarizes information on the number of missions to and from Brazil, including the number of people involved in each mission, and provides a rough indication of the commitment of the CWB to market development in Brazil.

Table 6.2.1: CWB Missions To and From Brazil

	To Brazil		From Brazil	
	Missions/Yr.	People/Mission	Missions/Yr.	People/Mission
1985/86 to 1989/90	2.8	2.6	1.4	2.3
1990/91 to 1994/95	3.2	3.8	2.6	1.9

Source: Canadian Wheat Board

The data are shown for two time periods; 1985/86 to 1989-/0, in which all sales were through the Brazilian central-desk marketing system, and 1990/91 to 1994/95, after liberalization. CWB missions to Brazil increased from an average of 2.8 missions per year in the period under central-desk purchases to 3.2 missions per year in the post-liberalization period. These missions were generally larger, with the average number of team members increasing from 2.6 to 3.8 persons. Similarly, the number of incoming missions from Brazil increased from an average of 1.4 per year prior to liberalization to 2.6 after liberalization. However, on average these incoming missions were smaller.

In summary, the quantitative data indicates that Canada has performed well in the Brazilian market. Argentina, Canada's main competitor in Brazil, has translated a huge locational advantage into increased sales and market share through trade agreements giving them preferential tariff treatment. Canadian sales and market share have been stable. The CWB has been successful in Brazil under two very different trading regimes; first when Brazil maintained a central-desk trading agency, and later when this agency was disbanded. In comparison, the U.S. was not able to maintain its sales and market share. The United States dominated the Brazilian market until the mid-1980s, but was essentially eliminated from it throughout the early 1990s.

6.3 Brazilian Buyer Perceptions of CWB Performance

Interviews were conducted with senior personnel in charge of wheat purchases from four buying groups, to elicit information regarding the CWB's performance in Brazil. These groups account for over 85 percent of Brazilian milling capacity.

This section organizes the groups responses into four components: price, product, promotion and distribution. These are key components in a marketing mix used for the development of market segmentation and penetration strategies.

6.3.1 Price Policies: Canadian Prices Relative to Competitors

The price of Canadian wheat is typically higher than that of Brazilian and Argentine wheats, and it is used primarily to improve the quality of Brazilian flour production.

The pricing of Canadian wheat must be interpreted in the context of product quality. Final landed values for Canadian and Argentina wheat were presented in an earlier section and confirmed that significant price differentials were common in the Brazilian market. When asked about these directly (questions 17 and 18), Brazilian millers reported that price differentials were commonplace and that they were primarily due to quality differences, but also influenced by policy and transportation factors. One respondent noted that "Canadian wheat costs more but also returns more due to the quality."

Respondents were asked to rank suppliers by price (Table 6.3.1). Three of the four respondents ranked Canada as the highest-priced supplier. Similarly, three of the four respondents regarded Argentina as the lowest-priced supplier. Respondents felt that they did not have sufficient experience with Australia to provide an evaluation, therefore, Australia is considered in all cases as "not applicable".

Table 6.3.1: Ranking of Wheat Suppliers with regard to Price by Brazilian Millers

	Rank (lowest to highest)
Argentina	1
European Union	2
Canada	4
United States	3
Australia	N.A.

6.3.2 Product: Perceptions of Canadian Product Quality

Respondents were asked to rate and rank seven criteria of wheat quality in terms of their importance when making purchasing decisions. Although not exclusive, these criteria are commonly utilized in the wheat trade as general indicators of quality. Some of these criteria (moisture level, general milling performance, flour processing tolerance and flexibility) refer to physical characteristics of the wheat, while others (cleanliness, consistency of quality from shipment to shipment, meeting the protein guarantee) reflect a combination of production and marketing system influences.

All four respondents agreed that the consistency of quality from shipment to shipment was the most important aspect affecting grain purchases. Consistency was always rated as very important and all respondents ranked it among the top three criteria. The second ranked aspect affecting purchases is the joint relationship between general wheat quality, milling quality and final baking performance. In other words, how well does the wheat perform in producing products (bread, pasta, etc.) for the desired standards? Key sub-components identified by respondents included gluten strength and flour extraction rates. Price is generally a tradeoff with wheat-quality factors and is negotiated in the context of the quality package. Interestingly, respondents agreed that moisture level and cleanliness were less important factors; rated as not important, or somewhat important, and ranked lower than the other criteria.

Respondents were also asked to rank suppliers in terms of wheat quality (Table 6.3.2). Respondents unanimously agreed that Canadian wheat was the highest quality of all suppliers. Similarly, they unanimously agreed that European Union wheat was the lowest quality. The United States and Argentina were ranked second and third respectively, although there were minor differences between respondents regarding their relative ranking.

Table 6.3.2: Ranking of Wheat Suppliers with regard to Quality by Brazilian Millers

	Rank (highest to lowest)
Argentina	3
European Union	4
Canada	1
United States	2
Australia	N.A.

6.3.3 Promotion: CWB Market Development Activities in Brazil

Respondents were asked to describe the importance of CWB market development activities. All four respondents specifically noted the importance of the various programs offered by Canada, and especially stressed the usefulness of the CIGI courses and on-going technical support provided to Brazilian customers. Importantly, several respondents remarked that the key to Canada's market success in Brazil has been the provision of the entire package of services supplied by the CWB. They regarded Canada as the world leader in providing information and support regarding grain quality and the linkage to final bread-making performance. Further, the respondents directly linked this information, as well as the technical support and after sales service offered by the Canadian system, to Canada's ability to maintain market share, despite a price disadvantage relative to competing sellers.

One weakness of the Canadian system identified by the respondents was the lack of information about crop prospects in Canada. Brazilian wheat buyers said it was often necessary to phone and request crop and market information. In contrast, the U. S. Department of Agriculture is highly regarded for their detailed published reports about wheat market prospects.

However, the respondents were unanimous in ranking Canada first in market service (Table 6.3.4). The United States was ranked second and the European Union third. Overall, Argentina was ranked last, although it should be emphasized that average ranking for Argentina was only slightly lower than the European Union and several respondents reported that Argentine market service had shown considerable improvement recently.

Table 6.3.4: Brazilian Miller's Ranking of Wheat Supplier's Service

	Rank (highest to lowest)
Argentina	4
European Union	3
Canada	1
United States	2
Australia	N.A.

6.3.4 Distribution: Supplying the Brazilian Market

Respondents highlighted distribution as a key disadvantage faced by Canada in relation to Argentina and the United States. For example, delivery times from Argentine ports to Brazilian markets are usually less than 7 days, while delivery from Canada can take up to 27 days. Moreover, Argentina can deliver wheat from a large number of ports, while Canada has only one all-weather port.

When asked to identify problems that commonly arise when purchasing wheat from Canada, respondents emphasized problems associated with logistics and shipment administration. Although they emphasized that the CWB is very reliable, they also noted that Canada has had delivery problems in the past associated with port closures, and that Canada has very limited shipping flexibility due to port constraints.

6.3.5 Overall Assessment of CWB Performance Relative to Competitors

Price and quality are important, but other factors influence the decision of wheat buyers in Brazil. When questioned directly about factors important to their decision, all respondents reported that the long-term reliability of the supplier was "very important" and all rated it as the most important factor. Respondents also felt that reliability of shipment (i.e., general standard of the product) was an important factor. Thus, overall reliability of suppliers and shipment seem to play a key role in the purchase decision of Brazilian buyers. Key for respondents was receiving what was purchased, when and where they want it. Price, generally rated as the third most important factor, is subject to negotiation in relation to prevailing market conditions and product quality. The lowest ranked factors were "availability of service and technical support" and "documentation and information support" although respondents agreed that these were also important.

Respondents were asked to summarize the main competitive strengths and weaknesses of the major wheat suppliers in an open-choice format. Relative to the other principal

competitors for sales into Brazil, the CWB has an excellent reputation, as illustrated in Table 6.3.5.

Several respondents elaborated regarding the comparative strengths and weaknesses of the United States and Canada. Specifically, the central-desk selling system in Canada was viewed as greatly facilitating transactions, particularly the farm to market integration and coordination that exists in the Canadian system. Brazilian buyers regard this as key to the confidence and reliability of purchasing from Canada. One respondent commented that the United States is fast becoming a much more serious challenger to Canada in the Brazilian market because they are now copying some of the features of the CWB. What he called the “little Wheat Boards” in the United States (such as Farmland—a U.S. cooperative), copied the CWB concept of total quality control and coordination. He went on to indicate that U.S. trading companies (which he felt did not historically pay sufficient attention to quality) have also began to improve substantially in their market service and quality control.

Table 6.3.5: Strengths and Weaknesses of the Major Wheat Suppliers

	Strengths	Weaknesses
Argentina	price Mercosul proximity/logistics	service inconsistent - production - quality
European Union	price	product quality logistics
Canada	product quality confidence/reliability consistency	price distance/freight
United States	product quality logistics/proximity tradition of "availability"	price grain cleanliness negotiation difficulties
Australia	N.A.	N.A.

Brazilian buyers report the following as advantages to dealing with a single-desk seller like the CWB:

- easy to buy—one seller;
- quality control—security/consistency/reliability of the product by control of the entire system; and

- confidence—“Brazilians like to deal with a known seller”.

In contrast, one weakness in conducting business with U.S. trading companies was the need to carefully specify and negotiate premiums and discounts when making each transaction. This was regarded as a “negotiation difficulty”. Brazilian buyers prefer the quality assurance and negotiation ease that is provided by the Canadian central-desk system.

Respondents were also asked to comment on the weaknesses of dealing with a central-desk seller. From their perspective, price was regarded as a major weakness. Several reported that the CWB attempts to extract a very high premium, sometimes unjustified by the higher overall quality of Canadian wheat. At times they would like to buy more Canadian wheat but are unable to justify additional purchases at the existing price.

A second problem is the availability of financing, especially the payment conditions. Competing sellers (particularly the United States) offer extended financing terms that are more attractive than those offered by the CWB. One other weakness in dealing with the CWB identified by one respondent was that it was difficult for smaller Brazilian buyers to purchase Canadian wheat.

However, in aggregate, the respondents believe that the Canadian central-desk system serves them very well. According to the primary buyers of wheat in Brazil, the CWB can be entirely credited for the level of sales and market share for Canadian wheat in Brazil. One respondent called the impact of the CWB “total ... the market share reflects the work of the CWB.” Another said, “100 percent of the market share after liberalization was due to the CWB ... the Canadians were much more agile in the market than the Americans.”

6.4. Conclusion

This case study has attempted to evaluate the performance of the CWB in the Brazilian market. The evaluation is based upon two primary data sources: (1) an assessment of available quantitative market data; and (2) qualitative data gathered from open-format interviews with major Brazilian wheat buyers. It should be emphasized that this case study focuses upon the Brazilian market and perceptions of Brazilian buyers about the CWB. It cannot be interpreted as an overall evaluation of the benefits and costs of central-desk selling to Canadian farmers. However, this case study does provide documentation of the performance of the CWB in serving an important export market. Moreover, it assesses the effectiveness of the CWB in responding to dramatic institutional change within Brazil.

Overall, it is difficult to criticize the performance of the CWB in the Brazilian market. Sales and market share have been maintained over the last twenty years under conditions of a central-desk buying agency and a liberated market. At the same time, the United States has been unable to maintain its presence in the Brazilian market. In addition, the evidence suggests that

Canada has not "purchased" market share through low prices and attractive side conditions such as credit terms. In fact, the converse is true. CWB sales have occurred at substantially higher prices than other competitors in the market in the face of a distinct disadvantage created by: (1) preferential access for Argentina to the Brazilian market (because of the Mercosul trade agreement); (2) credit terms that are less flexible than those provided by U.S. sellers; and (3) significant logistical disadvantages relative to the United States and Argentina.

In-depth interviews with leading Brazilian wheat buyers (representing over 85 percent of Brazilian wheat demand) confirms the observations drawn from the quantitative data. The CWB is regarded by Brazilians as a reliable supplier. They like doing business with the CWB and appreciate the range of services offered. In addition, they emphasize that this reputation for reliability increases overall confidence in the quality and consistency of Canadian wheat. Thus, the reputation for quality which Canadian wheat has achieved can not be separated from the central-desk system. Brazilian buyers said that they have been well serviced by the CWB and said that it is responsible for the level of sales and market share that Canada currently enjoys in the Brazilian market.

Appendix A6

Interviews Conducted

Millers

Santista Alimentos SA

- Edson Fernandes Csipai, Manager, Logistics & Wheat Supply

J. Macedo Alimentos S.A.

- Ricardo M. Marcondes Ferraz, Supply Manager

Pena Branca

- Antenor Barros Leal, Director

Grande Moinho Cearense SA

- Adriano Campos, Director of Strategic Planning

Other Institutions

Parana Institute of Economic and Social Development (IPARDES)

- Paulo Wavruk, Researcher
- Sergio Wirbiski, Researcher
- Gracia Maria Viecelli Besen, Researcher
- Jorge Sebastiao de Bem, Researcher

Organization of the Cooperatives of the State of Parana (OCEPAR)

- Nelson Costa, Manager of Economics

ABN-AMRO Bank

- Giovani de Matos, Assistant V.P. and Chief Economist

English Version of Questionnaire

Date _____

THIS IS A CONFIDENTIAL MARKET QUESTIONNAIRE.
ALL RESPONSES WILL BE SUMMARIZED BEFORE PRESENTATION
AND INDIVIDUAL FIRMS WILL NOT BE IDENTIFIED.

Interviewers

Merle D. Faminow
Beatriz E. Faminow

Background Information

Official _____

Position _____

Firm _____

Address _____

Telephone _____

Fax _____

Basic Information of Firm

1. What are the primary activities of your firm?
2. How many flour mills are associated with your firm?
3. Do these mills have a regional concentration? If so what region(s) do they serve?
4. Are these mills specialized in particular products? If so, what product lines do they serve?

5. Please describe the nature of the Canadian wheat you typically purchase.

- Type/quality
- Quantity per year
- Proportion of total wheat purchased
- Primary use(s) of Canadian wheat

6. From what other country suppliers do you typically purchase wheat?

7. In total, how much wheat do you typically purchase each year?

Basic Information About Brazilian Wheat Market

8. What is your assessment of the five-year outlook for Brazilian wheat import needs?

9. How important are the following characteristics when making your purchasing decisions?
Can you rank them?

	<i>Very Important</i>	<i>Somewhat Important</i>	<i>Not Important</i>	<i>Rank</i>
Moisture level	_____	_____	_____	_____
Cleanliness	_____	_____	_____	_____
Consistency of quality from shipment to shipment	_____	_____	_____	_____
Meeting the protein guarantee	_____	_____	_____	_____
General milling performance	_____	_____	_____	_____
Flour processing tolerance and flexibility	_____	_____	_____	_____
Price	_____	_____	_____	_____
Other _____	_____	_____	_____	_____

10. Are there regional variations in these quality characteristics? If so, please explain.

11. What is your assessment of the overall ability of the following wheat suppliers to serve the Brazilian market over this five-year horizon?
- Argentina
European Union
Canada
United States
Australia
12. How are Brazilian wheat purchases likely to be affected by Mercosul over this period?
13. What factors are responsible for Canada's market share in the Brazilian market over the last five years? Can you rank them?

Supplier Comparisons

14. In choosing a wheat supplier how important are these factors to your firm? Can you rank them?

	<i>Very Important</i>	<i>Somewhat Important</i>	<i>Not Important</i>	<i>Rank</i>
Long-term reliability of supplier	_____	_____	_____	_____
Reliability of shipment	_____	_____	_____	_____
Availability of service and technical assistance	_____	_____	_____	_____
Documentation and information support	_____	_____	_____	_____
Price	_____	_____	_____	_____
Other _____	_____	_____	_____	_____

15. What problems commonly arise in purchasing wheat from international suppliers? How are these problems resolved?

16. How would you rank the following countries for each characteristic?

	<i>Wheat Quality</i>	<i>Price (L-H)</i>	<i>Service</i>
Argentina	-----	-----	-----
European Union	-----	-----	-----
Canada	-----	-----	-----
United States	-----	-----	-----
Australia	-----	-----	-----

17. When purchasing wheat, do final prices in the same time period sometimes differ between suppliers? Is this a regular occurrence in your purchases?

18. If so, what factors affect these price differentials? Can you rank them in importance?

19. What marketing services does your firm require from suppliers? Can you rank them in importance?

20. What wheat quality characteristics are required by your firm? Can you rank them in importance?

21. What are the main competitive strengths and weaknesses of major wheat suppliers?

	<i>Strengths</i>	<i>Weaknesses</i>
Argentina		
European Union		
Canada		
United States		
Australia		

22. How good a job does Canada do when informing you of wheat quality and end-use performance relative to sellers from the following countries?

	<i>Better</i>	<i>Equal</i>	<i>Worse</i>
Relative to Argentina	_____	_____	_____
Relative to European Union	_____	_____	_____
Relative to United States	_____	_____	_____
Relative to Australia	_____	_____	_____

Canadian Marketing Performance

23. From the perspective of your firm, what are the primary advantages of purchasing wheat from a single-desk seller such as the Canadian Wheat Board? Can you rank them?
24. What are the primary disadvantages? Can you rank them?
25. In your assessment, what factors are necessary for Canada to maximize its potential in the Brazilian wheat market over the next five years?
26. How would you evaluate the capacity of private Canadian grain firms to serve the Brazilian market?
27. Can you identify specific technical support provided to your firm by the Canadian Wheat Board during the last 5 years? How have these services contributed to your firms' purchases of Canadian wheat?
28. In your assessment what has been the impact of the Canadian Wheat Board in terms of the quantity of Canadian wheat sold to Brazil over the past five years?

Other

29. Is there anything else you would like to add?
30. If we require clarification on some issues can we call you? What time would be most convenient?

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