



GEORGE MORRIS CENTRE

**The Move to a Voluntary Canadian Wheat Board:
What Should be Expected?**

Kate Stiefelmeyer, Janalee Sweetland, Bob Seguin, and Al Mussell

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1. Introduction

The federal government has announced that, effective August 1, 2012, it will change the marketing system for wheat and barley in western Canada. Under its announced decision, the government plans to allow open marketing of wheat and barley; this differs from the current system in which the Canadian Wheat Board (CWB) is the single desk seller of all exports of western wheat and barley and all domestic sales of western wheat and barley for human consumption.

The CWB developed in an environment when there were fears of market power abuse of growers by their customers. Its activities have evolved with the market changes given its regulatory context, and the CWB is not the same as it was 60 years ago, or even 10 years ago. At the same time, the CWB has struggled to evolve at the same pace as the market and to anticipate/facilitate opportunities.

Within this background, there is a need to understand the potential implications of the government's decision regarding the CWB on western Canadian agriculture.

1.1 Purpose and Objectives

The purpose of this study is to provide an overview and analysis of how wheat and barley markets are likely to evolve under an open market.

The objectives of this project are:

- To understand the existing evolution of grain, oilseed and pulse markets outside of CWB control versus western wheat and barley under CWB control
- To provide a survey of investment in processing facilities in non-CWB grain, oilseed and pulses
- To survey the pricing mechanisms available for CWB grains vs. outside the CWB
- To provide an overview of research and processing development in non-CWB crops versus CWB grains

1.2 Organization of the Report

Section 2 below provides an overview of trends in field crops in western Canada. Section 3 provides an overview of pricing instruments available for CWB grains and from the private trade. Section 4 considers trends in investment in processing and research in western Canada. Section 5 provides some context for these results, and concludes the paper.

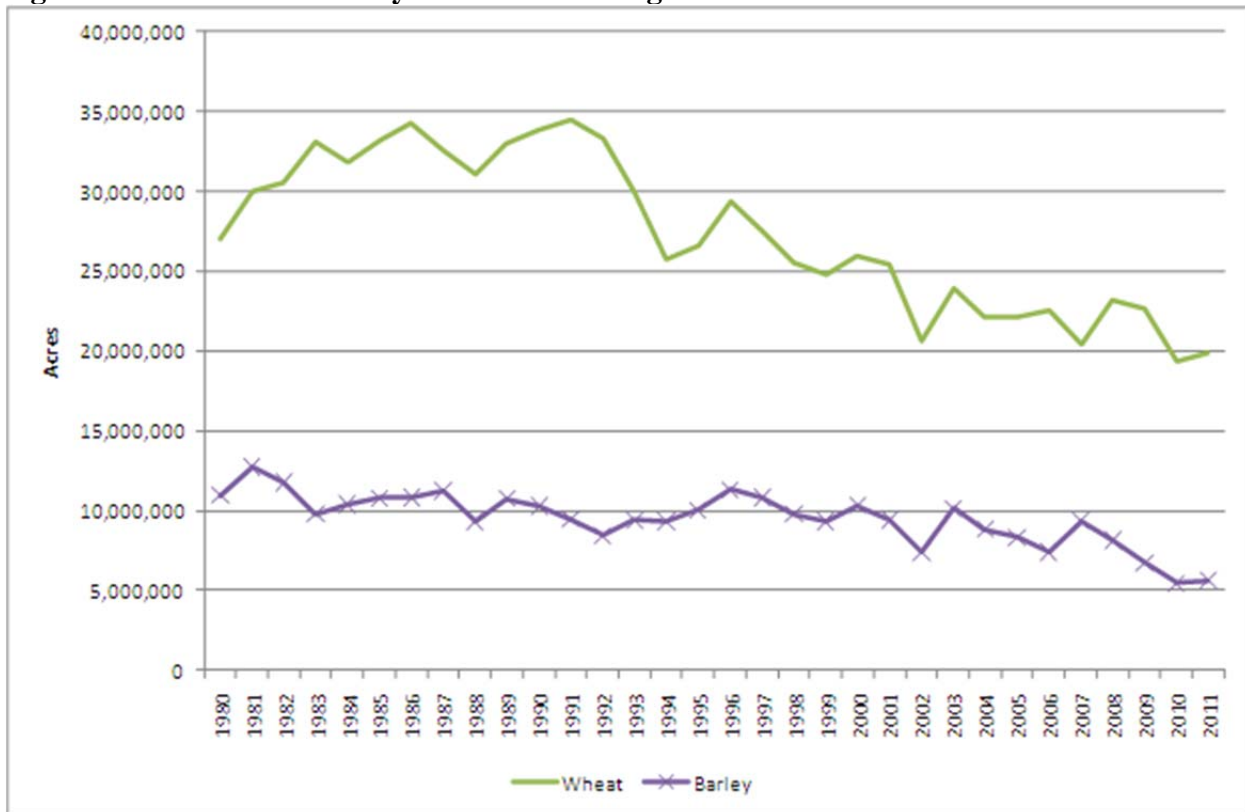
2. Trends in Western Canadian Field Crops

Producers respond to a range of factors in choosing cropping patterns. These relate to agronomics, production costs, per-acre returns, marketing opportunities, and other factors. This section considers the trends in CWB grains vs. other major field crops in western Canada.

2.1 Acreage

In western Canada, wheat has been the leading crop and barley a mainstay; this continues today. However, structural changes have been occurring that significantly alter this pattern. Figure 2.1 below, presents the harvested acreage of wheat and barley in western Canada since 1980, with estimates for 2011. The figure shows that in the mid-1980's to early 1990's, wheat acreage in western Canada ranged just under 35 million acres. Since the early 1990's, wheat acreage has experienced a pronounced downtrend. Recently, wheat acreage has ranged around 20-22 million acres in western Canada. Barley has also experienced a downtrend. Between 1980 and 2000, barley acreage in western Canada ranged around 10 million acres; more recently barley acreage has fallen to just over 5 million acres.

Figure 2.1: Wheat and Barley Harvested Acreage in Western Canada



Source: Statistics Canada, CANSIM database.

Figures 2.2 and 2.3 present acreage trends in major western Canadian field crops not marketed under CWB authority. Figure 2.2 presents acreage trends for canola, with a 2011 estimate. It

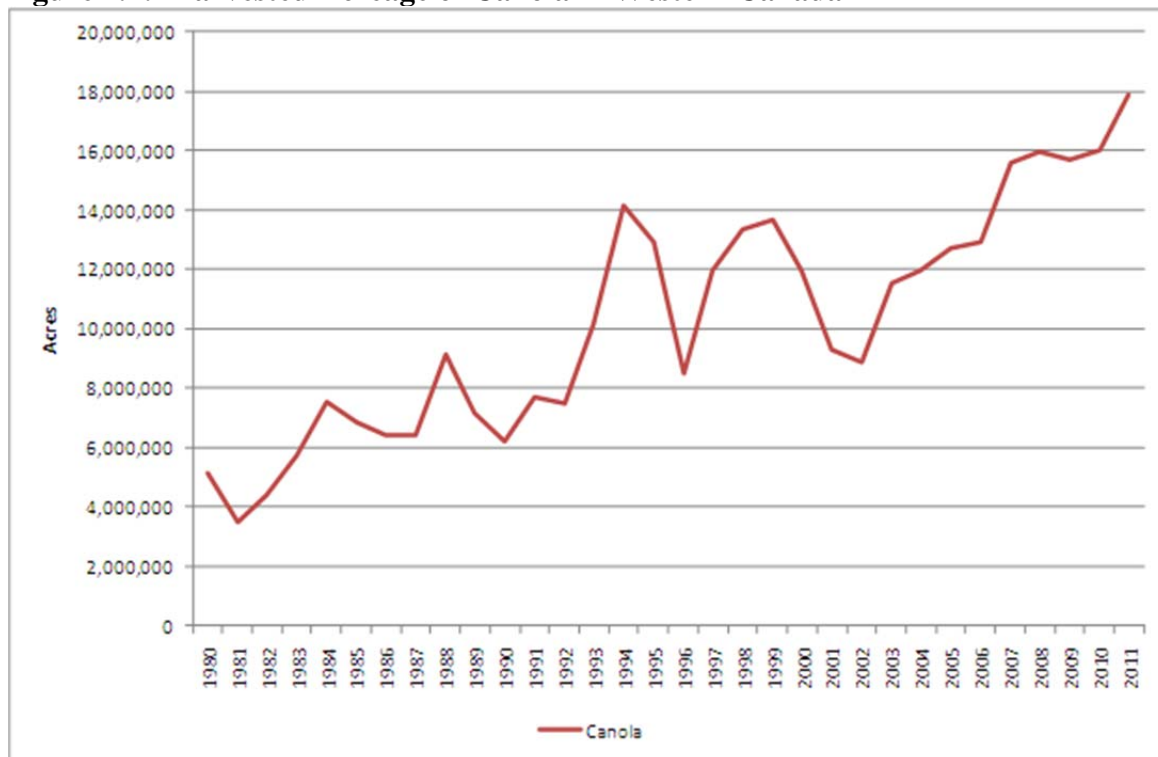
shows dramatic relatively steady growth in canola acreage. In the early 1980's, canola acreage was about 4 million acres; recently it has ranged in excess of 16 million acres.

Figure 2.3 plots acreage trends in oats, field peas, and hay with estimates for 2011. The figure shows significant growth in field pea and hay acreage, with oat acreage mostly stable. Field pea acreage increased from well under 1 million acres prior to the early 1990's to well over 3 million acres in recent years. Oat acreage has ranged around 3 million acres for many years, but has fallen recently to around 2 million acres. Prior to 1989 oats were under the CWB monopoly (although most oats were marketed into the local feed market prior to 1989).

Hay acreage increased from around 1 million acres prior to 1990 to over 5 million acres, and more recently at just over 4 million acres. This is consistent with the development in the beef herd in western Canada, as illustrated in Figure 2.4. The cow herd in western Canada peaked in about 2005 and is down by about 1 million head since.

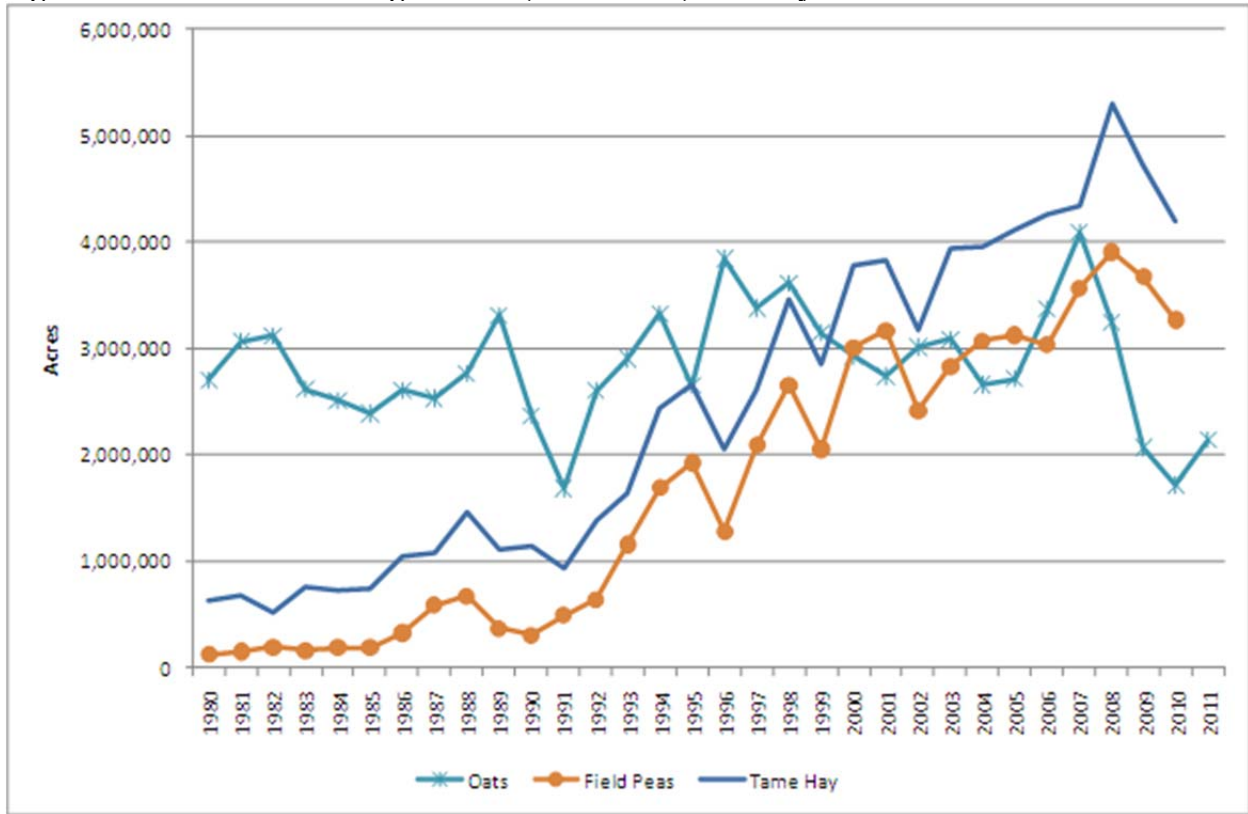
Finally, Figure 2.5 presents trends in summer fallow acreage in western Canada since 1980. The trend since the early 1990's is remarkably clear, with summer fallow acreage in steep decline. The figure shows that summer fallow has declined from over 25 million acres in the early 1980's to a low of just over 5 million acres in 2009. The increases in summer fallow in 2010 and 2011 correspond to significant unseeded acreage in these years due to wet field conditions. This amounts to almost 20 million acres coming into continuous crop production that had been summer fallow.

Figure 2.2: Harvested Acreage of Canola in Western Canada



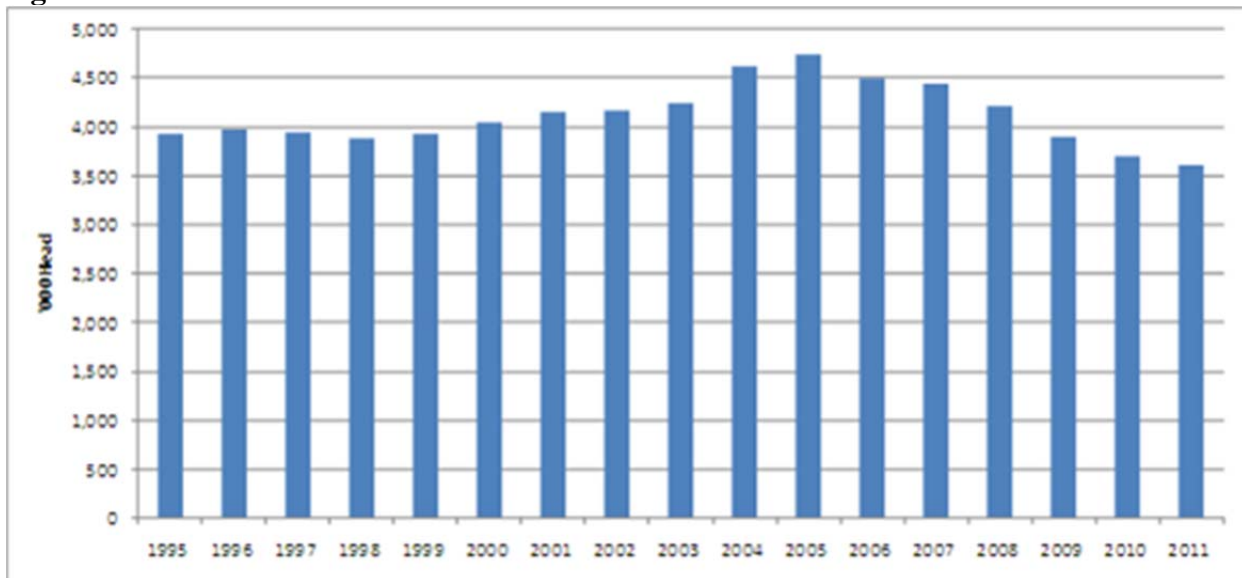
Source: Statistics Canada, CANSIM database.

Figure 2.3: Harvested Acreage of Oats, Field Peas, and Hay in Western Canada



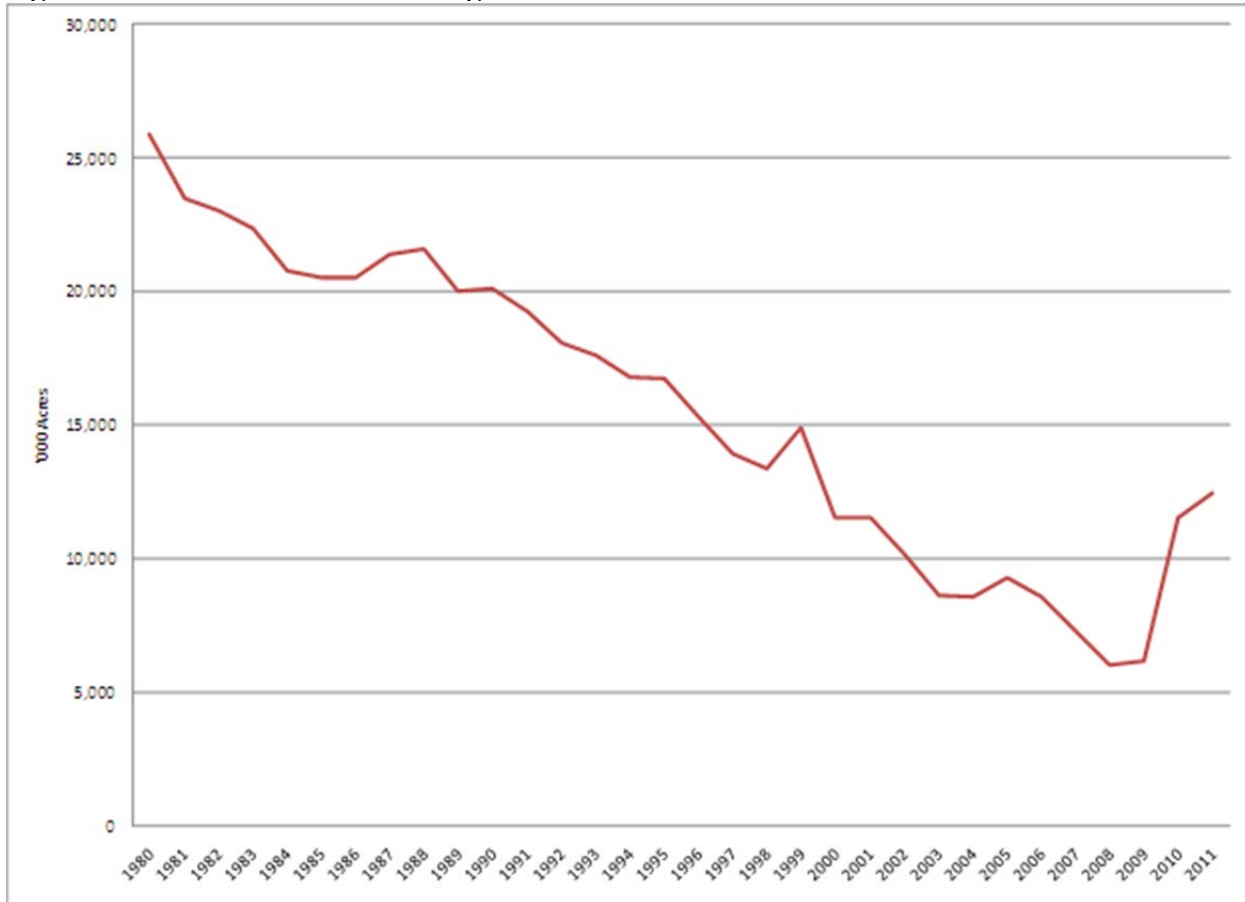
Source: Statistics Canada, CANSIM database.

Figure 2.4: Western Canadian Beef Cow Herd



Source: Statistics Canada, CANSIM database from the Statistics Canada Quarterly Livestock Survey

Figure 2.5: Summer Fallow Acreage in Western Canada



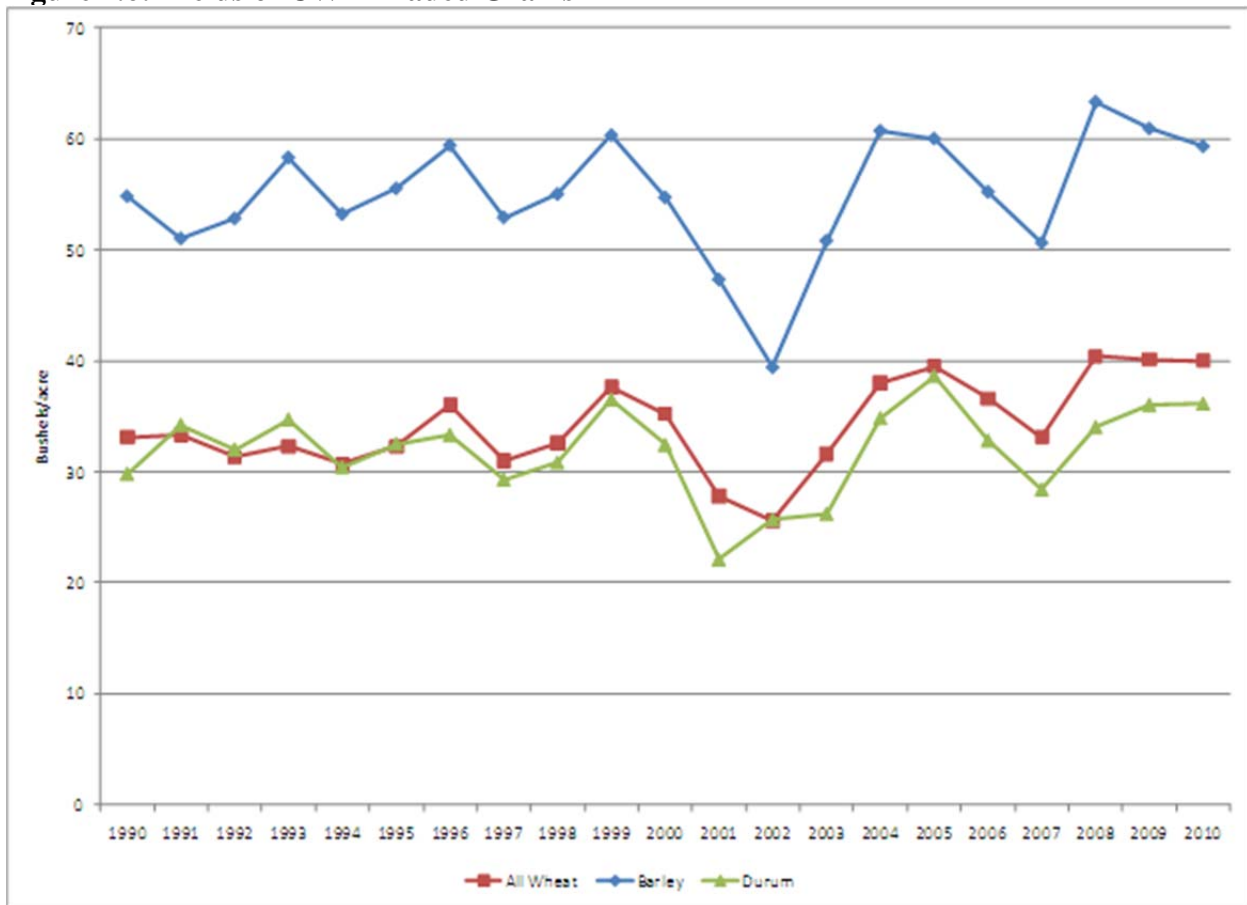
Source: Statistics Canada, CANSIM database.

2.2 Yields

Figure 2.6 below, presents average yields in CWB traded grains in western Canada since 1990. The figure shows variation in yields across crop years, along with the effects of severe drought in the early 2000's. Average barley yields have ranged around 55-60 bushels/acre. All wheat and durum yields have ranged around 30-40 bushels/acre. Figure 2.7 presents average yields for crops marketed outside of the CWB. It shows similar inter-year variation in yields. Oat yields have ranged from 60-80 bushels/acre, field pea yields have averaged just over bushels/acre, and canola yields have ranged from 25-35 bushels/acre.

Table 2.1 presents estimated rates of yield growth. Yield growth rates are estimated by taking 1990-2010 linear trend growth rates relative to the period average yield. The table shows that estimated yield growth rates have exceeded 2% for canola, and are just over 1% for oats and wheat. Yield growth rates for barley, durum, and field peas, at well under 1%, are essentially negligible.

Figure 2.6: Yields of CWB Traded Grains

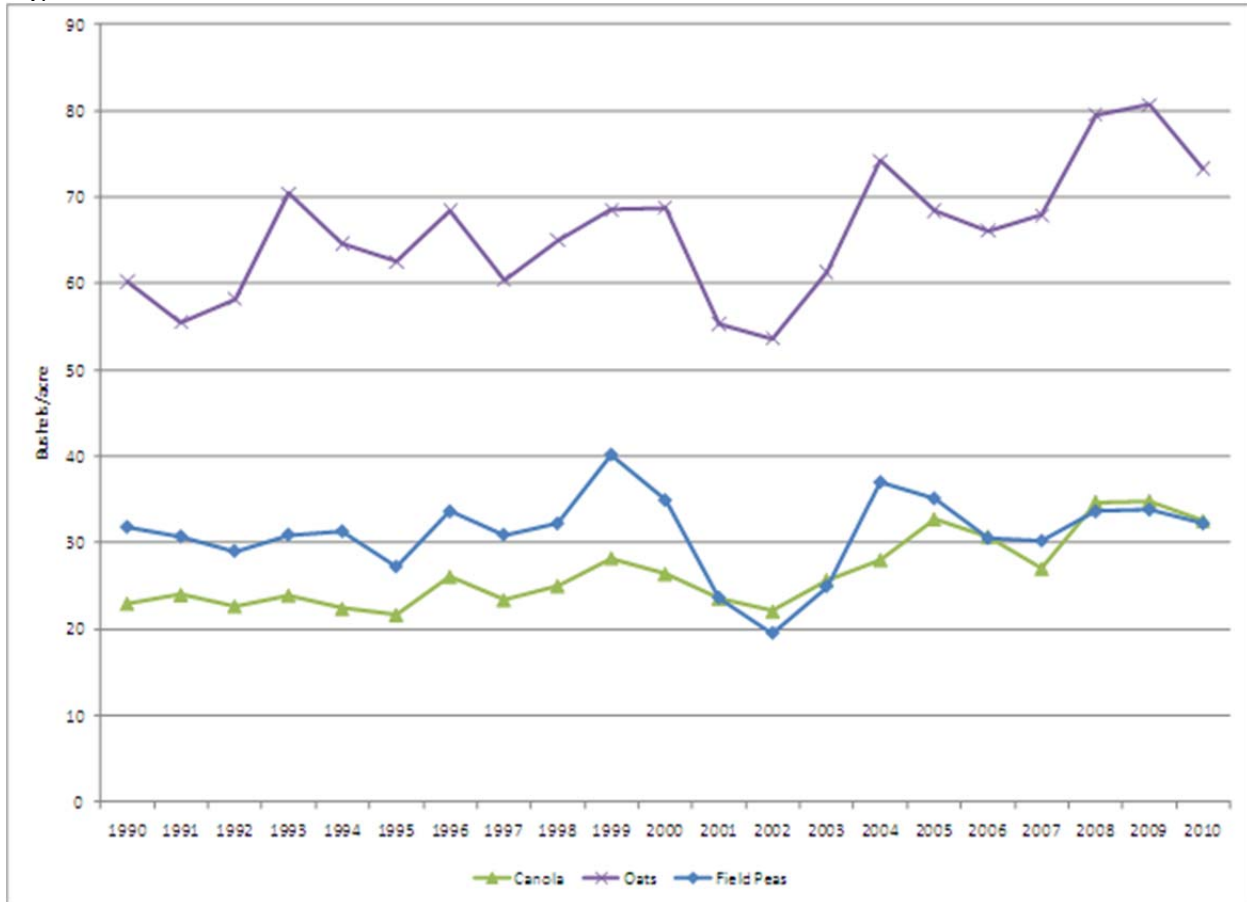


Source: Statistics Canada, CANSIM database.

Table 2.1: Estimated Yield Growth Rates

	1990-2010 Yield Growth
Canola	2.01%
All Wheat	1.07%
Durum	0.36%
Barley	0.50%
Oats	1.12%
Field Peas	0.36%

Figure 2.7: Yields of Grains Traded Outside the CWB



Source: Statistics Canada, CANSIM database.

2.3 Crop Returns

Expected returns are another element of cropping trends in western Canada. Table 2.1 below presents expected return budgets for major crops according to soil zone for major crops in Alberta and Saskatchewan. The expense methodologies used in Alberta and Saskatchewan differ slightly so specific returns per acre should not be compared across provinces; rather, the principal use of the table is to consider, within a province, the relative rank in contribution margin (expected revenue less variable costs) across crops. In Alberta, in each soil zone, wheat (including durum) round out the top three crops in terms of expected contribution margin; indeed, wheat is the most profitable crop on an expected basis for all soil zones in Alberta. Field peas and oats are among the crops with the lowest expected returns. In Saskatchewan, wheat (including durum) follows canola in rounding out the top three most profitable crops in two of the soil zones, and wheat is the most profitable crop in the remaining soil zone. Oats, feed barley, and field peas are among the lowest expected return crops. It is of note that the Saskatchewan budgets have less coverage across soil zones than Alberta, and lack budgets for malting barley.

Table 2.1 Budgeted Crop Returns for Alberta and Saskatchewan, 2011

	Black Soil Zone		Brown Soil Zone		Dark Brown Soil Zone		Grey Wooded-Soil Zone		Peace Region	
	Contribution Margin \$/acre	Rank	Contribution Margin \$/acre	Rank	Contribution Margin \$/acre	Rank	Contribution Margin \$/acre	Rank	Contribution Margin \$/acre	Rank
Alberta*										
CWRS Wheat	262.86	3	188.29	1	213.44	1	262.51	3	223.85	4
CPS Wheat	305.29	1	157.57	2	175.08	3	305.99	1	271.32	1
Durum	n/a	-	157.02	3	180.18	2	n/a	-	n/a	-
Feed Barley	211.59	5	144	4	152.85	4	208.91	5	198.37	5
Malt Barley	229.91	4	127.04	6	140.41	7	232.26	4	235.21	3
Milling Oats	150.35	7	83.15	8	106.49	8	142.89	7	139.7	7
Canola	275.51	2	110.06	7	141.76	6	271.76	2	264.01	2
Field Peas	151.83	6	130.3	5	141.86	5	153.93	6	153.47	6
Saskatchewan*										
CWRS Wheat	106.37	3	52.3	2	75.77	4				
CPS Wheat	121.09	2	43.33	3	86.6	3				
Durum	n/a	-	72.56	1	110.45	2				
Feed Barley	79.58	6	28.79	4	58.88	5				
Malt Barley	n/a	-	n/a	-	n/a	-				
Milling Oats	102.85	4	18.81	5	n/a	-				
Canola	188.36	1	n/a		154.67	1				
Field Peas	98.05 ^a	5	n/a		n/a	-				

*Note that Alberta and Saskatchewan use slightly different expense categories, so that comparisons across provinces should be avoided

Sources: Alberta Agriculture and Rural Development, 2011 [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/econ10238](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/econ10238)

Source: Source: Saskatchewan Agriculture Crop Planning Guides, 2011, <http://www.agriculture.gov.sk.ca/crop-planning-guides>

a) from specialty crop guide #1 green pea

2.4 Acreage Trends Elsewhere

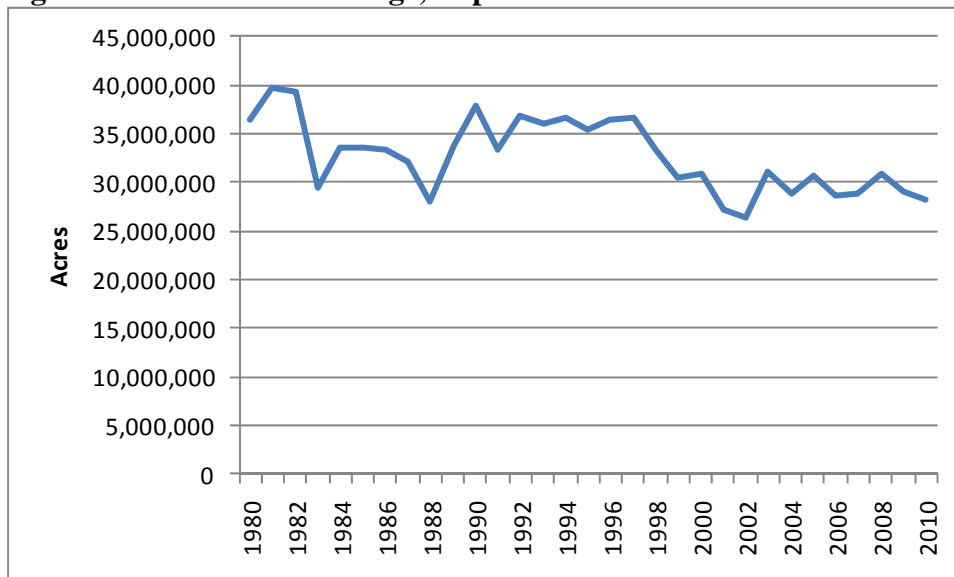
This section presents observations on trends in wheat and barley in other jurisdictions.

2.4.1 US Wheat and Barley

The US is a very large wheat producer, and a relatively small barley producer. Figure 2.8 below, presents wheat acreage in the top 5 wheat producing states in the US: Kansas, Montana, North Dakota, Oklahoma, and South Dakota, since 1980. The figure shows that wheat acreage in these states has decreased from 30-40 million acres in the 1980's and 1990's to a narrow range around 30 million acres today. Wheat yields since 1990 in these states are presented in Figure 2.9. Wheat yields have trended upward, but only slightly. Wheat yield growth in the top five states since 1990 has been about .8%/year.

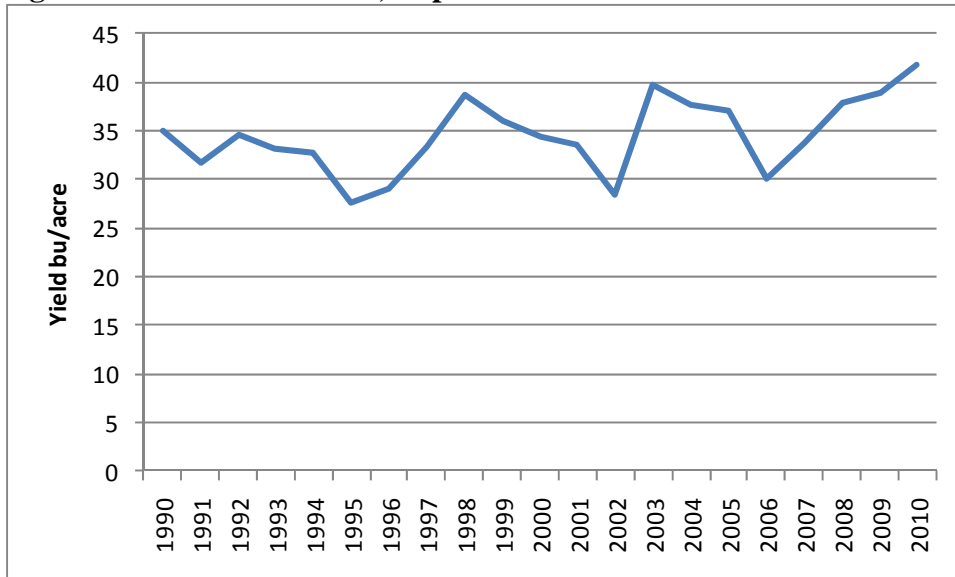
Barley acreage for the top five US barley states- Montana, North Dakota, Idaho, Washington, and California- is presented in Figure 2.10. As can be seen, barley acreage is relatively small in the US, and has decreased from almost 8 million acres in the early 1980's to just over 2 million acres recently. Barley yield trends for these states are presented in Figure 2.11. Barley yields have increased at a slow rate; between 1990 and 2010 the average yield growth rate was just under 1% per year.

Figure 2.8: US Wheat Acreage, Top 5 States



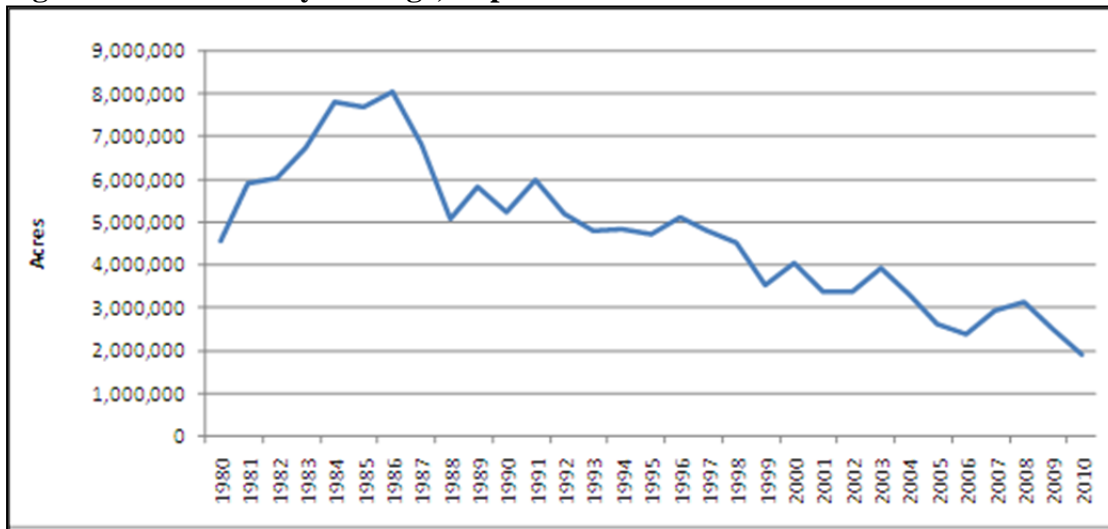
Source: USDA NASS

Figure 2.9: US Wheat Yield, Top 5 States



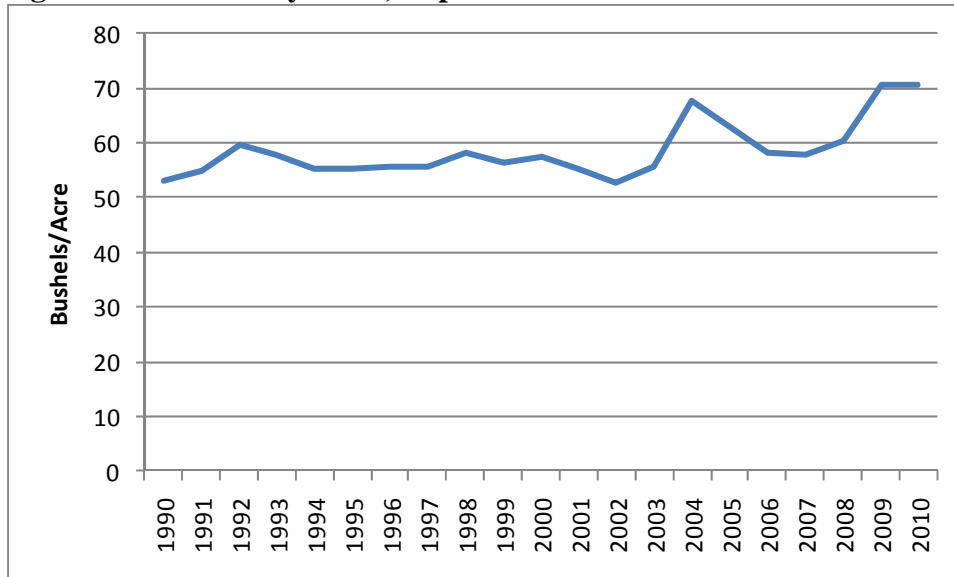
Source: USDA NASS

Figure 2.10: US Barley Acreage, Top 5 States



Source: USDA NASS

Figure 2.11 US Barley Yield, Top 5 States



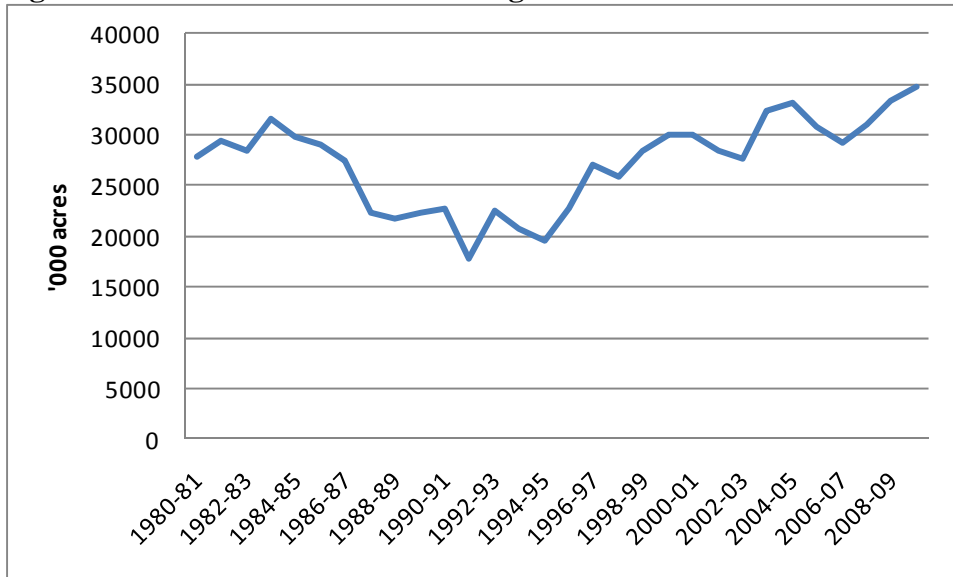
Source: USDA NASS

2.4.2 Australian Wheat and Barley

Figure 2.12 presents Australian wheat acreage. Wheat acreage decreased from about 30 million acres, to about 20 million acres between 1980 and 1990, and has since increased. Recently Australian wheat acreage has been well over 30 million acres. Figure 2.13 presents Australian wheat yields. Wheat yields since 1990 have been essentially flat; indeed, accounting for recent drought events, Australian yield growth has been slightly negative. Prior to July, 2008 the Australian Wheat Board was the mandated single desk seller of wheat in Australia.

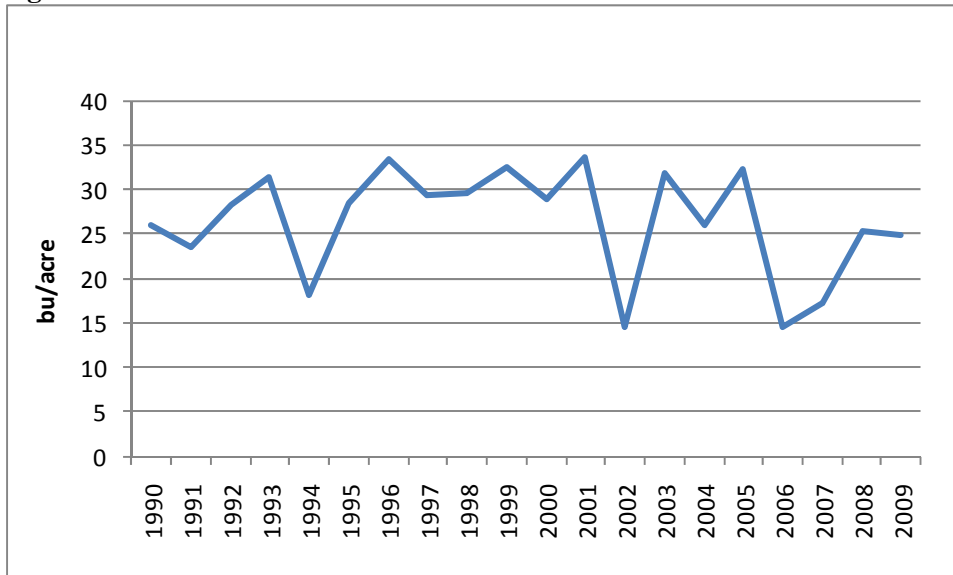
Figure 2.14 presents Australian barley acreage trends. The figure shows that barley acreage is up sharply since the 1980's and 1990's, and is now in the range of 12 million acres, vs. 6 million acres in earlier periods. At the same time, barley yields have been flat, as shown in Figure 2.15.

Figure 2.12: Australian Wheat Acreage



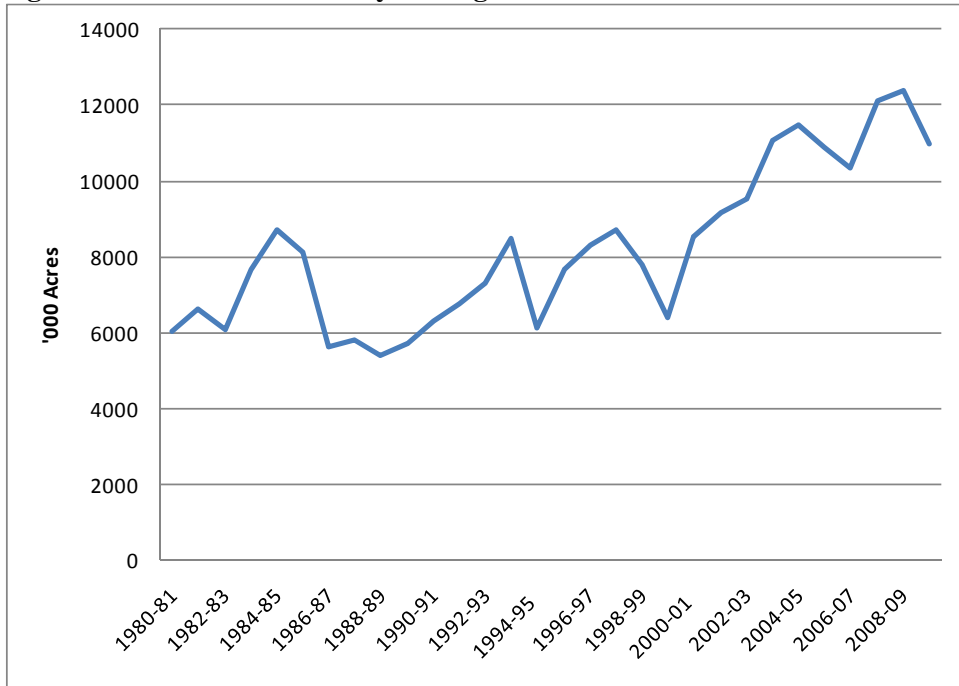
Source: Australian Bureau of Agricultural and Resource Economics

Figure 2.13 Australian Wheat Yield



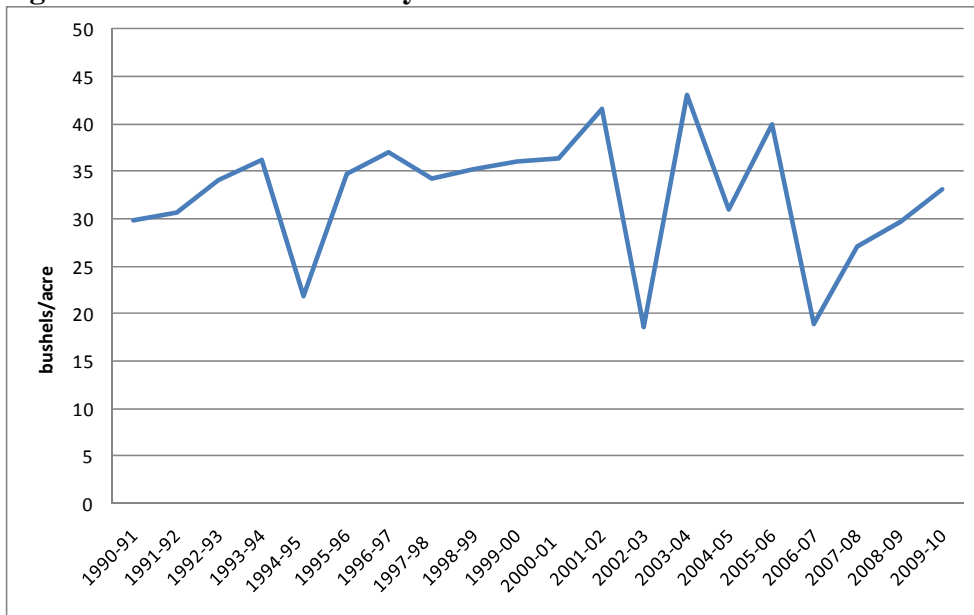
Source: Australian Bureau of Agricultural and Resource Economics

Figure 2.14: Australian Barley Acreage



Source: Australian Bureau of Agricultural and Resource Economics

Figure 2.15: Australian Barley Yield



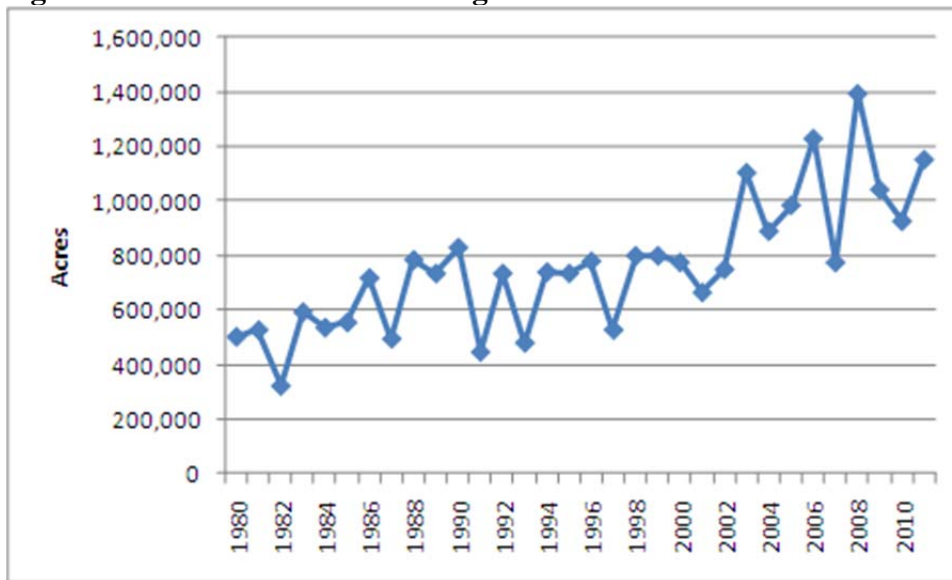
Source: Australian Bureau of Agricultural and Resource Economics

2.4.3 Ontario Wheat

While much smaller in scale than western Canadian wheat, Ontario wheat provides a useful analogy in developing future expectations when a compulsory regulated grain marketing authority evolves into a voluntary organization. The Ontario Wheat Producers Marketing Board (OWPMB), now part of the Grain Farmers of Ontario, was a mandatory single desk seller of Ontario wheat prior to the early 2000's. At that time the OWPMB created an exemption to its authority for farmers wishing to market their own wheat; the Ontario wheat market became fully open in 2003.

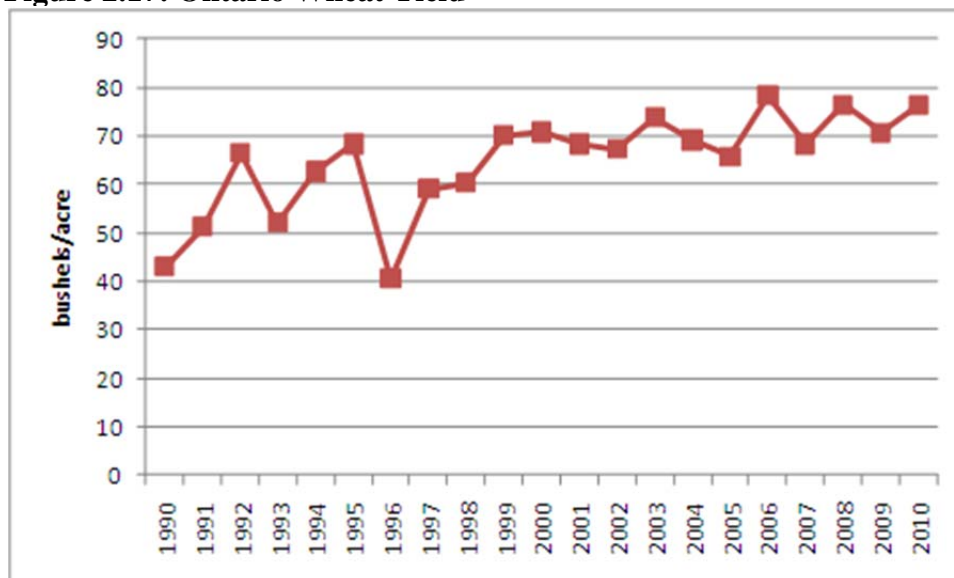
Figure 2.16 below, plots Ontario wheat acreage harvested from 1980-2010. The figure shows that through the 1980's and 1990's, wheat acreage ranged between about 500,000 to 800,000 acres. Since the early 2000's, wheat acreage has increased and is recently in the range of 1 million acres in most years. Figure 2.17 presents Ontario wheat yields since 1990. Yields have increased from typically 50-60 bushels per acre in the early 1990's to 70 bushels per acre or more in recent years. Over the 20 year period, average annual yield growth (estimated as described above) was about 1.9% per year.

Figure 2.16: Ontario Wheat Acreage



Source: Statistics Canada, CANSIM database.

Figure 2.17: Ontario Wheat Yield



Source: Statistics Canada, CANSIM database.

2.5 Observations

The above suggests the following:

- A significant structural change has occurred in western Canada, with a profound decline in wheat and barley acreage, and significant growth in acreage of other crops such as canola, field peas, and hay. Oats have been relatively constant in acreage.
- CWB grains have experienced low or negligible yield growth, especially in comparison with canola. At the same time, yield growth in other non-CWB crops has been low (oats) or negligible (field peas)
- Based on government extension budgets, CWB crops- notably wheat- are expected to be among the most profitable. In many cases wheat is budgeted at a higher return per acre than canola.
- There are many possible reasons for the decline in CWB-traded crop acreage and growth in alternative crops, including yield perceptions, crop rotation constraints, and per acre returns. Clearly CWB and non-CWB traded crops compete for a land base, so to some extent expansion in one crop comes at the expense of others. Low yield growth would seem to explain reduction in wheat and barley acreage and expansion in canola. However this is incomplete, because it appears as though wheat and barley have also given up acreage to field peas (which has negligible yield growth) and hay. Moreover, in most soil zones, wheat shows the highest contribution margin, and field peas shows among the lowest- yet wheat acreage is declining and field pea acreage is growing rapidly.
- At the same time, the extent of summer fallow is rapidly in decline, and hay acreage that expanded in support of the cattle industry is entering a downtrend. This has the effect of opening up significant acreage for alternative crops.

- The western Canadian experience in wheat and barley acreage decline appears similar to that in the major US wheat production regions. It contrasts with the Australian experience and with the Ontario wheat experience, where acreage has increased.
- The Ontario and Australian experience with wheat- initially in a mandatory single desk marketing arrangement, and then in an open marketing system- is instructive. Wheat acreage in Australia and Ontario has grown. It is also evident that the Australian and Ontario wheat industries did not implode following the removal of single desk marketing.

3. Pricing Instruments for Canadian Grains

The instruments through which farmers price their grain influences the overall price level they receive, risk and risk sharing with the downstream segments of the grain trade, market access, incentives for product attributes, and the timing of payments and thus cash flow. Thus, the nature and range of pricing instruments available to producers is a significant element of grain marketing, beyond the price level itself.

3.1 CWB Pricing Options

The CWB offers a variety of marketing instruments to producers:

- Pool

The price paid to producers is the weighted average of sales prices minus direct marketing and administration costs over the pool period, within grade. Producers wait until after the end of the crop year to determine final price for grain delivered. There are options for producers to shift pooling years, subject to a fee that offsets the impact of the uncertainty that is created for pool size and pool returns when grain is switched from one year to another, plus a CWB administrative fee.

- Early Payment Option

Producers receive a percentage of the current pool return outlook (PRO), minus a discount. This is meant to provide a greater proportion of the expected pool return (PRO) as payment upon – or shortly after – delivery. This is meant to offset the issues of poor cash flow under the conventional pool payment pattern. As well, it effectively increases the floor price created by the initial payment, called the Early Payment Value (EPV).

- Cash Plus and Cash-Buy and Guaranteed Price Contracts (GPCs)

Pricing is based on individual program sales agreements made by the CWB, with initial producer payments adjusted for risk, costs of handling and administration. The contracts carry specific delivery terms as apply to the specific sales. Cash Plus contracts also carry a potential final payment at the end of the crop year, reflecting the difference between the guaranteed price paid to farmers and CWB sales returns for the grain sold within the program, after covering all direct costs.

- Fixed Price Contract/FPCPlus/Flex Pro

Prices offered producers reflect current futures market prices, with a price adjustment that reflects CWB sales year to date. The FPC contract offers a flat price for wheat. The FPC Plus contract for durum is a fixed price, with an additional payment if the upfront risk discount calculated against the Pool Return Outlook (PRO) remains unused at the end of the crop year. Flex Pro offers a daily cash price, subject to an adjustment factor to account for previous pricing activity by the CWB after the start of the crop year.

- Basis Price Contract

The basis price contract allows a producer to lock in fixed adjustment to the futures price, with the futures price established at a later date. The CWB basis is equal to the Flex Pro price - futures price. Basis Price Contracts are subject to an adjustment factor to account for previous pricing activity by the CWB after the start of the crop year.

The range and coverage of these pricing options is summarized in Figure 3.1.

Figure 3.1: Range of CWB Producer Pricing Options, 2011-12

Product	Reference Grades	EPO	FPC	BPC	FlexPro	Deliverable Grades
Wheat						
CWRS	1 & 2 CWRS 13.5	✓	✓	✓	✓	1 CWRS, 2 CWRS, 3 CWRS, 4 CWRS*, CW Feed*
CWHWS	1 & 2 CWHWS 13.5	✓	✓	✓	✓	1 CWHWS, 2 CWHWS, 3 CWHWS, 4 CWHWS*, CW Feed*
CWRS/CWHWS	3 CWRS/CWHWS	✓				3 CWRS, 3 CWHWS
CWES	1 CWES	✓	✓	✓	✓	1 CWES, 2 CWES, CW Feed*
CPSR	1 CPSR	✓	✓	✓	✓	1 CPSR, 2 CPSR, CW Feed*
CPSW	1 CPSW	✓	✓	✓	✓	1 CPSW, 2 CPSW, CW Feed*
CWRW	1 CWRW 11.0	✓	✓	✓	✓	1 CWRW, 2 CWRW, 3 CWRW, CW Feed*
CWSWS	1 CWSWS	✓	✓	✓	✓	1 CWSWS, 2 CWSWS, 3 CWSWS*, CW Feed*
CW Feed	CW Feed	✓				4 CWRS, 4 CWHWS, 3 CWSWS, CW Feed
Durum	1 CWAD 13.0	✓	✓			1 CWAD, 2 CWAD, 3 CWAD, 4 CWAD*, 5 CWAD*
	3 CWAD	✓				3 CWAD
	4 CWAD	✓				4 CWAD
	5 CWAD	✓				5 CWAD
Selected Barley	Sel CW Two Row	✓				Sel CW Two Row
	Sel CW 6 Row	✓				Sel CW 6 Row
*Grades can be delivered against FPC, BPC, and Flexpro but daily feed discount is applied at time of settlement. Not deliverable against EPOs, separate feed grade EPOs are available						

Source: CWB

3.2 Pricing Options offered outside of the CWB

A range of pricing options are offered outside of the CWB. Most pricing contracts are done on a per-bushel or per-tonne basis, with some (particularly identity preserved contracts) on a per-acre basis for sign-up before harvest. Pricing options are available before or after delivery as well as pre or post-harvest depending on the contract. The following summarizes the types of pricing arrangements available:

- Spot pricing

Producer delivers to an elevator at a time of their choosing and receives the local cash price.

- Deferred Delivery contract price

Fixed price quoted for delivery at a stated location and stated time.

- Minimum Price

Minimum price is established at a discount to local deferred delivery prices. It provides a fixed minimum price, with the opportunity to take advantage of upward price movement.

- Floored Average Price

Contract price is established, and the producer also chooses a basis level and averaging period for the contract. Producer receives the greater of the floor price paid at the time of delivery or the average futures for the pricing period selected.

- Price Window

Contract has a stated minimum and a stated maximum price. Prices fluctuate with the market between minimum and maximum, but never move outside this range.¹

- Basis Price

Producers lock in basis via contract. Futures either locked in later or at time of delivery depending on the terms of the contract. Some companies allow basis to be rolled into other contract months. Some contracts allow producers to set the basis price and then select an independent trader to set the futures price², or offer an average hedged price by a risk management expert³.

- Fixed Futures

Producers lock in futures level with contract. Basis price either established at time of delivery or prior to delivery.

- Average Season Price

Producer receives average price over a set period of time.

- Price plus premium

Premiums are paid for unique traits (as in an IP program), quality, or high volume above either futures or spot contract price.

¹ For example, Cargill Price Protector® contract

² For example, ADM's Marketing/Risk Management Contract Tools, ADM Advantage Contract

³ For example, Cargill Hedgemaker®

- Premiums paid for initial delivery

Producer is paid a premium for initial delivery, in return for a commitment to deliver additional volume at a capped target price at a future date. If the futures price falls below the target at the time of delivery, the contract is nullified.⁴ Essentially, it is a premium paid to the producer to provide a call option on the physical grain.

- Pooled prices

Producer is paid proportional to a weighted average share of the purchaser's product sales.

Table 3.2 below summarizes the pricing instruments offered by the CWB and the private trade.

Table 3.2 Pricing Options under CWB vs. elsewhere

	CWB	Non-Board
Spot	No	Yes
Fixed Forward Contract	Fixed Price Contract, FlexPro	Yes
Pool	Yes	Yes
Average Season Price	No	Yes
Fixed Futures	Basis Price Contract	Yes
Basis Contract	No*	Yes
Minimum Price Contract	Early Price Option	Yes
Premium at initial delivery	No	Yes
Price plus Premium	Cash Plus	Yes

*CWB Basis Price Contracts are not true basis contracts as they do not reference a delivery location. CWB basis = Flex Pro price-futures, and does not reflect any elements to encourage delivery as private basis contracts might.

3.3 Summary

- The CWB has expanded its range of pricing alternatives such that it offers many similar pricing instruments to the private trade in non-CWB traded crops. However, the CWB is not comprehensive in offering the same alternatives as the private trade, and in attempting to mimic the types of instruments used in the private trade, the CWB mechanisms are lacking in transparency. This is inherently the case because ultimately all CWB price instruments link back to the pool (or PRO), which is a moving target with no market price reference. It leaves sellers with little guidance in evaluating marketing alternatives based on price level, risk mitigation, or location basis
- The CWB pricing mechanisms, with the exception of a few three-way contracts administered by the board, do not directly facilitate producers and handlers/processors in working together, as does the private trade. As purchasers place more value is placed on the origin of product and being able to work with producers directly, this is significant.

⁴ For example, Cargill AgHorizons Bonus Offer® contract

From the producer's perspective, pricing does not reflect the geography or local market conditions in pricing.

- The CWB pricing instruments, for the most part, do not convey final payment to the producer until after delivery of the product; final payment from pool sales are deferred over an extended period. This waiting results in a cash flow disadvantage to the producer. This is unlike non-CWB pricing instruments in which producers are paid in full at the time of delivery or very shortly thereafter. Other CWB instruments such as FPCs and BPCs offer prompt payment, but at the cost of a price discount.

4. Investment in Research and Processing

This section provides an overview of investment in research and processing in CWB and non-CWB grains.

4.1 Investment in Research

Research in CWB and non-CWB grains occurs under somewhat different models.

Western Grains Research Foundation

In CWB grains, a check-off is used to fund wheat and barley variety development, in combination with government supported research- both in research stations and through grants. The CWB takes a check-off of 30¢/tonne for wheat research, and 50¢/tonne for barley research, which is then forwarded to the Western Grains Research Foundation (WGRF); the check-off is refundable upon request. WGRF states that 95% of producers choose to support the check-offs. In recent years annual wheat check-off funding has amounted to \$4-6 million, and annual barley check-off funding has ranged around \$1 million.

The WGRF obtains additional funding for research based on railways exceeding the Revenue Cap on western grain transportation. WGRF check-off funds provide matching industry funding that is required to lever federal research dollars, primarily spent on research in government research stations and through grant programs utilized by university research programs.

Alberta Barley Commission

Alberta barley producers do not pay into the WGRF check-off for barley. Under the Alberta Barley Plan Regulations, Alberta barley producers pay \$1.00 to the Alberta Barley Commission for every tonne of barley they sell.

“This fee is the Commission’s sole source of ongoing revenue. Check-off dollars fund research and marketing activities to improve the value of barley, both for the growers and their customers” (<http://www.albertabarley.com/members/member/members.html#checkoff>). Similar to the WGRF check-off, producers can request a refund of their check-off dollars.

Other CWB-Grain Commissions

Alberta and Saskatchewan have winter wheat producers’ commissions. Each of these commissions collect a check-off on winter wheat sold. The check-off revenues are these commissions’ sole revenue. Check-off dollars are used to support variety research, market development, agronomic practices and extension/education. These commissions are similar to many others across the country that collect levies including the Alberta Pulse Growers Commission and the Ontario Fruit and Vegetable Growers’ Association.

In non-CWB grains, producer directed research occurs through industry associations (for example, through the Canola Council of Canada and its provincial affiliates), in government research stations and granting programs, and through research conducted by the private sector. Private investment in research has been very significant; for example in canola research:

- Pioneer Hi-Bred opened a new canola seed production facility in Lethbridge Alberta in 2008, reported to be valued at \$12 million, with 30,000 square feet, and 20 employees. It also opened a research facility in Carman, MB for the development of canola, corn and soybeans in Western Canada, employing 7 full-time, 10 seasonal employees.⁵
- Cargill opened a specialty oils research and production centre in Aberdeen, Saskatchewan in 2008. It specializes in a hybrid breeding program and production trials.
- In 2009 Bayer Crop Science opened its Canola Breeding Centre of Innovation in Saskatoon, which is dedicated to research, development and breeding of canola/oilseed, in particular for the advancement of Bayer's InVigor hybrid canola. It was reported to be a \$15 million investment, with 50,000 square feet and employing 40 people.⁶
- Monsanto Canada opened its Breeding Centre in Winnipeg in 2010. It was reported to be a \$12 million investment, 29,000 square feet in size, and employing 40 positions. Monsanto also has a crop technology research institute in Saskatoon for canola trait development and testing that was recently expanded with a \$3 million investment.⁷
- Dow Agro Sciences has research and development facilities at Innovation Place, Saskatoon that develops canola traits, hybrids, and varieties.

A recent survey by the Canadian Seed Trade Association suggested that about 90% of private research investment was in canola, corn, and soybeans, and that fully 74% of private research investment in Canada was in canola. The survey also showed very high proportions of certified seed use in canola (92%) versus much lower rates of certified seed in cereals (18%). In other words, in CWB grains there is a much greater extent of growers cleaning and reusing seed on the farm, versus purchasing certified seed with its measure of quality assurance.

4.2 Investment in Processing

The basic investments in processing that relate to CWB grains are barley malting facilities, flour milling, and pasta processing. The following summarizes investment in barley, wheat, and durum processing.

- Four firms have barley malting plant facilities in Canada, and new investment has been non-existent since the last major investment in malting in Canada in 1993 with the Rahr plant in Alix, AB.
- Investment in pasta processing in western Canada is also limited. There is one small plant operating in Edmonton, Alberta that was established in the late 1990's. In October 2011, Alliance Grain Traders announced the intent to construct a pasta and pulse processing facility in Regina valued at \$50 million.

⁵ <http://www.topcropmanager.com/content/view/4918/38/>

⁶ <http://www.topcropmanager.com/content/view/4918/38/>

⁷ <http://www.topcropmanager.com/content/view/4918/38/>

- There are nine major wheat flour milling operations in Western Canada operated by five firms. The last major processing plant investment in wheat flour milling was in 2004 in Chilliwack, BC. Prior to that investment, plant investments occurred in a plant in Regina in 2000 and in Elie, Manitoba in 1998.

At the same time, significant processing investments have occurred in non-CWB grains. According to the Canadian Oilseed Processors' Association, there are 10 processing facilities in western Canada that crush oilseeds, dominated by canola processing. Canola processing investments have increased rapidly in recent years; this is summarized in Figure 4.1 below. Since 2007, there have been 5 significant investments in canola processing facilities in western Canada, including two new plants with estimated combined capacity of 1.7 million tonnes, and major plant retrofits of existing facilities in Manitoba, Saskatchewan, and Alberta. Over the last 5 years, it is estimated by the Canola Council of Canada that there has been investment of over \$500 million in canola processing. This is reflected in the volume of canola seed crushed; as shown in Figure 4.2. The Canadian volume of canola processed in Canada has essentially doubled since the mid 2000's.

There are currently 7 oat milling facilities in Canada, and all but one are located in western Canada. Figure 4.3 provides detail on some recent investments. It documents investments of around \$13 million in oat processing in western Canada in the last ten years.

Pulse crops have also seen significant investment. According to Saskatchewan Agriculture (2008), the processed volume of pulse crops increased 60% between 1999 and 2002, and another 7% between 2002 and 2008. At the same time, the number of processors declined by 29% between 2002 and 2008, due to processor consolidation. In a survey conducted in 2008, Saskatchewan Agriculture observed that about 48% of processors planned to expand within 1 to 3 years.

Thus, there are somewhat sharp differences in the pattern of investment between the CWB grains and non-CWB crops. This is also reflected in the proportion of crops processed in western Canada. Table 4.1 below provides the context. The table presents crop production versus volume processed in western Canada for canola, oats, wheat, durum, and barley. The table shows that, through increased investment in processing, since 2002-03 the canola crush in western Canada has averaged about 42% of the canola crop, and has recently exceeded 50% of the crop. The proportion processed in western Canada for oats has been somewhat lower, averaging 13% of the crop, and recently ranged over 16% of the crop. The proportions processed in western Canada of CWB grains are broadly much lower; less than 5% of wheat, just over 1% of durum, and less than 10% of barley is processed in western Canada.

Figure 4.1: Recent Investment in Canola Processing in Western Canada

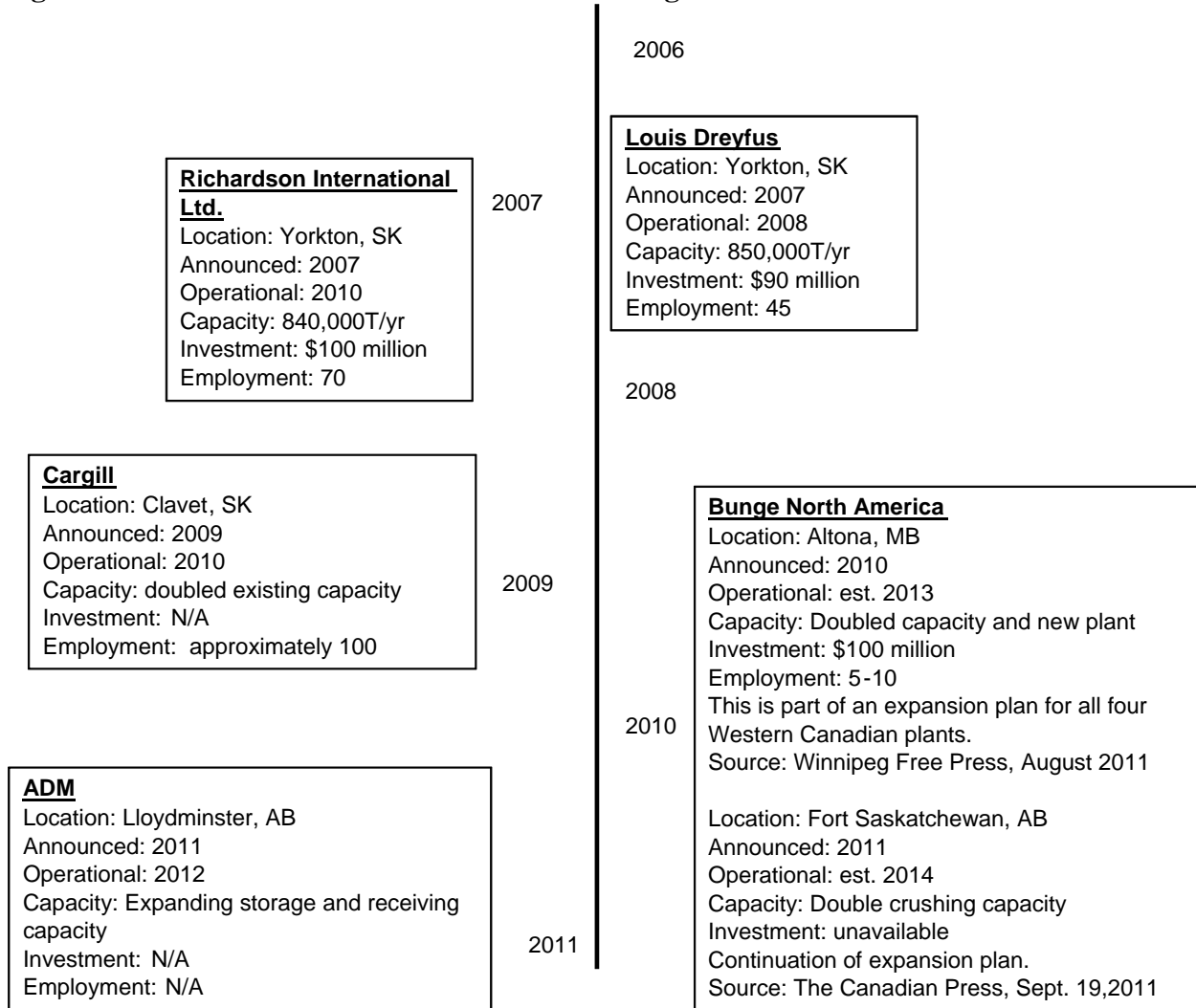
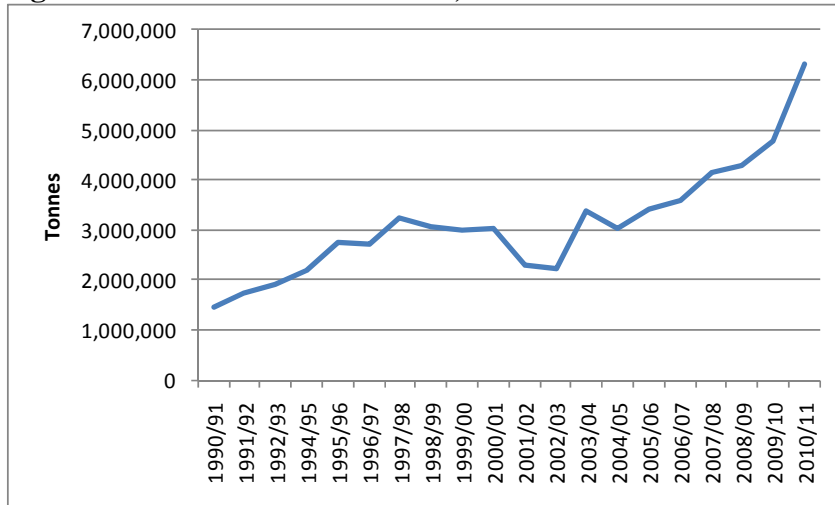


Figure 4.2: Canola Seed Crushed, Canada



Source: Statistics Canada, Cansim Database

Figure 4.3: Recent Investments in Oat Processing

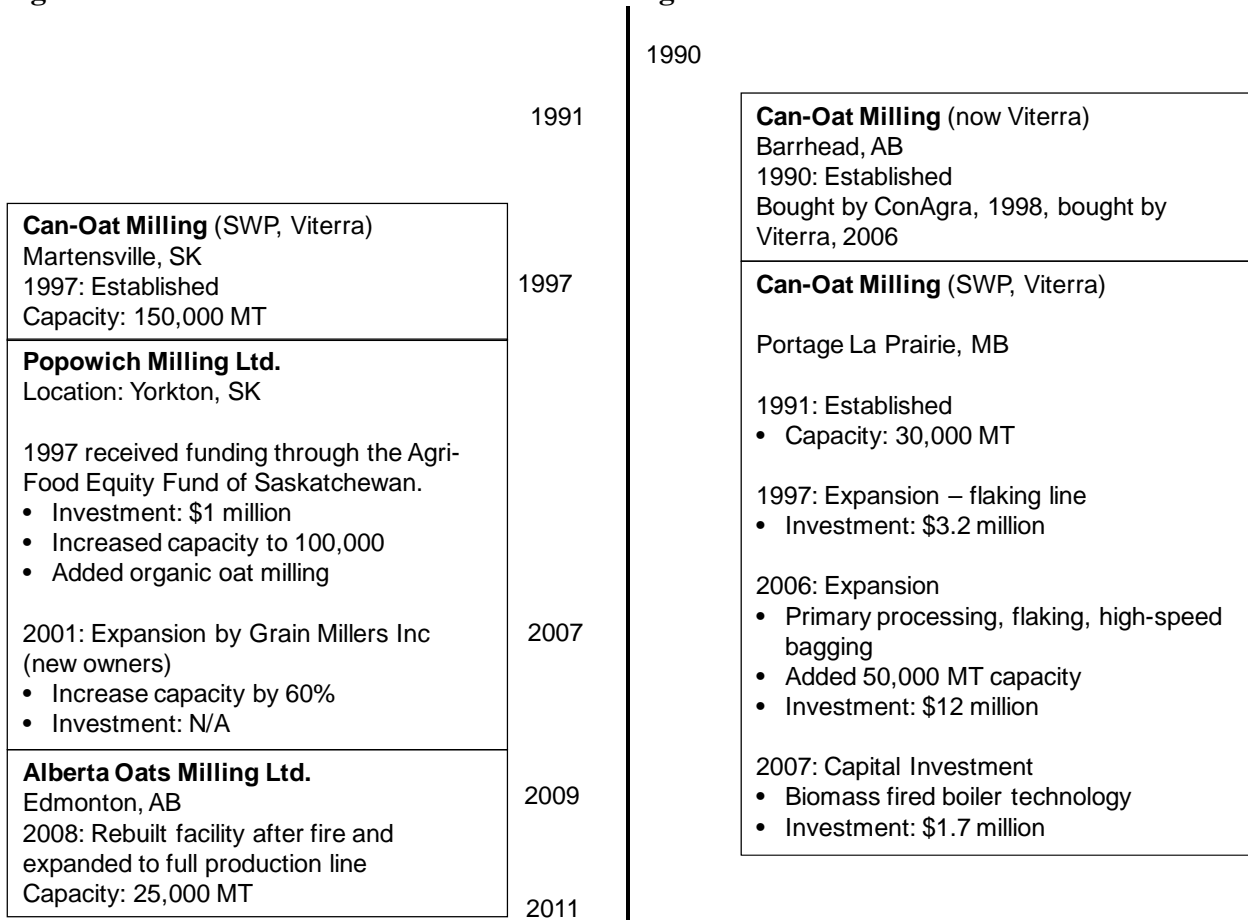


Table 4.1 Production and Processing of Crops in Western Canada, Thousand Tonnes, and Percentage Share Processed in Western Canada

	Canola			Oats			Wheat			Durum			Barley		
	Prod	Crush	Share	Prod	Milling	Share	Prod	Milling	Share	Prod	Milling	Share	Prod	Malting	Share
2002-03	4,463	2,225	49.9%	2,492	326.8	13.1%	10,726	772.4	7.2%	3,877	65.5	1.7%	6,397	800.6	12.5%
2003-04	6,706	3,389	50.5%	2,936	332.8	11.3%	16,390	600.4	3.7%	4,212	55.7	1.3%	11,232	843.2	7.5%
2004-05	7,596	3,032	39.9%	3,044	416.1	13.7%	18,092	661.8	3.7%	4,801	71.4	1.5%	11,678	855.1	7.3%
2005-06	9,432	3,423	36.3%	3,874	510.0	13.2%	17,855	648.1	3.6%	5,915	74.6	1.3%	10,876	860.9	7.9%
2006-07	8,974	3,579	39.9%	3,429	506.2	14.8%	19,097	646.4	3.4%	3,346	76.0	2.3%	8,868	941.6	10.6%
2007-08	9,555	4,144	43.4%	4,288	483.1	11.3%	14,713	555.7	3.8%	3,681	40.6	1.1%	10,313	1,033.9	10.0%
2008-09	12,560	4,280	34.1%	3,959	368.7	9.3%	19,978	993.4	5.0%	5,519	65.5	1.2%	11,209	960.2	8.6%
2009-10	12,354	4,787	38.7%	2,573	386.0	15.0%	19,251	947.8	4.9%	5,400	22.4	0.4%	8,925	873.3	9.8%
2010-11	11,777	6,310	53.6%	1,924	317.2	16.5%	18,017	963.5	5.3%	3,025	27.4	0.9%	6,984	829.2	11.9%
Average			42.9%			13.1%			4.5%			1.3%			9.6%

Sources:

Crop production: Western Canadian production from Statistics Canada via CWB Annual Statistical Tables

Processing:

Canola - Statistics Canada via Canola Council of Canada

Barley – Canadian Grain Commission (Western Canada, including Thunder Bay)

Oats - Canadian Grain Commission (Western Canada)

Wheat - Canadian Grain Commission (Western Canada)

Durum - Canadian Grain Commission (Western Canada)

The differences in processing investment between CWB and non-CWB crops could be attributable to a number of factors, including the inability to access supplies direct from farmers. For example, in announcing the Alliance Grain Traders (AGT) investment in durum and pulse processing in Regina in October 2011, the president of AGT was quoted as saying that their move “is based on ‘the new economic opportunities created by the government's commitment to end the single-desk wheat marketing system’”⁸. The “new economic opportunity” appears to be the ability to procure directly from suppliers, rather than from the CWB as intermediary. This is evident in a press release on the new facility by AGT, in which it describes itself as “creating value through origin-based processing, locating our processing facilities where high quality crops are grown”.⁹ The President of the Malting Industry Association of Canada has stated publicly that his members have no intent in making further investment in Canadian malting facilities as long as the CWB maintains its single desk authority in malting barley.¹⁰

4.3 Observations

This section suggests that research in support of production of CWB versus non-CWB grains has occurred somewhat differently. Research in CWB grains has been heavily focused on public research, which generates public varieties, low rates of yield growth, with low usage rates of certified seed. Using canola as an example of non-CWB grains, private research investments have been extensive and generate licensed varieties, with much higher rates of certified seed use and higher yield growth. The high rate of certified seed use in canola is easily explained due to hybrid seed and technology use agreements for seed; the low rate of certified seed use in cereals is not as easily explained, but it is a significant issue since seed certification is the first step protecting the purity of the grain value chain.

Processing investments have seen a very different pattern between CWB and non-CWB grains. In barley there has not been a major investment in almost 20 years, and prior to a proposed investment recently announced, the only pasta processing are a small plant in Lethbridge, and a small plant in Edmonton established in the late 1990's. Major wheat investments have not occurred in western Canada since the early 2000's. The non-CWB crops have seen a surge in investment in processing. Where information is available, these investments have been significant in terms of dollar value and employment. Finally, investments in processing non-CWB crops have been much larger in proportion to crop volume than CWB grains.

⁸ <http://www.winnipegfreepress.com/breakingnews/prime-minister-harper-at-announcement-of-50m-pasta-processing-plant-for-regina-131347238.html>

⁹ <http://www.alliancegrain.com/download/139>

¹⁰ Phil de Kemp, President, Malting Industry Association of Canada, personal communication

5. Summary and Conclusions

5.1 Summary

- Wheat and barley in western Canada has declined in the past decade in acreage and stagnated in terms of yield growth; this is a similar experience to that of major producing regions in the United States. It is not universal, however, as wheat acreage and barley acreage is increasing in Australia, and wheat acreage has increased in Ontario, both of which evolved from a single desk wheat marketing system to an open market.
- At the same time, canola acreage has expanded greatly and yield growth is about double that of wheat (and even greater than this for barley). It does not appear that the decline in wheat and barley acreage is simply substitution by canola as a more productive crop; other crops such as field peas have also increased markedly in acreage, but have negligible yield growth.
- Evolution has occurred in CWB pricing instruments, and the pricing options available for wheat and barley today have evolved to resemble what is available in off-board crops. However, the CWB pricing instruments lack the transparency of those offered by the private trade, and create cash-flow lags for producers.
- CWB crops have declined in acreage despite the fact that expected returns from CWB crops generally exceed or are at least comparable with non-CWB crops. This is somewhat of a paradox. The apparent explanation is a combination of transparency in pricing and the timing of cash flows from payment.
- Wheat and barley research is based on a public funding model, almost exclusively. For the most part, this model generates public varieties with low yield growth and low adoption of certified seed. Using canola as an illustration of off-board crops, there has been significant investment in private research, yield growth of around 2% per year, and extensive uptake of certified seed (driven by hybrid technology use agreements).
- The investment in processing facilities has increased rapidly in off-board crops such as canola, but has been sharply limited in wheat and barley. As such, the tonnage of canola crushed has expanded dramatically while the tonnage of barley consumed by millers and maltsters has stagnated. Moreover, there is a sharp difference in the proportion of product processed in western Canada for CWB and non-CWB crops; for example, well over 40% of canola is processed in western Canada, while less than 5% of the wheat is.

5.2 Conclusions

Given the federal government's decision to remove the CWB single desk, wheat and barley segments will evolve, and the experience in other regions and crops is instructive. Australia is experiencing growth in wheat and barley acreage, as is Ontario in wheat. There has been significant growth in the acreage of non-CWB crops; this has been coupled with increased investment to add value to these crops. This suggests that there is significant potential for grains currently marketed under the CWB's single desk.

Clearly there will be a greater private sector role in providing the marketing function for western grains formerly carried out by the CWB. The experience with canola and off-board grains suggests that this will result in a greater range of pricing instruments, greater transparency, and improved timeliness of payment.

With very low ratios of volume processed in western Canada versus production, there is opportunity for increased investment in processing and thus rural economic development, in western Canada. The magnitude of the potential opportunity needs to be placed in context. Investment in canola processing has exceeded \$500 million in just the last five years; similar investments made in other manufacturing facilities, such as automotive plants, garner national headlines.

Ironically, the mandate given to the CWB came out of a history in which western grain producers and their customers did not (or would not) work well together. Given the federal government's decision on marketing choice, two observations on this are relevant. The first is that the marketplace has changed markedly since the CWB was formed, with much greater emphasis on the nature and origin of the farm product in making and marketing food products; in this environment, producers and their customers must have access to one another. This creates challenges to a regulated intermediary to be able to evolve with sufficient flexibility in a timely fashion. The second observation is that it is unlikely that all of the concerns that producers would face market power exerted by their customers have gone away. However the performance of canola, oats, and pulses suggest that these concerns can be engaged and mitigated without the need for the single desk powers exercised by the CWB.

Thus, there is no evidence of impending collapse in western Canadian grain markets due to the federal government's decision on the CWB. The prospect exists for wheat and barley to develop more like canola, oats and pulses in a less regulated environment under a voluntary CWB. If this were to occur, it would lead to significant investment, growth, and economic opportunity in western Canada.

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