



**Price Risk Management Strategies for South Australian Wheat  
Growers**

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## **Abstract**

The study investigates how South Australian wheat growers have adjusted to the deregulation of their industry since 1989. Prior to this date growers were obliged to deliver their wheat to the Australian Wheat Board which undertook the management of price risk on their behalf. Since that date growers have an increasing number of ways by which they can price their wheat.

A number of growers were interviewed in 2002 in regard to the methods they used to sell their production. This showed that the adoption of alternatives to the traditional pooling system is relatively slow. Some of the alternatives require an understanding of derivatives which many growers lack and hence prefer to deliver the bulk of their production into pools.

An investigation of wheat prices shows how the United States market has the greatest impact on prices, which in turn is influenced by supply and demand. This investigation also shows that there does not appear to be consistently more favourable times of the year for the adoption of individual pricing mechanisms.

The difference between price risk and production risk is clearly shown during the period of the study. A number of growers practicing forward selling found that while they were managing price risk, they had failed to take into account production risk. This has major implications for growers in low rainfall areas.

The study was unable to confirm that any particular strategy is superior to others over time and that production risk in lower rainfall areas can be more important than price risk. With regard to forward pricing sellers should determine the current price in relation to the long-term average and only forward price when the price is above the long term average. The range of tools available to producers, have in the main, come from the service industry and not from grower demand.

## **Declaration**

This report contains no material that has been accepted for an award of any other degree or diploma in any university or other tertiary institution.

To the best of the author's knowledge, this work contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my project report, when deposited in the University Library, being available for loan or for photocopying.

Hugh Wynter

## **Acknowledgements**

I wish to thank Ian Cooper for the support and guidance he has shown throughout from when I applied to enrol to the final draft.

I would like to thank the fifty or so wheat growers and their partners I interviewed. Without their cooperation I would have been unable to draw the conclusions I have.

I am also grateful to Glenn Ronan for his tireless support and encouragement throughout, to Malcolm Bartholomaeus for information and someone with knowledge of the industry I could bounce ideas off, and finally John Williams for the provision of data and critical opinion.

## **Chapter 1: Introduction**

### ***1.1 Title***

Price Risk Management Strategies for South Australian Wheat Growers.

### ***1.2 Situation statement***

Since the deregulation of the domestic wheat market in 1989 growers have been offered opportunities to acquire additional skills and knowledge in the marketing of their wheat with claims made by financial institutions and consultants that there are risk management benefits in the use of derivatives. The number of selling and pricing alternatives has increased creating uncertainty as to whether some strategies are better than others. The project examines and considers the options available to producers.

### ***1.3 Hypothesis***

That the pursuit of some price risk management strategies by growers since deregulation of the wheat industry can increase farmer risk.

### ***1.4 Methodology***

There are three stages to the study:

1. Wheat growers were interviewed by telephone to determine the methods by which they priced and marketed their wheat. As the interviews proceeded it became clear that the original breadth of the study that included all crops was too great and the focus shifted to wheat only.
2. Literature was searched for relevant background information, including the history of wheat marketing, variables affecting wheat price and methods used by farmers to combat the variability in the price received for wheat (price risk management).
3. Statistical data of wheat prices for each method of sale and currency movements were collected and analysed for various lengths of time during the period 1985 to 2002 concentrating where appropriate on the most recent eight to ten years.

From these steps conclusions have been drawn.

### ***1.5 Structure of the document***

Chapter 1 states the hypothesis and the methodology used in the study. Chapter 2 describes the history and structure of wheat marketing in Australia over the past seventy years and the way the responsibility for marketing decisions formerly vested in the hands of a statutory marketing authority has been transferred back to the growers. Chapter 3 discusses factors that influence wheat prices and risk management strategies available to growers. Chapter 4 deals with the four basic selling alternatives. Chapter 5 considers on farm decision making and the features of an individual property that may influence the choice of selling alternative. A description and results of an initial survey to obtain information as to farmer wheat selling practice appear in Chapter 6. This chapter also discusses the sources of data used in the evaluation of alternatives. Chapter 7 contains the conclusions drawn from this study.

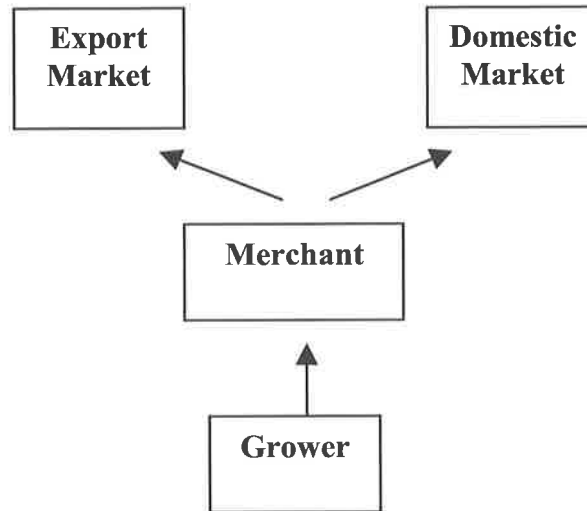
## **Chapter 2: History of wheat marketing in South Australia**

Since the first production of wheat there have been three distinct phases in the way in which producers marketed their grain, pre World War II, from World War II until deregulation and post deregulation in 1989.

### ***2.1 Pre World War II***

Prior to the outbreak of World War II, wheat was sold into a largely unregulated market. (Figure 2.1). This often caused friction between buyer and seller with much of the trade occurring at the rail siding where the grower had little alternative to accepting the price offered. Price volatility was a daily occurrence with sellers finding it difficult to match the guile and superior market knowledge of buyers. This was little different to the situation in the United States where the growth in influence of derivatives on the Chicago Board of Trade (CBOT) was having an impact on the American wheat industry (Geisst 2002). A Royal Commission was held between 1934 and 1936 and recommended amongst other recommendations that “ a home consumption price should operate as a relief measure for limited periods of low world prices, enabling wheat growers to share the benefits accorded to other industries by the protection policies of the nation” (Mauldon 1990). In Australia voluntary pools were established in an attempt to reduce price fluctuations and the inequities that growers perceived existed. The militancy of growers was dampened during the war as the Commonwealth Government compulsorily acquired the crop.

Figure 2.1  
Pre World War II Market Structure



## 2.2 *Post World War II*

By 1946 farmer organizations and Government had pressed ahead with plans to regulate the industry. In 1948, the Australian Wheat Board (AWB) was established as a statutory marketing authority and as a monopoly exporter on behalf of all wheat growers. It also had control over the domestic sales of wheat. Wheat was delivered into pools managed by the AWB which sold it on the growers' behalf on both the export and domestic markets (Figure 2.2). The price paid to growers was an average of prices received over a period of time, both domestic and export, less the costs incurred. As there was little segregation for quality there was little incentive for producers to grow grain for particular markets or to quality specification. As sales were often associated with long-term contracts, final pool payments could take up to five years to be paid.

Every five years an agreement between growers and the Federal Government was renegotiated, which set a minimum price based on a cost of production formula. This arrangement effectively transferred the role of price risk management from the grower to the Australian Wheat Board.

“The traditional system of wheat marketing in Australia had four main characteristics:

1. The AWB was the exclusive marketer of wheat within Australia and for export.
2. A buffer fund operated to stabilise prices through taxes on exports at times of high prices with payments when prices were low.
3. There was differential pricing between domestic and export markets, and, within the domestic market, between wheat for human consumption and wheat for stock-feed.
4. An elaborate pool- payment system to disburse the net proceeds of sales on various markets, after allowance for marketing costs and stabilisation transactions.

The export monopoly of the AWB Ltd is the only major feature of this elaborate system that has survived” (Watson 1999).

While these measures were intended to assist growers this policy is often questioned as to the extent it did achieve its aims.

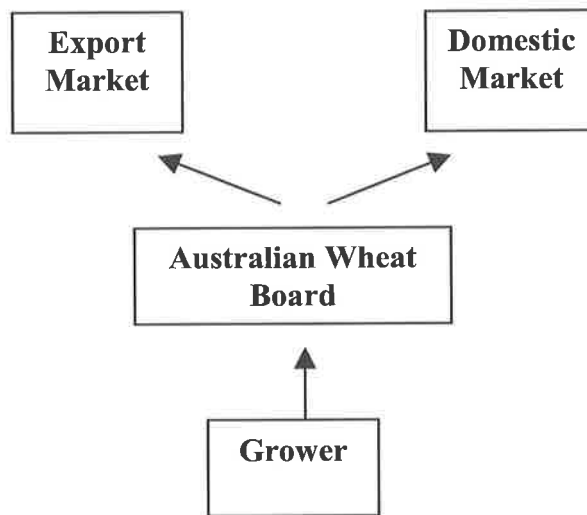
“It is a moot point whether the domestic market pricing mechanism within the wheat stabilisation scheme as unequivocally intended to assist wheat growers, since the assistance actually received during each of the plans could differ from the assistance thought likely at the time they were negotiated. In periods of unanticipated high world prices, such as occurred from 1973 to 1975, the home consumption price severely taxed wheat growers. However one feature of the arrangements was intended to be a cost compensation for growers. In the plans which operated until 1984-85 a new domestic price was negotiated at the beginning of each plan. This price was adjusted annually in relation to movements in assessed costs of production. This had the effect of protecting wheat growers to some extent against cost increases which were beyond their control.”(Mauldon 1990).

These arrangement benefited growers, leading to an expansion of production at a time when wool and livestock prices were weak. Farmers lost no time increasing production of a commodity with a guaranteed minimum price. An explosion in the area planted in 1968-69 coincided with high global production. The Commonwealth Government implemented legislation leading to delivery quotas and an overhaul of the price setting system.

Regulations governing the marketing of wheat were slowly relaxed. Domestic marketing in Australia was deregulated on 1 July 1989 with the Australian Wheat Board retaining a single

desk for export sales. The industry had changed from being production driven to being market driven. (Whitwell & Sydenham 1998). Deregulation also meant that price risk management was once again the responsibility of the grower.

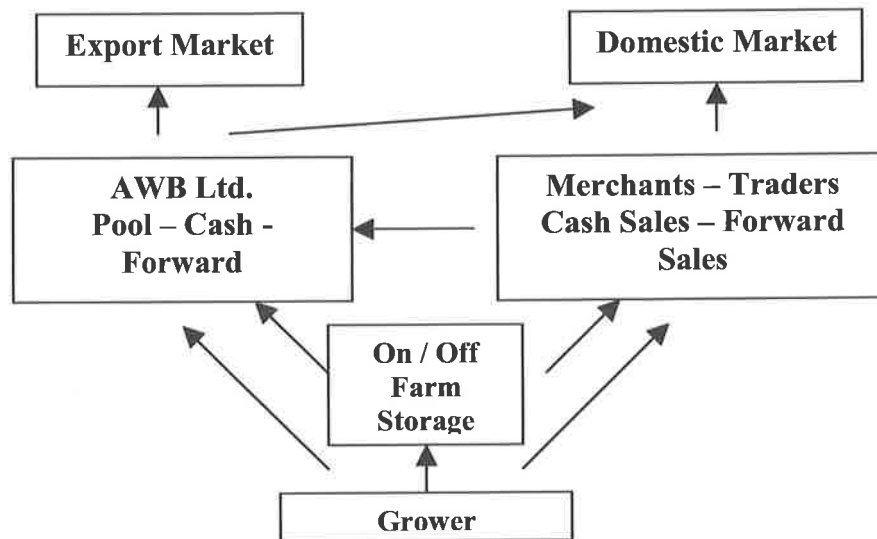
Figure 2.2  
Post World War II Market Structure



### ***2.3 Post deregulation***

In 1998 the Australian Wheat Board was demutualised. It became AWB Ltd. Individual growers were allotted shares based on their deliveries to the Board in preceding years. Initially it was only wheat growers who became shareholders. Thus there was no conflict between shareholders and suppliers who were one and the same. Latterly shares have been issued to others who are not wheat growers. In 2003, AWB Ltd purchased and subsequently sold a significant shareholding in Futuris Corporation to obtain a foothold in rural communities through its Elders subsidiary. In September it purchased the Landmark division of Westfarmers. While wheat can be traded freely within Australia, AWB Ltd. still retains a monopoly over exports until 2006 when it is to be reviewed. (Figure 2.3)

Figure 2.3  
Current Market Structure



Growers can still deliver into pools, which in fact every respondent in the survey actually did with part of their crop, and thus delegate management of currency and futures risk to the pool managers. On the other hand there is a wide range of tools available from banks, merchants and other institutions (detailed in chapters 4 and 5) to assist growers in managing price risk themselves. The analysis of historical data illustrates the difficulties faced by growers attempting to manage price risk in an uncertain future.

South Australian Co-operative Bulk Handlers was also demutualised in 1998 becoming Ausbulk Ltd. It has since become a competitor to AWB Ltd in the South Australian market as a merchant and trader as well as maintaining its role as a bulk handler of wheat in the State. It too has broadened its base to include grain processing through the purchase of Joe White Maltsters Ltd. In May 2004 it announced a merger with ABB Ltd.

The diversification by previously grower only owned organisations into other areas of the grain distribution chain and the inclusion of non-grower equity partners changes significantly

the concept of grower controlled and directed marketing bodies established for the benefit of growers.

With deregulation has come the opportunity for service industries to offer products and services to assist farmers address risk management and in particular price risk management issues. The expansion in the choice of tools that farmers now have has increased their need to understand and evaluate them.

## **Chapter 3: Variables affecting wheat prices**

While the foregoing was concerned with the physical delivery of wheat through the system, the prices on offer to the producer are influenced by a number of factors. The Australian price is influenced as much by overseas events as domestic. While global supply and demand are important in price determination, a secondary market consisting of futures and other derivatives, where many of the merchants and traders take positions and where speculators may be found. These activities can bring about price changes (Geisst, 2002).

The pricing market is also influenced by those, while not having a direct interest in the industry, see opportunities to provide services to growers. In Australia these include banks, merchants and brokers who offer a range of over-the-counter products designed both to meet the needs of producers and their own profit requirements.

These products enable growers to forward price to protect themselves against fluctuations in exchange rates and movements in the price. These instruments may be used for up to two years in advance. Pool operators on the other hand take over the role of price risk management on behalf of growers.

The structure of the wheat market has undergone some significant changes over the past fifty years. This has put pressure on producers, particularly the older generation, to become more sophisticated in their approach to marketing. Some of the difficulties they face are described in this study.

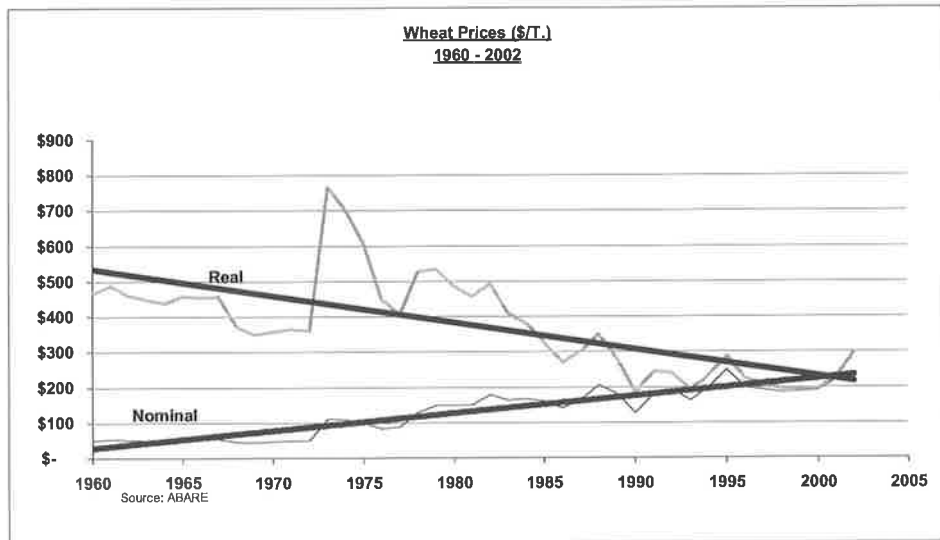
### ***3.1 Supply and demand for wheat.***

#### ***3.1.1 Australian wheat prices***

Over the past thirty years wheat prices have fallen in real terms (Figure 3.1). In 1960 the Australian Standard White (ASW) wheat price was \$51 per tonne. In 2002 the same grade of wheat was estimated to be worth \$278 per tonne (ABARE, 2002). After allowing for inflation, as measured by the consumer price index (CPI), the wheat price in 1960 is equivalent to \$480

in today's dollar values. The CPI is an index which can be used to compare price and cost movements over time.

Figure 3.1  
Australian Wheat Prices



### 3.1.2 Production in Australia

In the 5 years, 1997 – 2001, South Australia produced an average of 3.528 million tonnes of wheat representing 15.7% of the Australian average production of 22.481 million tonnes.

In the same period Australian domestic consumption averaged 5.23 million tonnes. In the absence of a large domestic market, compared with the Eastern states, a high percentage of South Australian production is exported. Australia exported an average of 16.4 million tonnes. This represented 15.5% of wheat traded on the world market. In Table 3.1 Australia ranks third as a wheat exporter behind USA and Canada and ahead of the European Union and Argentina. Together these five countries account for 82% of all wheat exports (ABARE 2002).

Table 3.1

## Production &amp; Exports of Wheat from major exporting countries

(Average of years 1999-2000 to 2001-2002)

	Production Mt	Exports Mt	% exported	% of world exports
<b>Australia</b>	<b>23.9</b>	<b>16.6</b>	<b>70</b>	<b>15</b>
USA	58.9	28.2	48	26
Canada	27.8	17.7	64	16
Argentine	16.0	10.9	68	10
European Union	97.1	14.2	15	13

Source: ABARE 2002

**3.1.3 World wheat stocks & prices**

While Australian and South Australian wheat production has increased over the past ten years, global production has remained steady. (Table 3.2)

Table 3.2

## Australian, South Australian &amp; World Wheat Production

1991 – 2002

Year	Australia kt	South Australia kt	World mt
1992-1993	16184	2680	562
1993-1994	16479	2121	559
1994-1995	8972	1487	524
1995-1996	16504	2724	538
1996-1997	22924	2795	582
1997-1998	19224	2689	610
1998-1999	21464	3310	586
1999-2000	24758	2586	585
2000-2001	22108	4162	582
2001-2002	24854	4897	579

Source: ABARE 2002

It is estimated by ABARE (2002) that approximately one third of the wheat produced in Australia is consumed domestically. This ratio has remained fairly constant as production has risen. Table 3.3 shows the changes in world wheat stocks that occur from year to year and Figure 3.2 how wheat prices in America are influenced by world wheat stocks. Wheat prices are influenced by events which influence production and demand. For example Table 3.4 sets out the seasonal spread of production in the major exporting countries. Occurrences in the

Northern Hemisphere in regard to production while being outside the Australian growing season may influence prices received by farmers in Australia in six to nine months time.

Table 3.3

Closing Stocks in Major Exporting Countries  
1996 - 2002  
(Mt)

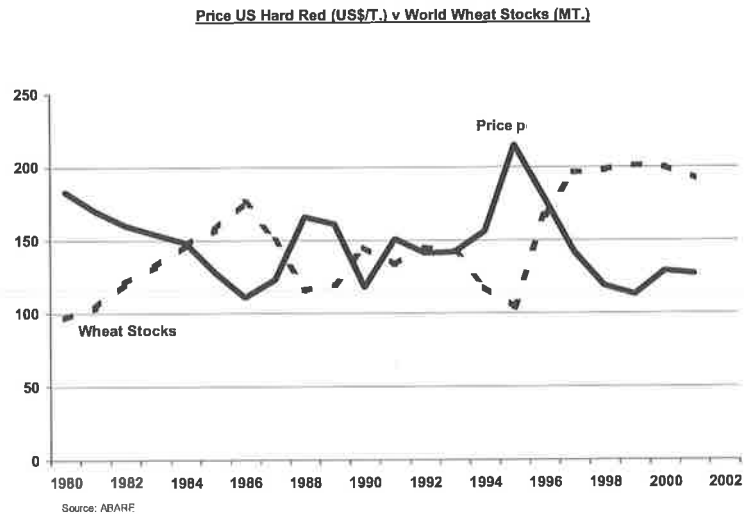
1996	35.7
1997	40.7
1998	52.8
1999	51.2
2000	51.8
2001	46.0

Source; ABARE 2002

Figure 3.2 compares world wheat stocks with United States hard red winter wheat prices.

Figure 3.2

Price US hard red wheat v. world wheat stocks



### 3.1.4 Global production pattern

When the Australian crop is being sown (May, June), harvesting is about to start in the Northern Hemisphere where approximately 70% of exported wheat is grown (Table 3.4)

Table 3.4

Month Harvest Commences

Australia	October
Argentina	December
United States	June
Canada	August
European Union	July

For example a large harvest in the United States will affect the futures price and hence may influence both the price in Australia and the area planted.

**3.2 Factors affecting price**

**3.2.1 Exchange rates**

Transactions on commodity exchanges in North America are reflected in forward price predictions and spot prices offered to Australian producers. The prices struck on exchanges such as the Chicago Board of Trade (CBOT), are in turn influenced by global supply and demand. Figure 3.2 has been derived from ABARE 2002 data.

Export sales of Australian wheat are denominated in United States dollar values. Therefore any movement in the value of the Australian dollar in United States dollar terms impacts on the price Australian farmers receive for their wheat. It is estimated that a one-cent movement in the exchange rate translates into approximately \$4 per tonne received by the grower (Bartholomaeus 2002b). Figure 3.3 plots the exchange rate against the closing CBOT futures price and shows that CBOT price is subject to greater variability over time than the exchange rate.

**3.2.2 United States futures price.**

Bartholomaeus (2002b) states that the December or March CBOT futures contract is a good indicator for the value of Australian wheat. He calculates that a ten US cent change in the price per bushel has the potential to add or subtract \$10 per tonne at 2002 prices and exchange rates.

Figure. 3.3

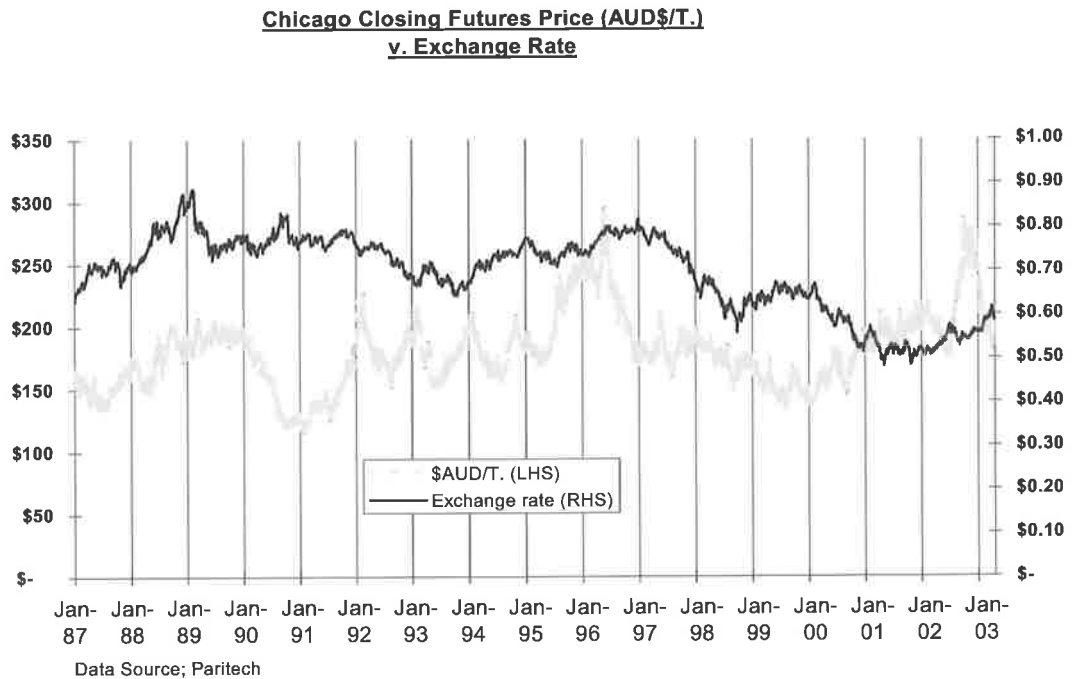


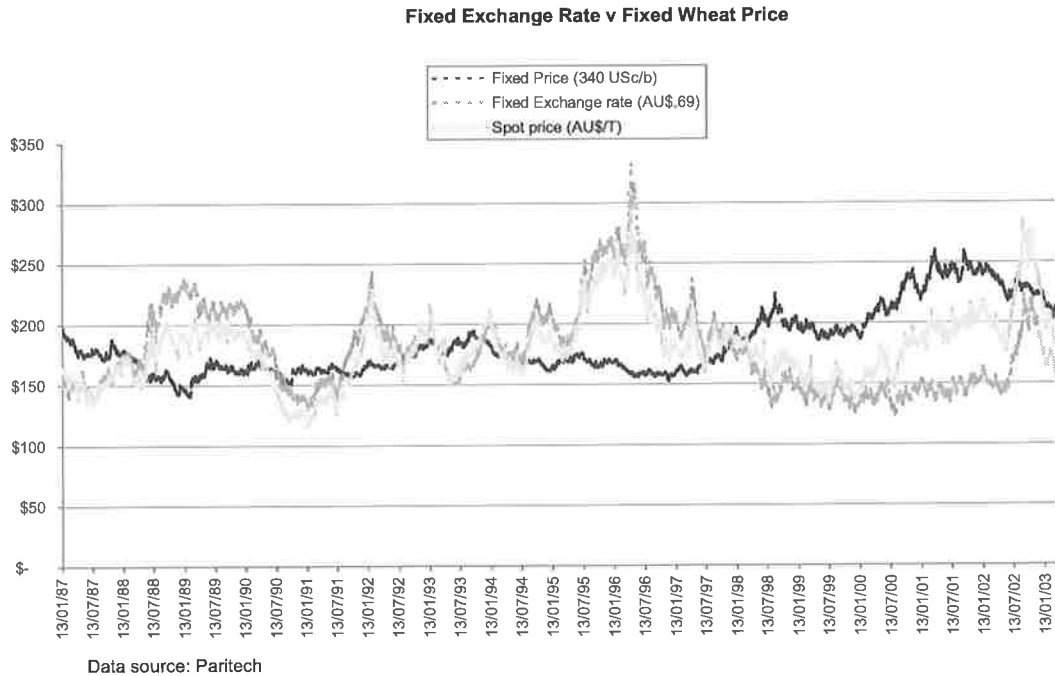
Figure 3.4 shows the relative importance of both the exchange rate and the wheat futures price on the spot price when expressed in Australian dollars. The chart spans the years from 1987 to 2002. To achieve this three data series have been plotted.

- The closing wheat price per tonne expressed in Australian dollars based on the CBOT futures closing price and the closing futures exchange rate.
- Where the closing exchange rate has been fixed at the average for the period (AU\$0.69) with the wheat price as of that time.
- Where the closing wheat price has been fixed at the average for the period (US\$ 3.40 per bushel) with the exchange rate as of that time.

The chart shows that the price of wheat paid to the Australian farmer is influenced more by the price of wheat on the CBOT than the exchange rate. When the exchange rate is fixed, the price

tracks the spot price in Australian dollars more closely compared with when the wheat price is fixed. However the recent rise (2003-4) in the Australian dollar against the United States dollar has significantly reduced the benefits of a strong American wheat price.

Figure.3.4



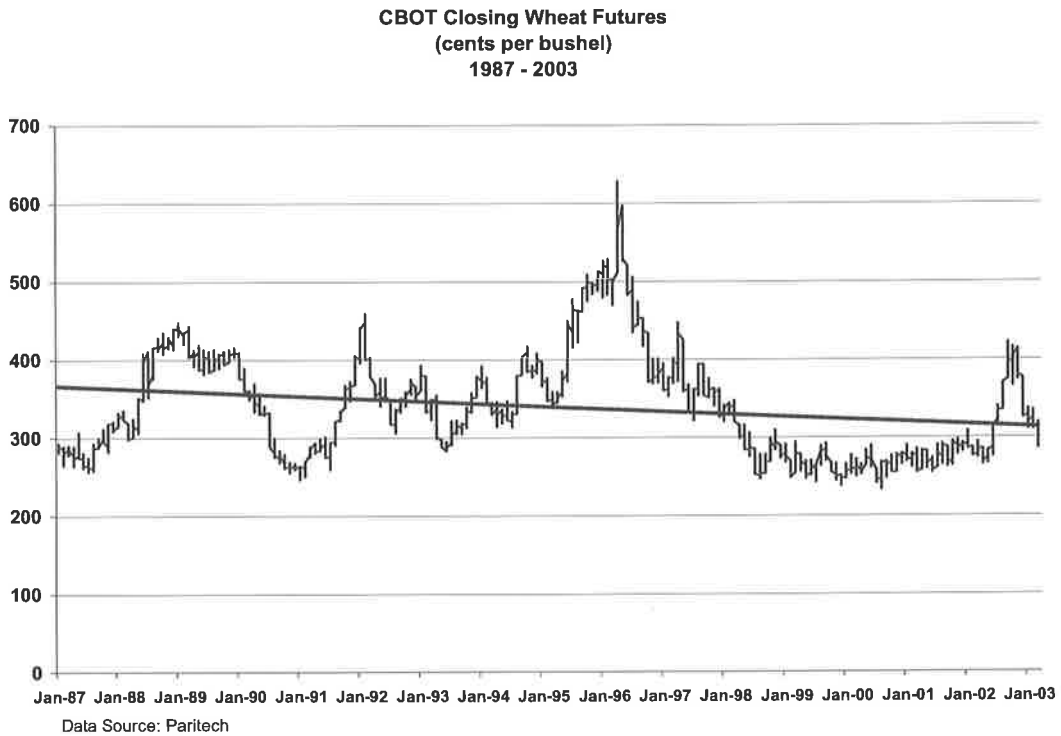
### 3.2.3 Climate

Rainfall received in the growing season is the greatest determinant of yield in South Australia. While above average wheat prices have been achieved in seasons of below average rainfall in Eastern Australia (1994 and 2002), there have been seasons of high production when prices have not fallen (2000 and 2001). While the effects of low yields are important to the Australian grower, their impact on wheat prices can be offset by events in other parts of the world. The CBOT wheat futures market while reflecting the global position for commodities also takes into account events in individual countries.

### 3.2.4 Price stability

Figure 3.5 shows the closing price for wheat on the Chicago Board of Trade expressed in US cents per bushel from 1987 to 2003 on a daily basis together with the downward trend line.

Figure. 3.5



In Table 3.5 the same data has been set out in a decile analysis. It shows the chances of the price exceeding certain levels over the period. If the price is above the long term average (340cUS) then it has a greater chance of falling than increasing further.

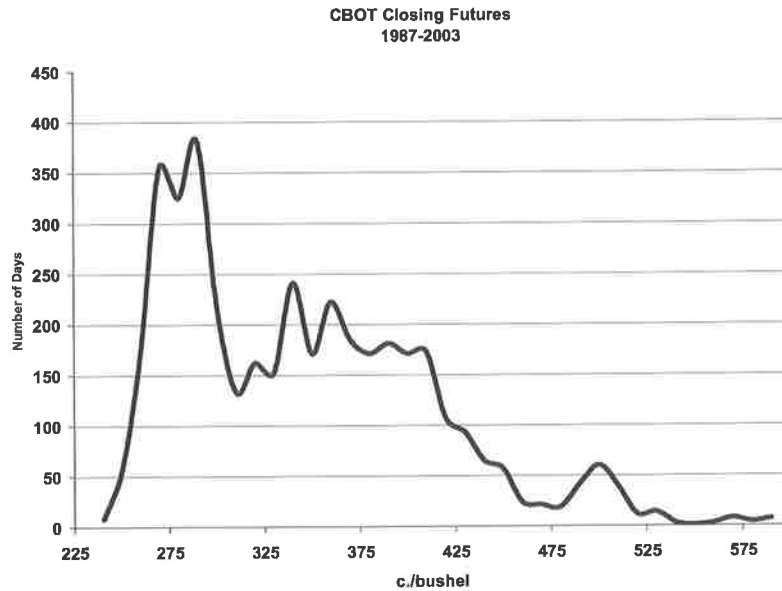
Table 3.5

Decile Analysis of CBOT Futures Price

Decile 1	>428c	10%
Decile 2	>397c	20%
Decile 3	>374c	30%
Decile 4	>354c	40%
Decile 5	>333c	50%
Decile 6	>310c	60%
Decile 7	>289c	70%
Decile 8	>278c	80%
Decile 9	>267c	90%
Decile 10	>234c	100%

Figure 3.6 shows the distribution of the values according to the number of days each value occurred between 1987 and 2003.

Figure 3.6



Data Source: Paritech

The same analysis has been done after converting the data to Australian dollar values. The table takes into account any influence that the exchange rate has on price. (Table 3.6 and Figure 3.7)

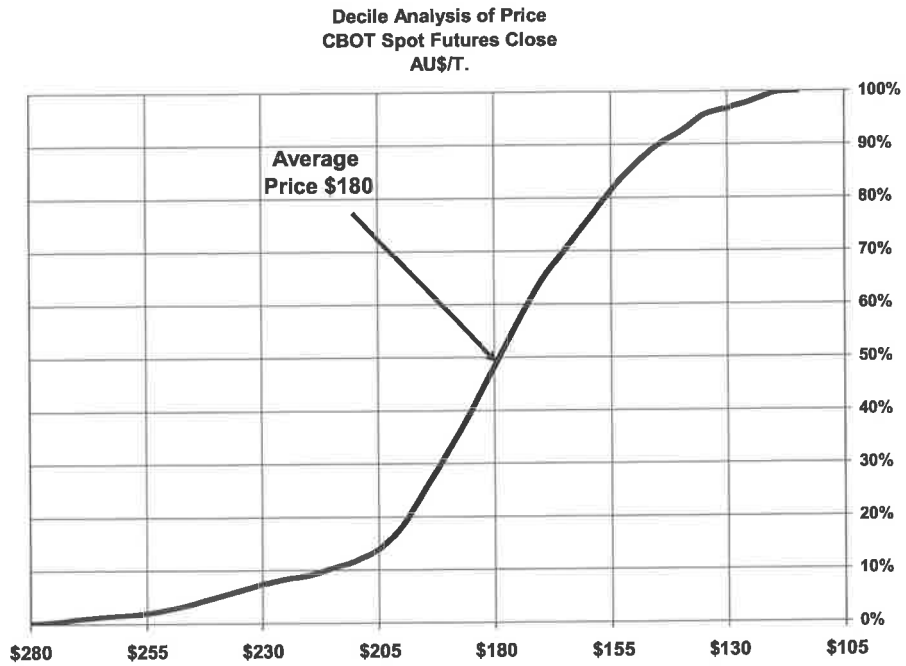
Table 3.6

Decile Analysis of Futures price in AUD\$

Decile 1	>\$278	0.2%
Decile 2	>\$260	2%
Decile 3	>\$242	4%
Decile 4	>\$224	8%
Decile 5	>\$206	13%
Decile 6	>\$188	35%
Decile 7	>\$170	63%
Decile 8	>\$152	84%
Decile 9	>\$134	96%
Decile 10	>\$116	100%

Figure 3.7 shows the distribution of prices expressed in AUD\$. It shows how there is a weighting towards values less than the average. The average price over this period was \$180 per tonne.

Figure. 3.7



The implications of these factors are discussed in Chapter 6.

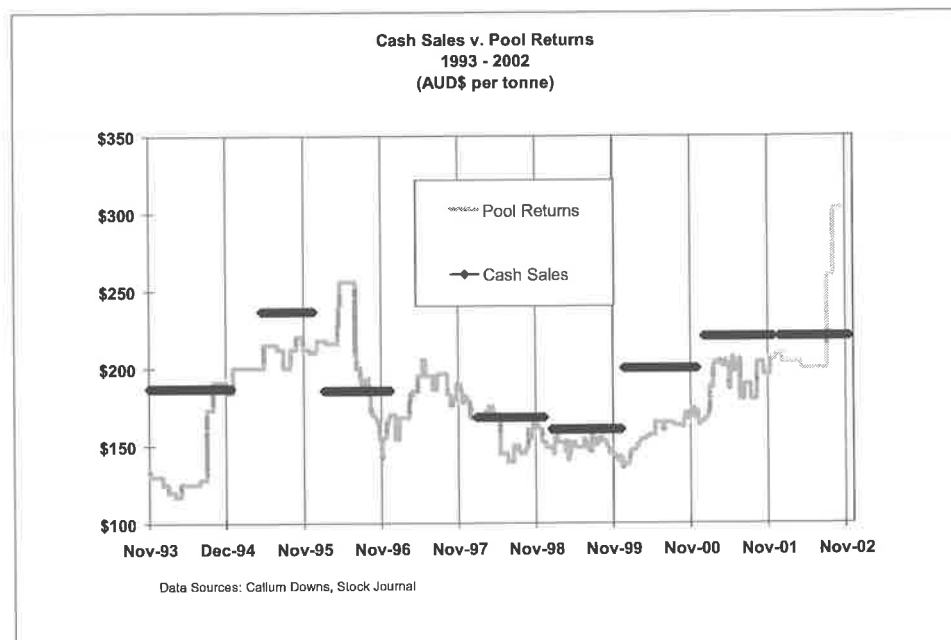
## Chapter 4: Selling and Pricing Alternatives for Wheat Producers

There are four basic strategies for growers to select from when pricing their wheat. It is the optimum combination of strategies that some farmers are constantly seeking to achieve to provide wheat prices that enable them to carry on producing profitably. Others are less active relying on pool managers to price their grain. Two of these strategies are concerned with locking in the price which is offered at the point of delivery and two with leaving one's options open with the aim of managing the risk of price movement to one's advantage.

### 4.1 Cash Sales.

Cash sales may be executed at any time in exchange for the physical wheat. Producers often make cash sales at harvest when the spot price is attractive (as in 2002) or for financial reasons when cash flow is important. Between 1994 and 2001 cash sales at harvest have fallen short of pool payments each year (Bartholomaeus 2002(a)). Figure 4.1 compares the cash price with final pool returns.

Figure 4.1



Cash sales in South Australia are restricted compared with the eastern states, where most intensive livestock and milling industries are situated. However cash sales can provide sellers with an opportunity to secure prices higher than those obtained from alternative pricing methods. Such a window occurred in November 2002.

A cash sale attracts none of the costs associated with other selling alternatives other than the costs incurred in delivery to the delivery point. Proceeds from pool payments will have incurred a number of costs associated with managing the pool.

#### **4.2 Pools.**

It is estimated that 90% of wheat grown in South Australia is disposed of through the pool system. This compares with about 75% in the Eastern States (AWB Ltd 2002). Today competition in the market from both AWB Ltd & Ausbulk Ltd allows farmers to choose the distribution of the estimated pool return and the timing of the payment to meet cash flow and taxation needs. All respondents in the survey reported in Chapter 7 that they used pools to some extent. Pool operators address price risk management issues. Pools are now often finalised within eighteen months of delivery compared with several years previously.

While the final pool payments are derived from sales over a period, they do not provide protection from sharp falls in returns from one year to another. (Table 4.1). There are critics of this system who question whether growers are receiving the best price through pooling (Profarmer 2003). AWB Ltd holds a monopoly on all exports and as such has an advantage over its rivals. In the event of the export market being opened up to other traders producers will determine the validity of the criticisms.

Table 4.1  
 Net Pool Return to Growers – ASW/APW grade  
 Delivered Port Adelaide (\$/T.)

1986	\$124	1995	\$236
1987	\$140	1996	\$185.52
1988	\$190	1997	\$176.55
1989	\$168	1998	\$168.05
1990	\$108	1999	\$160.44
1991	\$162	2000	\$199.80
1992	\$169	2001	\$219.54
1993	\$151	2002	\$210.20
1994	\$187	2003	\$185.93

Data source: Callum Downs Commodities

### 4.3 *Forward Sales and Hedging*

A grower may seek to fix a price prior to seeding or lock-in a price before their own production is available for sale. This can be achieved by two methods: by undertaking a forward delivery contract, or by writing a forward pricing contract.

Embedded in the concept of forward selling is the belief that it provides a floor in the market against adverse price movements. Wise (1993) states: “Establishing a hedge is designed to safeguard or protect the value of an existing or prospective inventory of produce”. While it is possible to achieve a perfect, i.e. risk free hedge in other parts of the food distribution chain it is difficult for a primary producer to obtain one.

For example a baker signs a contract to deliver bread over a defined period at a certain price. The baker calculates that if flour can be purchased at a price over the period of the contract a profit will be achieved. The baker therefore seeks a supply contract with a miller to supply flour at that price for the duration of the bread contract.

Wise goes on to define hedging as “...the action taken to lessen the risk of a loss in the physical or cash market by taking an opposite position in another market – i.e. futures, options or forward contracts.” A wheat grower on the other hand knows neither the quality nor the

quantity of the grain that will be produced when a forward contract is signed for a crop either still to be sown or not yet harvested. There is exposure to possible penalties for failing to meet contract specifications in regard to quantity and quality. Whether or not a grower decides to hedge the crop as a risk management strategy it is worth remembering what Kohls and Uhl 2002 point out, "Routine hedging of a crop every year will be no more profitable for a farmer than automatically selling the crop at harvest every year."

Forward sales and forward pricing are important tools in price risk management (Bartholomaeus, 2002, Williams & Schroder, 1999). They enable growers to lock-in a current price against future deliveries and hence provide certainty at that price.

However it is important to differentiate between forward delivery contracts and forward pricing as the risks involved in each are different.

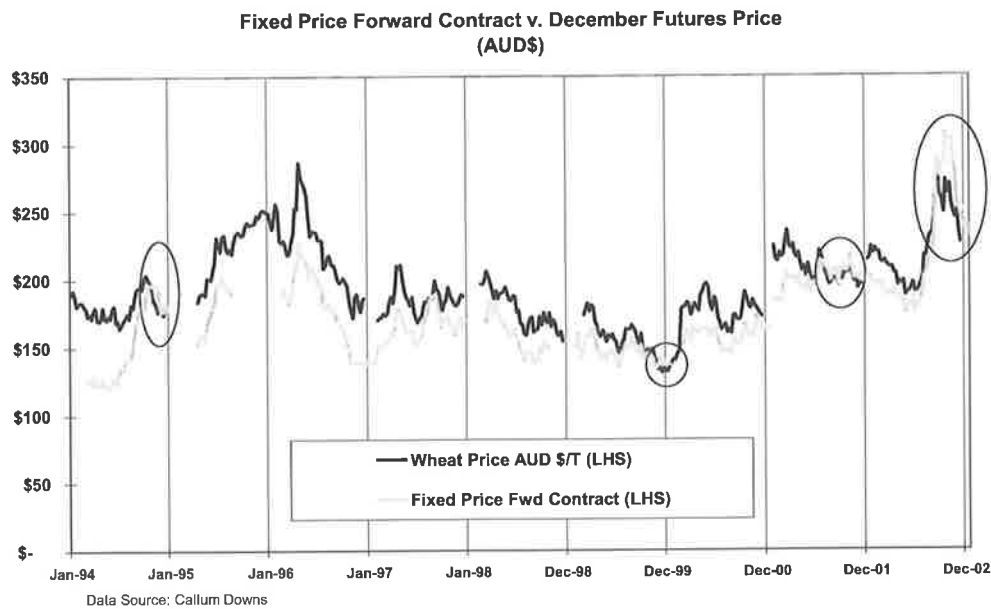
#### **4.3.1 Forward delivery contracts**

A forward delivery contract is one where the seller enters a contract to deliver a quantity of wheat for an agreed fixed price. This type of contract can increase risk under certain circumstances. For farmers most forward delivery sales are in fact *short* sales. A short sale is where a contract is entered into for the delivery of wheat before the crop is sown or harvested. The seller is usually bound by the terms of the contract to deliver grain to a specification otherwise penalties are incurred. If the grain is already on hand these risks are considerably reduced.

This risk distinction between a forward pricing contract and a forward delivery contract was born out in 2002. Drought conditions in South Australia resulted in some producers not producing enough wheat to fulfil their fixed price forward delivery contracts. They were faced with the choice of closing out the contracts with penalty, going into the market to buy the shortfall or rolling the contracts over to a future year. There is also a quality risk with short selling where wheat sold to a specification subsequently fails to meet the specification due to storm damage for instance.

Where these sales are negotiated through a fixed price forward contract it is often argued (Bartholomaeus 2002a) that too great a discount is applied to the forward price compared with the futures price. In other words buyers tend to demand a high price for agreeing to accept wheat at a fixed price in the future thus removing price risk from the seller. In Figure 4.2 the occasions when the fixed price forward contract has exceeded the December futures price between 1994 and 2002 have been circled.

Figure 4.2



Short selling strategies are used by speculators. They do not intend to be involved in physical delivery or acceptance of the underlying commodity (Geisst 2002). It is not always easy to determine the motives of a grower who sells forward. Is the sale made because the price fits the management objectives or is it because of speculation that the price will drop? Wise (1993) describes hedging as the business of safeguarding the value of a commodity while speculating is the business of trying to generate profits from trading. Nevertheless it remains a contentious issue as to where the line between speculation and risk management lies in regard to the pricing alternatives available to growers.

Bartholomaeus (2002a) argues that the risk in forward selling is simply one of the price rising and has little to do with not being able to deliver. Take the case of a forward seller who is happy to lock-in a price as it covers the cost of production and a margin of profit. If the price rises before delivery that grower incurs an opportunity loss. That is the difference between

what the wheat would have sold for at harvest and the forward price contracted. On the other hand if the grower experiences a shortfall in production, the cost of covering the shortfall is an actual loss.

Hence the extent to which forward delivery contracts should be used in price risk management is dependent on the yield variability and the climatic reliability as well as the personal preferences of the manager. This issue is covered more fully in Chapter 6.

#### **4.3.2 Forward pricing contracts**

There are non-deliverable contracts (e.g. NAB swaps) available that allow farmers to participate in forward pricing without the risks associated with short selling. While these eliminate the risks of non-delivery, there remain the cash settlement costs when adverse price movements occur.

The price associated with a forward sale, i.e. for delivery at some time in the future, is seldom the same as the spot or cash price. The difference between the two is known as the **basis**.

Williams and Schroder define basis as “the difference between the cash price in the physical market at a particular locality and the futures price. It is the amount, on any given day, by which the local cash price of a commodity is above or below the current price of a particular futures contract”. In Australia, basis equals the cash price less the futures price.

There are three variable components in pricing a basis contract. The exchange rate, the futures price and the basis (National Australia Bank 2004) Some operators e.g. Ausbulk Ltd, allow the sellers of wheat through a deliverable basis contract to lock in the components at any time up to prescribed dates. Other providers of basis type contracts e.g. National Australia Bank *swaps*, do not allow this as the currency and futures are locked in at the outset and the contracts are non deliverable. The differences between these two contracts expose growers to different risk profiles over the life of the contracts.

In Table 4.1 December basis contract values from 1994 to 2002 are tabulated on a monthly basis expressed in AUD\$. It shows the changes that occur within each year and that while highest prices have occurred in the first five months of the year on six occasions, they have occurred at any time during that period.

Table 4.2  
Monthly December basis contract values (1994 – 2002) AUD\$.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Pool
1994	186.95	181.76	174.85	171.91	173.33	173.95	168.42	178.06	192.89	201.29	183.62	187.00
1995				185.19	192.63	210.80	229.63	222.59	232.68	238.82	243.23	236.60
1996		226.51	185.19	256.71	264.36	237.80	222.23	215.72	201.39	190.71	180.85	185.52
1997		173.00	179.89	200.04	194.42	178.90	173.47	186.15	190.37	185.27	183.43	176.55
1998		196.86	199.19	188.79	189.73	187.29	170.29	167.39	166.03	172.50	165.78	168.05
1999	186.45	174.52	178.95	171.09	158.16	157.77	149.09	163.64	159.46	146.43	142.39	160.44
2000	167.77	179.13	178.74	179.75	191.62	184.26	167.59	163.15	171.21	183.58	181.14	199.80
2001	219.33	214.93	224.62	220.22	208.06	201.32	209.60	200.17	199.98	203.21	201.79	220.51
2002	220.33	216.49	210.21	202.60	193.44	195.98	222.49	242.08	266.71	262.31	252.91	251.00
Average	196.17	195.40	191.45	197.37	196.19	192.01	190.31	193.21	197.86	198.24	192.79	198.39
				Max			Min					

Table 4.2 sets out a summary of the risks associated with forward pricing alternatives. Some of these alternatives reflect the production risks that are covered in detail in Chapter 6.

Table 4.3  
Risk Comparison of Forward Pricing Alternatives

Type of Contract	Potential Risks	Extent of Risk
Fixed Price Forward Contract	Short delivery Quality not met	Theoretically unlimited
Basis Contract	Short delivery Quality not met	Theoretically unlimited
SWAP (non deliverable)	Cash settlement costs	Limited to extent of basis on settlement
Bought Futures	Failure to close out contracts	Limited to cost of Futures
Bought Put/Call Options	Time decay of options	Limited to the cost of the options

The wheat marketing industry is constantly offering new products for farmers to use in pursuit of price risk management. Each one of them has a cost. The cost as a percentage of the sum insured can reduce the value of them as it is not the full value of the wheat but the amount by which the price might move over time is what the producer covers.

Within forward pricing, growers can select from a range of pricing products including *caps* where a maximum price is fixed, the taker of the risk taking any amount over the cap. There are also *collars* where the grower is guaranteed that the final price will lie between two prices and *floors* where a minimum price is set. In addition, there are variations within each to the extent that a person wishing to manage price risk can obtain almost any form of insurance they wish at a cost (National Australia Bank 2004).

### **4.3.3 Options and Futures**

#### ***Options***

While the foregoing tools are concerned with forward selling, growers can also purchase options as means of managing price risk. If a grower does not wish to sell forward but is concerned that the price may subsequently rise, the purchase of a call option can to some extent provide insurance against the rise. If the price of wheat rises, so too will the value of the option. However the time premium built into the option price decays over time and becomes the cost to the purchaser. The price of wheat has to rise by at least the value of the call option before any benefit accrues to the purchaser.

If on the other hand the grower does not wish to sell forward but is concerned about the wheat price falling before harvest, buying a put option may provide protection. As the price of wheat falls the value of the put option increases. As with the call option a time premium is built into the price that also decays over time.

Factors influencing the price of an option include the strike price, volatility, the value of the underlying security, the time to maturity and short-term interest rates

While it is possible to force delivery against an option, this is seldom enforced in the Australian wheat market, the option being matched out before maturity.

## ***Futures***

The futures price is today's price for a product to be delivered in the future. The futures market is a unique risk management tool. "The futures contracts that are traded on commodity exchanges are promises to deliver or accept delivery of a specific commodity at a specified time in the future. No physical commodity changes hands when the contract is traded and priced.....In this way , futures contracts allow *forward pricing* of commodity deliveries." (Kohls & Uhl, 2002).

The futures market operates in parallel to the physical market. Contracts can be both bought and sold. However unlike options, there is no provision for the delivery of the physical commodity to close out a contract. Futures contracts are legally binding agreements which can range up to eighteen months ahead. Wheat futures are a component in all *basis* type contracts.

*Basis* is the difference between the spot price and the futures price. A market is described as being in "contango" when the future price is greater than the spot price and in "backwardation" when the spot price is greater than the future price (Williams and Schroder 1999). The cash and futures price must come together at maturity.

### ***4.3.4 Warehousing or on-farm storage***

Growers are able to store grain for later sale. This can be done on farm or in storages owned by merchants and others. This is often done in the expectation of a better price in the future. However holding or carrying costs are incurred that require a rise in price to cover them. These include overhead costs associated with the facility, handling costs and possible grain wastage together with the interest foregone on the value of the stored grain. Over the period of this study, 1993 – 2002, there have been only two years when the rise in price within the following period has justified deferred sale (1994 and 2002). While some growers may store on-farm they still incur costs associated with handling and interest foregone had the grain been sold earlier plus costs associated with the capital structures. An alternative to on-farm storage is to use the warehousing service offered by bulk handlers. In October 2003 AWB Ltd. quoted

their charge for warehousing at \$8 per tonne plus \$1.05 per month. The cumulative costs incurred for six months are set out in Table 4.3.

Table 4.3  
AWB Ltd Storage Costs 2002 (\$/T.)

Period	Receival Fee	Storage cost	Interest	Total
1 month	\$8.00	\$1.05	\$1.00	\$10.05
2 months		\$1.05	\$1.00	\$12.10
3 months		\$1.05	\$1.00	\$14.15
4 months		\$1.05	\$1.00	\$16.20
5 months		\$1.05	\$1.00	\$18.25
6 months		\$1.05	\$1.00	\$20.30

## **Chapter 5: Wheat Price Risk Management**

### ***5.1 Background to risk management***

As Bernstein (1996) describes in “Against the Gods”, prior to the Hindu-Arabic numbering system reaching the Western world nearly one thousand years ago, and the subsequent development of skills and tools to quantify risk, people believed that events and particularly future events were at the mercy of the whim of the gods. Since that time there remains the controversy between “...those who assert that the best decisions are based on quantification of numbers, determined by the patterns of the past, and those who base their decisions on more subjective degrees about the belief of an uncertain future”.

### ***5.2 Price risk management prior to deregulation***

Farmers have been urged for many years to move away from being price takers to a position where they can influence price through a number of alternative selling strategies. To achieve this they can respond more to market signals in the choice of the way they sell rather than to focus on production allowing the market to dictate price outcomes. Grain farmers at the end of World War II lobbied heavily for orderly marketing to be established. By so doing they delegated the responsibilities of marketing and pricing to statutory marketing authorities who carried out these functions. However the risks of the market were always born ultimately by the producer who depended on SMAs to make the right decisions.

Price risk is just one of the risks farmers face that in the past were handled by others. Interest rates for farm loans were regulated and in some instances discounted for primary producers. Marketing authorities managed the risks associated with trading and currency fluctuations on international markets. Guaranteed or minimum prices for some commodities were assured. Financial assistance was readily available to compensate for the ravages of drought and other natural disasters. Tax concessions encouraged production and development in areas that would not be profitable without such assistance.

These protective policies have been whittled away to the extent that there are no more guaranteed prices, interest rate fluctuations reflect the broader market, tax concessions are reduced and natural disaster assistance is only available after exhaustive criteria has been met.

### ***5.3 Price risk management post deregulation***

While probabilities of events occurring are often established over long periods, the life span of a farm business under one manager is often shorter. In addition the attitude to risk of an individual change over time as their needs and wants change together with the accumulation of their life experience.

Since deregulation, growers have had to develop skills and acquire knowledge to participate profitably in a free market environment. With these changes has come price uncertainty requiring producers to cope with price fluctuations formerly the responsibility of marketing boards to deal with.

It has been established that for grain farmers to two most important variables are yield and price (Kingwell (2000), Krause (1995)). While some of the risks associated with yield can be within the control of the manager (disease, weeds etc.), climatic risks are harder to manage. Kingwell goes as far as to suggest that farmers should focus on yield risk, an area they are often expert in, and leave price risk, an area in which they may lack experience, to others. There are many farmers who seem to agree with this as shown by their dependence on pools as disclosed in the survey.

McColl (1997) identified improved risk management as an essential tool for those farm businesses that are to prosper in a ever deregulated environment. Farmers have always had to manage risk. Those who remain in farming have managed it better than many who have left.

Bernstein (1996) points out that through the use of futures contracts a grower can pass on the risk of lower prices to someone else. This applies where the cost of lower prices will be more damaging to the farm business than the foregoing of additional income should prices rise. Bartholomaeus (2002a) argues that a crop grower is at greatest risk when about to sow the

crop without any firm idea as to the price the grain may sell for at harvest. By simply relying on the spot market at harvest Krause believes that farmers never know in advance what the price will be.

In spite of these urgings about 90% of the South Australian wheat crop is still delivered into pools (AWB Ltd). In other words the majority of wheat is planted without any regard to the price which may be achieved and at harvest is delivered into a pool without knowledge of what the final price will be. However there is little evidence to show that over time pool returns are less than what can be achieved through other selling alternatives.

The focus of price risk management becomes one of obtaining a price that satisfies the criteria the producer sets. The criteria may include a target price to cover the cost of production, a price as close as possible to the highest for the season, one that cushions against sharp falls, or one that aims to iron out sharp fluctuations over time.

Bernstein (1996) describes the tension that exists in managing risk between those who believe the best decisions are based on quantification and numbers and those who base their decisions on subjective beliefs about an uncertain future. Bernstein also discusses the theory police whose experience comes more from theory than practice and who become disappointed when the people actually bearing the risk decide their own parameters.

From the literature reviewed in this study there is a weight of evidence to support Bernstein on this point. Wise (1993), Williams and Schroder, Krause and Bartholomaeus are all quick to suggest that most farmers would be better off through being more proactive in their selling strategies. Adding to this clamour are those whose livelihood depends on selling price risk management products. Geiss (2002) describes how some derivatives such as *swaps* came out of the necessity for banks to create a profit centre rather than the needs of the market. The accompanying survey goes some way to investigate the apparent resistance of growers to adopt changes in pricing others see as vital for a prosperous future.

Krause (1995) suggested that amongst the new tools farmers are developing for this increased risk, computers might play an important role. Decision making processes were explored by Kaine et al. (1994). Farmers were divided into two groups. Those who believed they can

influence events past the farm gate (analysers), and those who preferred to focus their decision-making on events which occur within their control (defenders). The study was stimulated by an increasing number of computer-based planning aids available and the notion that their use would lead to greater prosperity. However Kaine was unable to conclude that use of these new aids actually improved a farm's financial returns.

In a later study Kaine (2001) again explored the behavioral differences and results of both analysers and defenders. While the latter were slow to adopt changes external to their control, their adoption rate of those measures they believed they could control (internal) was no different to the former. He recommended that extension programs should target defenders in a way that gave them more confidence in addressing external control as the analysers exhibited superior financial results. Survey respondents often questioned the suitability of the content of some extension activities (Table 7.5)

The rate of adoption of new technology in management by South Australian farmers was addressed by Cummins' survey in 1997. While over 90% of respondents were aware only 49% had tried new technology in respect to grain marketing and risk management. Of these 22% had discontinued with the changes. There was a significant difference in both adoption and disadoption across that state depending on regions.

Marketers and service industries have lost no time in devising and offering growers products and advice that are aimed at helping them manage price risk.(AWB, Ausbulk, NAB). Danielle England, a crop consultant with PIRSA in June 2000, went as far as to advise "Depending on farmers' attitudes to risk, it is recommended that up to 50 per cent of the average tonnage be sold forward". Some merchants offer total marketing services for those who find it all too difficult.

The individual farm manager has to differentiate between price maximisation and price management. While they are not mutually exclusive some price risk management decisions can be costly compared with a situation where no effort is made to manage price risk. The reverse can also apply.

Figure 5.1 shows how each year prices peak and trough. These events do not appear to occur at the same time each year. From time to time major spikes in the price occur. These events occur infrequently as in 1996 and 2002. Kingwell points out that these major price spikes have a narrow window and their capture may be important to the farm's wellbeing given that the long term trend in wheat prices is downwards (Figure 3.1). In fact he suggests that farmers should not use instruments which limit their access to these spikes as they may deny themselves opportunities for above average incomes to compensate for years of low prices.

Figure 5.1

**Chicago Closing Futures**  
**(AU\$/T)**

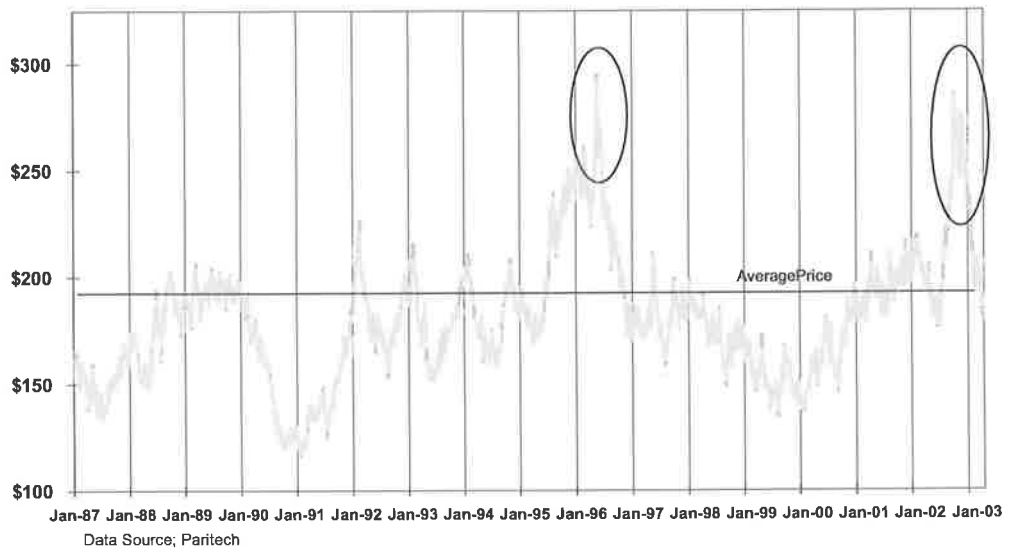


Table 5.1 sets out the average December futures price for wheat on a monthly basis expressed in \$AUD for each year from 1994 to 2002. The months when the maximum and minimum prices occur are highlighted.

Table 5.1  
Average December Futures Price for Wheat (\$AUD)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Pool
<b>1994</b>	186.95	181.76	174.85	171.91	173.33	173.95	<b>168.42</b>	178.06	192.89	201.29	183.62	187.00
<b>1995</b>				<b>185.19</b>	192.63	210.80	229.63	222.59	232.68	238.82	243.23	236.60
<b>1996</b>		226.51	185.19	256.71	264.36	237.80	222.23	215.72	201.39	190.71	<b>180.85</b>	185.52
<b>1997</b>		<b>173.00</b>	179.89	200.04	194.42	178.90	173.47	186.15	190.37	185.27	183.43	176.55
<b>1998</b>		196.86	199.19	188.79	189.73	187.29	170.29	167.39	166.03	172.50	<b>165.78</b>	168.05
<b>1999</b>	186.45	174.52	178.95	171.09	158.16	157.77	149.09	163.64	159.46	146.43	<b>142.39</b>	160.44
<b>2000</b>	167.77	179.13	178.74	179.75	191.62	184.26	167.59	<b>163.15</b>	171.21	183.58	181.14	199.80
<b>2001</b>	219.33	214.93	224.62	220.22	208.06	201.32	209.60	200.17	<b>199.98</b>	203.21	201.79	220.51
<b>2002</b>	220.33	216.49	210.21	202.60	<b>193.44</b>	195.98	222.49	242.08	266.71	262.31	252.91	251.00
Average	196.17	195.40	191.45	197.37	196.19	192.01	<b>190.31</b>	193.21	197.86	198.24	192.79	198.39
				Max			Min					

From the table it can be seen that there is no definite pattern as to when prices peak or trough. Peaks occur more frequently in the first five months of the year and their concentration occurs in the three months from March to May. Conversely minimum averages are found more often in the latter half of the year. This comes as no surprise as it illustrates the erosion of the time component of the futures price.

In summary, not one farmer interviewed in the survey could tell with any accuracy how much better off they had been with using one price management tool compared with others. However many recounted experiences of 'losing' when the price of wheat subsequently rose above the price they had negotiated.

## **Chapter 6: Implications for on-farm decision making**

A number of factors play a part in the decision making process on the individual farm. They are either internal, over which the manager has some control, or external where outside forces can bring influence on the decision taken. (Kaine 1994)

### **6.1 Debt levels**

The level of debt can influence decisions. The greater the debt the less choice the manager has. At one extreme where high debt – low equity exists, the manager may be pressured by a creditor to make decisions protecting the creditor's interest while at the same time restricting the choices of the manager. Even without this external pressure, managers may respond to their own perceived or imagined fears of risk. Anecdotal evidence supports this where lending institutions with exposure to price risk through their loan portfolio have been known to insist on borrower addressing price risk management issues (The Australian)

### **6.2 Personal choices**

The decisions an individual makes in regard to risk management are inexorably linked to the individual's attitude to risk. The survey showed that 45% of respondents admitted to moderate to severe stress levels associated with pricing decisions. Fifty five per cent of partners to the prime interviewees stated they were more averse to risk than their partner and indicated that often they would make different decisions if it were left to them. There can also be competing pressures in the management team as to the best way to address price risk.

### **6.3 Availability of knowledge and skills**

All respondents to the survey delivered to the AWB Ltd pool. Some used only pools. When asked why this was preferred the response was often that the skills and knowledge required to manage price risk was considered both time consuming and difficult to master. Of those who had attended grain marketing workshops 56% were only partially satisfied with them (Chapter7). The main observation by these individuals was that too much material was introduced in the time available and that the level of prior knowledge assumed was too high.

Others have transferred the task of selling their wheat to others who then execute sales on the producers' behalf. However little is said of this practice in regard to the risks incurred in committing a year's production to the whims of others.

#### **6.4 Production risk**

Some wheat growers commit only part of their anticipated production to forward sales. This amount is often restricted to between ten and twenty percent of the expected production. In years of low yield and high production risk even this relatively small percentage of expected production may not be met and may trigger penalties associated with closing contracts out. This was a wide spread occurrence in 2002, a drought year.

When comparing two properties, one in the Mid-North and one in the Mallee, the distribution and reliability of rainfall has a major influence on the appropriate price management strategy for each farm. Take for example the grower in the Mid North whose expectations of production in an average year is 2000 tonnes. The lowest yield recorded on the property would not produce less than 1000 tonnes for the area to be sown. Thus it can be argued from a production viewpoint that up to 1000 tonnes may be sold forward with little risk. This is equivalent to 50% of the anticipated production.

The Mallee farmer also has an expectation to produce 2000 tonnes but over a much larger area. However the lowest yield ever recorded on the property will barely produce enough seed for the next crop with no wheat available for sale. In this case there is a significant production risk which it can be argued is greater than the price risk.

Table 6.1 illustrates the yield differences of the two properties and hence the production risk associated with each. While the Mallee farm has a greater number of years with above average yields, in years of below average yields the yields are 30% of the average. This compares with the Mid-North farm where yields in below average years are 72% of the average

Table 6.1  
Production Risks of Two Properties Compared

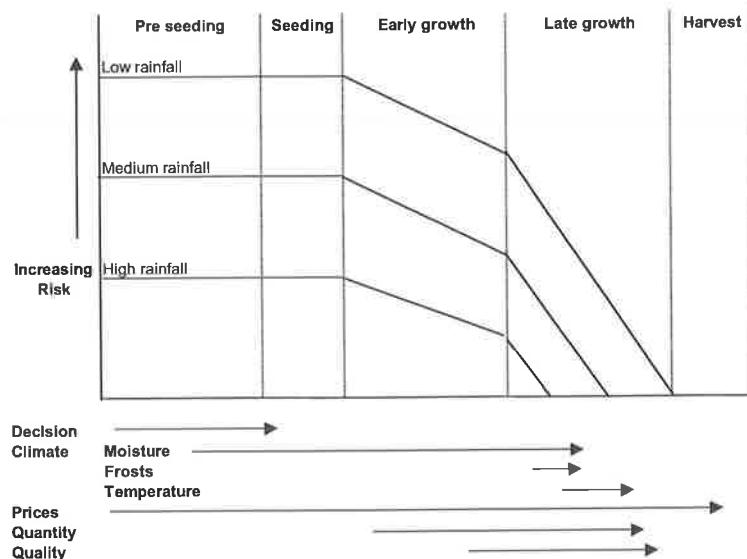
	No of years recorded	Lowest Yield recorded (T./ha)	Average Yield (T./ha)	No Years yield is => average	No Years yield is < average	Yield in below average years as % of the average	Yield in above average years as % of the average
<b>Mallee</b>	43	0	0.9	27 (63%)	16 (37%)	36%	129%
<b>Mid-North</b>	27	0.93	2.98	12 (44%)	15 (56%)	72%	135%

Data source; Krause (2003)

In summary a change in price has more impact on the farm income of the Mid-North farmer than a change in yield. Conversely in the Mallee there is more risk from yield change than price change on the farm income. While these two properties represent extremes in yield reliability for South Australia they demonstrate the need for growers who consider forward or short selling to determine to potential risks of both price and yield on the farm income.

Figure 6.2 shows how production risk increases with decreasing rainfall and how the period of time the risk exists for diminishes as the rainfall in the growing season increases.

Figure 6.1  
Risk Profile in Relationship to Rainfall



Production risks associated with climate variability in crop production will remain for as long as there are no ways that growers can cover these risks. Hertzler (2004) points out that to

insure against rainfall variability requires an instrument which would not be tradable and would be concerned with “quantifying” and not pricing. Edwards and Simmons (2004) point out that while weather derivatives are available for other purposes they require significant modification to be attractive.

### **6.5 *Cost of Production and Target Pricing***

Some farmers seek a target price to cover their cost of production. This practice is followed by twenty one per cent of farmers surveyed. However there is a wide variation in the costs farmers include in their calculations. In addition some do not include a margin for profit. Not only do costs differ from farm to farm, but also the actual cost of similar items. The result can be that some farmers consistently aim for higher or lower target prices than others simply by the way the cost of production is calculated.

Proponents of this tactic are unable to suggest what a grower should do if at the time of calculation the price does not cover the cost of production. Should the grower switch to another crop or defer seeding until the price rises.

## Chapter 7: Farmer Survey

The aim of the survey was to determine;

- The range of selling alternatives farmers used in selling wheat
- The rate of adoption and disadoption of alternatives
- The level of satisfaction with the methods chosen
- The degree of stress price risk management caused
- Where they obtained marketing information from and their preferences
- The suitability of training programs addressing grain marketing

### 7.1 *Sample characteristics*

52 farmers were interviewed across the state (Table 7.1). They were selected by virtue of the author's association with them over time and are not taken to be representative. As a group they are considered to be more receptive than the average in attitude to change.

Table 7.1  
Property Location

Region	Number of respondents
Upper South-East	13
Mallee	9
Mid-North	10
Yorke Peninsula	12
Eyre Peninsula	8
<b>Total</b>	<b>52</b>

Table 7.2  
Farm size by gross farm income

<\$250K	2	4%
>\$250K<\$500K	29	56%
>\$500K<\$750K	8	15%
>\$750<\$1M	9	17%
>\$1M	4	8%
	52	100%

### 7.2 Respondents approach to marketing

To the question

#### **Which of the following three categories best describe your approach to marketing?**

The following responses were recorded

<b>A</b>	I have a conservative attitude to marketing relying on pools with some cash sales.	9	17%
<b>B</b>	I have used a number of alternatives to pools and/or selling for cash but have discontinued their use and rely on the pool and cash systems	6	12%
<b>C</b>	I use a number of alternatives to get the best price for my grain	37	71%
	Total	52	100%

### 7.3 Respondents approach to target pricing

To the question

#### **Do you ever set a target price to cover your cost of production?**

Table 7.3  
Cost of Production

Yes	16	31%
No	36	69%
	52	100%

### 7.4 Respondents who relied on traditional selling methods

To the question

#### **Why haven't you tried alternatives?**

Those who identified themselves as **A** "I have a conservative attitude to marketing relying on pools with some cash sales." indicated that a lack of understanding or knowledge was the main inhibitor to their adoption. They also stated that they were happy with the way things are. These are part of the group identified by Kaine as a possible target for an extension program to improve their knowledge.

Stress was nominated by a number of farmers who had returned to selling their wheat largely through pools. Over half the respondents reported that stress was a factor in their selling decisions.

### 7.5 *Stress perceived by respondents*

To the question

#### **How stressed are you by the decisions made and their aftermath?**

On a scale of 1 to 5 where 1 = not at all stressed, and 5 = very stressed the following were the responses;

Table 7.4  
Stress Levels

Level	No.	%
1	25	48%
2	4	8%
3	16	31%
4	6	12%
5	1	2%

### 7.6 *Training & Education of respondents*

Nearly all respondents had attended grain marketing and risk management workshops. Under half were satisfied with them. A major complaint was that the deliverers often assumed too high a level of prior knowledge and too much material was presented in the available time. While 42% of attendees were satisfied with the workshops there is a possible need for the development of materials that address the difficulties experienced by those only partially satisfied with the events.

Table 7.5  
Training and Education

	Number	% of Attending
Non attendance	4	
Satisfied	20	42%
Partially	27	56%
Not satisfied	1	2%

### **7.7 Forward Selling by respondents**

Forward selling has been identified as a strategy where the risks involved are not always understood. Nearly two thirds of respondents forward sell with the majority dealing with the current crop only.

Table 7.6  
Forward Selling

Have never sold forward	13	25%
Have discontinued the practice	3	6%
Sold forward current harvest	28	53%
Sold forward 1 year	4	8%
Sold forward 2 years	2	4%
Sold forward 3 years	2	4%
Total	52	100%

### **7.8 Overall perceptions of respondents**

When asked as to how better or worse off they were adopting the strategies they did no one was able to state by how much they benefited or not. Doubt was often expressed as to whether the respondents were any better off using a number of selling alternatives than the grower who delivered to the pool regardless of market trends and forecasts. The farms adopting forward selling grew more wheat on average (1338 tonnes) than those that did not (1111 tonnes). The difficulties respondents experienced in trying to predict the future as opposed to knowing with hindsight what should have been done confirms the age old problems of risk management as described by Bernstein.

## Chapter 8 Conclusions

The project considered ways in which wheat growers are adapting to an increasingly deregulated market. It also examined the different pricing alternatives growers have and to determine whether some are better than others.

Against a background of an ever-increasing array of pricing tools and advice, the farmer faces a formidable task in selecting the most appropriate to ensure his or her pricing strategy is achieved. That person faces the difficulty of using historic market information to predict the uncertain future. For some this has become too much to cope with and these individuals rely on the managers of pools to manage price risk or they appoint an agent to act on their behalf.

Many producers use a number of strategies each year to spread the risk. Whether this gives any greater benefit over continuing to pool is questionable. However there are market signals from time to time which may help growers in their choice of tactic. For example when the price of wheat is above the long-term average it may be the time to forward price.

Unlike traders who are constantly in the market, most producers have only one opportunity to enter the pricing market. A trader experienced in multiple transactions over long periods can often trade out of adverse situations. (Geiss 2002) A producer on the other hand having made the decision to price or sell by whatever means does not have the flexibility to roll out or buy back contracts and is thus at a disadvantage over the trader.

The wheat price received by Australian farmers is heavily influenced by events in other parts of the world which in turn are reflected on American mercantile exchanges. While the exchange rate influences the price received in Australia it is only one factor to influence prices. The futures price in the United States has a greater influence. This in turn is affected by climatic and production trends worldwide. However a rapidly appreciating Australian dollar in 2003-2004 resulted in the price Australian farmers received for their wheat falling at a time when the price of wheat in the United States was rising. Since then the exchange rate has moved in favour of the farmer.

If a grower decides to enter the market to lock in a price for one of a number of reasons then the strategy adopted together with the tactics involved will influence the result. The actual prices achieved may subsequently turn out to be less than those obtained from an alternative strategy in that year. It's the willingness of the grower to accept the benefits of a chosen strategy against the perceived benefit of an alternative that makes the pricing decision less stressful.

The following is a summary of the relative benefits of the four basic strategies that farmers have when selling their wheat.

**Cash sales at harvest** – over the period of the study there have only been two occasions when this strategy has offered higher returns than others. The opportunities arise close to harvest and provide what is a brief window in which a grower can act.

**Forward selling and forward pricing** - it is important to distinguish between the two. While over fifty per cent of surveyed farmers have used forward sales there is nothing to show that it offers long-term benefits. There have been years when it has paid off. On the other hand there have been two years when the opportunity loss incurred by those who forward sold has more than equaled the benefits of other years. The discounts to the spot price that apply to forward sales while a fact of life tend to work against the seller. Forward selling for many producers in 2002 highlighted the risk of production shortfalls occurring which created significant penalties in many cases. To overcome these risks growers are swinging more to a non deliverable *swap* type of contract.

The price of wheat relative to the long term average provides a guide to when to forward sell or price. With forward pricing, the strategy can be used to advantage when market signals indicate. However there is no pattern which indicates that there is any preferred time of year to enter forward pricing or selling contracts.

**Warehousing** – due to the relatively high carry costs associated with storage it is seldom that this strategy works in the seller's favour.

**Pools** – while pools are the most used strategy by wheat growers who wish to delegate some of the price risk management issues they do not always produce the best returns in any one year. The marketing and handling costs associated with pools is often criticised. However as more traders and merchants offer pools the performance of each will be closely watched by producers.

Price risk management for South Australian wheat growers will remain an important factor affecting farm incomes. With possible changes to wheat marketing through changes to the export monopoly held by AWB Ltd. pricing decisions will remain a priority for many producers. The survey incorporated in this study highlighted the need for more appropriate training materials to be adopted for those who wish to improve their pricing and marketing skills.

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## Appendix 1: Survey data collection forms

### Hugh Wynter Price Risk Management Survey 2002

Name;	Date;
Address;	
Phone;	Email;
Age;	Position in Management Team;
	For how long?

Gross Farm Income	Approx. Annual Production
<\$250,000	Tonnes Wheat
Between \$250,000 and \$500,000	Tonnes Barley
Between \$500,000 and \$750,000	Tonnes Canola
Between \$750,000 and \$1Million	Other
> \$1Million	

### Which of the following three categories best describe your approach to marketing?

<b>A</b>	I have a conservative attitude to marketing relying on pools with some cash sales.	
<b>B</b>	I have used a number of alternatives to pools and/or selling for cash but have discontinued their use and rely on the pool and cash systems	
<b>C</b>	I use a number of alternatives to get the best price for my grain	

### Do you ever set a target price to cover your cost of production? Yes / No

If Yes, what do you include in your COP Figure? Cash Costs only, Cash Costs + Overheads or Cash Costs + Overheads + Profit Margin?

If **A**;\_ Which Pools do you use? \_\_\_\_\_

### **1. Why haven't you tried alternatives? (You may tick more than one box)**

I don't understand them	
They seem to take a lot of time	
I think they increase risk	
I am not on the internet or my connection is poor	
I don't have enough knowledge	
Other persons' experiences have put me off	
My production isn't large enough	
I am satisfied the way things are	

Your response will be discussed during the interview

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**2. Do you think you may adopt other alternatives in the future?**

Your response will be discussed during the interview

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**Which marketing alternative(s) are you planning to use for the coming harvest?**

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If **B**; Please tick the following alternatives you have tried in addition to pools or cash?

Forward sales hedged	<input type="checkbox"/>
Forward sales unhedged	<input type="checkbox"/>
Storage for later sale	<input type="checkbox"/>
Futures	<input type="checkbox"/>
Options	<input type="checkbox"/>
Contracts	<input type="checkbox"/>
Currency hedging	<input type="checkbox"/>
Others (please list)	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>

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**Why have you discontinued with them? Please tick**

I believe I was no better off	<input type="checkbox"/>
I lost money compared with others	<input type="checkbox"/>
It was too stressful	<input type="checkbox"/>
I don't really understand them	<input type="checkbox"/>
I believe they increase risk	<input type="checkbox"/>
They were too time consuming	<input type="checkbox"/>
I was originally influenced by others to have a go	<input type="checkbox"/>

Your response will be discussed during the interview

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**Which marketing alternatives are you planning to use for the coming harvest?**

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If **C**; Which of the following have you used or are still using?

	No Longer Using	Still Using		No Longer Using	Still Using
Pools ABB or AWB			Futures		
Other Pools (eg NAB)			Options		
Cash sales			Contracts		
Forward sales hedged			Currency hedging		
Forward sales unhedged			Others (please list)		
Employing an agent					
Storage for later sale					

How much have you benefited from their use? If you have had tangible benefits please describe below. This will be discussed during the interview.

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Do you require more skills and knowledge?	
Will you continue with the alternatives you use?	
Do you think you may try other alternatives?	
Does this activity give you a buzz?	
Do you ever feel stressed by these activities?	

**Which marketing alternatives are you planning to use for the coming harvest?**

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**Sources of Information**

Are you connected to the internet? Yes / No

On a scale of 5 where 1 = poor and 5 = excellent how do you rate the connection? \_\_\_\_

How often do you use it for market info where 1 = hardly ever and 5 = frequently \_\_\_\_

In the boxes below indicate your sources of information in order of importance

Neighbours		AWB		ABC	
Callum Downs newsletter		ABB		Consultant	
Kondinin Group		Printed media			
Ausbulk		Profarmer			

**Training and education**

Have you attended workshops on (Please tick)

Risk Management	
Grain Marketing	

Are you a member of a grain marketing discussion group? Yes / No

Have or do these activities meet your needs? Yes / No / Partially

If **No or Partially**; what changes or additions to the activities do you believe would improve their effectiveness for you? These will be discussed in depth during the interview.

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**Questions for other person(s) in management team (i.e. spouse, partners, parents etc)**

**Age**

**Status**

On a scale of 1 to 5 where 1 = not involved and 5 = equally involved

To what extent are you involved in marketing decisions? \_\_\_\_\_

On a scale of 1 to 5 where 1 = not at all and 5 = very stressed

How stressed are you by the decisions made and their aftermath? \_\_\_\_\_

Do you consider yourself more or less risk averse than your partner/spouse etc? \_\_\_\_\_

If you had the sole responsibility for making marketing decisions would you do things differently? Yes / No

If Yes, what changes would you make?

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