Positive price outlook for wheat: implications for WA agriculture

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Positive price outlook for wheat—implications for WA agriculture

After a 40 year period over which wheat prices have dropped by an average of 2.7 per cent annually in real terms, fundamental changes in wheat supply and demand look set to reverse this trend. It is possible that real prices could increase by as much as 4 per cent annually in the medium term.

Alan Haagensen and Ian Wilkinson look at the forecasts for wheat prices and outline the forces that will influence world supply and demand trends for wheat.

World wheat situation
The Australian Bureau of Agricultural and Resource Economics (ABARE) forecasts only a small rebuilding of wheat stocks to the year 2000 (Figure 1). Its view is that world wheat production will have difficulty keeping pace with world wheat consumption in the next five years. This is supported by an analysis by the Professional Farmers of America which indicates the long term growth of consumption is greater than the long term growth of production. The world seems to be moving from a period of general oversupply of wheat with occasional weather related shortages, to a period of general shortage of wheat with occasional years of oversupply in years of favourable weather.

Wheat has had a price decline over the past 40 years of 2.7 per cent per year after adjustment for inflation (Figure 2). The real price for wheat has been sufficiently low that it did not justify sowing increased areas to wheat. Farmers have grown alternative crops such as oilseed and pulses, because the prices of these crops have increased significantly relative to wheat and feed grains.

Demand factors
Never before has the world had such a large population with incomes growing so rapidly. Even though the rate of growth of population is expected to slow to less than 1 per cent per year by the year 2025, population increase will continue to be the main driving force behind increased demand for wheat (Figure 3).

World population is increasing, especially in India, China and South-East Asia. These areas cannot grow sufficient food to feed themselves, but strong economic growth means that they will have the ability to import wheat to meet their needs. They are choosing to import wheat and export manufactured goods because of their comparative advantage in manufacturing.

It is forecast that the Asian market will be 2.5 times the size of the American and European markets by the year 2030. As the economies grow, consumption of wheat increases due to westernisation and the increase in meat consumption from grain-fed pigs, poultry and beef. Already the increasing affluence in Taiwan has resulted in a 30 per cent replacement of rice by other cereal-based foods – this could also happen in China.

The world’s fish stocks are dwindling, and two-thirds of the world’s great fisheries are in
trouble. The number of fishing boats has trebled but the global catch has not changed. Because of this, aquaculture is increasing rapidly around the world, and relies on crop by-products as feed stock. The demand for cereals and protein meal for feeding fish and crustaceans is rapidly increasing.

**Supply factors**

In recent times, increased demand for wheat has been met by increased yields off a slightly declining world wheat area (Figure 4).

Over the next decade, increases in wheat supply could be limited by the following.

- One million hectares of arable land is taken from production each year for construction and housing. The earth is running out of arable land and fresh water to grow more crops and livestock.
- The potential of the first generation of high yielding cereals (dwarf wheats) developed during the 1960s is now almost exhausted. To continue yield gains it is necessary to develop varieties that will improve soil and water use even further. The world has doubled production over the past 30 years, but it may need to quadruple over the next 30 years to satisfy increased demand.
- Investment in biotechnology is growing in an attempt to provide the next quantum leap in grain production and quality. Genetic engineering mainly improves the selection pressure by direct selection from DNA identification. This technology has a big advantage for selecting against deleterious genes. However, it is long term technology and changes will be gradual.
- Significant benefits from cereal genetic engineering could be more than a decade away.
- The 'agricultural miracle' in China has been enormous but there are signs that the rate of increase in grain production is slowing down and demand is moving ahead of supply.

**Environmental regulations**

Environmental laws are increasingly limiting the ability of farmers to increase production. For example, manure output is a limiting factor in Danish livestock production, beef feedlots in the United States are being restricted because of their impact on water and air quality and in this State we have clearing restrictions limiting the amount of land available to plant crops.
Elasticity of supply
Elasticity of supply measures the responsiveness of production to price. Wheat supply elasticities are high in Western Australia in the wheat-sheep zone owing to the low cost of increasing output. A 10 per cent rise in wheat price results in an increase of 2.8 per cent in supply of wheat and a drop of 1.2 per cent in wool supply. The price of wheat in Western Australia is controlled by the world price. Over 95 per cent of wheat is exported and our domestic price is largely fixed by the export price.

In contrast to the domestic scene, wheat supply elasticities have been low in the world because of government intervention through price supports and deficiency payments. The farmers in major exporting countries will not fully benefit from the current world price rise. The only benefit will be to their governments because their deficiency payments will be less. A sizeable price rise will be needed to encourage extra production in the world as the demand for imports rises.

There has been considerable resistance from buyers to pay current increased prices, but this resistance has been broken (Figure 5). Prices have risen above the downward trend line of export prices. Once a trend line has been broken in this manner markets often move quickly. An unfavourable scenario for Western Australian growers would be a sudden spike in prices as occurred in 1973 (Figure 2). This would significantly increase world production and lead to an over-correction in the market and a period of volatile prices as the market seeks a new equilibrium. Periods of volatile prices also encourage political intervention by both major exporters and importers.

Political reform
The world wheat market has been grossly distorted by government involvement in response to concerns about national food security and the welfare of farmers. This in turn creates the need for export subsidies to sell surplus wheat production that has been induced by production subsidies. The effects of political influence are likely to diminish in the future as forces of supply and demand lift prices to a level where subsidy arrangements become superfluous. This has occurred in the 1995/96 season where export subsidies by the US and EC have become almost non-existent.

Political reform of production and marketing has begun, but every government will do whatever it can to enhance its political or economic position.

Budgetary and environmental pressures are also now beginning to have a significant impact on the reform of agricultural policy in major exporting countries.

Common Agricultural Policy in the European Union
The aim of European policy is to have food security and self-sufficiency. The European Union (EU) has recently suspended export subsidies on wheat and have implemented export tariffs on cereals to maintain their home supplies and keep prices down in Europe.
The amount spent on the Common Agricultural Policy (CAP) is slowing down. The link between subsidies and production has been weakened. Reform will be slow because farms are built on the highly subsidised production world of CAP, but overall CAP is heading in the right direction.

Central Europe plans to join the EU, but this is not practical with the current levels of subsidy paid to agriculture. The key is to reform CAP so that subsidies are reduced. This may be the region with the largest potential to increase production. Central and eastern Europe have the potential to become large scale, low cost producers and hence large exporters of grain, but major changes are needed to their infrastructure for this to occur.

**GATT and the 1996 US Farm Bill**

Implementation of General Agreement on Tariff and Trade (GATT), budgeting pressures, and the environment are all putting pressure on the US to remove wheat subsidies.

In the short run the GATT agreement will have a minor impact because the US Export Enhancement Program (EEP) payments are below $5 per tonne and hence below the GATT ceiling due to low wheat stocks and corresponding high prices.

The US recently passed their 1996 Farm Bill after a great deal of debate. The new Farm Act removes the link between income support payments and farm prices by providing for seven annual fixed but declining 'production flexibility contract payments'. Farmers will still receive government payments, but they will no longer be linked to commodity prices. Annual acreage idling programs have been eliminated, and farmers will be permitted to plant any crop they wish on contracted acres. Farmers will be required to comply with existing conservation plans, and to keep the land in agricultural production to receive government payments.

The bottom line is that US farmers will now be free to plant crops based on market signals rather than to comply with government programs. In addition, a significant proportion of the less environmentally sensitive land held in Conservation Reserve will be released from the scheme and brought back into production.

Over 4 million hectares of wheat land are set aside in the Conservation Reserve Program. The Conservation Reserve Program (CRP) has been operating for 10 years, and the first contracts expired in September 1995. It has been estimated that if CRP is cancelled, wheat land returning to production will result in 10 per cent more production in the US and 10 per cent lower wheat prices. Still modeling work carried out by ABARE predicts price rises after 1999 and is only two years behind the situation if CRP is renewed (Figure 6). It should have little effect on the rate of long-term price rise.

This is a worst case scenario for prices. The calculations assume all suitable land is sown back to wheat. A survey has shown that farmers would only sow back 60 per cent, which would almost halve the effect of cancelling CRP. The calculations also assume the

![HRW Gulf price graph](image_url)
yield on this environmentally sensitive land will be the same as the average yield in the wheat program; in reality its yield will be lower.

In summary, agricultural policies have had a dominant effect on the price of wheat. In the future, the effect of political influence should be less as forces of supply and demand, budgetary and environmental pressures, and provisions of the GATT become greater.

Future price predictions
The World Bank predicts there is a 70 per cent chance of the price being between the low and the high forecast. This illustrates how difficult it is to be definite about future wheat prices.

ABARE has carried out analyses that account for income and population growth in Asian countries, agricultural policy changes in the US and EU, production in the former Soviet Union (FSU) and increased wheat yield in most regions. Under all scenarios the outlook for world trade is for rising prices, driven by population and income growth in the developing world. A critical factor is how quickly FSU can overcome its structural problems and become a net exporter.

Price rise predictions from 1999 to 2003 are 5 per cent per year after adjustment for inflation for both the optimistic and baseline predictions. Even the pessimistic outcome shows an increase in price from 1999 (Figure 6).

Events that could change this forecast
Three major events have the potential to change the forecast increase in wheat prices.

- The FSU solves its internal problems and significantly increases agricultural production. As mentioned earlier, the FSU is one of the few regions in the world where production could increase markedly. Much depends on how quickly the region’s economy can be ‘revived’ and how much help they receive from the Western world.

- Europe eliminates the compulsory set aside of 12 to 15 per cent - EU farmers are lobbying for its removal. This could increase production by 15 million tonnes, although farmers usually set aside the least productive land. The increase in world population of 90 million next year will require 16 to 27 million tonnes of grain to feed. Eliminating this set aside could delay the price rise by one year to the year 2000.

- China fails to continue its economic growth. Much of the positive outlook for wheat is due to continued strong import demand from China, not only for wheat but for other food and feed grains as well as oilseeds. Should China’s economic growth falter, it would have major implications for grain prices.

| Table 1. The World Bank 1994 prediction for wheat price (current dollars) |
|------------------|------------------|------------------|
| $US               | $136     | $230     | $129    | $277     |
| $Aus              | $180     | $306     | $170    | $370     |
Implications for Western Australia

Crops
Grains make up half of Western Australia's agricultural production. The price of wheat and wool drives the agricultural economy. About six million hectares of crop was sown in 1994/95, equal to 40 per cent of the cleared area. In some shires, crops covered 65 per cent of the cleared area. The area could rise to eight million hectares, 55 per cent of the cleared area, with 0.75 million hectares of lupins and one million hectares of pulses and canola.

As a result of the economic advantage of crops over pasture, farmers may crop arable land continuously in rotation with wheat, pulses, canola and lupins. As the profitability of crops rises relative to sheep, farmers with all arable land could choose to have no sheep at all.

This would give rise to a need to identify, for all soils, the best rotation for continuous cropping with pulses, canola and cereals. There is also a need to develop wheat varieties and cropping technologies for the high rainfall region of the State.

With the possible predominance of continuous cropping, problems of soil structure decline, stubble handling and herbicide resistance will need to be addressed.

Pulses and oilseeds
Pulses and oilseeds are likely to become an integral part of the crop rotation, replacing pasture ley rotation. Lupins will probably drop back in production by as much as 13 per cent since they are a lower priced feed grain and their price will be determined by soybean meal prices.

Sheep
Wool price is not expected to increase in real terms and this could lead to a great reduction in sheep numbers. They are likely to be run on non-arable land—land too shallow, too acidic, too wet, too saline, or too steep for crops. More pastures are likely to be permanent, so pastures will not need to be adapted to crop rotation. There may be a place for short term pastures, sown down for two to three years to help combat herbicide resistance in crops.

With a large reduction in the number of sheep the price of sheep meat will rise. Prime lamb and Awassi lamb production will become more important. Half of the sheep disposals are likely to be prepared for live export. Next to the live shipping of sheep, the introduction of Awassi will be seen as the most important step forward for the sheep industry in the last 30 years.

Cattle
Wheat will be produced mainly for human consumption as it could become too expensive for cattle feedlots. Export feedlots based on grain will not be viable in Western Australia because we do not produce large quantities of feed grains. Feedlots in Western Australia will target the home consumption market. Cattle may move off arable land onto tagasaste grown on poor sands. Store steers will be exported live to feedlots in Asia and fed there on crop residues.

Sociological implications
As the profitability of farming increases, family members will choose to stay on the farm and we could possibly see the number of farms increasing and farm size dropping, breaking the long trend of increasing farm size.

Degradation
If there is a move towards continuous cropping and no livestock then there will be little need to fence to soil types. Remnant vegetation and saline areas will revegetate themselves. There should also be better stubble residues and less water and wind erosion.

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