Agribusiness Management towards Strengthening Agricultural Development and Trade

IV : Development and Success of Agribusiness: Country Experience

The Development of Agribusiness: Australia's Experience

by

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Abstract

Australia has a highly developed agribusiness sector, which is charged with the responsibility of producing raw agricultural products and disposing of them mainly on the export market. The aim of this paper is to review the development of the agribusiness sector over the past ten years and to describe the causes of these developments. It was found that the sector has performed well on international markets, with the major broad acre industries in the sector either maintaining or increasing their market shares. The main causes of these developments are an improvement in the factors of production and a depreciating currency.

1. Introduction

Australia is a small resource-based economy, which is highly dependent on export markets. Australia relies on and utilizes the available factor endowments to produce mainly raw agricultural products, which are sold to other countries. The products that are produced from these factors are so plentiful that, because of the small population level, an export market is required to sell excess supply. During the 1990s, it has been noticed that Australia's agricultural industries managed to maintain and in some cases expand their export market shares in a rapidly changing international market. In relation to agricultural production in Australia, two questions can be asked. First, how has Australia's agricultural sector developed, particularly over the past ten years? Second, what factors have caused the agricultural sector to change over this period? The purpose of this paper is to address these two questions.

Before answering these two questions some meaningful way of measuring the developments that have occurred is needed. While there are many measures that could be chosen, given Australia's dependence on export markets, prominence is given to the...
international competitiveness of the major industries in the sector. International competitiveness is measured in terms of the changes that have occurred to the share Australian products have on the export market. However, given the complexity of the agricultural sector, it is impossible to get a clear and unequivocal picture across all products produced. Then, it is necessary to assess the factors that caused these developments. To undertake this task a theoretical framework can be used to order and clarify the many causes under investigation. The framework employed in this study is Porters Theory of National Competitive Advantage\(^3\).

2. An Overview of the Australian Agribusiness Sector

Agribusiness in Australia is taken to embrace all activities involved in taking agricultural products from the farm to the plate. This simple definition masks an extremely complex process that involves a wide range of products, passing through a variety of specialized processing and transports networks and ending up in a diverse number of markets. The complexity of the sector under consideration is such, that any overview of it runs a risk of being labeled simplistic. Despite this risk, it is necessary to gain some understanding of the size and extent of the sector in Australia. Details of the size and the scope of activities undertaken in the sector are presented in Table 1. The data upon which this overview is based, and that for the study as a whole, was derived from the Australian Bureau of Agricultural and Resource Economics (1999) Australian Commodity Statistics.

Agricultural production accounts for less than 3 percent of gross national product in Australia and for approximately 4.5 percent of employment. However, the contribution of agriculture to aggregate Australian export returns is nearly 20 percent.

In many ways Australia is no different to many other developed countries, requiring only a small proportion of its population to produce its agricultural output. Furthermore, like other developed countries, other sectors (especially the service sector of the economy) tend to contribute a vast proportion of the gross domestic product. However, what makes Australia different to many other developed countries is the contribution agriculture makes to export earnings.

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\(^3\) It should be noted that Porter’s so-called Theory of National Competitive Advantage is not really a theory. It has been called a theory by Hill (1998, p.124). It is in reality a set of determinants that may explain the development of a firm or industry in the international markets. In line with Hill, in this study it shall be treated as a formal theory, where each determinant is assessed individually.
Table 1  Indicators of the Size and Scope of the Agricultural Sector in Australia 1997-98.

<table>
<thead>
<tr>
<th>Items</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Broad Indicators of Farm Production and Contributions of the Agricultural Sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Value of Agricultural Production</td>
<td>A$m.</td>
<td>28,021</td>
</tr>
<tr>
<td>Contribution to Gross Domestic Product</td>
<td>%</td>
<td>2.9</td>
</tr>
<tr>
<td>Employment on Farm</td>
<td>1,000</td>
<td>378</td>
</tr>
<tr>
<td>Contribution to Australian Employment</td>
<td>%</td>
<td>4.5</td>
</tr>
<tr>
<td>Value of Farm Exports</td>
<td>A$m.</td>
<td>22,444</td>
</tr>
<tr>
<td>Contribution to Australian Exports</td>
<td>%</td>
<td>19.7</td>
</tr>
<tr>
<td><strong>Farm land Use and Livestock Numbers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Area of Farms</td>
<td>m. ha.</td>
<td>466.4</td>
</tr>
<tr>
<td>Area used for Wheat</td>
<td>m. ha.</td>
<td>10.4</td>
</tr>
<tr>
<td>Area used for Other Crops</td>
<td>m. ha.</td>
<td>10.1</td>
</tr>
<tr>
<td>Area Sown to Pasture</td>
<td>m. ha. (EST)</td>
<td>30</td>
</tr>
<tr>
<td>Number of Beef Cattle</td>
<td>million</td>
<td>23.75</td>
</tr>
<tr>
<td>Number of Dairy Cattle</td>
<td>million</td>
<td>3.08</td>
</tr>
<tr>
<td>Number of Sheep</td>
<td>million</td>
<td>117.49</td>
</tr>
<tr>
<td><strong>Number of Agricultural Producing Establishments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Establishments</td>
<td>1,000</td>
<td>115</td>
</tr>
<tr>
<td>Number of Employers</td>
<td>1,000</td>
<td>236</td>
</tr>
<tr>
<td>Number of Wage and Salary Earners</td>
<td>1,000</td>
<td>175</td>
</tr>
<tr>
<td>Number of Unpaid Family Helpers</td>
<td>1,000</td>
<td>20</td>
</tr>
<tr>
<td><strong>Food Processing Industry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Establishments</td>
<td>no.</td>
<td>3,939</td>
</tr>
<tr>
<td>Number Employed</td>
<td>1,000</td>
<td>167.8</td>
</tr>
<tr>
<td>Wages and Salaries Paid</td>
<td>A$m.</td>
<td>5,906</td>
</tr>
<tr>
<td>Turnover</td>
<td>A$m.</td>
<td>46,639</td>
</tr>
<tr>
<td>Industry Gross Product</td>
<td>A$m.</td>
<td>12,611</td>
</tr>
</tbody>
</table>

Another interesting aspect of agriculture in Australia is its sheer size. Australia has a landmass of 770 million ha. Of that approximately 60 percent is farmed. While most of the country is grazed a significant proportion, over 20 million ha., are cropped. A further 30 million ha. are sown to pastures. The size of the cattle herd is nearly 27 million heads, of which over 3 million are dairy cows. While the size of the Australian sheep flock is falling, it still consists of 117 million heads.

When one considers the (small) size of the workforce involved in producing this level of output, the scale of activity by each individual is quite large. There are over 115,000 establishments producing agricultural goods. These institutions have an available work force of just over 431,000 people.

Much of Australia’s exports leave the country either unprocessed or only lightly processed. This tends to occur because the bulk of what is produced is wool and wheat, which only require minimal processing before being transported. However, exports of meat and dairy products require some degree of processing. In the processing sector there are nearly 4000 establishments, employing approximately 167,800 people. These firms have an annual turnover of A$46,639 million. Despite this, it is safe to assume that a review of the Australian agribusiness sector will need to concentrate on the exports of raw or lightly processed products produced from the broad acre industries.

3. Measuring the Performance of the Agribusiness Sector

Davidson (1981) argued that for Australian agriculture to be viable, it must rely on satisfying four main principles. They are the:

- use of a lot of land, a readily available factor of production;
- reliance on as little labor as possible, a scarce factor of production;
- need to produce a product that does not deteriorate as it is transported to distant markets; and
- necessity to produce products that have a ready export market.

The major products that are produced in Australia conform to these principles. They are the products of broad area agriculture and include wool, wheat, dairy and meat. It should be noted that some viable agricultural enterprises defy these conditions. They are the cotton, wine and horticultural industries, which rely in many cases on publicly funded irrigation schemes, to produce a product under fairly intensive conditions. However, the quantity of
water available and the techniques by which it is dispersed have always limited the scope for these industries to expand.

The condition that would appear to be most crucial to the performance of any pursuit in Australia is the need to produce a product that has a ready export market. This condition arises because of the mix of all the other conditions. The large land base and small population means that Australia can produce more than it can consume. Thus, what it needed to produce is a product that could be exported. However, given Australia's remoteness from its markets in the Northern Hemisphere, the products could not be allowed to spoil. The problem is that to stop many products from spoiling requires some processing, which in turn requires labor, which is expensive in Australia.

Thus, some idea of the performance of the Australian agribusiness sector can be gauged from its ability to place goods on foreign markets. To not do so would, in the long run, lead to the demise of the industry in Australia. What is important to Australia is the international competitiveness of the sector. To measure the international competitiveness of the sector there is a need to assess the changes that have occurred to the share of Australian products on the export market. This approach is not only consistent with the set of circumstances the country finds itself in, but is also consistent with Porters approach outlined in the Theory of National Competitive Advantage. However, this is not the only way to measure international competitiveness. Hopkins and Lewis (1996) recently reviewed the international competitiveness of Australian agriculture, using comparative measures of changes in a number of macroeconomic variables including inflation, exchange rates, productivity and protection measures. These, what can be termed "price measures", can be combined with Porter's "non-price" measures to provide an overview of the causes of developments that have occurred over the past decade.

It should be noted that McGovern (1999) has questioned the role of the export market to the Australian agribusiness sector. He argues that errors in the way exports are valued have resulted in analysts over-estimating the importance of the export market. Despite these concerns, any assessment of the agricultural sector that ignored the export market would not be complete. In the next section the development of the Australian agribusiness sector during the 1990s is reviewed in terms of its international competitiveness.
4. Developments in the Agribusiness Sector During the 1990s

In the last ten years it could be argued that the Australian agribusiness sector has performed well despite facing a number of internal and external pressures. Internally, the government deregulated the economy and promoted greater competitiveness, resulting in the structural adjustment, not only of the agricultural sector, but also of the related sectors that service agriculture. Externally, the sector has had to adjust to the pressures of foreign reactions to the World Trade Organization's new trading relationships and the Asian Economic Crisis. The purpose in this section is to briefly review the performance of the sector during the 1990s.

Both the Gross Value and the Output of Agricultural Production in Australia have increased in the 1990s (see Figure 1). Taking 1997-98 as a base, the index of the real net value of farm production has risen from a low of 28 in 1990-91 to a high of 115 in 1995-96. While the high degree of variability in this measure tends to reflect changing prices, rather than variable yields, much of the increase is due to an improvement in the level of output. The index of total farm production rose from a low of 78.6 in 1991-92 to a high of 100 in 1997-98, an increase of over 22 percent. Contributing to this increase was the rise in output from the crops sector, which improved by over 30 percent during this period, augmented by a rise in the output of the livestock sector, of nearly ten percent.

The total value of agricultural exports from Australia rose from A$ 14,590 million in 1991-92 to A$ 22,411 million in 1998-99, a rise of nearly 54 percent over the initial value (see Figure 2). The value of exports from the crops sector increased by approximately 115 percent during this period, while the value of exports from the livestock sector increased by over 15 percent. These results, while calculated in nominal terms, are quite remarkable, given that inflation in Australia increased by only 12 percent over the same period. The destinations that Australia sends exports to have also changed (see Figure 3). All Asian markets tend to be growing, while the traditional markets in Europe and North America are being maintained.

Market shares of Australia and its main competitors, for the dairy, beef and veal, wheat and wool industries, (the major broad acre commodities produced), are presented in Figures 4, 5, 6 and 7, respectively.
Figure 1  Real Net Value of Farm Production, Total Farm Output and Livestock and Crop Products 1990-91 to 1998-99

Figure 2  Total Value of Exports 1991-92 to 1998-99
It would appear that in terms of maintaining and expanding the share of the export market, Australia’s agricultural sector has performed well. Details of the changes in export of all the milk produced around the world only eight percent, or 37 million tonnes, crossed international borders in 1997. In 1988 only 30 million tonnes, or six percent of world production, was traded on the international market. The dairy export trade is dominated by the European Union, New Zealand, the United States and Australia, who collectively account for 86 percent of dairy exports in 1998, a rise of five percent on their share in 1988 (ADC 1999). If the export performance of just these four countries is examined as a group (i.e. ignoring the 14 percent of the product that is exported by the rest of the world), an interesting picture emerges (see Figure 4). The European Union's share of world exports has fallen by over 50 percent between 1991-92 and 1998-99, and now stands at approximately 39 percent. During that same period Australia’s export share has risen from nearly 12 percent to over 19 percent. This trend is similar to that of New Zealand where their market share rose from approximately 26 percent to over 36 percent over the same period. The export share held by the United States has varied greatly over the same period, reaching a high of over 13 percent in 1993-94 and a low of 2.5 percent in 1996-97. Over the period the United States on average accounted for eight percent of the market share of dairy exports.
The world beef market would appear to be one which is split into two segments based on sanitary classifications. The foot and mouth free market is centered on the Pacific Basin and involves the trade between Australia, New Zealand, the United States, and Asian markets. The other is centered on the Atlantic Ocean and involves trade between Argentina, the European Union, and the United States. The major players in the world beef and veal markets are Australia, the United States, the European Union, and New Zealand. These countries accounted for approximately 74 percent of world trade in 1998-99 (see Figure 5). Australia’s share of that market remained relatively static, at approximately 25 percent, between 1991-92 and 1998-99. During the same period of time New Zealand’s share of world exports also remained fairly constant, at around ten percent, while the European Union’s share declined from over 29 percent in 1991-92 to under 15 percent in 1998-99. The United States’ share of the market rose from under 13 percent of the market to over 21 percent during the decade. While Australia’s export share did not fall, a question mark over its performance could be raised. Chang and Hsia (2000) assessed Australia’s market share of Taiwan’s beef market. They argued that the growth in that market had slowed and that new marketing strategies need to be developed. Furthermore, the inability to capture other markets, especially those once dominated by the European Union, must cast some shadow over the industry, particularly given the fact that a major competitor (the United States) appears to have benefited. However, just maintaining the share in a climate of crisis over the Mad Cow disease, the Asian meltdown and threats of market access to the lucrative North American markets, is evidence of some degree of ideal performance.

**Figure 4  Market Shares of Selected Dairy Exporters 1991-92 to 1998-99**
The largest exporter of wheat in the world is the United States, who account for nearly 30 percent of the trade. The other major exporters are Canada and the European Union who together account for somewhere between 30 and 40 percent of the export market, during the 1990s. Australia is by comparison a relatively small contributor, accounting for on average 12 percent of the world trade between 1991-92 and 1998-99 (see Figure 6). Yet, Australia’s share of world exports was only 6.6 percent in 1991-92. By 1996-97 it had risen to over 18 percent, falling back to 16.4 percent in 1998-99. This growth was achieved at the expense of exporters from Canada and the European Union, where export market shares have fallen by approximately three percent in each case.
It could be argued that wool producers have experienced the greatest adjustment stresses faced in Australia. In the late 1980s, the marketing arrangements employed in the industry for nearly two decades, collapsed. These marketing arrangements resulted in producers receiving a high price for the product and consequently oversupplying it, putting the surplus production into a stockpile that continues even at the end of the 1990s to depress prices. Thus, during the 1990s wool producers have not only needed to find new ways of marketing their product, but have faced the added burden of a massive stockpile with its concomitant effects on prices. The result has been a contraction in the industry, displayed in total sheep numbers, which have declined from over 160 million at the beginning of the 1990s to under 120 million by the end of the decade. Despite these concerns the Australian wool industry has increased its export market share over its main rivals in South Africa, Argentina and New Zealand (see Figure 7). Australia’s share of the world wool export market rose from approximately 61 percent in 1991-92 to just under 74 percent in 1998-99. Over the same period the share of the export trade from New Zealand remained fairly constant at approximately 20 percent, while the small share’s enjoyed by Argentina and South Africa tended to fall. It should be remembered that the total quantities exported globally over the decade declined by approximately 25 percent.

Figure 7  Market Shares of the World Wool Exports 1991-92 to 1998-99
In terms of the share of world trade in processed foods, Australia has not fared nearly as well during the 1990s (see Figure 8). While the trials and tribulations of processed dairy and meat products have been discussed, it would appear that the share of the export share of other goods, such as edible oils, horticulture, beverages, sugar, animal feeds and cereal products has not grown. While rising slowly, Australian exports of these products accounts for less than two percent of world trade. Once again, it should be stressed that despite the concerns of McGovern (1999), the Australian agribusiness sector is not orientated towards the production and export of highly processed products.

Figure 8  Australia’s Share of World trade in Processed Foods by Type 1993-94 to 1997-98

Hopkins and Lewis (1996) reviewed a number of macroeconomic measures of the international competitiveness of Australian agriculture. They argued that improvements in international price competitiveness arise if domestic wages are rising less than foreign wages, domestic productivity is rising more than foreign productivity and the domestic mark up of prices over marginal costs is less than the mark up in foreign countries. Wage levels do not
greatly affect international competitiveness, because labor is not a sizeable input to the production process (see Lewis, 1990). In terms of productivity increases, Knopke, Strappazzon and Mullen (1995) suggest that productivity growth in agriculture in general, and particularly in the cropping industries, have been large in the 1980s and 1990s. So much so that there has been a shift in resources from small farms to large ones. These productive increases have been between one and four percent per annum in the sheep and wheat industries respectively. No comprehensive analysis of the cost structure of the agribusiness sector has been undertaken. Hopkins and Lewis (1996) argue that the measures employed by the government to improve domestic competitiveness must have had some impact on reducing the mark up on agricultural goods.

5. The Causes of Developments in the Australian Agribusiness Sector

In a large multifaceted sector like the Australian agribusiness sector, the causes of developments can be many and specific to each industry in question. One way of understanding what has happened in the sector is to align with a known paradigm that others have used to achieve a similar task. One such paradigm is Porter’s (1990) Theory of National Competitive Advantage. In that, Porter suggests that there are four determinants that shape the industrial circumstances. These are what are termed the points of “Porter’s Diamond” and include:

- factor conditions;
- domestic demand conditions;
- related and supporting industries; and
- firm strategy, structure, and rivalry.

Apart from these four broad determinants, Porter posed two additional factors of competitive advantage: government environment and chance. It should be noted that Porter’s paradigm mainly reviewed what have been termed the “non-price determinants” of competitiveness. Critics of the approach, notably Rugman and D’Cruz (1993), Bellak and Weiss (1993), Daly (1993), Yetton et al. (1994) and Warr (1994), suggest that Porter places too much reliance on the need for strong domestic demand conditions. They have suggested that some determinants of price should also be assessed, in a similar manner to the study undertaken by Hopkins and Lewis (1996). In the case of the Australian Agribusiness sector, a notable influence on the competitiveness of the sector has been the value of the Australian
dollar. In this section the six determinants specified by Porter are reviewed, along with the effect of changes in the exchange rate.

5.1 Factor Conditions

Porter argued that factor conditions (i.e. physical and human resources, knowledge, capital and infrastructure) influence the competitive advantage of a nation or an industry. This influence is not only dependent on their availability, but also on how effectively they have been used and whether they are continually upgraded. Importantly, Porter recognized that hierarchies occur among factor conditions, that factors can be described as being either basic (raw and undeveloped) or advanced (developed and refined). In addition, they can be classified as being either generalized or specialized (used for a particular purpose). He stressed that the advanced and specialized factors are significant for sustaining a nation's competitive advantage. He also argued that while factor conditions are generally naturally inherited, they could be created and changed by either the government or the private sector.

Australian agricultural production enjoys several natural advantages. The large area available for pasture and crop growing, with suitable climatic conditions, is one of its most important physical resources required for agriculture. It can be considered to be a basic and inherited factor of production. However, as Australia is an old continent, a lack of soil fertility is one of the most important limitations on land use. As a quality of pasture and crops relies upon the quality of soil, fertilizer management is an important task farmer's need to undertake. Soil testing is one indicator of the management practices used to manage and improve soil fertility. As an example of the importance of this practice, between 1991/92 and 1995/96, the number of soil tests undertaken in the dairy industry rose from an estimated 59 percent of total dairy farms, to an estimated 78 percent (Telford & Jennings, 1997). Gretton and Salma (1997) reviewed the links between land degradation and farm profitability. A concern in Australia has been that farmers would degrade land in order to return a profit in the short run. While not specifically resolving this issue, Gretton and Salma suggest that the problem is a highly complex one, which may on occasion require a policy response from the government.

Climatic conditions in Australia mainly revolve around water and rainfall availability, as severe cold circumstances do not occur. While climatic conditions in many Northern Hemisphere countries require herds to be sheltered indoors for extended periods, with considerable supplementary feeding needed to maintain output, animals in Australia can be
raised outdoors at a much lower cost. Yet water availability and reliability is seen as a constraint. To overcome this irrigation schemes were developed. Yet the water from these schemes was not generally employed to produce more products from the broad acre industries. Rather, it was used to produce water dependent crops, which Australia did not necessarily have a competitive advantage in. Despite the concerns over water availability Australia does have a significant proportion of land that receives adequate, but highly variable, supplies of both summer and winter rainfall.

The availability of land is related to its location. The further productive land is from its markets the less valuable it is thought to be. Blainey (1966) claimed that Australia suffered from the tyranny of distance. His argument was that Australia was separated from its traditional markets in the Northern Hemisphere. However, the growth of Asia as a new and closer market has if anything gone some way to solve the problems associated with the tyranny of distance. Other factors that have been beneficial are improvements that have occurred in the transport and communications sectors.

In the last decade there has been an upgrade of the basic factor of labor, so much so that it can now be considered an advanced factor. This has resulted from the structural adjustments that have occurred in the agricultural sector. As the agricultural labor force has declined, the skills and knowledge of those that remain has had to improve. Those farmers that are left are required to operate sophisticated capital equipment that has been substituted for the labor resources that are no longer employed. In addition, as most Australian farms are family owned and operated, there is only limited use made of hired unskilled labor. Alternatively, farmers are increasingly making use of specialized labor resources, including contractors (for harvesting, fencing, etc.) and consultants.

In the 1990s significant changes occurred in the management of Australia's knowledge resources. Alston, Pardy and Smith (1998) argue that real public expenditure on research and development grew by only 0.3 percent each year between 1981 and 1993. Concomitant with the decline in expenditure has been a change in the management of research. In the past decade some benefits were derived from the various research and development corporations that were set up to serve the sector. Through these organizations a more systematic approach was taken to the stimulation and direction of research, with strong input on priorities coming from farmers and other stakeholders. These Corporations report to the Federal Minister for Primary Industries and Energy and to the individual councils governing each industry. Each industry council makes a recommendation on how each
research and development corporation is funded. In general producers are levied (in the order of three to four percent of gross sales) with the amount raised being matched by the Federal Government. In addition to increasing the research capacity in the industry, information in general is now more available than it was ten years ago. A number of databases have been created for Australian farmers, such as surveys by governments and farmer bodies, information from state and federal authorities, data from the Australian Bureau of Statistics and independent farm consultants, all of which can be accessed by researchers and farmers alike. Cox, Mullen and Hu (1997) estimate that between 1953 and 1994 internal rates of return to research expenditure on Australia’s broad acre industries was between 12 and 20 percent.

The agricultural sector is highly capital intensive. The capital requirement is so high for new entrants to the industry that it could be considered to be a barrier to entry. Owners, who use private equity capital and retained earnings to fund it, have predominantly financed on-farm investments. In addition, the banking sector is a key source of funds to the industry (ADFF, 1999). During the 1990s interest rates have declined substantially, providing some relief to farmers who needed to borrow to finance capital improvements (see Figure 9).

![Figure 9 The Change in Interest Rates in Australia 1987-1998](source)

Infrastructure provides that important link between production and consumption, but
does not include processing. Infrastructure is the provision of the transport, power, water,
telecommunications, etc. necessary to produce goods. Porter argued that the competitive
advantage derived from infrastructure depends on how efficiently and effectively they are
deployed. In general, it could be said that the provision of infrastructure to the Australian
agricultural sector is more than adequate. However, a number of commentators in the late
1990s have complained about the inadequate levels of the government services to rural areas
in Australia. If anything this is a problem of small rural towns losing services to larger rural
towns. As many larger towns have grown, greater infra-structural support has resulted. An
additional factor in this whole process has been the rationalization at the agricultural
industries in the 1990s. In the dairy industry for example, with deregulation has come an
improvement in milk processing capacity. Other infrastructure issues that have improved in
the 1990s are those derived from the microeconomic reform of the electricity industry and on
the waterfront.

Porter’s argument was that a wealth of, and an ongoing improvement in, factor
endowments would lead to an improvement in international competitiveness. It is quite
evident that this has occurred in Australia’s agribusiness sector. Australia was endowed with
a large landmass and a suitable climate in which to excel in agricultural production. Given the
small population, it was imperative that to make the most of this advantage, capital would
need to be substituted for labor. Not content with these conditions, Australian producers have
improved upon them, changing them to a more advanced and specialized form.

5.2 Demand Conditions

Porter argued that the mix and characteristics of demand influence how firms
perceive, interpret and respond to buyer’s needs. In addition, he argued that the domestic
demand, rather than export demand, played a more significant role, as it pressured national
firms to innovate and upgrade. Understanding the nature of domestic demand conditions is
believed to be important as it shapes the strategies firms can employ on international
markets. If a country has a small and unsophisticated domestic market, it may not be
considered to be a major determinant contributing to the international competitive
performance of the industry.

Davidson (1981) argues that Australia’s agricultural sector has depended on export
markets since 1810. Since then, domestic market conditions have not played a significant
role in determining the international competitiveness of any agricultural industry. The reason for this set of circumstance lies not only in the small size of the population, but also because for many years Australia was a very insular society. Until the mid 1970s, the number and source of immigrants to Australia was limited. The emphasis was on integrating mainly European immigrants into the existing society. In the mid 1970s a multicultural society developed in which diversity was encouraged. It is only since then that the conditions were germinated that lead to the development of a sophisticated domestic market needed to test new products in. The fruits of this policy can only now be harvested (Kelly, 1992).

Despite this development, there is little evidence to suggest that a strong domestic demand played a great role in the development of the Australian agribusiness sector in the 1990s. Rather, it could be said that domestic demand has changed in response to the performance of the sector. As the industries have responded to the changing demands of their customers overseas, the variety of goods on sale to domestic consumers has improved.

5.3 Industry Structure, Domestic Rivalry and Firm Strategies

The Australian agricultural sector is relatively large and involves a range of diversified players from farmers, and processors to exporters. In addition, the industry is dependent on government regulation. Porter argued that the interaction between these groups would have a bearing on the international competitiveness of a nation. Given the diversity of the sector in question it is difficult to draw conclusive evidence of which factors have been responsible for the development of the sector over the past decade. However, from an economic point of view it is generally accepted that if the structure of the sector is competitive (i.e. has many players that compete with one another rather than colluding to achieve some outcome), the greater the rivalry between players. This rivalry should lead to the firms in the sector employing strategies that will promote development.

At the raw production level, the majority of Australian farms are family owned and operated. Given the number, they tend to be highly competitive and innovative. Australian farmers do not appear to have shied away from undertaking a process of structural adjustment, which has resulted in decline in their number, mainly through amalgamations (Malcolm, Davidson and Vandenberg, 2000). This process has happened across all industries in the sector. For instance, in 1975 there were 30,000 dairy farms, by 1999 the number had fallen to 13,156 (ADIC, 1999).
The transport and processing sector would appear to be far less competitive than the farm sector. In every major industry there are limited number of operators, dominated by a few large firms or cooperatives. In the dairy industry, for instance three cooperatives, Bonlac, Dairy Farmers and Murray Goulburn, process over 60 percent of the milk produced. In the wheat industry, it is generally considered that the Australian Wheat Board has a monopoly on the sale of exports. Two firms dominate the wool broking services in Australia. Meat processing would appear to be more competitive, but is still dominated by a few large firms. However, high levels of concentration are only detrimental if the firms undertake collusive activities. There is no evidence to suggest that this is occurring. If anything the processing firms appear to compete with one another to a high degree.

Nowhere is this degree of competition and its concomitant effects more evident that in the dairy industry. Processors need to compete with one another to secure available supplies of milk from farmers. As a consequence, dairy farmers secure their market and the price they are paid (Schelhass, 1996). The milk processing and manufacturing sectors have undergone significant restructuring in the past two decades. As part of rationalization, enterprises in the dairy-manufacturing sector have merged to form large cooperatives. The rationalization also resulted in more efficiency gains and improved market capabilities, because manufacturers are able to take advantage of economies of size in reducing production costs. Another feature of rationalization has been the emergence of vertically integrated enterprises that engage in various stages of processing. This enables operations to distribute risk amongst several operations and further reduce the unit costs of production. In addition, the large companies now have the ability to make major investments and have improved flexibility in product choice. The consolidation in the dairy processing firms has reduced the number of large companies, yet increased the number of companies making specialty products. In 1995, it appeared there were about 55 specialty-cheese manufacturers, 30 specialty manufacturers of ice cream and gelatin, and 19 other companies producing one or more of the specialty products such as flavored milks, yogurt, deserts and fermented milk (ADIC, 1996). These specialty manufacturers aim for higher value products in niche markets.

A lot of the competition that arises in the agricultural processing sectors results from the seasonal nature of supply. The very act of readying the product so it can be consumed all year round, is a manufacturing process. Manufacturing is best run on a production process that operates at a constant speed, all year round. That way the returns to the capital invested are maximized. If it does not operate all year round, expensive capital is sitting idle, not
earning a return, yet still incurring costs of maintenance, housing and debt financing. However, the processing of agricultural products, especially meat and dairy, suffers because the supply of the raw material is seasonal and tends to spoil quickly if not modified. Thus, the processing sector needs to have sufficient capacity to process all the raw materials at harvest time, the busiest period in the year. At all other periods, processors are competing with one another to get sufficient throughout to maximize their investment in capital. Thus, they need to offer producers a high enough price to attract the available supplies.

Australian processors, exporters and the government have actively promoted products on the international market. The government not only facilitates sales through an organization called Austrade, but also assists in financing less generic promotion activities. In the wool industry, Australia is a major stakeholder in the International Wool Secretariat. In the wheat industry a vast majority of export sales are conducted by the Australian Wheat Board, which is a statutory government authority. In the dairy industry, the Asian market was significantly enhanced by a cooperative effort between processors and the government. In the meat industry, as with all of Australia’s products sold overseas, the government has played a large role in maintaining access in highly restricted markets (see Section 5.6 below).

Overall, it appears as if firms’ strategies and their structure and rivalry have helped the agricultural industries’ international competitiveness. The competitive nature of processing companies in particular has been beneficial. However, it could be argued that many of these innovations occurred after industries started to perform on international markets. They are perhaps a response to changing market circumstances, rather than a cause. It would appear that while important, they were subservient to increases in supply.

5.4 The Role of Related and Supporting Industries

The influence of related and supporting industries, which are internationally competitive, on the Australian industry are considered to have some effect on its international competitiveness. The related and supporting industries are those that supply chemicals, fertilizer, transport, research, consulting and other needs. Their impact can be assessed at two levels. First, their ability to forge alliances and cooperate to maximize effort. Second, their ability to be more competitive and thus deliver a product at a lower cost.

There has been some cooperation between related agricultural industries. The high standards of operation and improved food safety and quality have been an advantage to the Australian industry. In addition to the benefit from joint research programs among several
rural industries, plant breeding and new pasture species research have assisted the growth of the dairy, meat and wool industries. The research and development organizations cooperate with one another to minimize duplication of the research effort and to ensure the maximum value for it's investment in these projects. In terms of supporting industries, supplier companies such as chemical and fertilizer sectors provided on-farm-consulting services to farmers.

The ability of supporting and related industries to be more competitive, and thus to provide their products less expensively, has been a major contributor to the development of the agribusiness sector. Since the mid 1980s, the government has promoted a more competitive environment in Australia, by withdrawing from markets, and thus forcing greater competition amongst suppliers. A good example of this activity lies in the provision of farm advisory services. Prior to the 1980s, state governments provided this service. Since then, it has become an activity of private firms, with many attached to fertilizer and broking firms.

5.5 The Role of Chance Events

There have been three major chance events that have influenced the competitive advantage of the Australian agribusiness sector. These are the entry of the UK to the European Union, the emergence of the Asian market and a reduction in trade barriers.

Before 1973, a significant proportion of Australian produce was exported to Western Europe, especially to the United Kingdom. Preferential trade agreements tended to dominate the trading pattern. The entry of the UK into the European Economic Community in February 1973 can be seen as a significant change to the international markets for Australian goods. This forced a shift in the focus of Australian exporters toward the rapidly growing economies of Asia and newly emerging markets such as the Middle East, where demand for products was expanding. In addition to this changing circumstance, the loss of the European market demanded more diversification of the product mix, as new customers demanded different products.

The emergence of Asian markets opened trade opportunity for Australian exports and enhanced the competitive advantage of the industry. Phillips (1998) and Schelhaas (1996) noted that the increase in Asian consumption (especially of dairy products) was driven by a number of socio-economic factors including the:

- strong growth in population and incomes;
- dramatic increase in the number of western-style restaurants and fast-food outlets;
• greater penetration of supermarket chains;
• increased use of ingredients in food processing sector; and
• increased acceptance of western styled products.

In terms of trade barriers, in an attempt to establish their own self-sufficient industries, many countries put relatively high tariffs on imports. This was considered to be a major constraint to Australian access. This aspect could not be controlled by the Australian industry and possibly slowed down the development of the export markets. India and Korea, for example, imposed strict restrictions on dairy and meat imports for many years. Thailand, Indonesia, Malaysia and Taiwan also imposed a wide range of import controls on fresh milk and substitute products (such as SMP) to support local dairy farmer interests. Similarly, Japan undertook a high degree of control for products such as rice and meat. Nonetheless, some Asian countries, such as Singapore and Hong Kong, had no restriction on Australian exports. In the rest of the world the United States and Europe not only imposed restrictions on imports, but also actively subsidised their own production and exports.

In the Uruguay Round of the General Agreement on Tariffs and Trade (hereafter the GATT) the competitive advantage of the Australian agribusiness sector was supported and enhanced as market opportunities were created by a more liberalized trading environment. The GATT is a multilateral trade agreement among autonomous entities aimed at expanding international trade in order to increase global welfare. It could be argued that not until the Uruguay Round Agreement was approved in 1994 was the agricultural sector fully involved in the world trading system. The Uruguay Round was expected to lead to the reduction of market protection and subsidy schemes. The Agreement requires export subsidies to be cut by 36 percent by developed countries (24 percent for developing countries) below their average level in the 1986-1990 base period and the volume of subsidies on product exported be reduced by 21 percent by the year 2000. Moreover, the countries that were previously highly regulated and restricted their markets were required to be more open. Consequently, Australia expects to see more opportunities in markets such as Europe, America and Asia. The government played on important role in facilitating the change in attitudes that resulted from the Uruguay Round.

5.6 The Role of Government

The Australian government played an important role in the development of the agribusiness sector. During the past decade, the government policy has positively affected
the industry’s competitive advantage. The Australian government, through its policies, created an environment in which firms can upgrade their competitive advantage. The introduction of the free trade agreement with New Zealand and the new marketing arrangements introduced since 1986 have promoted the phasing down of subsidies and created a greater impetus for individual producers to develop and capture export markets.

A good example of these activities occurred in the dairy industry, one of the most regulated industries in the world. An agreement between Australia and New Zealand, commencing on 1 July 1990, allowed free trade in dairy products came into operation. As New Zealand is widely considered the most efficient dairy producer in the world, the effects of free trade had an influence on domestic policies. The introduction of Kerin plan in 1986 resulted from the expectation that free dairy trade between Australia and New Zealand would occur. This marketing arrangement for manufacturing milk provided a gradual reduction in assistance, reducing domestic price levels to import parity. A reduction in assistance placed the Australian dairy industry in a better position to compete with imported products from New Zealand (Lembit, Topp, Beare and Sheales, 1991). The regulative level in the dairy industry has been progressively reduced during the 1990s, in response to Australia’s commitment to the Uruguay Round. The Domestic Market Support scheme was reduced in July 1995 in line with the concepts embodied in the Kerin Plan. The Domestic Market Support arrangements and market milk regulations that prevent trade in liquid milk across all states and territories were abolished on 30 June 2000. The attempt to place the right market signal in both domestic and international segments is being achieved and creates appropriate investment strategies at both the farm and manufacturing levels.

In summary, it could be said that the role of government heavily influenced the competitive advantage of the Australian agribusiness sector through its policies of creating the circumstance in which firms can operate. Governments also affect the macro-economic environment within which the sector operates. These issues are discussed in the following section (5.7).

5.7 Price Impacts: the Role of Exchange Rates

The role of price in the process of determining the international success of Australia’s agribusiness sector can not be underestimated. In theory, as an industry becomes a more competitive industry, the lower the price levels are. Yet, in international markets, changes in exchange rates alter the prices paid for the product. If a country's currency is depreciating,
the goods exported from that country become less expensive. If the currency is appreciating, the exported goods become more expensive. By observing the Australian exchange rate, some idea of the development of the agribusiness sector in maintaining and expanding its market share that are derived from putting the product on international markets, can be determined.

During the 1990s the value of the Australian dollar has fluctuated greatly (see Figure 10). Both the Trade Weighted Index and the US/Australia exchange rate depreciated slush not colon between 1990-91 and 1992-93 as Australia recovered from a recession. Thereafter, until 1996-97, both appreciated. Between 1996-97 and 1998-99, the Trade Weighted Exchange Rate has depreciated from 58.7 to 56, while the value of the Australian dollar has fallen from 78 USc to approximately 63 USc. Since then the value of the Australian currency has continued to depreciate. In October 2000, one Australian dollar was worth approximately 54 USc.

While the reasons for the fall in the value of the Australian dollar, since 1996-97, are not fully understood yet, a major contributor to this decline has been the Asian Economic Crisis. The government has maintained a floating exchange rate policy with minimal intervention (except by altering interest rates and other macropconomic variables) since 1983. Hockman (1999) argues that one of the major reasons why Australia was insulated from the
contagion was that the government did not attempt to defend the currency during the crisis. Hockman (1999, p. 392) states that although Australia

"... lost competitiveness and even some markets in Asia, ...our competitiveness across a range of products, goods and services against European and North American producers had risen .... In aggregate, export volumes regained pre-crisis levels quite quickly, ... much of which was driven by a favorable shift in the Australian dollar."

At the macroeconomic policy level O'Mara, Bartley, Ferry, Wright, Calder and Douglas (1999) state that there is some evidence to suggest that since the mid 1980s changes in Australia's fiscal policy have helped stabilize the real exchange rate. However, they argue that this stability has moderated the impact a depreciating currency could have on the sector. Furthermore, it is believed that recent changes to the tax system may well cause the exchange rate to appreciate, to the disadvantage of the agribusiness sector (Freebairn, 2000).

While Australia has not followed a policy of competitive devaluation, it could be argued that a major element contributing to the success of its agribusiness sector has been the falling value of its currency. If anything this element may well have been as important as the improvements that have been made to its productive capacity.

6. Summary

The discussion in this paper has centered on the international competitiveness of the Australian agribusiness sector. Two questions were addressed. First, how has the Australian agribusiness sector developed over the past ten years? In general it can be concluded that while the sector has had to adjust to a number of internal and external changes, its place in the market has on the whole improved. Second, what caused the sector to develop in the way it did? In addressing this question Porter's Theory of National Competitive Advantage was used as a guide to evaluate the determinant of these developments. This framework was augmented by briefly considering the effect of exchange rates. It was concluded that domestic demand is not a great determinant of the competitive advantage of the Australian industry owing to the small and unsophisticated nature of the market and thus played only a small role in the development of the industry. Factor conditions were investigated and found to have contributed greatly to the competitive advantage of the industry. Factor conditions
were continually upgraded and thus were effectively employed. A wide range of natural advantages and specialized knowledge resources can identify the industry’s factor advantages. The other determinants of international competitive success were also investigated and found to play a supporting role, especially in related industries. The role of chance events and government in changing the nature of the industry were also a crucial element in the mix determining success. However, the role of exchange rates can not be ignored in any analysis of the determinants of the development of the agribusiness sector over the past ten years.

References


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