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THE IMPORTANCE OF INDUSTRY STRUCTURE

LESSONS FROM THE AUSTRALIAN WINE INDUSTRY

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ABSTRACT

Transaction costs are a large proportion of the cost structure along the value chains of most industries, especially the food and beverage industries. Competition forces industries to structure their value chains to minimise transaction costs but, in agriculture, this process is commonly impeded by government intervention. In Australia, this has resulted in severe distortions to the structure of most agricultural industries. The wine industry, particularly in South Australia, has avoided or overcome these distortions more effectively than most and its current international competitiveness is the result. The paper proposes an analytical framework for assessing industry structure, describes the Australian wine industry in those terms and draws implications for other food and beverage industries.

1. INTRODUCTION

If you want to understand why the Australian wine industry has been so successful in the last decade or so, read Michael Porter not David Ricardo. That success has much more to do with competitive advantage than comparative advantage or, to use Porter's terminology, more to do with dynamic (created) advantages than static (natural) advantages.

Without doubt, much of south-eastern Australia can grow good winegrapes cheaply, but so can many other parts of the world. Australia has natural advantages, but they are not huge. Moreover, Ricardo can not explain the timing of the Australian boom - the long period of relative dormancy followed by such a rapid blossoming.

Porter draws common threads from a wide range of examples of successful industries and categorises them into four sets of conditions. One of these encompasses the (static) factors of production, while the other three divide dynamic advantages between aspects of the industry's home market, its associated industries and its national political, institutional and cultural environment (1991, throughout). This provides valuable insights, but it does not *explain* very much about why those sets of conditions have been instrumental in success.

In fact, there is a theory which explains Porter's insights: transaction cost theory - but, unfortunately, Porter does not use it. In short, all of the phenomena to which

Porter very plausibly attributes industry success are transaction cost-reducing mechanisms.

The argument in this paper is that Porter is relevant to understanding the success of the Australian wine industry in international markets and to helping other food and beverage industries to emulate that success. This is because he is talking about how to reduce transaction costs and transaction costs are a major cost component in those industries, especially in international trade. What differentiates the wine industry from the others is the evolution of an industry structure which is effective in minimising transaction costs along the whole value chain.

This conclusion begs the question as to why such evolution should happen in the wine industry to a greater degree than in other industries. The general issue of why industries do not always develop efficient structures is addressed in Taylor (1994, Chapter 2, Section F), but not in this paper. In brief, the argument advanced is that efficiency improvements are only one source of rents. Following Sieper (1982), public choice theory is used to show how many agricultural industries have been successful in using political power to increase their share of existing or potential rents. While the resulting regulatory impediments to trade have often delivered short-term benefits to those industries, they have imposed long-term costs in the form of structural distortions. Typically, regulation has been pursued because the short-term benefits have been readily perceived but the long-term costs have been poorly understood.

2. A TRANSACTION COST APPROACH TO INDUSTRY STRUCTURE

The term *industry structure* is used here to encompass two issues:

- who owns what - that is, how ownership is organised within the industry; and
- the ways owners (or firms) interact to ensure that consumers continue to buy their products and that supplying those products remains profitable.

An industry is defined very broadly in this context to include the vertical value chains and the network of supplier and complementary firms.

Hansmann (1988) articulates a general theory of enterprise ownership in which he argues that "the efficient assignment of ownership is that which minimises the sum of market contracting and ownership ... costs amongst all patrons of the firm" (p.281). He uses the term *patrons* to encompass all who have a transactional relationship with the firm (customers, suppliers, employees, lenders and providers of equity capital). Ownership costs include monitoring (agency) costs, those of collective decision-making and those of bearing risk. Market contracting costs include information costs and those of securing (or avoiding) market power. With the partial exception of risk-bearing, these are all transaction costs.

This theory explains, for example, why fruit growers, who have high sunk costs and are therefore vulnerable to monopsonistic power, have commonly formed marketing and processing co-operatives, while vegetable growers, who can change crops to fit market conditions, do not. Hansmann argues that the identity of interest shareholders have in maximising the present value of future dividends reduces

collective decision-making costs and is a major factor in the success of the listed company as an organisational form. ACIL (1993:xxxvii) argues that, for co-operatives on the other hand, conflict of interest over quality premiums, investment strategies and whether surpluses should be distributed as dividends or as increased prices for produce supplied is a major source of inefficiency. The demise of fruit co-operatives can be understood as the result of a change in the relative importance of the market power and collective decision-making factors. This change has been brought about by increased competition in the markets for their products and increased sophistication of capital markets.

In effect, Mark Casson (1987) extends this analysis by using the same set of transaction costs to explain the differences in the extent and method of vertical and horizontal integration between different industries. The question of method of integration is to do with the choice between owning adjacent operations along the value chain and entering into strategic alliance contracts with other firms that own those operations.

Casson argues that vertical integration is essentially about reducing three sorts of transaction costs: information costs; costs of protecting "know-how"; and those associated with market power:

- *Information costs.* The primary information cost is to do with ensuring that intermediate products or services transferred between stages along the value chain are of appropriate quality. Information exchange along the chain can be critical as well. One of the major weaknesses in Australia's fresh food export systems is the lack of timely and accurate information about consumer requirements flowing back to the producer.
- *Protection of "inter-stage" know-how.* Much of the know-how from which firms gain their competitive advantage is not able to be protected by intellectual property rights. For some examples of inter-stage know-how, it may be necessary to own the two relevant stages. For others, a close and mutually beneficial strategic alliance may suffice.
- *Gaining/avoiding market power.* The market power-related costs affecting the vertical integration decision are those of avoiding (or gaining) bargaining advantages of the sort referred to above in relation to fruit co-operatives.

In general, all of these market contracting costs can be reduced more effectively by owning the relevant stages than by forming strategic alliances. However, as Hansmann argues, ownership incurs costs of its own. In vertical integration, costs of monitoring employee performance are important. Internalising the market for the intermediate products increases monitoring costs. By removing market-based price signals, it complicates performance measurement and performance-based remuneration in the stages either side of the internalised market.

Two other factors affect the decision about how to integrate vertically:

- minimal efficient scale can differ markedly between stages. This is discussed in Section 4 below; and
- although ownership may generate significant advantages, the pay-off may be below the firm's required rate of return on capital.

The three types of transaction costs relevant to vertical integration are also relevant to horizontal integration. The way they affect the method adopted are as follows:

- *Information costs.* Those relating to: tracking changes in consumer requirements; assuring customers of product quality (brand management); and developing technology all exhibit substantial scale economies and are influential. Within each of these groups of information costs, some are proprietary and some can be shared across an industry stage (eg. growing or processing). Sections 4 and 5 will describe the way the Australian wine industry has dealt with this complexity.
- *Monitoring costs.* Monitoring costs are a form of information costs, but their impact is different from those above. Economies of scale in monitoring costs can vary greatly between stages along a value chain. Normally, the spatial separation of agricultural workers limits those economies and explains why farms tend to be smaller than firms in other stages along the chain (Casson 1987, Ch. 4). This has a major impact on the structure of food and beverage industries (see Section 4 below);
- *Protection of intra-stage know-how.* Close parallels to inter-stage know-how in the vertical integration decision.
- *Gaining/avoiding market power.* The scope for gaining market power is largely determined by government regulation. Inter-firm collusion is disallowed in most situations, encouraging firms to merge but, if the firms in question have large market shares, such mergers can be prevented by ACCC intervention. In the past, however, agricultural producers have been successful in gaining dispensation from these strictures. This still applies in many industries with regard to export markets.

An additional factor in horizontal integration is the cost of bearing risk. In the food and beverage industries, (apart from foreign exchange risk) the main risks are to do with seasonal fluctuations in volume and quality of agricultural production and degree of commitment from suppliers and trade customers. The latter is a vertical integration issue but, by increasing its size, a firm can adopt a portfolio approach to supply of critical inputs, diversifying across geographic regions and supplier firms. Similarly, it can diversify across a number of markets and trade customers.

This analysis of industry structure makes it clear that the decisions about vertical and horizontal integration are interdependent. Information costs are a major driver of vertical integration, but there are scale economies in managing all of the information costs discussed, so it is often necessary to attain a reasonable scale of production to justify the large investment in vertical integration, whether achieved by ownership or strategic alliance. Monitoring is vital to intermediate-product quality, a vertical integration issue. Scale economies in monitoring vary between stages and affect both horizontal and vertical integration decisions. Risks in input supply and in product marketing and distribution are often addressed by a deft combination of both strategies.

The interdependency of the vertical and horizontal integration decisions is a major issue in improving the international competitiveness of Australia's food and beverage industries. The South Australian and Commonwealth Governments are investing heavily in encouraging vertical integration of the food and beverage industries by

way of strategic alliance contracting. This is a worthy aim, but Taylor (2000 b & d) argues that success has been limited because the vast majority of Australian farms and many of its packers/processors are too small to capitalise effectively on the investment required to establish state-of-the-art vertical linkages. Government intervention aimed at improving international competitiveness will need to take into account the interdependency between vertical and horizontal integration. Among other things, this will entail expediting the process of aggregation of operational units at farm level and, to varying extents, at the processing, marketing and distribution levels as well. Collaboration by farmers is being encouraged, but that will not be sufficient¹. For the majority of farms, the substantial investment in building collaborative structures will not be justified.

Average farm size is growing but, with improving technology and increasing length and complexity of value chains, so is the minimum efficient scale of farms. If farms (and other parts of most value chains) are to reach the optimal scale, changes in government policies (particularly at State level) will be required. The initial task will be to reverse the myriad of interventions which, often unwittingly, have had the effect of impeding the market-driven evolution of food and beverage industries towards more efficient structure. The argument here is that an efficient structure is one which allocates ownership such that the sum of transaction costs along the value chain is minimised.

Sections 3 and 4 of this paper will describe the structure of the Australian wine industry in terms of the approach outlined in this section. The central point is that its international competitiveness is very largely a result of its ability to structure itself such that transaction costs along its value chains are smaller than along those of both its international competitors and of other Australian food and beverage industries.

Section 5 addresses a third and important dimension of industry structure: the way problems affecting the industry as a whole are solved.

3. VERTICAL INTEGRATION IN THE AUSTRALIAN WINE INDUSTRY

The central question in the matter of vertical integration for any firm in a food value chain is "which activities do we bring in-house and which do we outsource?". Should the firm buy out its suppliers and/or trade customers or should it continue to trade at arm's length?

For example, it is quite likely that, having developed a good wine product and a system for ensuring consistent quality, a corporate winery's best investment is in building its brand (or brands) and the distribution systems for ensuring reliable supply to the consumer². If that is the case, why do the major wineries grow some of

¹ Governments have traditionally encouraged farmer collaboration in numerous forms, including marketing boards and bulk-handling co-operatives. Unfortunately, these (mostly regulated) structures have impeded the flow of information between consumer and producer, usually causing severe market distortion.

² Indeed, a senior executive of Southcorp Wines Ltd, has implied that this is the reasoning behind Southcorp's sale of its vineyards at Cadell in the South Australian Riverland and its investment in

their own grapes and buy some from independent growers? Would it not be better to sell off their vineyards and use the proceeds to build brands and distribution systems? The answer, fairly obviously, is to do with risk management: ensuring supply of enough grapes at acceptable prices and ensuring that they are of good enough quality to protect the investment in their brands. But what is the right level of protection? If there is a right level, why do those firms vary in the mix of their own and purchased grapes? The answer is probably to do with how much of their requirements are for grapes (such as warm-climate Chardonnay) for which there is a big and liquid market and how much is for specialist grapes, such as dry-grown Barossa Shiraz³. In other words, the issue is still risk management, but the risks are higher for some types of grapes than others.

Clearly, the wineries will benefit if they can minimise those risks without actually having to own a large share (or, indeed, any) of the vineyards supplying their grapes. From their perspective, this is the rationale behind building strategic alliances with growers. Growers, for their part, also face uncertainty about grape prices and, at times, even about whether they will find a buyer for their grapes. So strategic alliances can make sense for growers as well. But this is not just a matter of saving a few sleepless nights for the winemaker and grower or of changing the share of the pie each enjoys at different stages of a boom-bust cycle: strategic alliances can actually increase the size of the pie.

It is axiomatic in marketing circles that consumers prefer brands that exhibit consistency in flavour, quality and supply. While wine buffs might enjoy the seasonal variations of a particular wine, it has been shown that, for the vast majority, consistency is valued in wine just as it is in other products. To the extent that they help deliver consistency, strategic alliances can improve the success of a brand⁴. Moreover, with reduced fluctuations in the volume and quality of grape supply for a particular brand, wine companies will be willing to invest more heavily in marketing the brand. These points are well illustrated in the current export boom, in which both product consistency and brand-building have been critical elements.

Some growers argue that strategic alliances favour the buyer at their expense. While some exploitation of producers may occur, in general, the arrangement puts producers in a stronger position than they would otherwise be, providing insulation against the vagaries of commodity markets. Since the market for branded consumer products fluctuates much less than that for commodities, such insulation results when intermediate products (such as winegrapes) are specifically tailored for a manufacturer who markets branded products. Typically, under this arrangement intermediate input suppliers differentiate their products from the commodity market by tailoring them to customer specifications and by producing under long-term contract. The insulation occurs partly because contract pricing can be related more to the prices and risks faced by the manufacturer and partly because the

liquor distributorships. The latter is central to Southcorp's response to globalisation of food and beverage retailing.

³ Again, the example of Southcorp is illuminating: sale of the Cadell vineyards was followed by a major planting of dry-grown premium red grapes south of Seppeltsfield in the Barossa Valley.

⁴ Case Study 8 in *Competitive Performance* (Supermarket to Asia, 1997) describes how Orlando Wyndham Group Pty Ltd has used strategic alliances to create the Jacob's Creek success story.

manufacturer's market advantage is based on the use of precisely-specified inputs and this creates a degree of dependence on individual input suppliers.

Four characteristics of the winegrape market make growers particularly vulnerable under the traditional spot-market trading arrangements⁵. They are:

- The large investment involved in vineyard establishment. From a whole-of-industry perspective, this is a *sunk cost*, which can only be redeemed by profitable sale of grapes over a long period.
- The perishability of the grapes, which must be processed within hours of harvesting. In times of oversupply, buyers can increase the pressure on sellers by delaying price agreement as harvest approaches. Growers of other fruit, for example, at least have the option of sending their produce to interstate markets.
- The discontinuous nature of the grape market. The markets for non-perishable products continue through the year, so growers are constantly aware of price adjustments and the different options for disposal. In many cases, this allows them to adapt production and marketing strategies as the season progresses. On the other hand, buyers and sellers in the grape market must, to some extent, start from scratch each year to establish benchmark prices.
- The asymmetrical nature of winegrape market intelligence. Wineries know a lot about changes in growing costs and seasonal conditions, but growers know much less about changes in market demand and production costs of the wine their grapes will become.

These characteristics all enhance the value to winegrape growers of negotiating long-term contracts. Such contracts would be even more appealing if they enabled the grower to lock in at a fixed price. Unfortunately, the capacity of wineries to fix the price in such contracts is limited by the risks they face in their product market.

The rapid spread of strategic alliance contracting has been crucial to Australia's development of consistent, value-for-money wines and to the brand-building discussed above.

However, because of the grape-market problems described above, the matter of price formation, that is, of establishing the benchmark prices on which to base each year's individual price contracts, has still to be resolved. This will be discussed in Section 5 below, but part of the answer is likely to lie in continued evolution of the way long-term contracts are negotiated.

If strategic alliances are as advantageous as suggested here (and Porter's evidence is that they are a hallmark of internationally competitive industries), why are they not the norm in markets for agricultural products? A number of factors have slowed their adoption. Five are discussed here:

- Although the concept of strategic alliance contracting was articulated some fifty years ago, it has only entered mainstream management thinking in the last

⁵ The intrinsic problems in the winegrape market, and ways of reducing their impact on market efficiency, are discussed more fully in Taylor 2000c.

twenty years or so and it represents a significant shift away from traditional approaches to agricultural marketing.

- Strategic alliances usually require substantial investment in the early stages (for example, to get the product specification correct) and the foregoing of peak prices in boom times. This has often appeared a risky investment. The pay-off, of course, comes from the increased security afforded by keeping the end-product internationally competitive.
- Most Australian farms are too small to reap satisfactory returns from the large (and to the farmer, at least, risky) investment in building alliances.
- The market and foreign exchange risks faced by processors (including wine makers) are, in general, significantly greater than the production risks faced by growers. Processors' risks have usually been underestimated by growers, whereas understanding the customer's risks is one of the important initial investments in the relationship because it paves the way for optimal risk sharing.
- Disproportionate political power in the hands of farming communities has often lead to legislative means to protect markets and product prices. While this approach can offer short-term benefits, it removes the incentive to meet changing product specifications and to respond to price pressures on the manufacturer. This ultimately erodes the industry's competitive position in international markets. Agriculture in Japan and in the European Union provides text-book examples of this process⁶. Arguably, the resulting ossification of the European wine industry has been a major factor in the Australian success story.

A possible conclusion is that the current re-focusing of attention on rural issues at the political level creates an excellent opportunity to direct resources away from traditional (often retrogressive) rural programs and into those which aid evolution to more efficient industry structure. Taylor (2000 b and d) argues that there are numerous ways of achieving this without creating social or political problems in the bush. The publications of the *Supermarket to Asia* program provide excellent examples of resources being used to create a wider understanding of the possibilities and procedures of strategic alliance contracting. A wine industry example was quoted in Footnote 4 above.

The first lesson that the wine industry has to offer other Australian food and beverage industries is about vertical integration. In both extent and method, the wine industry is far ahead of other industries. In South Australia, for example, more than 75% of winegrape production is organised under a fairly astute combination of ownership and strategic alliance contracting. Moreover, the linkages between winery and consumer are more appropriately structured than, for example, those between packers of fresh horticultural produce and their end-customers.

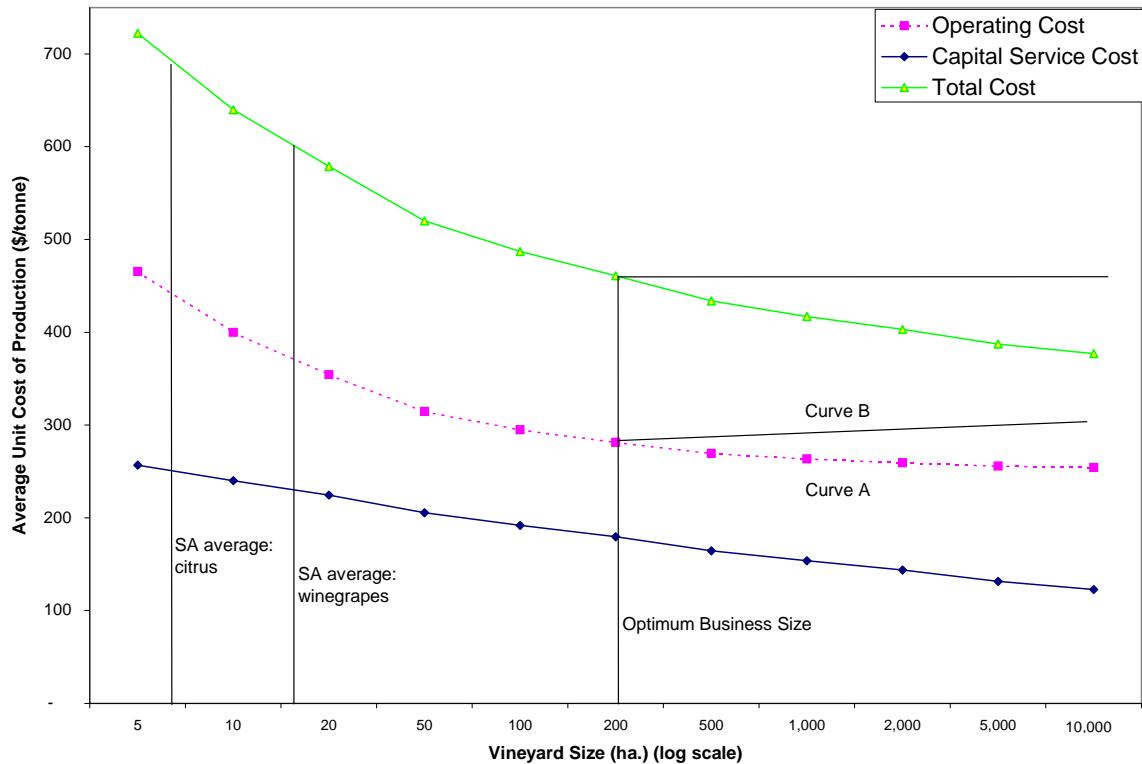
⁶ The attractiveness of market protection can be sustained by taxpayer and consumer subsidy, but the burden increases inexorably and is ultimately rejected by voters. This process is demonstrated in the current deregulation and internationalisation of the Japanese and European economies. It is ironic that Japan, the country which pioneered strategic alliances in manufacturing, has been one of the greatest protectionists in agricultural markets. The reason for the anomaly is the heavy electoral bias towards rural voters in Japan.

4. HORIZONTAL INTEGRATION IN THE AUSTRALIAN WINE INDUSTRY

The key question in horizontal integration is "how big should an operation be to capture economies of scale efficiently?"

Compared with other stages in food and beverage value chains, the optimal size for a farm is quite small, with a turnover around \$2-4 million. Figure 1 shows an indicative long-run average cost curve for growing high-quality premium red-variety grapes in the Riverland (SA). It assumes a yield of 20 tonnes per ha. and competent management. Depreciation of plant and vineyard infrastructure is taken up as an operating cost. Capital service cost includes interest at 8% (falling to 7% at 10,000 ha.) less 1% p.a. capital appreciation (over the first 20 years).

Figure 1: Long-run Average Cost Curve for Premium Red Winegrape Production in South Australia's Riverland



Source: Taylor (2000b)

Curve B is an alternative operating cost curve which suggests that monitoring costs may increase above 200 ha.. That size is ideal for one vineyard manager. Generating around \$4 million in gross income, it is also around the upper limit for a family to manage using permanent operational staff but no non-family managers.

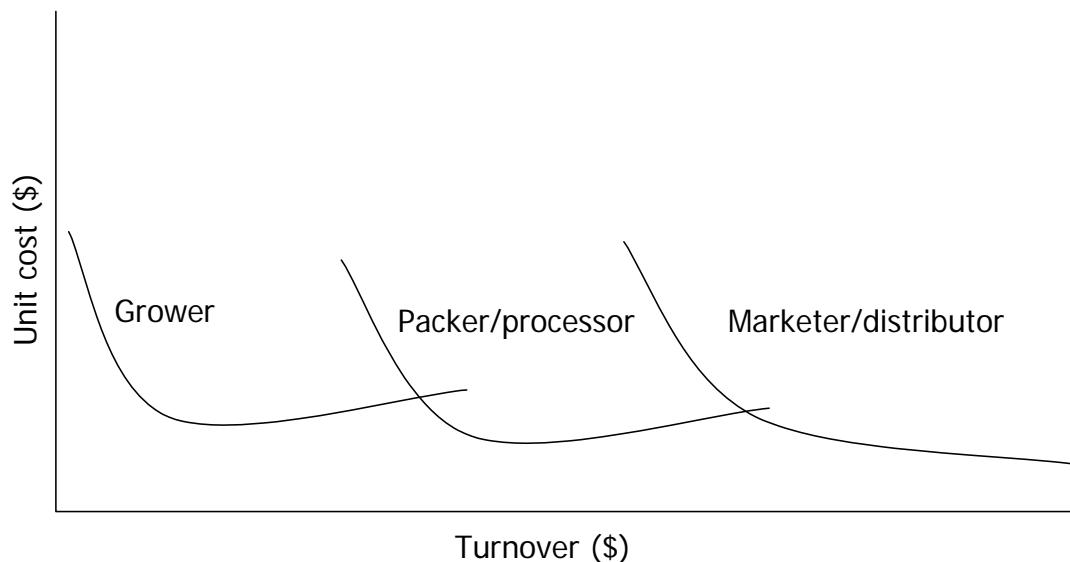
Section 2 raised the point that spatial separation of agricultural workers increases monitoring costs. In effect, one traditional solution has been to give those workers a financial interest in the quality of the product by making them owners of the farm. The family farm makes use of the cohesion of the family unit (and, in the case of

children remaining on the farm, the expectation of inheritance) to overcome the monitoring-cost problem. This provides the most convincing explanation for the fact that most agricultural production in the Western world is still based on the family farm. Disproportionate political power is certainly a factor in the persistence of the family farm in the West, but that is unlikely to be effective in the long term without some economic factor underpinning the status quo.

The impact of disproportionate political power in Australia, and the resulting government support, has been to retard the process of farm agglomeration mentioned in Section 2. In fact, for a range of historical reasons to do with technological innovation, politics and sociology, most farms are well below the optimal size in any industry. This is demonstrated in Figure 1. While it is true for the winegrape industry, it is significantly worse in other industries. For example, citrus production has similar cost curves to winegrape production (with different unit costs on the vertical axis), so the average citrus-farm size in SA is shown in Figure 1 for an approximate comparison.

The optimal size for a packer or processor, by contrast, is usually 10 to 50 times that for a farm. For the marketing function, the optimal size can be in the range \$500 million (eg. Enza, the New Zealand Apple & Pear Marketing Board) to \$5 billion (eg. Chiquita Brands Inc.), since unit costs of managing brands and distribution systems usually continue to fall until global scale is reached. Figure 2 indicates diagrammatically the relationship between the long-run average cost curves of the three stages.

Figure 2: Optimal Business Size Along the Food and Beverage Value Chain



This difference in the optimal size for an operation between different stages of the value chain is one of the reasons why *vertical* integration by owning up- and downstream businesses is uncommon in many industries. Coordination of the linkages between a few processing or packing plants and a global marketing and distribution system can be manageable within the firm. However, it is usually easier to outsource growing the produce so that coordination of supply from the many farms involved is conducted at arm's length (by market transaction) rather than by internal

management. Strategic alliances are an attempt to get "the best of both worlds", namely, the right mix of good quality control, appropriate risk-sharing, simplified supply coordination and financial incentives for production efficiency.

The wine industry provides an interesting study in horizontal integration because well-managed operations at both ends of the size spectrum can generate very satisfactory profits. The reason for this lies in the different ways wine is marketed. To simplify the discussion, let us say that wine can be promoted as a safe, value-for-money product for more or less regular consumption or it can be promoted as a lifestyle experience in which the process of sampling and buying it can be as important as drinking it. Clearly, a large corporate winemaker fed by large, efficient growers will have a competitive advantage in the former case, while a boutique winery growing its own grapes and sourcing the balance from small growers in the neighbourhood will be competitive in the latter case.

Bruce Kemp, past CEO of Southcorp Wines Ltd, has argued publicly that the rapidly-agglomerating supermarket chains will want to sign contracts for global supply of wines and that this will create problems for mid-sized companies. This suggests that mid-sized wineries must plan their production and marketing strategies carefully to avoid being caught in a "no-man's land" between the two extremes. One example is the approach of Petaluma Ltd, which has structured itself essentially as a group of independent smallish wineries, each with their own grape sourcing, winemaking and marketing strategies and structures. The results of this strategy appear to be keeping shareholders content but, at present, the same could be said for most mid-sized ASX-listed winemakers, regardless of strategic approach. However, the international wine market is certain to become more competitive and such considerations are bound to increase in importance.

One of the reasons why the optimal size of farms is significantly larger than that of most existing farms is the high information cost involved in good farm management. For example, the expertise required to grow high quality grapes year after year and negotiate a good price for them is only acquired after a heavy investment of time and money. However, once it is acquired it is essentially just as valid for a large vineyard as for a small one. Those and other capital costs can be defrayed across much greater production on a large vineyard, reducing the all-up unit cost. One way in which smaller farms can capture these scale economies is by forming grower groups.

A number of such groups exist in South Australia. Two examples are CCW Ltd and Barossa Estates Ltd (the latter having its own winery as well as selling grapes to a corporate winery). These groups employ their own technical advisers who also have a quality monitoring function. The advisers maintain close contact with representatives of the client winery so that technical information is continually updated in line with changing customer requirements and this is disseminated to all growers in the group.

Groups of this sort have much to recommend them:

- It is efficient for the winery to pass much of the responsibility for grape quality control to the grower group. This way neighbours can keep an eye on one another to ensure that no one cuts corners and free rides on other members of the group.

- Much of the technical information relates to product specification and, as part of the winery's competitive advantage, can be confidential. This information is more likely to be imparted to a grower group than to private consultants or government advisers.
- For these reasons, the group can deliver a larger, more even line of grapes and reduce the purchasing cost of the winery. Thus the grapes are worth more than other similar grapes bought from individual small growers.
- The group increases the bargaining power of the growers in price negotiation with the winery, so it is probable that the price premium received is greater than that explained by the increase in value discussed above.
- Similar bargaining power can be used to reduce the cost of inputs.

An important issue in forming grower groups is to select growers of similar attitude and skill and for the group to be the right size. Ultimately, there will be a trade-off between, on the one hand, maximising bargaining power and, on the other, achieving agreement and cohesion about what will be produced.

The second lesson from the wine industry, then, is about horizontal integration. It was argued in Section 2 that the substantial investment required to build either vertical or horizontal alliances was much more easily recouped by a large firm than a small one, so both amalgamation of farms and better farmer collaboration will be required. At the farm level, the wine industry, in South Australia at least, is in a better position than others in both forms of horizontal integration. Its average farm size (measured in turnover) is high and grower collaboration is both more pervasive and more sophisticated. At the next level of the value chain, horizontal integration of wine making and marketing is generally well suited to the particularities of the retail market for wine (represented above as a simple dichotomy). Moreover, it is adapting rapidly to changes in global retailing. By contrast, Australia's fresh horticultural produce and meat industries have no international corporations comparable to those in the wine industry marketing their products.

5. THE WAY PROBLEMS COMMON TO THE INDUSTRY AS A WHOLE ARE SOLVED

Producers in any industry face a range of problems which are too expensive or difficult for an individual producer to solve, but which are shared by many in the industry. These problems are normally discussed under the market failure categories of public goods, common-property resources and externalities. From the Coasian perspective, they are opportunities whose transaction costs would be too high for any one firm to exploit. Examples include:

1. regional planning to resolve conflicts between large-scale wine production and wine tourism;
2. efficient working of the winegrape market;
3. production and environmental problems in viticulture and oenology;

4. building and maintaining the reputation of generic brands such as *Wine of Australia* and regional appellations (e.g. Coonawarra); and
5. negotiations with governments about issues such as tax levels and facilitation of industry development.

As in other industries, these issues are handled by industry-wide organisations and other institutional structures. This can be viewed as another element of a horizontal integration continuum and, to the extent the structures involve more than one stage of the value chain and deal with inter-stage issues, an element of a vertical integration continuum as well. However, for purposes of exposition, it is useful to separate this discussion from Sections 3 and 4.

In the past, Australian food and beverage industries have tended to leave the first three of these to governments to resolve, with the result that solutions have usually been economically inefficient. However, while some minimal government involvement is often required, industries can organise themselves in such a way that they retain control of the resolution process and gain more satisfactory outcomes. A partnership approach of this sort, with industry as the principal partner, is now sought by most, if not all, Australian governments.

The Australian wine industry, and particularly the SA component, provides an excellent model of how this can be achieved. In fact, wine industries in other countries are now trying to emulate its institutional structure. The roles of the various national and State industry organisations in solving industry problems will not be described here. However, some important aspects of the model include:

1. Development, by the Winemakers' Federation of Australia, of *Strategy 2025*, the industry's 30-year strategic plan, and its recent update, *The Marketing Decade*. This plan, developed in co-operation with winegrape industry bodies provides a framework within which most of the other issues are resolved.
2. Industry negotiation has delivered substantial improvements to the winegrape market which was characterised by much antagonism only a decade ago. In the light of the discussion so far, it is likely that the evolving market will have some combination of the following elements:
 - the existing series of wine and winegrape outlook conferences;
 - the evolving national winegrape utilisation and pricing surveys;
 - increased use of strategic alliance contracting;
 - rapid adoption of new technology for objective measurement of winegrape quality;
 - the establishment of a number of benchmark indicator grape types, based on objective measurement (as in the greasy wool market);
 - the establishment of forward markets based on the indicator grape types; and
 - the further evolution of long-term contracts to allow for mutually beneficial terms of payment and sharing of risks between individual growers (or grower groups) and wineries.

3. The wine industry avoided many of the problems experienced by other horticultural industries by negotiating with the Commonwealth Government to have an R&D Corporation separate from the rest of horticulture. Wineries match the R&D levy contributions of growers (then both are matched by the Commonwealth Government). This ensures a relatively high rate of R&D funding which is well targeted on agreed industry priorities.
4. The Australian Wine & Brandy Corporation monitors volume, quality and price of all wine exported and publishes trade statistics. Its sister organisation, the Australian Wine Export Council, maintains marketing offices in the US, UK, continental Europe and Japan from which it runs promotional campaigns for exporters under the *Wine of Australia* banner.
5. The Winemakers' Federation of Australia, with its State-based subsidiary organisations, has maintained a high-profile and effective lobbying campaign. It has generally been more effective in adopting a win-win partnership approach with government than have its counterparts in other industries. Examples in South Australia include the program to keep the State free of phylloxera (an ineradicable disease of vines) and gradual winding back of legislation controlling the winegrape market. Nationally, it has been able to maintain lower rates of tax on wine than on beer and spirits. It has been able to differentiate wine from other alcoholic beverages by forging agreement between wine companies to market wine as a "sophisticated lifestyle product" to be drunk in moderation and mostly with meals.

The third lesson from the wine industry is that intelligently planned and structured industry organisations can deliver substantial benefits to the industry as a whole. This is entirely consistent with Porter, who places much emphasis on an industry's institutional arrangements and the culture, particularly the readiness to engage in win-win activities, which brings those arrangements into being. The key to efficacy is that institutional arrangements complement free-market transactions and do not supplant them. This is true of all of the examples quoted, whereas other food and beverage industries have often been seduced by the attractions of heavier-handed approaches, such as marketing boards.

Devising such arrangements is an area in which the transaction cost approach can be helpful. Whether or not it involves negotiations with government, the process is one that seems to attract more than its share of woolly thinking, not to say blatantly misleading argument. Analysing both the market opportunity which proposed arrangements seek to facilitate and the transaction costs which must be reduced helps to tease out what will complement free-market transactions and what will not.

As is the case for the issues of vertical and horizontal integration discussed in Sections 3 and 4, the first job for government is to assess its existing involvement, preferably in transaction cost terms, and disentangle itself from all interventions which are not complementary to free-market activities. However, many government interventions are long-standing and have built up significant cultural and institutional inertia, often in the form of farmer dependency on government. This suggests a justification for government programs whose aim is to reverse that inertia.

Such programs will have to articulate a vision of what internationally competitive industries look like. Programs such as the Commonwealth Government's *Supermarket to Asia* and South Australia's *Food for the Future* aim to do this but,

without a clear understanding of the issues discussed in this paper, some of the activities can end up being counter-productive⁷. On the other hand, managers of such programs are fortunate to have the Australian wine industry as a case study in international competitiveness. The aim of this paper is to contribute to that case study so that the right lessons are learnt by other industries.

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⁷ For example, there can be a fine line between helping farmers become more entrepreneurial and collaborative on the one hand and propping up farmers whose best career options involve selling the farm. Moreover, it is possible that the adjustment package recently offered to dairy farmers in return for the National Competition Policy-inspired reforms will help them stay on their farms when the best option for many might be to sell.