Strategic Alliances and Marketing Cooperatives: A Lamb Industry Case Study

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Abstract

Producer cooperatives and strategic alliances could assist lamb producers and market efficiency by improving price signals through product grading. Opportunities exist for first and second cross lamb producers to achieve price premiums by forming intersectoral linkages with processors/wholesalers and retailers. Producer cooperatives enable producers to supply consistent quantities of high quality lambs to satisfy the market requirements of the wholesalers/retailers within the alliance. Alternatively, opportunistic lamb suppliers who are constrained by environmental or cost factors may not be able to derive similar price premiums.

Market analysis reveals that there are barriers to entry into specific market segments for some producers, who participate in the market individually or as a group. Hence, strategic alliances between producers and higher level market participants can yield price premiums beyond those achievable in a short-run freely competitive market.

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Introduction

Lately, there has been a call for farmers in several industries, primarily those related to sheep and beef products, but also in other industries such as grains, to form what are now termed strategic alliances with down-stream processors, and in some cases research funds have been directed at forming these alliances The main aim of these alliances is to develop the market for products that meet certain specifications and to increase market share against beef, pork, chicken and other lamb suppliers by developing intersectoral loyality A second aim is to minimise income risk by reducing price flutuations and also to remove the price distortions which result from "averaging" caused by the lack of product description We believe that graded products yield benefits to both producers and consumers, where the consumer in this case is the processor or wholesaler provided the niche exists for the product supplied with the desired characteristics, whether perceived or real

Factors which exist within the current free market system add a risk premium or cost to the final lamb product Some of these risks can be dissipated through the effective management of a supply alliance Lamb prices may fluctuate providing lamb producers with an uncertain level of income therefore they cannot effectively plan purchases of high quality inputs to produce a high quality end product Processors also add a risk premium to the cost of processing lambs as they are confronted by two sources of risk, quality of output and variations in throughput quantities. Purchasers of skins, offal and carcase meat are all subject to similar risks due to their dependency on the processing sector of the industry for supply consistency

The complicated supply structure within the lamb industry has resulted in producers being delivered unclear market signals regarding desirable lamb fat depth and weight. The price risk of not satisfying carcase specifications has previously rested with the wholesaler or processor resulting in price averaging This implies that producers of high quality carcases are effectively subsidising lower quality producers Furthermore, the cost of the processor accepting the risk is that producers are paid less than the optimal price for the product to account for the cost of wastage and the cost of further product grading. Lamb producers stand to benefit when they adopt the specification risk and grade the lambs on-farm to suit a particular market. Indirectly

the producer becomes the wholesaler of lamb to the retailer or food service company and uses the processor and wholesaler as a contractor of other services

The objective of vertical coordination is to remove some of the risks, to both parties, involved in a mass market transaction of an undifferentiated product The market risks include price, quality and delivery timing (Sporleder 1992) For example, if a lamb processor forms an alliance with a group of prime lamb graziers to supply a product meeting particular specifications for delivery on a certain date this may remove the price risk to both parties and allow the processor to plan her/his processing plant schedule with less variability in throughput The reduction in market risks and improvements in the quality and transmission of information leads to greater efficiency in the market place as more information is available, not only to those within the alliance but to most participants in the market (Barry, Sonka and Lajili 1992)

The primary purpose of this study is to examine the potential gains to producers from forming marketing cooperatives within a geographic area, or between producers of similar products, to develop niche markets for produce of particular specifications, and to determine if strategic alliances between these cooperating producers and down-stream market participants, such as processors or retailers, can improve market performance A second aim in this paper is to determine whether there is the potential for price premiums, paid to producers for meeting certain product specifications, to be sustained within a market that exhibits the atomistic structure of a purely competitive industry, such as the lamb industry

As an example of these processes we will analyse the markets of several lamb producer cooperatives located throughout New South Wales that are participating in a Meat Research Corporation funded project DAN 093 These cooperatives are attempting to supply different markets, hence they are producing lambs to different specifications, and they have entered into strategic alliances with processors or wholesalers seeking specific quality lambs. Also, we will consider the lamb industry structure to determine if these cooperatives and alliances can sustain price premiums or generate long-run supernormal profits

New South Wales Lamb Industry Structure

Of the Australian sheep and lamb population of 120 million head, about 64 per cent are predominantly Merinos for wool, 19 per cent are principally first cross for wool and meat and 17 per cent are for meat alone (Koch 1995a) The prime lamb industry has a high proportion of producers with small flocks Approximately 38 per cent of lamb producers are involved in prime lambs Some 52 per cent of these producers are aged 50 years and older (Collimore 1995). Lamb producers in NSW have reduced production of lambs from 4 1 million head in 1994/95 to approximately 3 1 million head in 1995/96, a decline of approximately 30 per cent (Koch 1995a). Lamb consumption has also declined from 11 8 kg per person in 1994 to 10 9 kg in 1995 as a direct result of lower availability and the resulting increase in retail price (Koch 1995b). Lamb prices increased by 8 1 per cent for the period from September 1995 to October 1995. For the period January 1995 to October 1995 compared to the same period in the previous year, the saleyard price of lamb rose by 42 5 per cent (AMLC 1995).

At present all lamb regardless of breed type, weight, fat depth and conformation is labelled and branded as lamb Lamb has for many years been considered a low cost generic product, many supermarkets have used it as a loss leader and further, the product is regarded as being over fat and cheap by consumers (AMLC 1994) Purchasers of live lamb continue to pay a premium for lambs wh' ' not satisfy consumer requirements especially when lambs are short in supply. AACM (1 ,) report that only 32 9 per cent of lamb destined for the domestic market were within Elite (22 kgs, fat scores 2 and 3) and Trim Lamb (18-22 kgs, fat scores 2 and 3) specifications Approximately 58 per cent of total lambs traded are purchased through sale yards, the remaining 42 per cent being purchased on Computer Aided Livestock Marketing (CALM) or direct from the producer (AACM 1994). Mullen (1995) found that, "consumer preference for leaner lamb was not being reflected in prices offered for lamb in traditional live auction markets". This problem is due to the fact that processors must slaughter a certain number of stock to meet their fixed costs

In most cases processors are not overly concerned by the quality of the product providing that they have throughput and that the processed product sells. This form of trading has led to an

industry structure which supports the concept that there are few grades and price minimisation rather than product quality, being the most important result. In some cases processors earn considerable profits from the offal and by-products derived from processing lambs, therefore the carcase value does not represent the total value of a live lamb to the processor (Read and Malcolm 1994, p18)

The Australian lamb market is divided two ways, 76 per cent for domestic consumption and 24 per cent for export (see Table 1). The retail and supermarket sectors of the industry are by far the largest market segments. The export sector has increased during the past decade and represents a significant market for first cross and Merino lambs. We have deliberately left this sector of the industry out of the discussion as it is much more complicated and better suited to purchasing methods which include forward contracts and utilising CALM.

Table 1

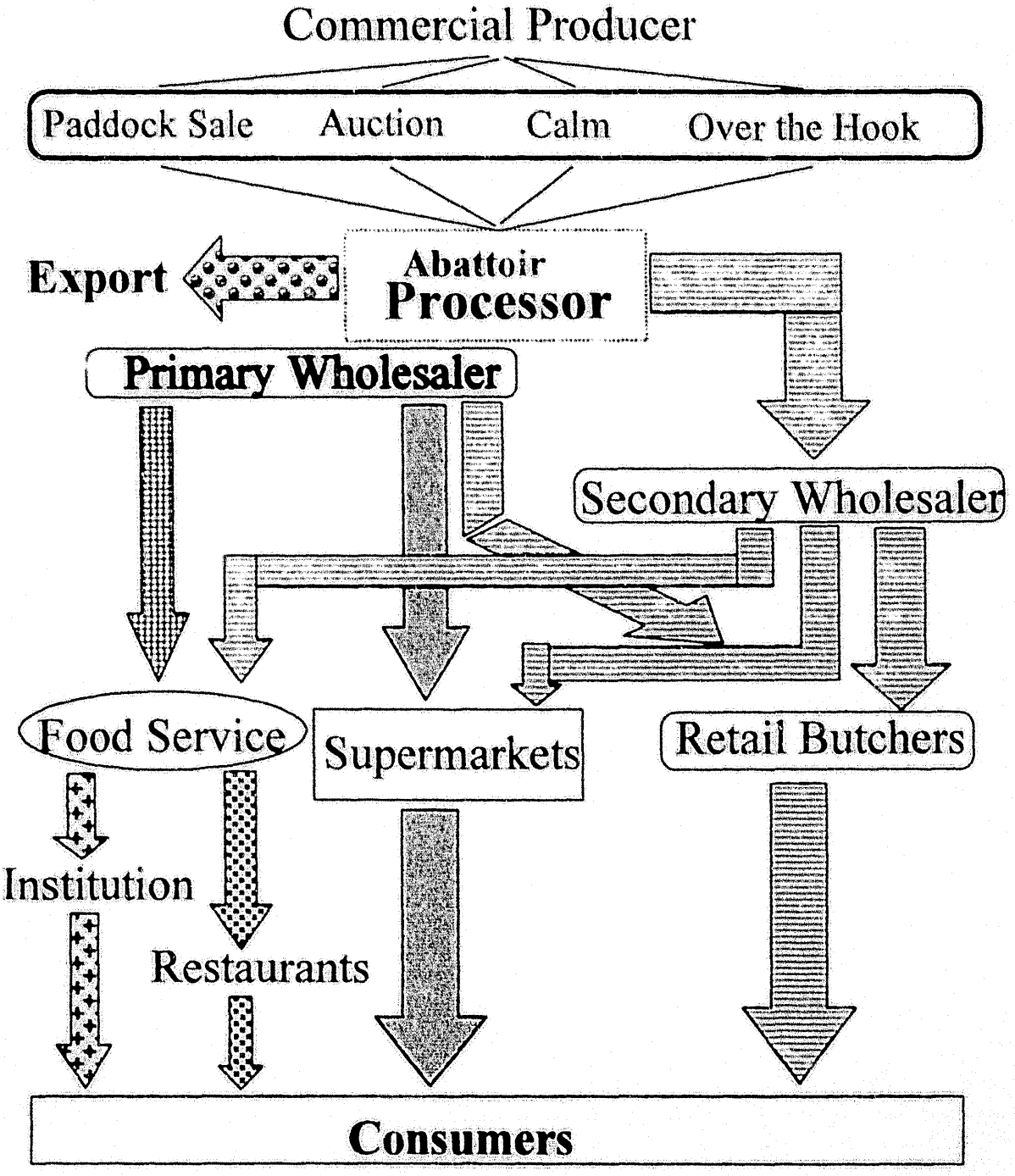
Market Destination for Australian Lamb

Market	**Per cent**
Retail	36.3
Supermarket	25.4
Food Service	6.9
Manufacturing	7.3
Export	24.1
Total	**100**

Source: AACM (1994)

In Figure 1 is shown the basic structure of the domestic lamb industry and the relationship between the various sectors. It is important to note that not all lamb which is sold to retailers is delivered direct from the abattoir by a processor acting as the wholesaler (Primary Wholesaler).

Figure 1.
Lamb Market Structure



Some lambs are sold from processors direct to wholesalers located close to the destination market who in turn sell lambs to retailers (Secondary Wholesalers) The major supermarkets purchase their lamb direct from producers or from primary wholesalers The food service industry currently uses a mixture of primary and secondary wholesalers

In Figure 2 are shown market specifications by carcase weight and GR measure GR is the tissue depth including fat and muscle over the twelfth rib 110 mm from the mid back line The GR score is used as an indicator of carcase fat depth which is differentiated by measures of five millimeters into five scores with one (0-5mm) being the leanest and five (21-25mm) the fattest Four sectors of the total lamb industry compete for lambs in the 20 to 22 kg weight range and three of the same four compete for lambs in the 18 to 22 kg weight range Participants competing for lambs within these specifications do so because of the carcase attributes of cut size, weight, fat depth and meat yield

Retail

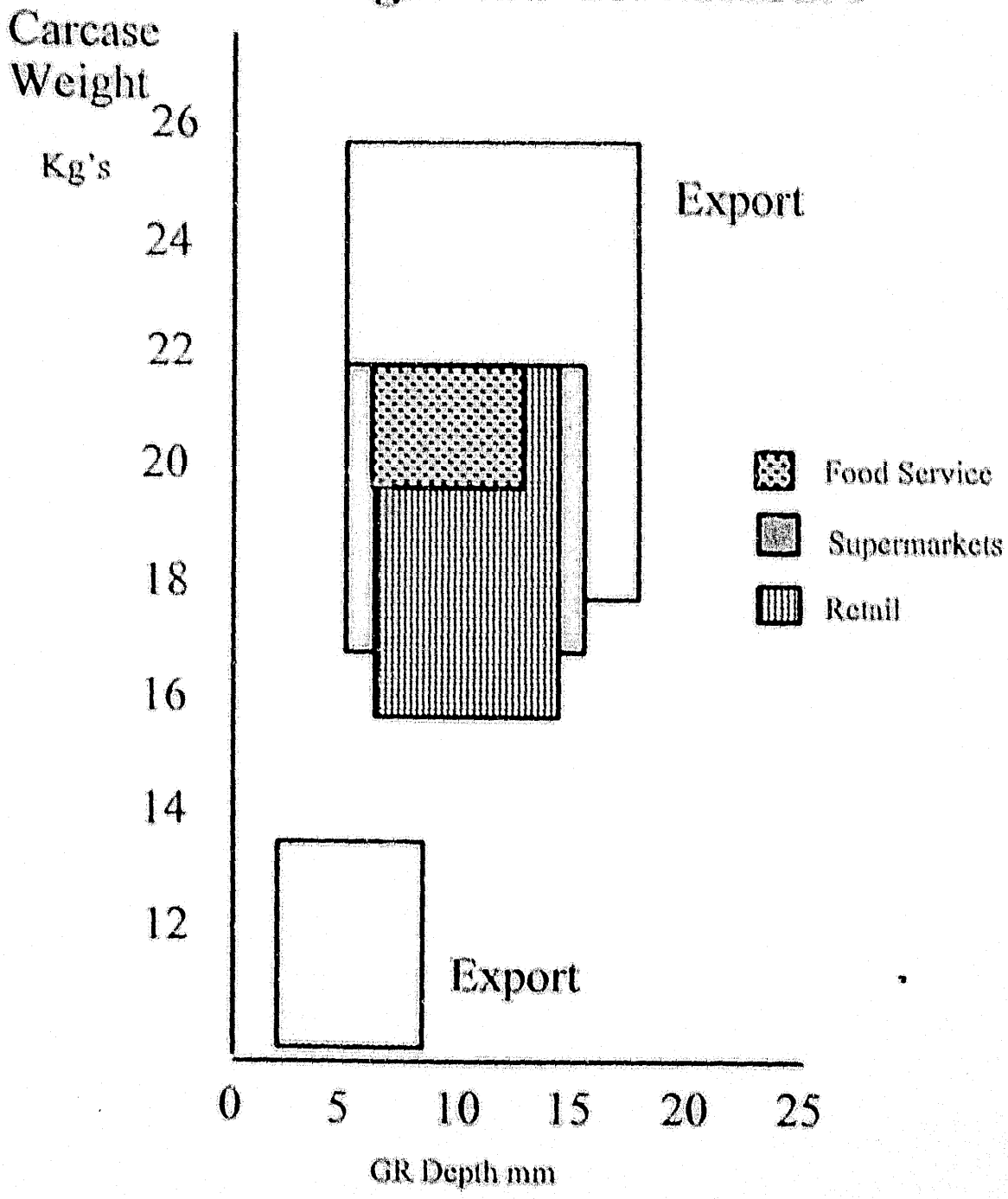
The retail butcher sector uses three types of lamb which include side, trade and heavy trade A brief outline of these market segments follows Light side lambs (14-17 kg's, GR 7-12 mm) are a declining market segment due to the high cost of processing, which is charged on a per head basis Some producers have developed a very select milk lamb (up to 3 months old) market, however this market is extremely small Competition in the side lamb market is generally limited to low priced club and hotel markets for club raffles

Trade lambs (17-20 kg's, GR 7-12 mm) are being used in small older style retail butcher shops. Retailers claim that this style of lamb provides them with a product which has small legs, i.e. less than $10 per leg retail price, and that the product is young and therefore tender The cost of processing these lambs is being subsidised by heavier lambs. This market uses first and second cross lambs as well as some Merino lambs in the discount stores although, the lamb preferred for this market is second cross with a light meat colour and good conformation. The light trade lamb market is declining

Heavy trade lambs (20-22 kg's GR 5-12 mm) are preferred by the better retailers due to higher carcase yields and more versatility in product range. However, this market is high value and retailers expect to receive lamb with very good meat colour, fat colour and conformation

Figure 2.

Market Specifications by Weight and GR Measure



consistently throughout the year This is a specialist market segment and is particularly suited to second cross producers

Supermarkets

Supermarket lambs (16-22 kg's GR 5-15 mm) are by far the most common weight and fat score of lamb The supermarket share of the domestic meat industry appears to be expanding. However, the total domestic market has declined due to the high number of small retail shops going out of business Hence, total supermarket consumption has most likely remained constant. Supermarkets use both first cross and second cross lambs

Food Service

The food service sector of the industry has a number of sub-sectors The preferred lamb type is lean and high yielding (20-22 kgs GR 7-14 mm) Weight variation is limited to a range of two kilograms as consistency of serve size is extremely important in the top end of this market. The average food service supplier accepts a range of up to four kilograms in weight as prices are lower and they are also prepared to spend their own time to trim to meet customer requirements. At the bottom end of this market are the club and hotel suppliers who purchase heavy lambs with more fat as they tend to sell whole legs and provide a product which is comparatively inexpensive. Many food service companies purchase broken lamb instead of a full carcase. Broken lamb includes legs, rumps, loins and racks Products such as forequarters, shanks and breast meat are sold to discount retail outlets for manufacturing into sausages etc. This market also utilizes both first and second cross lambs

Underlying all of these domestic market specifications are the nondescript specifications of bottom end retailers and smallgoods manufacturers who specialise in buying lamb which is not suitable for any of the above markets. These firms generally purchase lambs by price and buy from any supplier whenever the product is available and relatively cheap.

One market niche in the lamb industry at present is for "Trim Lamb". The desired attributes for Trim Lamb include small (150 to 250 grams per person) well muscled portions of fat trimmed, tender lamb. This niche is promoted as being different to traditional lamb which is perceived as being over fat, with only large portions of bone-in meat available. Consumers are very mindful

of the level of visible fat within lamb products and in most cases premiums are derived for fat free or low fat products. Mullen and Wohlgenant (1991) surveyed over 800 consumers and found that they were willing to discount lamb chops with higher levels of fat by a significant amount however, the consumers were not prepared to pay a premium for chops with a larger area of red meat.

The above attributes for "Trim Lamb" are derived from a limited range of carcases. The carcases must have low intramuscular and surface fat levels and produce high meat yields. One failing of the first Australian Meat and Livestock Corporation "Trim Lamb" campaign was inconsistent supply of the carcase product. Retailers claimed they could not source a sufficient number of suitable carcases to make Trim Lamb primals. Surveys by Hall *et al.* (1994) show that there were suitable numbers of lambs available for Trim Lamb however, wholesalers and retailers would not pay a premium to purchase these carcases. We speculate that there was no significant or perceived difference in the carcase product, which retailers purchased from their wholesale suppliers, from the normal lamb, relative to the Trim Lamb carcasses. Therefore, the butchers were unwilling to pay more for carcasses suitable for Trim Lamb processing as they could see no visible difference in product quality or supply source. This speculation causes us to believe that a niche product must be perceived to be so by both the supplier and the consumer of that product.

Cooperatives and Strategic Alliances

Cooperatives

Cooperatives exist in many forms within the Australian agricultural sector. They are present as purchasing, marketing, service provision, and merchandising agents in agricultural markets. Cooperatives occur in such diverse industries as cotton, dairying, horticulture, and fishing on the purchasing and marketing side, meat processing on the service side, and fertiliser and farm supplies at the merchandising end of the spectrum. The rationale for most cooperatives was to provide producers with some bargaining power when dealing with monopsonistic industry structures. Some cooperatives flourished due to favourable internal structures or market conditions, while others foundered due to poor management, the inability to maintain a large enough market to sustain the output of the cooperators, or the free rider problem. The free rider problem occurs when the cooperative establishes some type of marketing arrangement for the cooperators and non-cooperators then take advantage of this arrangement for their own benefit,

reducing the favourable conditions of the cooperative members (Campbell and Fisher 1991, LeVay 1983)

In most of the cases considered above, the cooperatives have some type of formal structure, such as boards of directors, formal profit sharing arrangements, and membership qualifications. The cooperatives examined in this study are less formal, with the principal aim of the cooperative being to achieve a price premium for achieving specifications, or a longer term market contract, for the members' product. Babcock (1935) believes, and rightly so, that compulsory membership to cooperatives will not necessarily mean the success of the cooperative. Compulsory membership imposes on the members and management an expense that is not necessarily covered by profits to the cooperative. LeVay (1983), in discussing the long term viability of an agricultural cooperative, implies that providing the cooperative yields benefits to members beyond those available to non-members the cooperative will succeed and there is no need for compulsory membership. The strength of these informal cooperatives to succeed in the competitive markets of an industry such as the lamb industry is "... the selfish interest of the farmers to improve their economic positions in the industry ..." (Babcock 1935, p153)

Strategic Alliances

Strategic alliances are not a new concept in the food market, but are relatively new in the primary production stage of the market (Sporleder 1992). Koenig and van Wijk (1991) define an alliance "as a cooperative agreement between independent firms designed to achieve mutually relevant outcomes ... with little or no mutual control". A strategic alliance in the context of this paper is a form of vertical coordination between at least two members of the lamb supply chain. The members of the alliance could be the primary producer and first stage processor, or the producer and a final retailer. The major difference in the type of vertical coordination in this study is that it occurs between relatively small participants in the market, and the product being supplied is usually of some particular specification and can be differentiated from others in the market.

The success of these strategic alliances depends on the structure of both the suppliers' and buyers' markets, and given the atomistic structure of most agricultural markets the potential for these marketing cooperatives to succeed could be limited. To maintain a price premium in the market for their product the cooperators need to have some type of barrier to entry, and the principal barrier to entry for farmers producing goods to specification is the capacity to produce to

specifications This barrier will be weak if other producers can easily emulate the cooperators and supply a comparable product In such circumstances the potential persistence of the alliance is threatened and the ability of cooperators to extract a long term price premium for their product is at risk

Success of an alliance is also dependent on the level of coordination of the goals of each participant Koenig and van Wijk (1991) suggest that a relatively flexible arrangement has the capacity to succeed even though the original aim of the alliance may not be achieved They also argue that the success and stability of the alliance is dependent on the development and maintenance of trust between all members of the alliance, and that the trust between members be as flexible as the alliance arrangement

The success of cooperatives and/or strategic alliances is inextricably linked to the goals of the individuals or firms within the structure If the goals of any party within the structure varies markedly from those of the structure then in most cases the cooperative or alliance is doomed to failure (Sargent 1982, LeVay 1983) Helmberger (1966), in a US context, sees vertical coordination as a means to provide farmer cooperatives with some power in the negotiation of market contracts, however, he concludes that cooperatives may be doomed to failure as the family farm becomes obsolete

Producer Marketing Groups

During the past two years, 20 lamb producer marketing cooperatives ranging in size from 5 to 29 participants have formed to supply niche lamb direct to lamb wholesalers, retailers and food service suppliers The majority of these groups differentiate their product according to breed type and ability to supply a lamb carcase which has been produced for a particular end market. Most of the smaller producer groups supply second cross lambs to secondary wholesalers, for periods from one to six months One end market may be serviced by up to four producer groups who have distinctly different production environments The supply from various producer groups is coordinated by livestock agents.

In northern NSW the "Guyra Lamb Marketing Group" supply 170 lambs per week to a Newcastle retail group of eight butchers during the period from January to June. A southern NSW producer group at Marrar supply lamb from July to December each year to take advantage of the surplus

winter feed and the resulting cost efficiencies in production These two groups are coordinated by independent agents, other groups are coordinated by network agencies, such as Wesfarmers Dalgety or Elders Pastoral

Producers who act cooperatively expect to receive higher financial rewards in return for supplying a differentiated product This in effect reduces the opportunity for further grading by industry participants further down the supply channel so the producer is in a position to capture the industry benefits and risks which are derived from grading Producers within such marketing groups stand to profit, by indirectly making other lamb producers (competitors) worse off. Producers in marketing groups aim to capture promotion benefits by advertising their product as superior to all other lamb available on the market

There is scope within the lamb industry for approximately five to a maximum of ten per cent of all lambs to be traded through producer marketing groups and alliances "A" grade retailers and the majority of the restaurant industry would be initial targets for producer groups Over time producers may also capture high value supermarket segments and some of the "B" grade retail markets as product branding became more prevalent within the industry Industry-wide marketing cartels would not be suited to the lamb industry as the proportion of low cost price competitive markets is high, furthermore the price elasticity of demand suggests that such cartels would not persist in the long term if either price or supply were fixed (Lubbe 1993)

Porter (1985) outlines four alternatives which suppliers can undertake to differentiate their product from the traditional product image The reconfiguration may involve areas such as the following:

a) a new distribution channel or selling approach,
b) forward integration to take over buyer function or eliminate the channels;
c) backward integration to control more determinants of product quality;
d) adoption of an entirely new process technology (pp158-163).

Option a has been achieved by directly linking the producer sector with the retail and food service sector. However, much of the distribution channel remains the same except that the participants may undertake a new function. Options b and c are being used by lamb marketing groups when they agree to form alliances. Lamb producers forward integrate to take over the grading and consistent supply functions from processors and wholesalers although these participants still have

essential tasks to perform Retailers and food service operators have used backward integration to ensure that they receive carcases with the desired characteristics to meet consumer requirements consistently by establishing product specifications and providing feedback information to producers A number of Australian processing companies have altered their supply and processing technology within the past ten years, option d, however, they remain less efficient than New Zealand lamb processing companies and supply alliances as well as other food industry establishments (Kearney 1994)

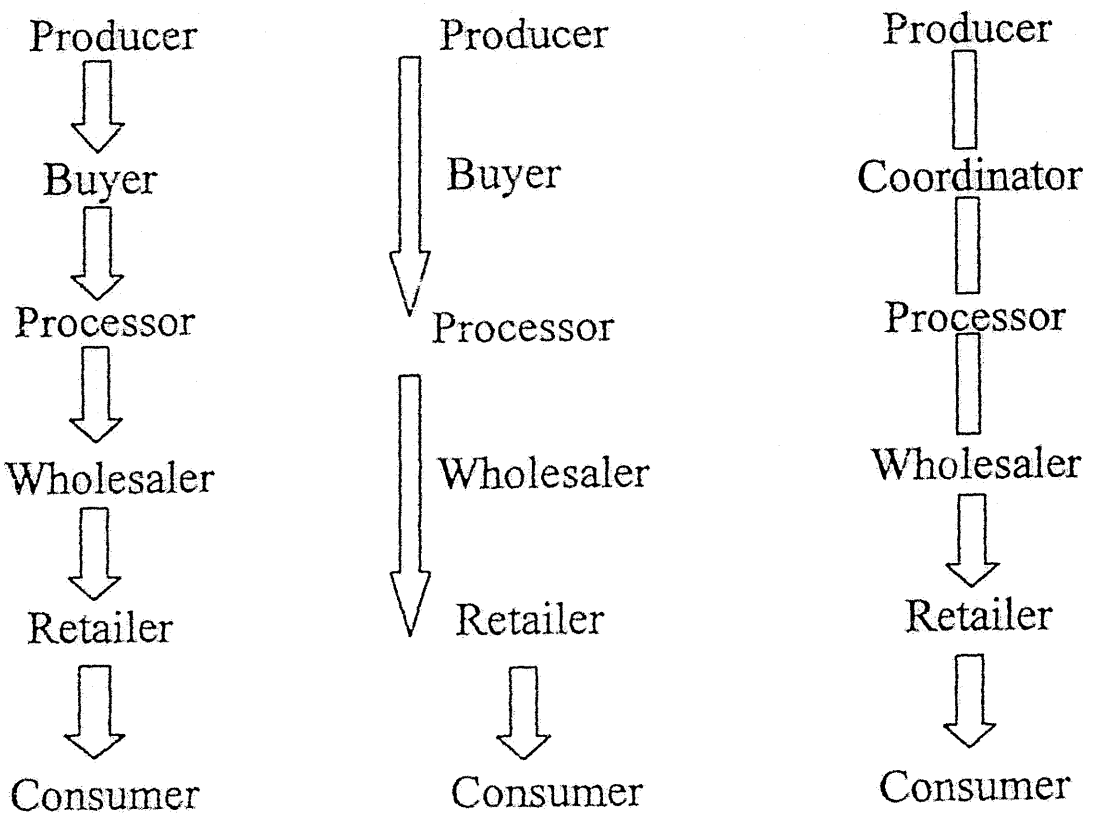
In Figure 3 is shown three separate supply channels for lamb Supply one, shows the current system under which most lambs are traded Ownership in the product changes up to four times before the product reaches the consumer Supply two, shows the supply channel where a processor buys lambs directly from producers and sells them direct to retail, by removing the services of the buyer and the wholesaler This method of trading has become more pronounced in recent years (Read and Malcolm 1994) The processor is sometimes seen as being an essential element within the supply channel Where producers have ready access to an abattoir which provides a service kill, the producer takes responsibility for marketing the product Supply three, shows the alliance trading system where all sectors participate in the supply system however ownership in the product changes at the retail store and all other services are contracted to the various participants

Product Grading and Branding

Freebairn (1967, 1973) suggests that by undertaking a grading scheme of some type the structure of the market will change, and that both buyers and sellers may be better off in a utility sense. He also concludes that the introduction of grading may help improve product development as firms attempt to find new characteristics to differentiate their products. Grading may also improve the flow of market information, hence improving market efficiency, however this will only occur if all participants in the market are aware of the grade specifications

Crosby (1995) also suggests that a grading scheme for Australian meat will improve the efficiency of production as producers who turn off poor quality animals will be penalised by large discounts at the market place, and that the price differential between ideal market animals and poor quality animals will increase as the grading system becomes more widely recognised. This increasing price differential will force producers of poor quality stock to either leave the industry or produce

Figure 3.
Supply Alternatives for Lamb Producers



the type of animals that achieve the higher market price, thus improving the productivity of the industry

By grading a product such as lamb into classes, i e by cut, fat score, or meat quality, it is assumed that these classes reflect consumer preferences for the attributes for the product (Griffith 1976) However, by increasing the degree of heterogeneity within a market for a commodity, the elasticity of substitution for each grade or class will tend to increase with the number of grades, as each grade becomes a closer substitute for the others as well as for other meat products, such as beef or pork Therefore, to make the grades less elastic in substitution, product branding could be undertaken so that the market desirability of the chosen grades is not diminished

Branding is a method of differentiating a product at the market place In the meat industry branding takes place at the abattoir and later at the point of sale or packaging, and many consumers of beef and lamb prefer to purchase branded meat as they believe that the brand implies a product of quality and boosts customer satisfaction (AMLC 1995) Branding is also seen as a method of assuring quality throughout the processing chain, and this assurance can be enhanced through the sourcing of the product from producers willing to participate in some type of quality assurance program within a strategic alliance or cooperative (AMLC 1995)

Cooperatives and/or strategic alliances may also have an indirect impact on total market efficiency through the establishment and application of a particular grading scheme Due to the atomistic nature of most markets and the heterogeneity of most agricultural products, a producer who does not participate in a cooperative but uses the cooperative's grading scheme to achieve higher returns, i e the free rider effect, can assist in achieving higher market efficiency due to more information being made available to consumers Alternatively, cooperatives may assist in increasing awareness of grades and the profitability of producers by a step type effect The cooperative first establishes particular specifications for its product, then to gain a boost in income other producers adopt these specifications, then to maintain price premiums the cooperative determines new specifications for its product, thus dragging non-cooperators along and improving the product's overall quality

Product Description

The Lamb Identification and Description System (LIDS) was developed to provide the lamb industry with an **objective** method of measuring and describing carcase weight and fat depth. Carcase weight and fat depth are the two most important predictors of carcase yield (Hopkins *et al.* 1995). LIDS is not the first attempt by industry to introduce a basic description system to trade lamb. New Zealand, South Africa and the UK have all operated lamb or sheep grading schemes which rely on weight and fatscore specifications. A carcase grading and description method was trialled in Australia by the CSIRO during the early sixties however, the system proposed by Brownlee and Moxham (1976) failed due a lack of industry support.

LIDS can be described as the basis of a partial description system as there are other carcase characteristics which are also deemed important by purchasers such as carcase conformation, meat colour, fat colour, age and product freshness. These characteristics are currently assessed **subjectively** by skilled assessors. The combination of the objective and the subjective information determines the carcase grade as used by sales people. The components of each grade vary depending upon the individual and the grades are not standard across the industry.

Whilst, there are no formal grades of lamb in Australia, there are well established informal grades of lamb which are used by industry participants. A survey of "methods of ordering" by retail butchers in Tasmania showed that 25.5 per cent use visual means, 29.8 per cent use weight only, 31.9 per cent use weight and fat and 12.8 per cent have no choice because the company has a central buyer (Jackson 1992 p8). The price variation for different grades of lamb can be as much as 33 per cent for lambs of similar weight and fat specification, therefore the subjective component of the product grade remains important.

The methods employed to grade carcases between wholesalers and retailers differ according to carcase weight and other factors such as the sex of the carcase. Hopkins *et al.* (1996) show that wholesalers place more emphasis on meat colour and conformation of the loin section of a ewe carcase but, they consider that fat distribution is a more significant descriptor of the value of cryptorchid carcases. Retailers placed much more emphasis on carcase conformation and meat colour than wholesalers as they are more aware of the meat characteristics which a consumer looks for when purchasing fresh meat with bones left in.

Retailers and wholesalers also differed greatly in their valuation of carcase weight and associated characteristics Conformation was shown to be the most important attribute However, conformation is poorly correlated with carcase yield This explains why fast-growing, well-conformed carcasses from second cross lambs command a premium from retailers over slower growing first cross and Merino lambs Although, first cross and well muscled Merino lambs are suited to export and the food service market segments as these sectors consider high meat yield characteristics more profitable than conformation or appearance

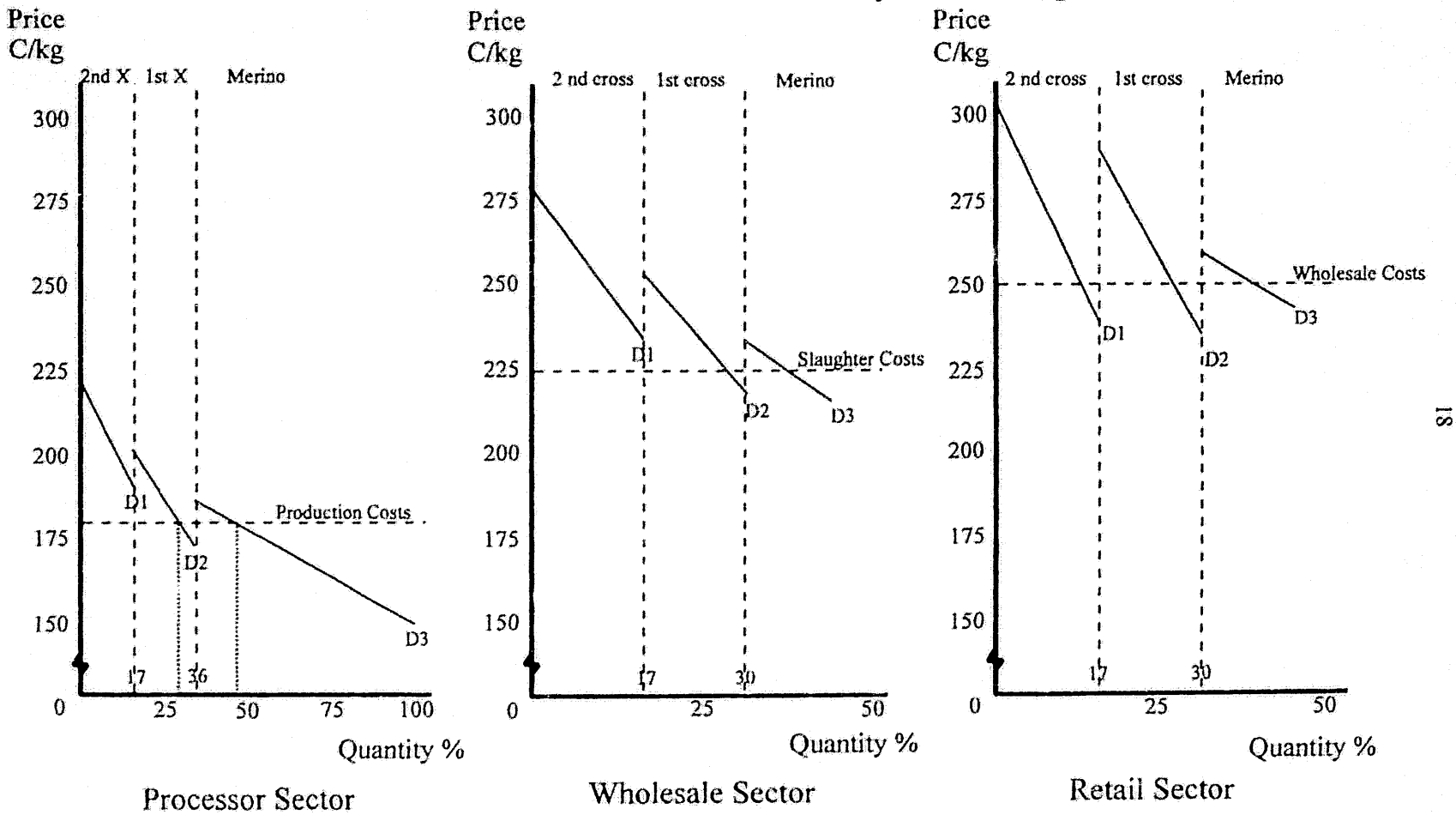
Lambs may be graded on-farm by the producer, by the agent in the abattoir, at the wholesalers or at the food service supplier The product may also be graded by the retailer before being sold to consumers The objective of using producer marketing groups is to derive an accurate specification for a product and have that product produced and delivered to meet the end market requirements The costs and benefits of grading increase for highly competitive markets such as the 18 to 22 kg weight range In these markets other factors such as consistency of supply, cost averaging and guaranteed eating quality are essential components of the product In other markets such as bulk butcher shops, the willingness to pay for such attributes is not the same

Returns from product grading increase the further a carcase moves down the supply channel as sellers can more accurately fulfil buyers' specifications In Figure 4 is shown the progression of demand for various breeds of lambs as they travel through the traditional supply channel (see Figure 3, supply 1) The demand curves become more inelastic towards the retail end of the market as there are more opportunities to grade lambs and to provide just in time delivery both of which cause prices to increase The grading process also causes some lambs to be down graded and sold below cost to other industry participants This is a typical cost cutting function when the fresh product begins to age (or become stale) beyond 2 to 3 days

Benefits and Costs to Producers of Participation in Alliances and/or Cooperatives

The price benefit from grading by producers will increase further if the product attributes such as leanness and tenderness are promoted and thus causes demand to become less elastic above the current price (Quilley 1986) These benefits will only be realisable if the producers can prevent other producers, processors and wholesalers not involved in the grading scheme from entering the market with an identical, or similar product

Figure 4.
Estimated Demand for Lambs by Breed Type



Percentage of Total Lambs Available for Slaughter

Producers who participate in lamb marketing cooperatives gain additional benefits which surpass those of individual producers. The large number of small scale lamb producers (family farms) operating in the lamb industry supports collective marketing activities. This is also true for meat retailers as they are all small shops competing against large supermarkets. Producers working in a cooperative manner may increase their returns by reducing the search costs of processors, wholesalers and retailers. Producers also benefit by being able to collectively market lamb skins and by-products such as offal. More advanced cooperatives may also act as a collective purchasing group to buy farm inputs and associated products.

Retailers derive similar advantages to producers as they can gain economies of scale in purchasing lamb, beef, chicken and pork as well as dry products for small goods manufacturing. The Meat and Allied Trades Federation of Australia (MATFA) has recently embarked on a campaign to form a nation-wide franchise for meat retailers. The trial program for the franchise (Mrs Beetson's) is operating in Newcastle, NSW, in addition to a local franchise, the "Tenderlean" group of retailers. Both groups appear to be successful as they are competing in different market segments. Franchising is not new to the meat industry, there are at least two other successful franchises operating with boutique butcher shops, the "Q"Guild in the United Kingdom and the Kerschlarger in Holland (Q-Guild 1991).

Market Segments

A number of researchers have examined the demand for lamb at both the farm and retail levels (see for example Murray 1984, Martin and Porter 1985, Alston and Chalfant 1987). The majority of these studies estimated own price elasticities of demand for lamb to be greater than -1.0 in the normal price range (Mullen 1995). This infers that the demand for lamb is relatively elastic when compared to other meats, therefore any increase in price should lead to a decrease in total revenue to the industry over the normal price range. Almost all of the previous studies have examined lamb as a single commodity product rather than as graded product. We speculate that there are at least three separate demand curves for lamb and in particular we suggest that the demand for lamb in the food service and high value retail shops is relatively inelastic given the final product market. Further, we believe that with the increased use of forward contracts within the institution trade (Motels, Hotels, Hospitals, Gaols, Schools etc.) the demand for lambs within these sectors will tend to be inelastic. Also, the growth in the supermarket share of the market, the decline in the number of older style retail shops during the past five years, and the expansion of the export

sector of the industry has led to an increase in price due to the lower volumes of lamb available on the domestic market. Hence, retailers are competing with a number of other market segments to secure "quality" lamb so their propensity to push prices down should also decline as lamb quality increases.

In Figure 5 is shown the supply and demand schedules for three different lamb market segments. Dt represents the total demand curve for the lamb industry and is shown to be relatively elastic. Dh and Sh are the demand and supply of high value lamb in food service and boutique retail shops. The elasticity of demand and supply in the high value market is assumed to be relatively inelastic as product quality, consistency of supply and brand loyalty are the principal components of the price.

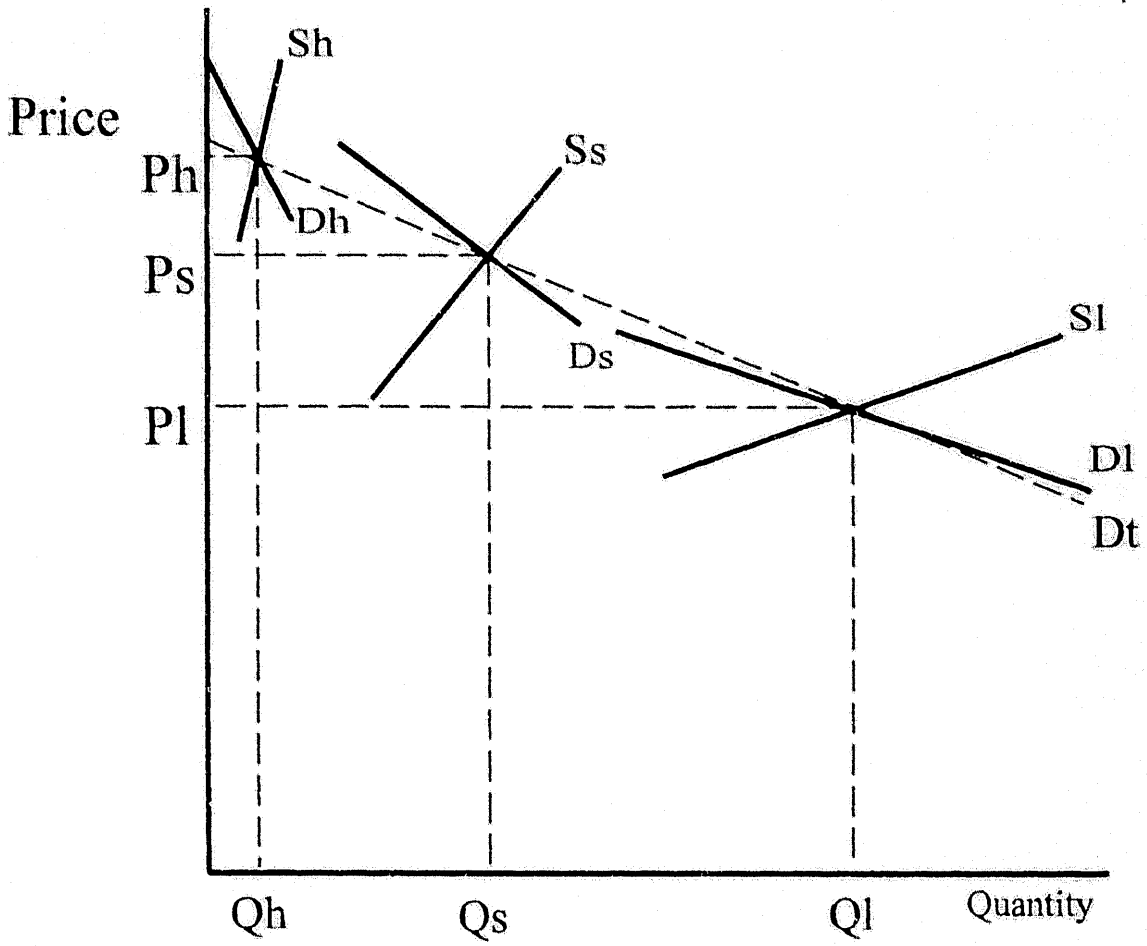
Ds and Ss are the demand and supply of lambs for supermarkets and medium quality retail stores. The elasticity of demand and supply in this market segment is shown to be near to unitary, as there are some basic levels of product consistency and quality available, however the market participants are also price competitive as there are many lamb substitutes available in these markets.

Dl and Sl are the demand and supply of low value lamb to lower quality retail shops and manufacturers of small goods. Demand and supply in these markets are shown to be very elastic as price is the overriding component of demand and supply (Hopkins 1995). The price and quantity of other protein substitutes also plays a vital role in price determination within this market segment.

Barriers to Entry

Supernormal profits can be sustained in the long run if there are barriers to other suppliers entering the niche market, thereby decreasing returns, increasing the consumer surplus and decreasing the producer surplus. Barriers such as producer education of niche market requirements, production environment, genetics of ewes and rams, quality control from farm to plate, new grading technology and product promotion will maintain opportunities for producers acting cooperatively. The alliances that producers form with processors, wholesalers and retailers also act as a barrier by the control that this system has over product quality and service.

Figure 5.
Market Segments for Lamb



Within an alliance the lambs are managed to suit a particular end market. The management skills which producers require to supply an alliance are usually above those of traditional producers. The producers in an alliance must have a sound understanding of all the operations and functions of other participants in the alliance. They must use improved genetic stock, they must be able to control the nutrition of the animal, they must know how to estimate dressing percentages, and understand factors which affect meat quality. The alliance requires the services of a stock coordinator and assessor to make sure the lambs will satisfy the end market specifications. Meeting specifications also means that the assessor must receive feedback and monitor progress regularly. Hence, the average producer who does not specialise in lamb production and operates a number of enterprises will not have the time or the price incentive to manage lamb production so closely.

The breed of the lamb will act as a barrier as each breed type has different characteristics, with breeds other than second cross lambs at a disadvantage in terms of conformation and growth rates. However, these same lambs have the advantage of being leaner at heavier weights. Lambs which are supplied through an alliance must be delivered according to a planned schedule, even if it costs the producer additional money to supplementary feed the lambs and/or the ewes. Hence, the cost of supplementary feeding in times of poor feed supply or drought may also act as a barrier to entry.

Contracts for supply between the different members of an alliance will act as a deterrent to producers who swing in and out of the lamb industry depending upon the market rate of wool and first cross ewes. Many of these speculators will not commit themselves to one market. Reynolds and Gardiner (1980) found that "Higher lamb prices lead to a slight increase in lamb carcase weights as producers hold lambs to heavier weights" (p205) and "It is obvious that there are far greater restrictions to building up flocks in times of high price than to running down flocks in periods of low prices"(p209). Hence, supply contracts restrict speculators from flooding markets by taking advantage of favourable seasons and the resulting decrease in production costs.

Quality control from farm to retail shop will add a further barrier to entry as lambs which are supplied outside of the alliance cannot be guaranteed to meet stringent meat quality parameters. Some alliances regularly taste test products for tenderness, fat percentage, cooking loss, pH and flavour. In fact, the more end users such as retailers, chefs and consumers know about product quality the greater is the barrier to other lamb from entering the niche market. Retailers and

wholesalers may encourage governments to enforce food safety regulations more strictly which would add an unbearable cost to some low priced competitors who may wish to enter high quality markets The United States Government is currently using th's tactic against Australian beef exporters

New technology such as Video Image Analysis (VIA) and the Tendertec probe may assist suppliers of high quality lamb to differentiate their product from other lamb VIA enables processors to grade lambs against a database of objective characteristics such as carcase proportions, meat colour, fat colour and estimated carcase yield The VIA system should then award the carcase with a predetermined objective grade Tendertec is a system of measuring product toughness or tenderness However, both systems are still in their development phase and are not commericially available to processors

Tendertec and VIA may also work against suppliers of high quality product if the system fails to detect a significant "quality" indicator in perceived high quality lamb The additional value of the quality indicator must be greater than the cost of differentiating the product This benefit must also be of value to retailers and wholesalers and not easily detectable in a live lamb for a processor to benefit from this outcome If the quality indicator is easily detectable within live lambs then producers will be in the best position to capture the benefits from adopting the VIA and Tendertec grading systems providing that wholesalers and retailers are willing to pay for the product difference. These grading systems may also make producers acting cooperatively better off at the expense of all other lamb producers Grading technology may limit the number of advantages which producer groups have over other industry participants in the long run

Members of an alliance may be able to raise additional promotion funding to market a brand image for their products and gain most of the benefit at the expense of other lamb suppliers as there would be too many free riders in the normal sector to target specific markets. Branding and product promotion through the media or in store at the restaurant or retail outlet will also add a further cost dimension to the product which may again exclude suppliers of normal lamb. In some alliances the retailer may choose to brand the individual cuts derived from lambs supplied through the alliance and not brand normal lamb when the retailer has a very diversified range of high and low income clients. Yabsley and Wright (1994) found that placing a label on apples added value for the consumer, and generated additional revenue, well in excess of the cost of labelling. With the advent of display ready packaging many lamb cuts sold through alliances will be branded and

display cooking hints, health status, use by dates and bar coded with prices etc. to provide the consumer with more product "quality" information to differentiate it from other lamb.

The above barriers to entry are sustainable in the short run until new barriers are developed or other producers utilise better production or grading technology. Large vertically integrated firms may capture more benefits than producer groups and their aligned industry partners. This has been the case with Japanese beef markets where small opportunistic suppliers are forced out of the market due to inferior product quality and price. The vertical integration or coordination process ensures that all sectors of the supply channel are quality focused and costs in one sector can be off set to ensure that the wholesale price is competitive with other suppliers. There are already a number of vertical integrated companies who supply lambs from processor to retail however, none of these companies have established feedlot finishing systems or backgrounding systems such as those which are presently operating within the export beef industry.

Industry Benefits

The measurement of benefits accuring to industry from participating within an alliance are not simple to measure as there are few objective attributes of lamb which can be measured and then priced. The present system of grading and product description does not provide a direct comparison of lamb carcase grades. Measurement of benefits and costs also becomes increasingly difficult when examining the dynamics of a market which segregates banded products from generic products (Quilkey 1986). However, once a number of carcase attributes are priced then marketing margins or utility analysis may prove useful to measure the extent of benefits and costs. The further valuation of risks within each of the sectors is also dependent upon some form of objective grading system being implemented.

The Guyra Lamb Marketing Group have been able to derive a ten to twenty cents per kilogram premium for lambs supplied through an alliance compared to lambs sold through local saleyards. This assessment of lambs for comparison was subjectively based on live weight and estimated fatscore. At the retail end of the market the Tenderlean group purchased the same lambs at a discount of ten to twenty cents per kilogram compared to other wholesale prices, reflecting a marketing margin in the region of twenty to forty cents per kilogram from producer to retailer against the alternative supply channel. Other lamb producers have stated they will require premiums of ten to thirty cents per kilogram carcase weight before they become involved in

alliance marketing to account for the additional work of planning supply and increased management requirements

In the final analysis we have been unable to quantify the many benefits and costs which arise from alliance trading. We argue that producers benefit through decreased price and income risk, as do all participants in an alliance. Processors benefits from consistent throughput at a fixed cost which reduces their search costs and quality risks. Wholesalers derive similar benefits to processors. Retailers also benefit from reduced price and quality risk however, they also have a supply system which can be differentiated from all other supply sources

We have shown that alliances and producer cooperatives can assist producers to increase returns for their lamb products. However, producers require technical support in product development and marketing, and assistance in identifying market opportunities for their products. Producers and agents may require additional human management skills and resources to successfully operate within an alliance. The Meat Research Corporation have sponsored a number of producer groups to attend a working in groups (WIGs) course however, many groups will also require additional pasture management and meat technology training

The lamb industry has now developed a formal strategic plan to increase communication between the various sectors of the lamb industry and to make specifications and trading more transparent. Advisory institutions to the lamb industry, such as MATFA, AMLC, MRC, Meat Industry Authorities and State Departments of Agriculture, are finally working toward a mutual target to increase the value of the lamb industry through the development of alliances. These developments will assist producer marketing groups and strategic alliances to form stronger bonds in the short term. However, the strength of alliances are their ability to promote a graded and branded, consistent lamb product to the retail and food service sectors of industry.

Conclusion

In this study we have examined the concepts of marketing cooperatives and strategic alliances in relation to the NSW lamb industry. We argued that cooperative marketing can assist lamb producers in marketing niche products. The inter-sectoral components of demand were examined from which we conclude that the general elastic nature of demand does not apply to all sectors of the industry. An industry-wide grading scheme would benefit producers who act cooperatively

at the expense of other more opportunistic lamb producers only if certain desired product characteristics were detectable in live lambs

Producers of lamb stand to benefit from cooperative supply coordination and marketing where they can effectively exclude other market participants from supplying similar products. We suggest that there are at least three differentiated markets for lamb rather than one and that the price elasticity of demand in the domestic food service, restaurant and boutique retail butcher markets is more inelastic than the other two high volume market segments. The supply alliance method of marketing is shown to provide benefits to all participants in an alliance from producer to consumers whereas, in the traditional system there are always winners and losers when prices and quality is averaged

There are significant barriers to entry from other suppliers entering the high quality market. Factors such as producer awareness of market specifications, farm management practices, quality control and food safety issues, new grading technology and the ability to promote the end product will all contribute to the short term success of producer marketing groups Over time some of these advantages may be eroded as other producers or large vertically integrated companies move to compete within the high value segment of the industry

In the short term we expect producer marketing groups to sustain above normal profits by marketing within an alliance supply network

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