

3. Analysis of the determinants of prices and costs in product value chains

DAIRY PRODUCTS

Analysis of the determinants of prices and costs in product value chains

Overview of the dairy industry

The dairy industry is a major agribusiness sector which has historically been largely production and supply driven:

- the majority of milk production enterprises supply dairy manufacturing or processing cooperatives which have developed into large enterprises aimed at achieving the best overall returns from supplied milk;
- major volumes of milk are converted into storable dairy products which are sold into available international markets; and
- national milk production is highly seasonal to take advantage of low-cost production conditions (such as spring pasture growth).

With the strong forces of globalisation, the industry value chain has in the past decade been highly exposed to demand factors and forces in export and domestic market segments. These have had a profound effect on the returns to the overall industry and the nature of competition through the chain. The most marked of these changes has been in the domestic consumer product sector.

Since the early 1980s the industry progressively removed internal support and regulation of prices and supply, and focused on taking advantage of low-cost production conditions to become a major player in the world market for dairy commodities and dispose of larger volumes of product.

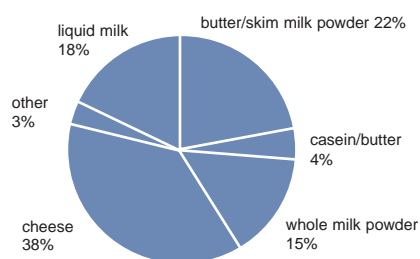
The final phase of that deregulation – of pricing and supply of milk to the packaged milk sector which directly affected less than a fifth of national milk output – is a relatively recent event. Considerable adjustment is still occurring in parts of the production and processing sector today.

The industry's product and market mix

The chart below shows the overall use of milk in the total industry, including all markets. The diagram uses 2002 numbers in terms of milk volume, considered normal prior to the sharp fall in production in 2003 as a result of the drought. In this diagram, 'liquid milk' includes packaged product that encompasses fresh and UHT (long-life) milk, and 'other' includes fresh dairy products such as yoghurts and desserts.

The influence of the world market extends well beyond simply setting returns for export products – it sets the overall return on a significant portion of manufactured dairy products such as cheese, ingredients and butter in the domestic market. This is due to the proximity of New Zealand which is the major exporter onto the world tradable products market.

Figure 5. MILK UTILISATION, 2001–02



Source: Dairy Australia 2003

DAIRY – PACKAGED MILK

Overview of the product

The packaged milk market consumes about 17 per cent of total milk output according to 2003 numbers.

Packaged milk is a traditional product category on which much of the industry production technology and culture was originally based – a commitment to service the fresh milk needs of the community. Significant changes have been seen through the chain as a result of technologies which have improved milk qualities, logistics systems capabilities and shelf life, as well as changes in consumer preferences towards greater convenience and health consciousness.

The history

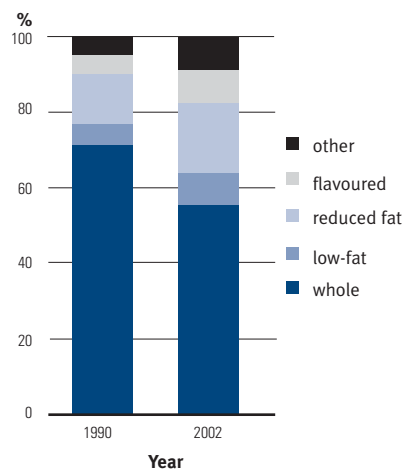
The industry has a background history of regulated prices through the chain at points which included factory gate, wholesale and back of store, and retail. The last piece of pricing regulation was removed on 1 July 2000 with the removal of farmgate regulated prices for milk used in packaged milk products.

The product–market mix

About 55 per cent of packaged milk sales in the domestic market are made through major supermarket chains.

The product mix has changed significantly over the past 10 years towards products with lower fat content, although white whole milk dominates volumes.

Figure 6. MILK PRODUCT MIX



Source of data on this and next page: Dairy Australia 2003

Drivers of pricing

A number of factors have significantly altered pricing in the packaged milk value chain in recent years:

- deregulation of pricing and supply laws that existed at state level, which included farmgate, wholesale and retail prices;
- major retailers moved to national supply contracts in packaged milk;
- the existence of excess capacity in milk packaging operations in the three major processors, coupled with increased awareness by retailers of the costs of milk production and processing;
- the use of private label products at a discount from proprietary branded products underpinned a gain in market share by chain retailers;

- growth in consumer adoption of larger pack sizes with 3 litre containers now almost as popular as 2 litre in supermarkets; and
- increasing competition from health beverages including waters, juices and other functional drinks.

Figure 7. **GROWTH IN LARGE PACK SIZES, LITRES SOLD PER QUARTER, AVERAGE**

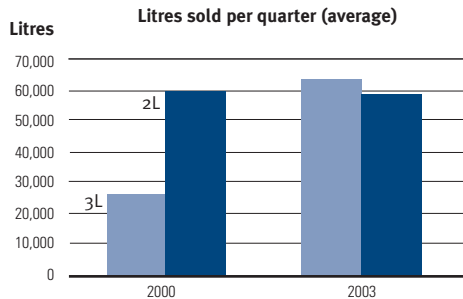


Figure 8. **GROWTH IN PRIVATE LABEL MILK, 2 LITRE, LITRES SOLD PER WEEK**

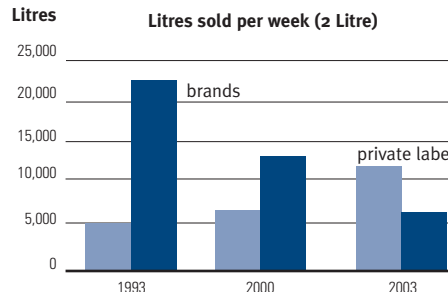


Figure 9. **PACKAGED MILK: MAJOR DRIVERS OF PRICES AND COSTS**

Packaged milk is a high-profile case study in the evolution of supply chain pricing in fresh food products. The analysis however must take account of the dynamics of the packaged products in the context of the wider industry.

1. Farm production factors

- Production volumes are relatively stable year to year.
- National production is strongly seasonal in low-cost production regions where milk is mostly used to manufacture commodity products.
- Milk used in packaged milk must meet a consistent daily supply requirement, incurring higher supplementary feeding costs.
- Highly perishable raw product requires prompt processing or conversion to storable form.

2. Value-chain integration

- Integration of activities along the chain to the extent that cooperatives are engaged in milk processing.
- Increasing scale efficiency of milk plants has occurred in past five years.
- Greater concentration of ownership of processing capacity.
- Removal of regulation has created a commercial market at the farmgate level, increasing the variety of sources of milk to processors.

3. The marketing approach

- Increasing differentiation of milk products into functional and convenience beverages to resist strong competition from other beverages.
- Increasing investment by major processors in distribution channels to convenience retail markets to retain a substantive volume of higher margin business.

4. Regulation and compliance

- Increasing costs of compliance with environmental, welfare and food safety requirements for milk producers and processors.
- Competition constraints on further consolidation of processing sector.

5. Trade impacts

- Growing share of total industry production committed to export market reduces the long-term average return for raw whole milk.
- Limited exposure to potential import competition from extended and long-life milk products which do not have strong consumer support.
- Overall returns to farmgate strongly influenced by world commodity returns for bulk products, which in turn influence the margin paid for milk designated for packaged milk usage.

6. Technology and innovation

- Increasing capital intensity of the farming sector. Changing cost structures in the processing sector.
- The transparent farmgate prices and costs enable a greater understanding by processors and marketers of the scope for different sourcing options.
- Significant investment in applied technology and innovation in milk production.

7. Retail market dynamics

- Increasing share of the total milk category for chain retailers.
- Development of a national milk buying market by chain retailers.
- Rapid growth in the share of supermarket sales of the private label milk lines, priced significantly lower than branded lines.
- Strong price-based competition between chain retail and convenience channels for packaged milk sales.
- Strong competition from an increasing range of health-based drinks.

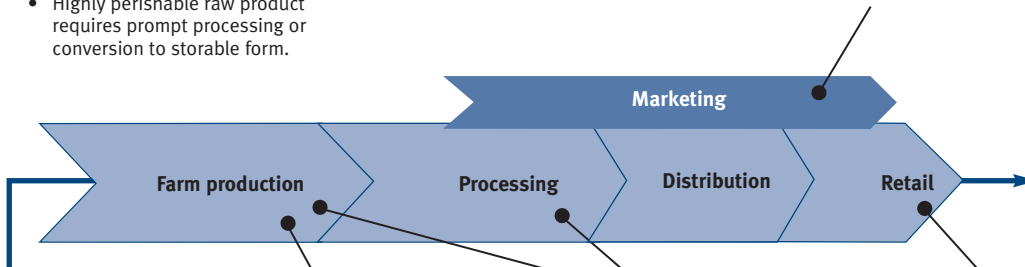
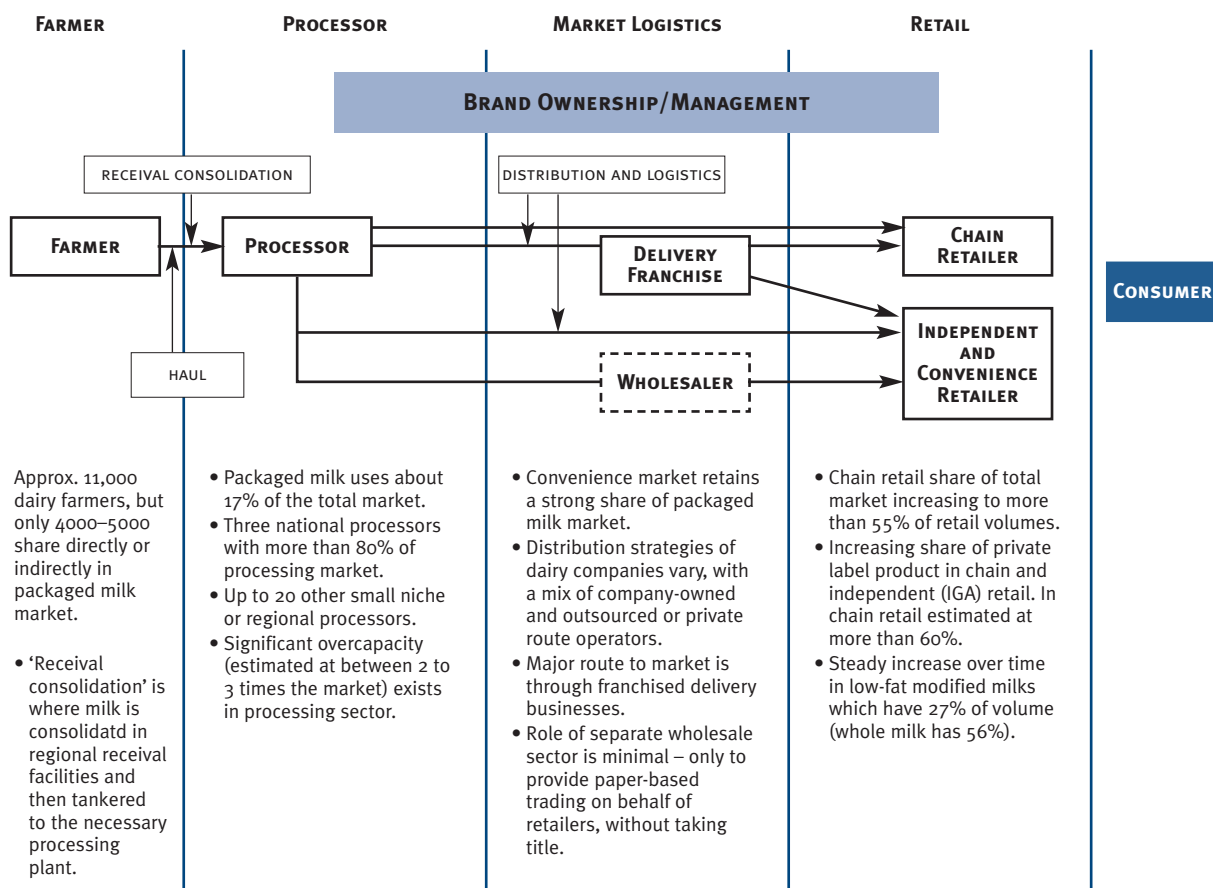


Figure 10. **WHOLE MILK, 2 LITRE, SUPPLY CHAIN MAP**



DAIRY – ANALYSIS OF PACKAGED MILK PRICING

Retail prices for milk

Historic regulated milk prices at retail were set on a cost-plus basis. Costs built up through the chain to provide each sector with a deemed appropriate margin which was justified on a cost-recovery basis.

Since the removal of price regulation, retail prices have broadly fluctuated around those historic levels with gradual increases over time. However, strong price competition remains between retailers, between major chain retail and independent stores and across the beverage category.

Retail versus farmgate pricing analysis

The dairy industry has emerged from a recent history where regulation supported a practice of setting different prices for ‘manufacturing’ (for milk used in manufactured dairy products) and ‘market milk’ (for milk used in packaged liquid milk products) at the farmgate level.

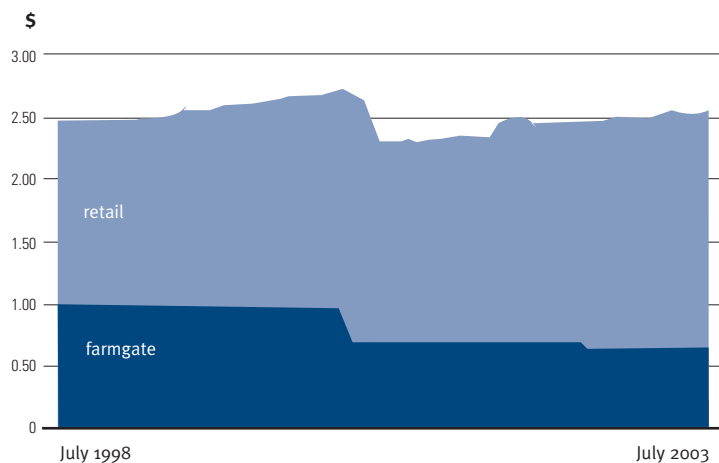
The major adjustment for the industry was moving from a production-push pricing culture into an environment where the returns of the processor and producer were very directly exposed to the consumer market realities of the fresh dairy category.

An analysis of the history of farmgate versus retail supermarket pricing over the past six years is contained in the chart below which illustrates pricing for a 2 litre whole milk product.

The farmgate price in the chart below is a farmgate price calculated as the average paid by packaged milk processors.

As expected, with the loss of regulated arrangements, there was a sharp fall in the farmgate price. Since that time, farmgate prices have fallen (commensurate with a fall in world market prices for dairy products) and average retail prices have risen.

Figure 11. **RETAIL VERSUS FARMGATE PACKAGED MILK, \$/2 LITRE EQUIVALENT IN NOMINAL AMOUNTS**



Source: Dairy Australia and Whitehall Associates

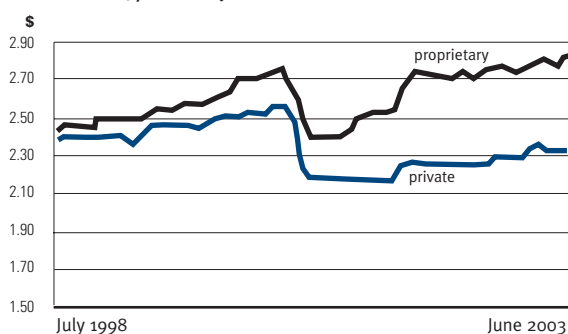
The gap between farmgate and retail has widened now that world market returns effectively set the benchmark for prices for packaged milk processing.

Retail prices

The returns from the packaged milk sector have been strongly influenced and driven by the strength of private label growth. The growth has been achieved through aggressive price competition which has seen a widening of the gap between the proprietary and private brand prices in supermarkets. A 2 litre milk product is one which is sold at a little or no margin overall to the processor. It is a volume product that enables the disposal of milk volumes, providing a distribution platform for the sale of profitable low-fat, specialty and flavoured milk products into various channels.

With lower margins available from the supermarket sector, processors have made varied responses to the growth in the private label as they have each sought to maintain brand equity in all channels to the consumer.

Figure 12. **SUPERMARKET SEGMENT RETAIL PRICES, MILK, \$/2 LITRE, 1998–2003**



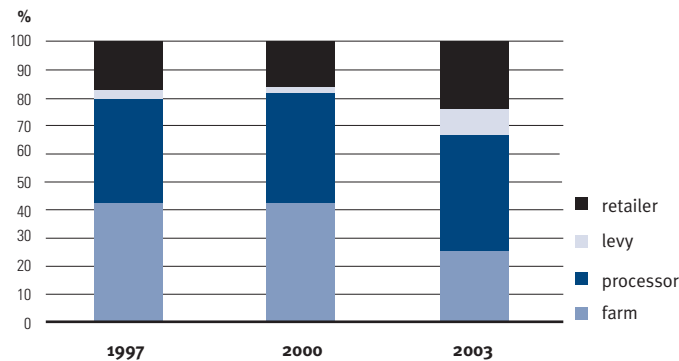
Source: Dairy Australia

Retail prices in the non-supermarket sector are generally higher than those in major retail. However there are frequent instances of discounting of 2 and 3 litre lines by independent stores in order to attract custom. Packaged milk products are now used in many segments of non-supermarket retail as a loss leader to attract customers to make other store purchases.

Prices through the chain

Our analysis of the history in farmgate and retail supermarket pricing over the past six years is set out below, illustrating pricing through the chain for a 2 litre whole milk product. The major trigger for change of the share of margins was the pricing of national contracts for the packaging of private labels. In view of surplus capacity, processors bid for the rights to supply those contracts at low prices in order to optimise plant throughput. This has resulted in a cut in wholesale prices for the private label by more than 25c a litre from pre-existing regulated prices.

Figure 13. **SUPERMARKET SALES, PACKAGED MILK, 2 LITRE, % OF RETAIL SALES VALUE**



Source: Dairy Australia

The above analysis is an assessment of an industry-wide average. Differences exist in farmgate prices depending on the supply region and, at wholesale level, depending on the business mix. Processor costs include meeting costs of cartage, processing and distribution. Marketing costs have tended to increase as processors attempt to put greater efforts into support of brands through the route trade. In recent years certain companies have achieved significant improvements in processing costs through investment and business rationalisation. Since the major shift in product margins in 2000, processors have won back small gains in net wholesale prices, though the average increase in wholesale returns is restricted by the increasing market share of the private labels.

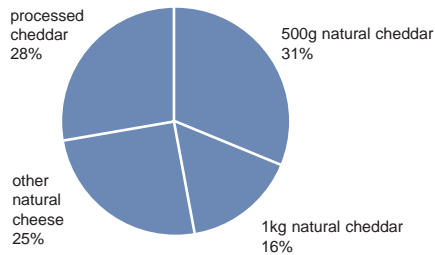
DAIRY – NATURAL CHEDDAR CHEESE

Overview of the product group

Cheddar cheese is a key product line to the Australian domestic dairy sector. Cheese products use 45 per cent of milk consumed in manufactured dairy products or approximately 36 per cent of total milk usage, making it the largest product category for the dairy industry. There are up to 50 style categories in the cheese cabinet of the retail market, differentiated on the basis of production method, fat content, texture and appearance. Cheddar is the largest style category within the cheese products group with about 55 per cent of total output. Australia exports about the same total volume of cheese that it consumes in domestic markets.

About 55 per cent of domestic cheese sales are made through the supermarket channel. Of that segment of the retail market, the product mix (Figure 14) shows the importance of the 500g and 1kg matured cheese lines, providing almost half of all cheddar sales. Processed cheddar, including slices provides 28 per cent of sales.

Figure 14. **SHARES OF SUPERMARKET SALES OF CHEDDAR CHEESE**



Source: Dairy Australia 2003

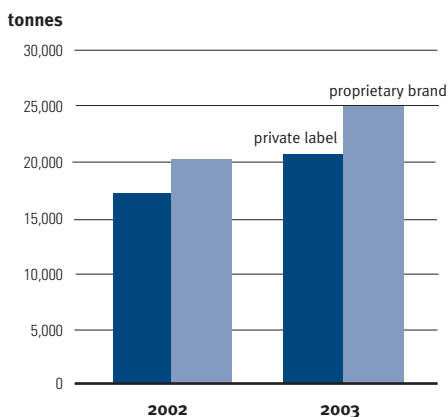
The pricing analysis for this report has been based upon a selection of major retail products. A combination of two major product lines – 500g and 1kg matured cheddar – has been chosen as it is indicative of the level of return from the major matured cheddar products.

Drivers of pricing

A number of factors have significantly affected pricing in the packaged cheddar cheese value chain in recent years:

- major retailers moved to national supply contracts for private label cheese products;
- prevailing import parity prices – for bulk cheddar and packed cheddar from New Zealand – which are set by world market conditions. Such conditions are strongly influenced by the level of demand in major customer countries to which the industry has access and the level of subsidised support paid to European Union cheese exporters;
- the existence of excess capacity in cheese manufacturing or inventories on hand from time to time in the hands of the major manufacturers. These are due to poor export market demand and/or prevailing commodity prices;
- the use of private label and branded products at a discount from primary proprietary branded products to underpin a gain in total market share by chain retailers;
- consolidation of cheese cut and pack facilities to enable manufacturers to achieve economies of scale in product manufacture; and
- deregulation of pricing and supply laws at state level which affected the volumes of milk available in certain regional areas for cheese manufacture.

Figure 15. **SALES IN SUPERMARKETS, CHEDDAR, 1KG AND 500G, TONNES PER ANNUM**



Source: Dairy Australia 2003

Figure 16. **NATURAL CHEDDAR CHEESE: MAJOR DRIVERS OF PRICES AND COSTS**

The cheese category is very diverse, with a wide range of products that create more than 50 cheese styles and more than 500 SKUs (stock keeping units) at retail level. The analysis is performed on the major lines of matured (or tasty) cheese.

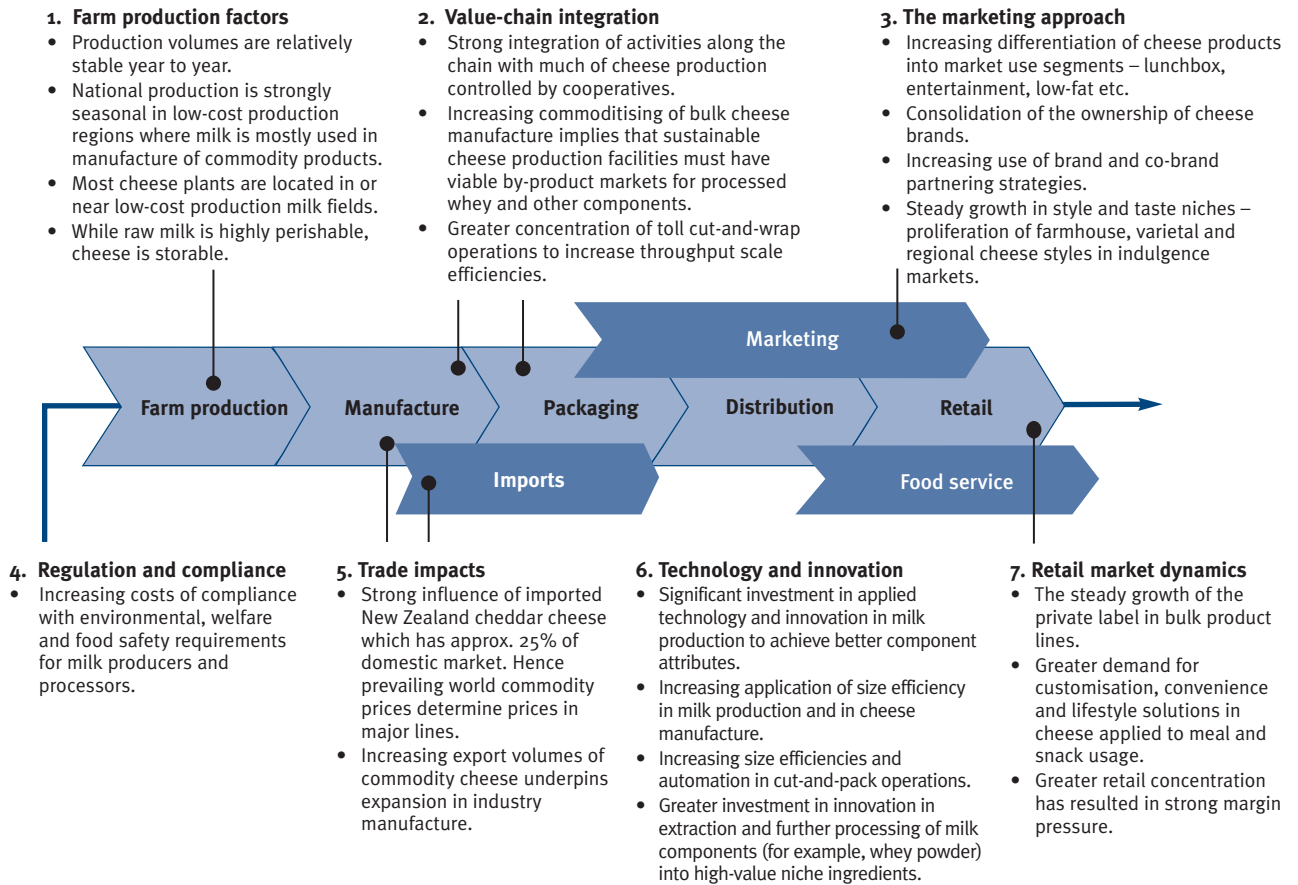
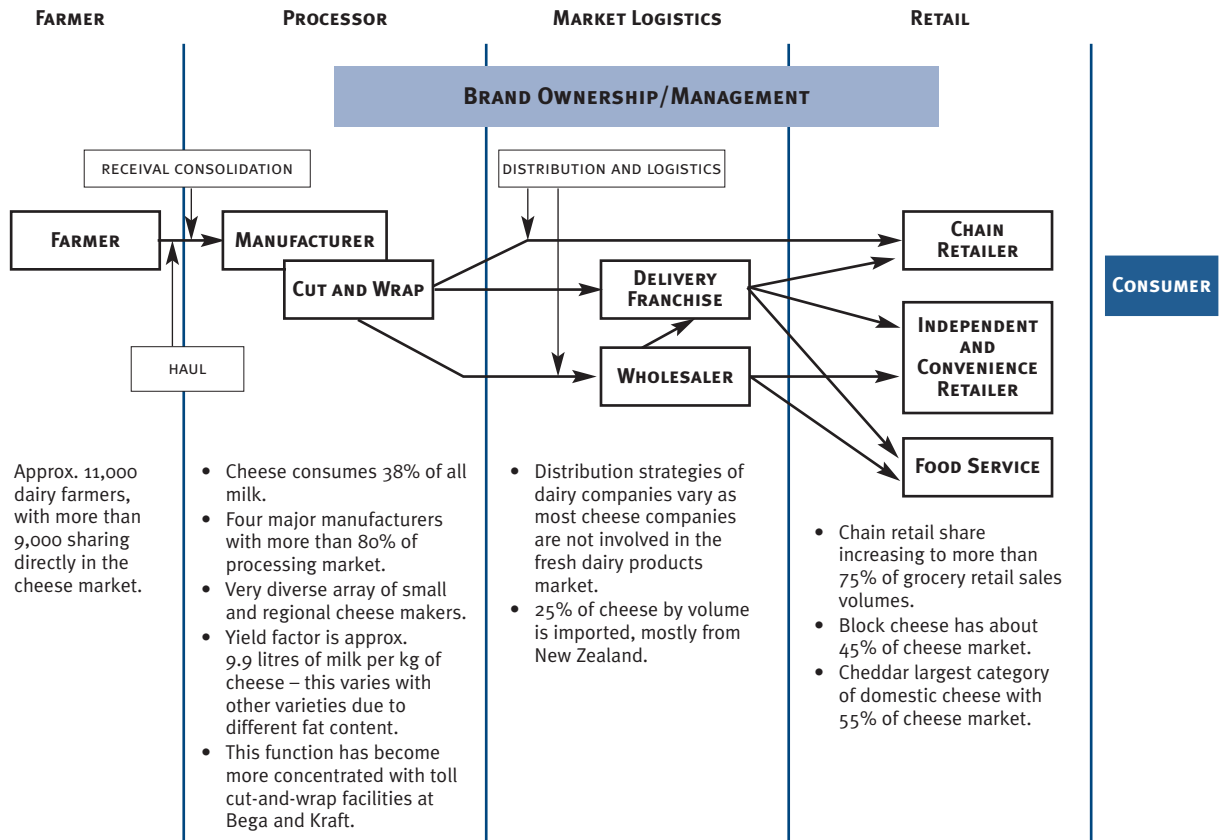


Figure 17. **NATURAL CHEDDAR CHEESE, 500G AND 1KG, SUPPLY CHAIN MAP**



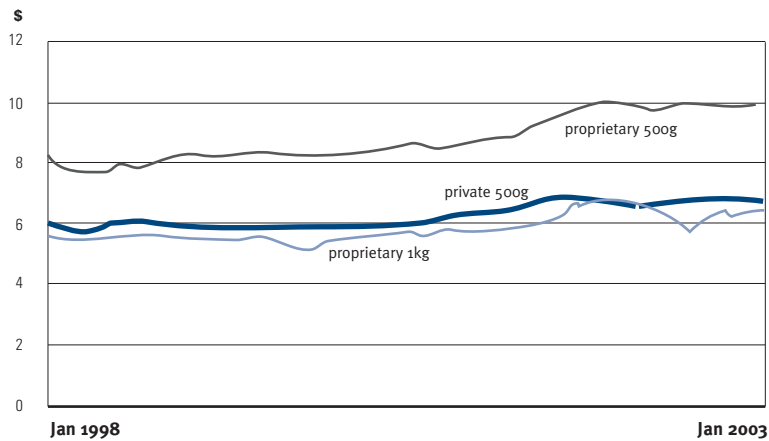
DAIRY – ANALYSIS OF CHEESE PRICING

Retail prices

The retail prices of cheese are based on a cost-plus approach, whereby world prices effectively set the level of returns at wholesale to cheese manufacturers. Marketers and retailers add margins to these prices.

With the significant volume of commodity cheddar cheese imported into the retail sector, price levels are kept in check with next best available prices.

Figure 18. **RETAIL PRICE OF CHEDDAR CHEESE, 1998–2003, 500G AND 1KG, \$/KG**



Source: Dairy Australia

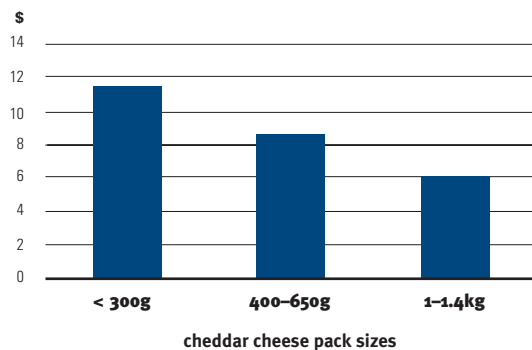
The climate in the world market for cheese also has a major bearing on prices from time to time, whereby if the industry is operating in poor market conditions with oversupply of product, major manufacturers are likely to seek an outlet for product in the retail sector through discounting. This effect can be seen in the past two years in the right of the graph above – fluctuating pricing for the 1kg branded product reflects a period of poor world market returns for cheese.

Retail prices

There is substantial variation in retail prices of cheddar cheese products across different pack sizes and maturity grades which range from mild to vintage or extra tasty.

The chart below provides an example of the differentials in average supermarket prices for the range of cheddar pack sizes (across all cheddar block pack sizes) over the past year.

Figure 19. **RETAIL PRICE OF CHEDDAR CHEESE PACKS, \$/KG**



Source: Dairy Australia

The 1kg product is a bulk discount line. Discounts drive consumption throughout the year and suppliers effectively take turns to fund the retailer's discount program in order to sustain activity levels in these products.

Farmgate prices

Farmgate prices are determined according to the prevailing returns from the total market available to the industry – a mix of export and domestic returns – as outlined on pages 33–34 in *Dairy – how are farmgate milk prices set?*

The major participants in the dairy industry do not differentiate between the various end uses of milk when setting prices at the farmgate.

The vast majority of cheese manufacture is owned by cooperatives, and milk pricing offered by such companies will tend to be weighted average prices that are payable from returns on a range of dairy products from export and domestic markets.

As cheddar cheese is a storable commodity dairy product, cheese-making cooperatives like to take advantage of lower cost seasonal milk production systems. This sees much of the output generated in the spring and summer months of the year. It is nonetheless more efficient and profitable for an operation to be in production for most if not all of the year in order to spread fixed overhead costs over higher volumes of product.

Milk prices are accordingly structured to manage the flows of milk during the year by offering incentives which promote higher production of milk in months when grass-fed production is most difficult. Prices contain incentives to also promote optimum composition of butterfat and protein.

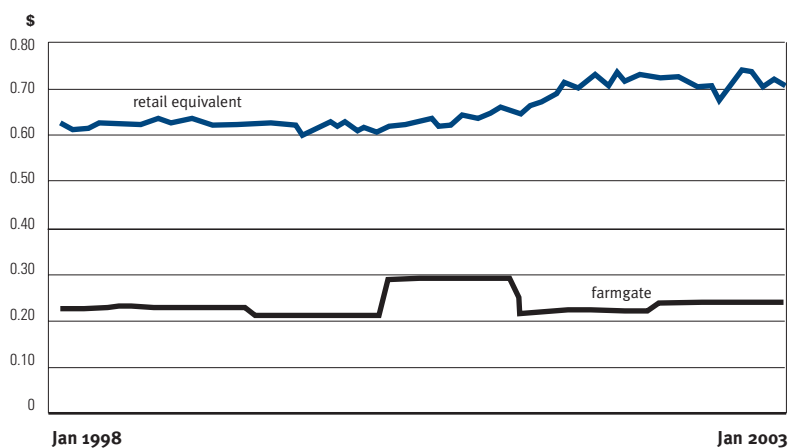
The retail–farmgate spread

Straightforward comparisons of cheese product prices and farmgate returns are overly simplistic: cheese is produced using butterfat and protein ingredients which are separately valued in milk pricing formulas offered by dairy companies.

Dairy – analysis of pricing of dairy spreads, pages 30–32, describes the factors taken into account in the pricing of farmgate milk.

The chart below depicts the spread of retail and farmgate prices that are relevant to the two major-selling cheese lines. The retail price data presented in the chart includes the weighted average of supermarket sales data for 500g and 1kg packs of mature cheddar cheese. This is compared to the average farmgate price paid by major manufacturing companies in the past six years.

Figure 20. **RETAIL VERSUS FARMGATE CHEDDAR CHEESE PRICES, \$/LITRE EQUIVALENT NOMINAL AMOUNTS, 1998–2003**



Source: Dairy Australia and Whitehall Associates

Note: This chart is based on the following:

- weighted average monthly data from chain retail over six years combining 500g and 1kg cheddar cheese blocks;
- average manufacturing rates for milk used by Victorian manufacturing companies over the six years to June 2003; and
- conversion of milk into cheddar cheese at the yield of 9.88 litres per kg cheese.

Share of retail dollar

The chart on this page shows the contrast in the share of the retail dollar at various stages in the value chain between 2000 and 2003 for major cheddar cheese lines.

Changes in margins over time

The chart shows a dissection of the margins in cheese products. The following points should be noted:

- The study of movements in retail and farmgate prices shows that while retail prices have shifted there is little evidence over the past six years that retail prices have moved in response to changes in the cost of milk at the farmgate.
- However, as changes occur, it is typically the manufacturer and/or marketer that absorbs or enjoys the changes in margin between farmgate and retail selling prices in times of fluctuating milk prices. Note: there are cheese marketers who are not also manufacturers of cheese. A significant portion of cheese making and packaging is outsourced in the domestic industry.
- There have been some gains in scale efficiencies in cut-and-wrap plants in the past several years as a result of consolidation of facilities; yet these have not materially added to the returns of manufacturers.

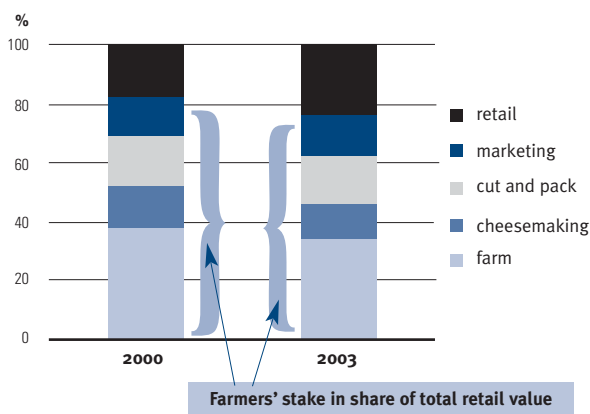
Who owns the share?

The majority of cheese-making and marketing enterprises engaged in major natural cheese products are owned by dairy farmers through cooperatives. As the chart depicts, dairy farmers have a stake in the share of retail dollar through to the point of wholesale sale to the retailer.

The exception to this feature is the Bonland Dairies business which is 100 per cent owned by New Zealand dairy farmers through Fonterra Cooperative Group.

The example using data from November 2000 was selected to show the effect when farmgate milk prices were high. At that time the prevailing farmgate price averaged 29c/litre, whereas in 2003–04 it is close to 25c/litre. 2003 analysis is based on the estimated annual average. This margin analysis is indicative only. It is based on assumptions as to margins and costs incurred through the chain by dairy companies, marketers and retailers.

Figure 21. **SHARE OF RETAIL DOLLAR, CHEDDAR CHEESE, MARGIN ANALYSIS OVER TIME**



Source: Dairy Australia and Whitehall Associates

Over time, the industry's performance in managing the costs of cheese making and cut-and-wrap facilities has improved with consolidation of these functions.

There are substantial fluctuations in margins across product groups based on the contribution of the products to the overall category for the retailer and the marketer. (The concept of category management is explained in Section 5.)

DAIRY – ANALYSIS OF PRICING OF DAIRY SPREADS

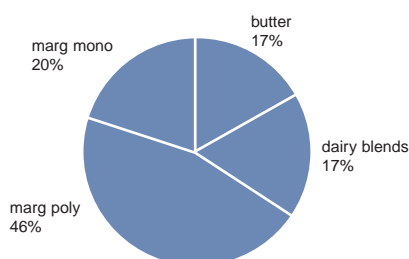
Overview of the product group

Dairy spreads are a major product line in the Australian domestic dairy sector. Butter has been the traditional mainstay of the sector, however blends of butter and vegetable oil have overtaken retail sales volume of packaged butter.

Butter is the major dairy spread product group. Approximately 50 per cent of butter product is exported (this varies year on year according to market conditions and available product supply). Of the product consumed in the domestic market, about 85 per cent is sold as straight butter product – of which only 40 per cent is reported as sold in supermarkets. The remainder is used in food service and industrial markets.

Dairy spreads compete in the table spreads market against margarines (polyunsaturated and monounsaturated) which dominate the category with more than two-thirds of sales volume according to 2002 supermarket data.

Figure 22. **SHARE OF SUPERMARKET SALES OF SPREADS, 2002**



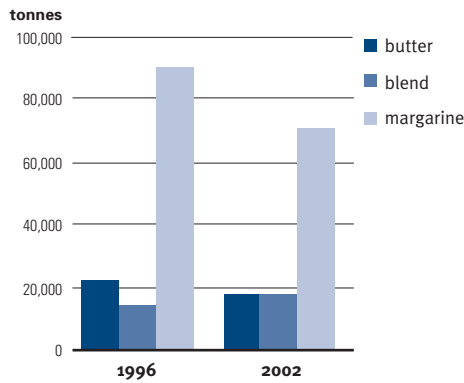
Source: Dairy Australia

Drivers of pricing

A number of factors have significantly affected pricing in the dairy spreads value chain in recent years:

- major retailers moved to national supply contracts for private label dairy spread products;
- prevailing import parity prices for packaged butter and dairy blend products from New Zealand which are set by world market conditions. Such conditions are strongly influenced by the level of demand in major customer countries to which the industry has access, and the level of subsidised support paid to European Union butter exporters;
- total steady decline in the overall table spreads category over time, falling steadily in total volumes each year since the early 1990s (source: Ibisworld 2003d);
- the long-term decline in consumer demand for butter products, offset by increasing demand for dairy blend spreads combining vegetable oils which have lower saturated fat content and properties which enable easier spreading;
- the existence of excess capacity in butter manufacturing or inventories on hand from time to time in the hands of the major manufacturers due to poor export market demand and/or prevailing commodity prices; and
- the use of private label and branded products at a discount from primary proprietary branded products to underpin a gain in total market share by chain retailers.

Figure 23. **SUPERMARKET SALES OF SPREADS, TONNES**



Source: Dairy Australia

Figure 24. **DAIRY SPREADS: MAJOR DRIVERS OF PRICES AND COSTS**

This category covers butter and butter-churn or blend products.

1. Farm production factors

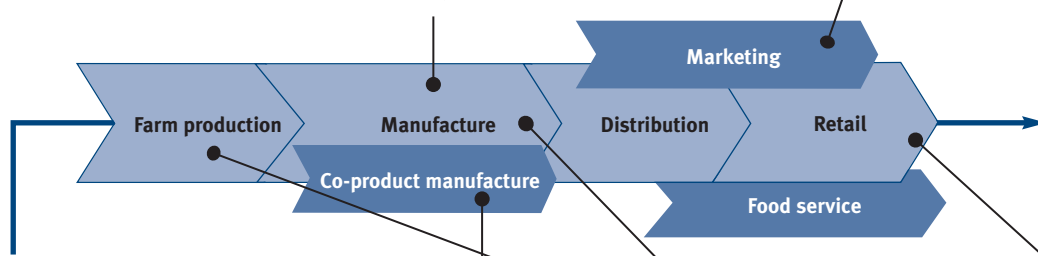
- Production volumes are relatively stable year to year.
- National production is strongly seasonal in low-cost production regions where milk is mostly used in manufacture of commodity products.
- Most major butter plants are located in or near low-cost production milk fields.
- While raw milk is highly perishable, butter is storable.

2. Value-chain integration

- Strong integration of activities along the chain with much of spread production controlled by cooperatives.
- Increasing commoditising of bulk manufacture implies that sustainable butter production facilities are tightly dependent on concurrent achievement of scale efficiencies in co-products (such as skim milk powder).
- Greater concentration of commodity factory ownership by major cooperatives following industry deregulation.

3. The marketing approach

- Strategies to combat pressure on the yellow fats spread category due to greater health consciousness of consumers.
- Increasing differentiation of spreads with the inclusion of low-fat and churn blends, and functional ingredients (for example, sterols).
- Consolidation of brands through gradual rationalisation of butter producers.
- Customisation of product solutions to growing food service markets and end uses.



4. Regulation and compliance

- Increasing costs of compliance with environmental, welfare and food safety requirements for milk producers and processors.

5. Trade impacts

- The profitability of butter production is highly dependent on prevailing levels of export market prices of butter and its co-products.
- Prevailing world commodity prices are affected by commodity competition from other traders, including the effects of intervention by subsidised exporters.

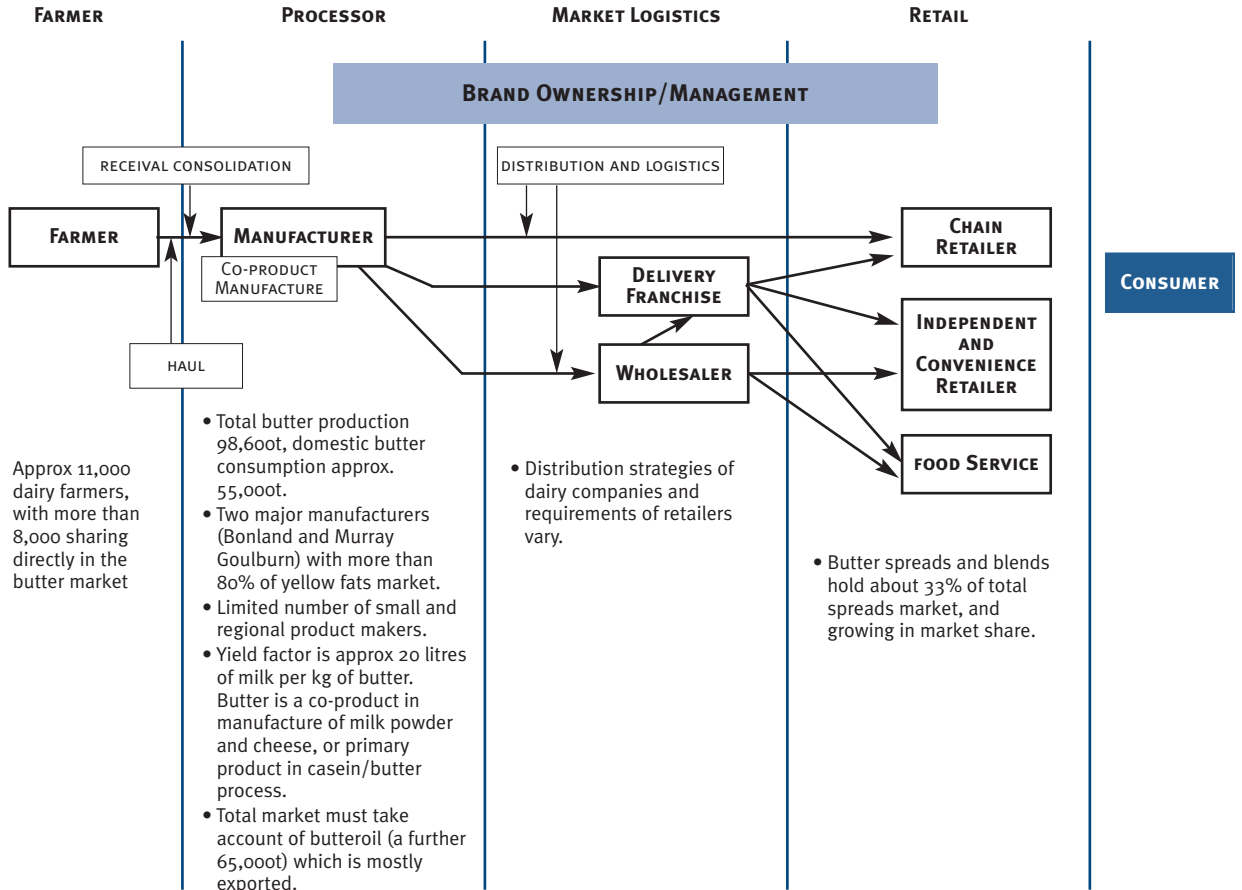
6. Technology and innovation

- Significant investment in applied technology and innovation in milk production to achieve better component attributes.
- Greater investment in innovation to diversify and extract value from major co-products through customisation and specialisation for end use. This affects overall viability of the product combination.
- Innovation in application of functional ingredients to spread product category.

7. Retail market dynamics

- Total spreads market volumes are in decline.
- Limited total growth in yellow fats category over recent years, but use of blends with vegetable oils has improved market share.
- Increasing prevalence of private label products.
- Greater retail concentration has resulted in strong margin pressure.

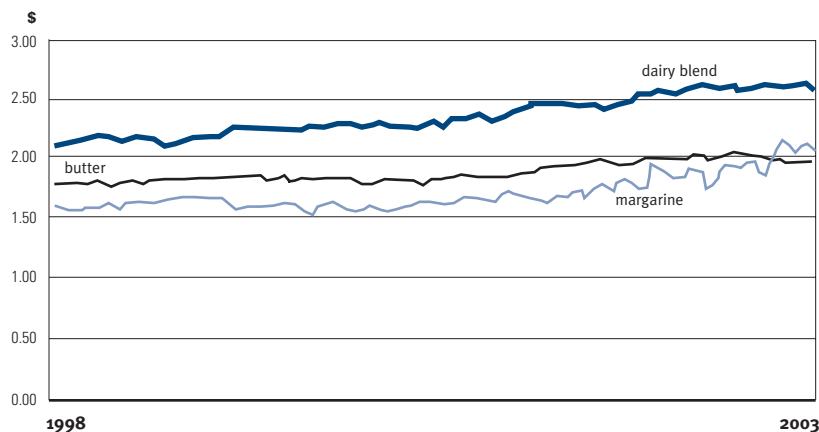
Figure 25. **DAIRY BUTTER AND BLEND SPREADS, SUPPLY CHAIN MAP**



Retail pricing

The six-year supermarket retail price history shows the different price points being assumed due to the nature of the market for each product. Butter prices have remained relatively flat due to static sales levels.

Figure 26. **RETAIL SELLING PRICES, DAIRY SPREADS, 500G TUB, 1998–2003**



Source: Dairy Australia

Margarine prices fluctuate due to the continual discounting by retailers; more so in recent times as market share has been lost to the dairy spreads.

Farmgate prices

Straightforward comparisons of butter-based consumer product prices and farmgate returns are not meaningful. Butter is produced using butterfat, which is separately valued in milk pricing formulas offered by dairy companies.

In addition, with the static nature of the global butter market, butter is largely produced as a co-product in combination with products which have been more important in terms of volume and value growth over the years, such as cheese and skim milk powder. There are few standalone butter factories in the industry.

As in the case of cheese, farmgate prices are determined according to the prevailing returns from the total market available to the industry – a mix of export and domestic returns – as outlined next.

The vast majority of butter manufacture is also owned by cooperatives and milk pricing offered by such companies will tend to be weighted average prices that are payable from returns on a range of dairy products for export and domestic markets. Comments on the nature of milk pricing are as for those made in the section of this report on cheese.

DAIRY – HOW ARE FARMGATE MILK PRICES SET?

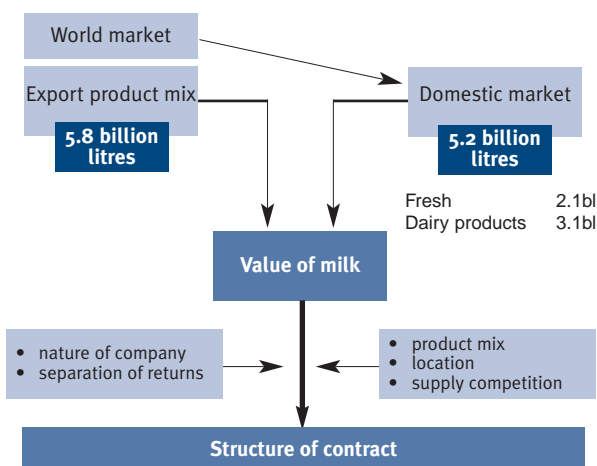
Drivers of farmgate pricing

Milk prices at farmgate are driven by the level of returns to the Victorian production regions which produce more than two-thirds of total output and more than 75 per cent of exports. Milk is sourced by dairy companies on a regional basis – each production region is regarded as a discrete economic milk field by companies relevant to their alternative sources of input that are available to their plants.

Dairy companies pay for milk solids (butterfat and protein) such that the effective price per litre depends directly upon the percentage of components per litre, which varies widely amongst individual producers. The value of milk solids to processors and manufacturers is driven by the level of product prices available to the industry in export markets which sets the returns for about 70 per cent of the milk produced in the highly seasonal regions of Victoria and Tasmania.

Major exporting cooperatives set farmgate milk prices based on net returns that can be achieved from their operations, making allowance for capital costs and working capital. Milk price is generally determined as a residual amount after the costs of business.

Figure 27. **INFLUENCES ON FARMGATE ENVIRONMENT, 2002**



'Step-ups' are paid by several large dairy companies and cooperatives to top up milk prices over the year as the cash flows from proceeds of the annual sale of product permit. Step-ups are generally in the order of 5–10 per cent of the eventual full year price and are typically only paid by companies that have a highly seasonal milk supply exposure.

A variety of approaches have been taken to the structure of farmgate supply contracts, with the major packaged milk processors now relying on contracts which contain a range of signals and incentives to suit the needs of the packaged milk business for high reliability.

These signals address the shelf life of the milk product, volume efficiencies, the costs of collection and haulage to the factory and the avoidance of impurities in the milk. As a result they can cause significant variation in the ultimate per litre milk price for the producer.

Milk used in packaged milk products

Prices for milk used in packaged milk processing are based on a balancing of the need to pay a sufficient price to encourage sufficient year-round production and a recognition of next-best supply alternatives available to processors. The prevailing price of dairy commodities has a major bearing on the overall value of milk that is sourced from each region.

Milk processors do not differentiate between the various end uses of milk when setting prices at the farmgate, although a requirement for milk used in packaged milk can typically induce a higher average farmgate price in a region due to the need to provide sufficient price incentive to producers to engage in year-round milk supply.

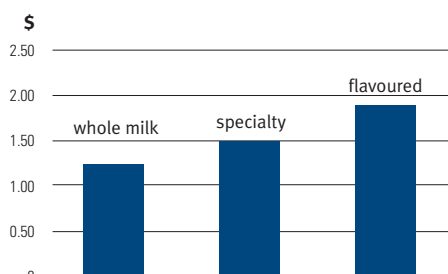
The true costs of milk to a processor will vary depending upon how the full litre of milk is used in their business and how they deal with the fluctuations in supply compared with their daily processing requirements. Processors face the challenge of balancing milk – handling the differences in milk flow as collected on a daily basis and used in a weekly processing cycle that is compatible with periods of peak consumer buying (late week and weekends). They also face the challenge of disposing of excess fat from the growing portion of low-fat milk drinks – fat is a commodity and must be converted to product for sale.

DAIRY – VALUE-ADDING IN THE DAIRY PRODUCTS MARKET

Milk

Significant differences in product returns are gained by processors between the standard whole 2 and 3 litre products and the range of specialty, flavoured and low-fat lines. The chart below shows comparison of retail prices for 2 litre packs between whole, specialty (low and reduced fat) and flavoured milk.

Figure 28. MILK PRICES, 2 LITRE PACKS, \$/LITRE, JULY 2003



Source: Dairy Australia

These margins are enhanced in impulse product lines in smaller pack sizes but there is a higher cost in support of these products in marketing and distribution infrastructure.

Cheese

A competitive cheese production and marketing company in the modern era must invest in activities across a range of applications. These would meet the definition of ‘value-adding’ in normal terms.

This is the case for several reasons:

- to provide a competitive offering to retail customers, cheese marketers must attempt to provide the entire range of cheese products in the main cheddar cheese style groups – covering natural and processed cheese;
- the returns to manufacturers from the production of commodity cheddar cheese are inadequate due to the tight price competition in the world market, the increasing costs of waste disposal and the economies of scale in achieving necessary plant throughput levels; and
- manufacturers must extract optimum value from the whole litre of milk in the form of whey protein or whey powder products (for which there are niche export markets as ingredients in a range of nutraceutical – nutritional and pharmaceutical – applications) in addition to minimising the wastage from cheese cutting into consumer packs (by returning offcuts to be converted into processed cheese products).

Value-adding as such is confined to areas where specialisation in pack size, maturity and preparation for special applications and end uses are developed into part of the product range. Cheese companies do not tend to regard this as value-adding but as simply having a competitive offering in the marketplace.

The value-adding activities in a cheese business address two major priorities, as set out below.

Value-adding to product value	Extracting a greater return from processing the commodity
<ul style="list-style-type: none"> • smaller, convenience retail pack sizes • extending cheese maturity • low-fat cheese blocks • natural cheese slices • entertainment pack cheeses • specialised processed products to target lunchbox market (for example, cheese stringers) 	<ul style="list-style-type: none"> • processed cheese products (consumes offcuts from natural cheese lines) • processing of whey into whey powder and whey protein concentrate products