

A REVIEW OF THE DEREGULATION
OF THE NEW ZEALAND TOWN MILK INDUSTRY

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AGRIBUSINESS & ECONOMICS RESEARCH UNIT

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PREFACE

The Agribusiness and Economics Research Unit has had a long period of involvement with the Town Milk Industry. The work carried out by the AERU since 1972 has involved an annual survey of town milk producers. This survey has identified the cost of town milk production and was used as the basis of the annual negotiation of town milk prices for farmers.

The partial deregulation of the industry at the beginning of 1988 resulted in the cost of production no longer being the basis of the milk price; processing companies must establish their own prices for farmers in order to obtain the milk required.

The New Zealand Milk Board ceased to exist as part of the deregulation process. Prior to the dissolving of the Board, it was decided that three studies should be carried out. One involved a survey of consumers in Auckland and Christchurch with emphasis on milk purchasing, the home vendor system and milk packaging, the second was a study of the impact of deregulation on the town milk supply sector and the third was a history of the Milk Board. The AERU was asked to carry out all three studies.

The survey of Auckland and Christchurch consumers has been reported in AERU Research Report No. 195 (July 1988). The history of the Milk Board is being prepared. This Discussion Paper provides the results of the review of the supply side of the town milk industry.

The AERU has an ongoing interest in the study of deregulation. (Research Report No. 193 provides a review of the egg industry.) It is considered important to understand the way in which industries adjust to changes in the regulatory environment, especially when the deregulation process has not been complete (as in both this case and the egg industry). Optimal utilisation of resources in a competitive environment is not an immediate outcome of deregulation and there may be considerable uncertainty in the short term. As the time since the partial deregulation of the milk industry was not sufficient for the process to have moved very far, this Discussion Paper can only provide an indication of the direction in which changes are occurring. Further study in a years time will be required in order to provide a better assessment of the deregulation changes.

Professor A C Zwart
DIRECTOR

SUMMARY

The New Zealand town milk industry, as it has become known, was established as an entity in 1944. Prior to that time, milk supply to the urban areas was of variable quality and dependability. In order to improve the quality of supply, legislation was enacted which established the New Zealand Milk Board. The Board had the responsibility to control and regulate the industry with the objectives of improving milk quality and ensuring an adequate supply of milk to consumers on a year round basis.

In order to do this, a quota system was established under which farmers guaranteed to supply high quality milk on a year round basis in return for a guaranteed price. If the supply was not maintained, penalties were imposed. The quotas for each area were set by the Milk Board. In addition, the Milk Board licensed milk processors in each area to receive the milk and arrange the supply to consumers. Milk vendors were appointed by the processors but were under the "quality control" of the Milk Board. Milk processors were responsible to the Board for the supply in their areas. Decisions on processing and other than normal day to day management matters were made by the Milk Board.

During 1985, this system came under review by the Industries Development Commission. As a result of the report of the Commission and consequent discussions with the industry, the Government introduced legislation which came into effect on 1 April 1988 which partially deregulated the town milk industry. The Milk Board was discontinued and replaced by the New Zealand Milk Authority. The purpose of the Act (Milk Act 1988) was "to provide for the continued home delivery of milk; and to reduce in other respects the regulation of the processing, supply, and distribution of milk for human consumption".

Milk processors are now free to acquire milk in what ever way is most suitable to them. The quotas are now the responsibility of the milk processors. However, Milk Authority functions are (inter alia) to license milk processors, to allocate home delivery districts and to influence retail price competition. This means that the town milk industry is only partially deregulated. Obtaining milk from farmers has been completely deregulated but the processing and marketing of that milk is still subject to controls.

As a result of the changes in the legislation, and in the case of packaging, prior to the legislation changes, there have been some significant developments in the town milk industry. Cartons and plastic bottles are now available as well as the traditional 600 ml glass bottle.

There is some evidence that milk sales have increased since the introduction of alternative packaging. In the upper part of the North Island, the New Zealand Cooperative Dairy Company (NZCDC) has become the major force in the town milk industry through takeovers of smaller town milk processing companies. Some of the smaller processing plants have been closed and some town milk farmers are in the process of having their quota removed. Other are opting to move into factory supply rather than town supply. There is an increasing move towards the introduction of winter milk supply contracts with quotas being discontinued. This will lead to some herds being calved in Spring and others in Autumn. It has been suggested that this may lead to increased variation in milk quality as the town milk is drawn from different parts of the lactation time. Combining of milk powder and UHT milk with fresh winter milk has also been suggested as a possible option for winter supply.

In the lower part of the North Island, some company amalgamations have also occurred. The Manawatu company appears to have established itself as the dominant entity. However, the company movements have occurred within the town milk industry rather than involving processing companies. There is some evidence to suggest that there will be increased town milk supply from new herds entering the industry and that the quota system is likely to continue in this area.

In the South Island, very little change has occurred. There is a suggestion that Canterbury Dairy Farmers (CDF) will emerge as the main competitive element with the possibility of extending the range of influence to Timaru, Oamaru and Dunedin. There appear to have been few changes to the farmer quota system to date with the possibility of exclusive winter contract production not being very significant in this area. Difficulties with supply during dry summer months are a continuing issue from Timaru to Christchurch.

Further south, the Dunedin and Invercargill systems appear to be continuing as they did in the past with company directors expressing satisfaction with being able to control their own operations. The quota system appears to be remaining intact as the most efficient means of obtaining milk throughout the year. The potential for competition from CDF is recognised.

To date, the partial deregulation of the town milk industry has resulted in significant company ownership changes in the northern part of the North Island, some changes in the supply arrangements in that area, some consolidation of processing plant ownership in the southern North Island and very little change in the South Island. Continuing the industry monitoring process in order to identify the impact of deregulation should be a priority for future research.

CHAPTER 1

INTRODUCTION

Over the three years from 1985 to 1988 the milk industry has been the subject of review and examination. During 1985 the industry underwent close examination by the Industries Development Commission. The objective was to seek ways of improving efficiency within the industry. It was expected that this might be achieved by introducing deregulation and encouraging competition. The Government's commitment to maintaining the home delivery service led to some uncertainty and confusion over the benefits of deregulation. This difficulty resulted in the Industries Development Commission (IDC) being unable to agree. They produced a majority and minority report, one advocating widespread deregulation and the other a continuation of the traditional home delivery service under NZ Milk Board control.

The uncertainty of the IDC report led the Government to seek further submissions. It later introduced a number of new policy changes during 1986. These incorporated some deregulation measures including the introduction of alternative milk packaging. In 1987 the Government accepted a plan for the progressive deregulation of the industry and new legislation was drawn up.

The new legislation (known as the Milk Act 1988) attempts to balance the objectives of encouraging competition through deregulation while maintaining a viable home delivery service. The NZ Milk Board was abolished and many of its functions handed over to the milk processing companies. A new Authority (known as the New Zealand Milk Authority) replaces the Milk Board. The Authority (comprising three Government appointees) has the following functions:

- "(a) To License milk processors;
- (b) To determine, allocate, modify, and reallocate home delivery districts;
- (c) To determine the retail price differential for milk under Section 18(1) of this Act;
- (d) To monitor the supply of milk, the delivery of milk to domestic consumers of home delivery districts by and on behalf of processors, and the retail prices of milk;
- (e) To report to the Minister on matters relating to the sale or delivery of milk;
- (f) Any other functions conferred on it by this Act or any other enactment" (Milk Act, 1988).

Chapter 2 describes the various elements of the industry before deregulation. An assessment is made of the value of town milk producers' quota rights and the costs of winter milk production. In Chapter 3 the new policy changes are reviewed. Chapter 4 considers some of the industry responses since deregulation and discusses some effects of deregulation on town milk supplies.

CHAPTER 2

DESCRIPTION OF THE INDUSTRY PRIOR TO PARTIAL DEREGULATION

2.1 Structure of the Industry

The farming sector of the New Zealand dairy industry numbers over 16,000 farmers but less than 1,300 supply the town milk market. The total annual production of milk exceeds seven million tonnes with 90 per cent of this milk used in the manufacture of dairy products (eg. butter, cheese, casein and milk powder). Over 85 per cent of these manufactured milk products are exported. Nearly five per cent of the milk produced is consumed by sales of liquid milk and cream by the town milk industry (33 million litres in 1986-87). The balance is used by the yoghurt and other cultured dairy foods industry.

Concern over the quality of milk supplied to local consumers led to the passing of the Milk Act 1944. This legislation established the NZ Milk Board which was expected to administer the supply of milk to New Zealand consumers and resulted in the formal establishment of a Town Milk industry. The main objective was the establishment of a year round supply of high quality milk for New Zealand consumers.

The production, supply, collection, treatment, storage, distribution, delivery and sale of town milk was therefore organised separately from the dairy manufacturing sector. The formation of the town milk sector of the New Zealand dairy industry was due to the year-round daily requirement for fresh milk. It also reflected the location of town milk farms close to centres of population. This helped minimize transport costs. However, in contrast with other dairy farms producing milk for manufacturing, town milk farms were seldom located on the optimum soils in the best climatic regions. In addition, milk production is costly during the colder winter months when per cow production is low and feed costs are high. This loss of comparative advantage resulted in higher payments being needed by town milk producers who were required to produce milk each day of the year.

The payment made to the many producers of manufacturing milk has always been related to prices received for exported dairy products. The town milk producer price has been linked to manufacturing prices, and a premium has been paid which reflected the higher costs of year-round town milk production. The relationship between the town milk producer price and the manufacturing milk price has been based on a change in the average manufacturing price for whole milk of one cent per kilogram

of milk fat resulting in a change in the town milk price of 0.06 cents per litre.

Under the provisions of the Milk Act 1967 the New Zealand Milk Board was required to organise the town milk industry on an economic basis. The Board was charged with providing an adequate supply of milk of good quality for human consumption. To help ensure milk quality, the Board operated a quality payment scheme with producer companies (Tarrant, et.al. 1985). The Milk Board also carried out a wide range of other administrative, promotional and organisational duties. These included the arranging of supply contracts with milk producer companies as well as negotiating local cartage and special distribution allowances. Regular reports to Government were made on the adequacy of the town milk producer price and recommendations were made on the consumer price.

The Board also controlled and maintained the milk vending service. The Board set the standard for vendors, and allocated and regulated the milk delivery rounds.

The consent of the Board was required to establish and operate a milk station. Each milk treatment station had a defined area in which to operate. To discourage uneconomic capital investment by milk stations, the Milk Amendment Act of 1980 gave the Milk Board increased powers. It also allowed the Board to close uneconomic milk treatment stations (eg. Raetihi).

Most of the Milk Board's funding was from a statutory levy on town milk sold in New Zealand. All milk sold by producer associations to milk treatment stations was levied 0.8 cents per litre (February 1987). The same levy was applied to town milk used in the manufacture of ice cream. Cream sold by milk stations to vendors was levied at 8.0 cents per litre. (It takes ten litres of milk to produce one litre of cream.)

Total annual expenditure of the New Zealand Milk Board in the last two years of its operation was \$3.98 million (1985-86) and \$3.64 million (1986-87). Its major expenses were for administration, staff salaries, office rent, power and cleaning, etc (New Zealand Milk Board, 1987).

Marketing and promotion expenses (\$1.47 million in 1986-87) were financed from the milk pool account. This amount represented the difference between the amount recovered from the consumer price and the seasonal costs of producing and distributing milk and cream for the year.

The Milk Board membership had a wide industry representation. It was comprised of ten members appointed by the Governor-General on the recommendation of the Minister of Agriculture and Fisheries. The term of office was three years although members could be reappointed.

Three of the Board members were producer representatives and two members were nominated by the Dominion Federation of Milk Vendors (Inc.) Other members included one nominated by the Executive Committee of the N.Z. Federation of Milk Stations Inc.; one member represented (and was also a member of) the N.Z. Dairy Board; one nominated by the Municipal Association of N.Z. and the N.Z. Counties Association Inc; one member representing consumers interests and the Director-General of Agriculture and Fisheries (or his nominee).

Each year the Milk Board allocated each producer association a set daily amount of milk (called the nominated quantity). The producer associations guaranteed that throughout the year their farmer members would meet their quotas which made up this daily liquid milk requirement. The nominated quantity was market related and varied according to the previous year's milk sales.

Each town milk farmer received a "town milk" payment for quota milk. During spring and summer (September to January), the payment was made for 117 per cent of the quota amount, while during the remaining part of the year (February to August), the payment was for 110 per cent of the quota amount. Some of the extra milk produced by the above quota allowances was used for cream production (cream was not included in the nominated quantity). The remaining "surplus" milk was sold at the (lower) manufacturing milk price. Therefore, part of the above quota allowance resulted in a supplementation of producer incomes. This cost was calculated by the Board to add up to 1.8 cents per litre (about three per cent) to the consumer price of milk.

The above quota allowances were first introduced in 1943 when milk demand exceeded supply. In recent years the situation has been very different. Since 1976, when the consumer price of milk doubled from 4 cents to 8 cents per 600 ml bottle, milk demand has steadily fallen. This has meant that many farmers now produce more milk than is required for town milk delivery. Any extra milk which was produced over the 10 and 17 per cent allowances was known as super surplus milk. The producer received the manufacturing milk price for it.

For the year ended 31 August 1987, 406,949,898 litres of milk was eligible for the town milk price. Of this total only 83 per cent (336,466,168 litres) was sold as town milk. The remainder was used in associated products (eg. cream sales of 9,617,518 litres) or sold to manufacturing companies.

2.2 Milk Treatment Stations

While the industry was administered by the Milk Board, milk treatment stations were granted an exclusive area of control. There was therefore no competition for the supply

and processing of town milk. The financial viability of the treatment stations was preserved by a payment of an allowance or margin. These margins were controlled by the Secretary of Trade and Industry.

The Secretary of Trade and Industry aggregated the assets and costs of the 16 largest treatment stations and if necessary adjusted the margin payouts to provide a return of 15 per cent on assets. For the smaller treatment stations the Milk Board was able to pay a special treatment margin to ensure the continued viability of the operation.

The Milk Board did have a limited policy of encouraging cost savings by rationalization where milk could be bought into a region at a lower cost than processing it in the local area. For this to proceed there had to be clear benefits to the consumer (eg. a reduction in the consumer price) and an adequate supply had to be guaranteed. One example was the closure of Raetihi station. This resulted in lower consumer prices in that area.

2.3 Producer Prices

In the year ended 31 August 1987 the final national average producer price for finest grade milk was 23.394 cents per litre. This price was based on the manufacturing farm gate value of 320 cents per kilogram of milkfat for whole milk. The town milk standard seasonal producer prices for finest grade milk were:

	<u>Cents/Litre</u>
Spring and Summer (1 Sept 1986 - 31 Jan 1987)	18.82
Autumn (1 Feb 1987 - 30 Apr 1987)	23.34
Winter (1 May 1987 - 31 Aug 1987)	30.12

Certain regions received additional special production allowances during the six autumn and winter months (Table 1). These additional funds were paid by the Milk Board to regions where the basic town milk producer price was not sufficient to ensure a continuing supply of town milk. In recent years the Government limited this fund to a maximum of \$1 million per year. In administering this fund the Board had to ensure that (regardless of other criteria) no region received an allowance greater than the cost of bringing in milk from a near-by alternate source of supply.

Table 1
Additional Local Prices or Special Production
Allowances Over the Town Milk Production Price
For The Year Ended 31 August 1987.^a

	<u>Cents Per Litre</u>
Rotorua	0.80
Gisborne	2.50
Hawkes Bay (excluding Maharahara)	1.25
Blenheim	1.25
Nelson	1.25
Grey District	0.60
Christchurch	1.25
Ashburton	1.25
South Canterbury	1.25
North Otago	1.25
Dunedin/Balclutha	1.80
Central Otago	3.50
Southland	3.25

^aCents per litre over six autumn and winter months

Source: N.Z. Milk Board Annual Report for the year ended
August 1987

The national town milk producer price established a base upon which regional allowances could be set to cover the variations in the cost of production. However, in some regions the number of farms producing town milk is falling rapidly. There are many explanations for this including the future uncertainty of the industry, falling farm incomes and milk station closures. If present trends continue, town milk (especially during the winter months) will need to be supplied from outside certain regions (Tarrant, et.al.1985). The areas under risk include:

Northern Hawkes Bay,
Wellington 50 km zone,
Grey District,
Central Otago and
South Canterbury (Waimate).

2.4 Milk Production Quotas

In order to obtain milk for 365 days of the year, town milk farmers have traditionally received higher prices than paid for seasonal manufacturing supply. This higher payout helped compensate for the extra expenses needed to produce winter milk. In return farmers undertook to supply a set minimum quantity of milk (called a quota) each day of the year.

The classical economic approach to dealing with high winter production costs is to raise the consumers price in the winter and to lower it in the summer (Harris and Chandler, 1960). Consumers would respond by increasing consumption in the summer and restricting it in the winter. A perceived problem with this was that price fluctuations may lead to an overall fall in total milk consumption and to avoid this, the consumer price has been kept constant while varying the price to the producer over the season.

A requirement of the quota system has been the supply of a set quantity of milk each day over the whole year. Although the summer price may have been perceived as "high" in relation to costs, while the winter price may not have fully compensated for winter production costs, farmers were compelled to produce on a year round basis by the quota system. Over the whole year, the farmer returns were presumably sufficient to offset costs and provide an income at least equivalent to what could have been obtained from an alternative activity.

The town milk quota scheme restricted the quantity of milk which would be accepted at the Town Milk price and producers benefited from the higher and stable prices. In New Zealand, quotas have not been freely traded and this has led to producers increasing their returns by producing additional milk above their quota. Some of this milk (within the 10 and 17 per cent margins) receives the Town Milk price, while above the allowed margins, the manufacturing milk price is paid.

If a producer is unable to meet quota requirements there have been two potential costs associated with this shortfall. These are the revenue losses from foregone sales, and the risk of permanently losing some quota allocation. This would result in a loss of revenue in the current year and in all future years (Alston & Quilkey, 1979). In New Zealand the penalties imposed on farmers who were unable to meet their daily quota varied with supply associations. Some associations first calculated each farmers' average daily quota supplied during two winter months. If this average figure was less than the allocated daily quota, then the farmer lost the shortfall the following year. Farmers were not penalized for dropping below their quota for a few days in the winter provided they were above quota later in the month.

The town milk producer insures against a shortfall by either:

- (a) producing more than the quota (the most commonly chosen option) or
- (b) adopting more costly input combinations. (eg. feeding concentrate foodstuffs), or
- (c) adopting other production techniques (eg. using a wintering barn).

2.5 The Value of Town Milk Quotas

Town milk producers are paid a premium over the prices paid for manufacturing milk. Because of this, people outside the industry sometimes believe that the "ownership" of a town milk quota yields a significantly higher net return than would alternative uses of the producers' resources. If this was so, the quota rights would acquire a capital value. This value would attach to the "owner" of the quota and if associated with the farm, would be absorbed into the values of capital assets such as land and buildings. If the farm was sold (provided the quota went with the farm) the value of the farm would be higher than an equivalent near-by non-quota farm. In recent years there has been little evidence that town milk farms have commanded a capital value premium.

In New Zealand, unlike many overseas countries, the absorption of town milk quota rights into the capital value of the farm is confused by the different ownership of the quota. In most regions quotas have been owned by the supply association. Quotas were seldom left with the farm in the event of a change of ownership (except for a few small districts such as North Otago). Since the mid 1970's, when consumer milk prices started rising and demand steadily fell, quotas from farmers selling their farms or ceasing town milk production, have been absorbed by the supply association. This helped cushion the steady fall in quota which remaining producers had available.

Because quotas have not been owned by the farmers, this has prevented quotas being traded. When quotas are freely traded (known as an open quota system) resource mis-allocation costs are reduced. When quotas are sold in continuously divisible units of quantities and time, more efficient low cost producers can purchase more quota rights (Veeman, 1982). Often farmers with high fixed costs of unused capacity or producers with potential to achieve economies of scale will be willing to pay more per unit for more quota rights. The advantage of allowing quotas to be traded is that supplies of milk may be obtained at a lower cost.

In the past, quotas were allocated amongst town milk producers according to criteria other than economic efficiency. Following the steady downturn in demand over the last 13 years there has rarely been any extra quota available for the low cost efficient producer. Between 1979 and 1986 farmers received some increase in the national average price of milk in nominal terms (Table 2). There was a substantial price decrease in 1986/87. The price increases have generally only been small and reflect changes in the price of manufacturing milk. However, the price increases were not sufficient to match inflation. Cost

increases and falling quota quantities have therefore resulted in town milk supply becoming less profitable over recent years.

Table 2
The National Average Farmer's Price for Finest Grade Milk

<u>Cents Per Litre</u>	
1979 - 80	15.1271
1980 - 81	18.7347
1981 - 82	22.9593
1982 - 83	22.9593
1983 - 84	23.4303 (to 29 Feb 1984)
1983 - 84	24.0405 (1 March to 31 August 1984)
1984 - 85	24.0645 (to 8 Nov 1984)
1984 - 85	26.8563 (9 Nov 1984 to 31 Aug 1985)
1985 - 86	27.2897
1986 - 87	23.3940

Source: N Z Milk Board Annual Report for the year ended August 1987.

2.6 The Reduction in Producer Numbers

As consumer demand for milk has fallen, there has been a slow decline in farm quotas. Since this decline began nearly 500 farmers have given up town milk production. In 1976-77, when milk doubled in price from four cents to eight cents a 600 ml bottle, there were 1728 producers. By 1985-86 the number of producers had fallen to 1,254 and the price of milk to the consumer had reached 45 cents a bottle (On 1 Oct 1986).

There have been many reasons why these farmers gave up town milk production. A few were made redundant as a result of milk station closures (eg. Raetihi). Some would have sold their farms. Others however, would have chosen to change to factory supply production. This change in dairy farm management is costly. There is a loss of earning capacity from some of the herd due to the down time involved in changing calving patterns. There is often a need for increased on-farm capital investment. More land may be needed, more stock may have to be purchased or bred, the milking shed may need to be expanded and more plant purchased.

A number of town milk farmers are financially locked into all year round milk supply. They often have limited land with small quotas. In many regions, especially in areas subjected to cold winters, there are few alternative farming options offering a similar return for those farmers

limited resources. In Dunedin in 1985-86 for example, 71 per cent of the 80 quota holders held quotas of less than 650 litres. While some of these small farmers could withstand the cost of changing to seasonal supply, many could not. If these farmers' quotas were lost following deregulation, Dunedin city may be forced to look elsewhere to meet its winter milk demand.

In 1986-87 there was a significant downturn in the payout for town milk production. Compared with the previous year the producer's milk price fell by nearly 15 per cent. This low price occurred (coincidentally) during a period of great change to the structure of the town milk industry. Discussions on the deregulation of the industry had been steadily progressing since the release of the report from the Industries Development Commission in October 1985. A number of farmers believed that deregulation (along with low producer prices) would seriously impair the future profitability of town milk production. Some farmers reacted by giving up their town milk quotas, and others, especially those on smaller farms looked for ways of expanding their capital resources (eg. by buying more land). This extra investment would make it easier in the future to transfer to factory supply dairy production.

There was a risk that these changes could lead to a less than adequate supply of town milk, given the existing price structure, especially in the winter months. To date this has not happened although in a number of regions (eg. Ashburton and North Shore) the existing farmers are producing close to their maximum capacity. It is unlikely that these farmers could further expand their production if one of their number gave up town milk. In more and more regions it is proving increasingly difficult to find other dairy farmers interested in taking on a town milk quota. There is much uncertainty among farmers about the future of the industry (especially after full deregulation in 1993).

2.7 The Costs of Winter Milk Production

There is uncertainty about the costs of winter milk production. From their annual financial statements factory supply farmers know the costs for their own dairy management farming system. Each town milk farmer's profit and loss account lists costs for twelve months, but for a shorter period (eg. winter) it is more difficult to isolate costs.

An attempt was made to quantify the differences in costs between the two dairy farming systems in a comparative study undertaken in the South Auckland region for the 1984-85 year (Moffitt, 1986). In that year the final manufacturing price of wholemilk was 396 cents per kilogram of milkfat (or 16.7231 cents per litre at 4.1 per cent fat content). The average final price for finest grade milk was 26.8563 cents per litre.

Before reviewing the results of this study, it is worthwhile to first consider the differences in payout between the two enterprises. Had the average town milk farmer received the manufacturing price (of 16.7231 cents per litre) for all milk supplied for six summer months (eg. September to February), how much more would he have needed during the six winter months to achieve the same total revenue for the year? Throughout the year the average price to the town milk farmer was 26.8563 cents per litre. If he was paid only 16.7231 cents for the six summer months he would have had to be paid an extra (26.8563-16.7231) 10.1332 cents per litre for his six months winter milk. This equals 36.9895 cents per litre (assuming the summer and winter quantities were the same).

What if the company paid the town milk farmer the low manufacturing price for nine months? To achieve the same annual revenue, he would have had to be paid the average price of 26.8563 cents plus 30.3996 cents or a total of 57.2559 cents per litre for the three winter months. (As the farmer received 10.1332 cents per litre less for three quarters of the year, this loss (of 10.1332 x 3) would have to be added to his average payment of 26.8563 cents for the other quarter of the year.)

At a 4.1 per cent fat test, 57.2559 cents per litre represents \$13.96 per kilogram of milkfat.

The 1984-85 survey of 26 South Auckland town milk and 31 factory supply dairy farms highlighted the cost differences between the two farming systems. Total expenditure per dairy productive hectare for the average town milk farm was 134 per cent greater than the nearby average factory supply dairy farm. Almost every expense was higher on town milk farms including labour (up 63 per cent), administration (up 61 per cent), operating expenses (up 38 per cent), and overhead expenses (up 29 per cent). Part of these higher costs relate to the need to supply year-round milk with much of the difference in costs relating directly to winter milk production. However, differences in farming efficiency may also contribute to the differences in the cost of production.

The higher payout received by the town milk farmer helps compensate for these higher costs. However, in South Auckland in 1984-85 this extra payout did not quite match the higher costs. In that year the average town milk farmer recorded an average net farm income per dairy productive hectare of \$534. This was marginally, lower than the neighbouring average factory supply farmers result of \$552. A similar result was recorded from a survey conducted the previous year (\$416 and \$494 per dairy productive hectare respectively) (Moffitt, 1985).

These results from the South Auckland region indicate that in this region, the quotas owned by town milk farmers did not result in additional profits. Compared with investing in a factory supply dairy farm, the future earning value of these town milk quota rights is negative. (This comparison does not however consider differences in land values associated with such investments.)

On town milk farms both production and carrying capacity per hectare is less than neighbouring seasonal supply farms. Results from two separate studies of the two types of dairy farms highlighted these differences in production. One study was undertaken in Manawatu (Anon, 1987) and the other in South Auckland (Moffitt, 1985). The town supply farms in both regions carried 20 per cent fewer cows per hectare and produced 17 per cent less milkfat from seven per cent less milk per hectare. The lower milkfat figure probably reflects the predominance of Friesian cows in town milk herds compared with a higher proportion of Jersey cows on factory supply farms.

CHAPTER 3

CHANGES IN LEGISLATION

In 1985 a detailed and comprehensive examination of the town milk industry was undertaken by the Industries Development Commission (Tarrant, et. al. 1985). The Commission concluded that the industry was one of the most regulated primary sector industries in New Zealand. While calling for deregulation, the Commission believed that it was in the public interest to retain certain features of the present system, namely a home delivery service and a central authority.

Following further discussions, Government passed a new Act (The Milk Act, 1988) which partially deregulated the Town Milk industry. Before the Milk Act came into effect on 1 April 1988 the Government had introduced a number of policy changes for the milk industry. The object was to encourage rationalisation. The production of town milk was deregulated from 1 September 1987. Milk processors were required to make their own arrangements with producers for the supply of milk in their region. The prices which were negotiated with the producers did not necessarily need to follow the previous Milk Board pricing formulas. Nor did processors have to maintain the additional seasonal percentages (of 10 and 17 percent). A minimum price of 15.14 cents per litre for town milk was set by the Minister of Agriculture.

Control of milk vendors passed from the Milk Board to local processors. Processors were able to offer contracts to the vendors they wished to keep. Those who wished to leave the industry or who were not offered contracts were entitled to an exit package. This included a refund of the vendor's goodwill and \$1,000 in lieu of chattels. Vendors who failed to receive a new contract were able to stay until the new Milk Act came into force. A number of vendors were upset over the low compensation offered. They were also concerned that individual vendors were not entitled to have a contract offered to them. They believed the new policy removed their right to a livelihood.

A major objective of the new Milk Act is to subject the Town Milk industry to the disciplines of a more competitive trading environment. Previously the tight regulatory conditions imposed by the Board may have restricted the optimum use of industry resources. By allowing commercial decisions to be made under more open market conditions, the interests of consumers and the economy were expected to be better served. However, the Bill stopped short of full deregulation (at least until 1993) by imposing one key provision; the maintenance of a home delivery service. Processors are obliged to provide a home delivery service in exclusive designated zone.

Under provisions of the Milk Act the responsibility for production, pricing, promotion and the distribution of town milk passed from Milk Board control to the private sector. The Board was replaced with a new body called the New Zealand Milk Authority. This three person body has the role of monitoring the industry, licensing milk processors, and allocating home delivery districts. It also determines the margin between the retail price of milk in supermarkets and the price of home delivered milk.

Only one processor may hold a licence for a home delivery district, although a processor may hold a licence for more than one district. Each processor is provided with monopoly rights to the home delivery trade within a defined region. The licence may be cancelled if there are reasonable grounds to believe that "the processor is not at all times providing sufficient milk to satisfy the requirements for milk of all the consumers of any of its home delivery districts" (S.11 Milk Act, 1988). When the Act came into force, incumbent processors were granted licences.

The Milk Authority has interpreted the Act as providing the power to decide on the frequency of delivery of milk to consumers and the times when milk is to be delivered. In Wellington city and parts of Auckland the daily home delivery service has been cut back. Some vending districts are difficult to service because of their size or terrain. These vendors are delivering every second day. In these regions it is often difficult to obtain new vendors to replace those leaving the industry. There is a risk in a partially deregulated market of processors restricting home supplies and diverting demand towards the bulk market. This can be profitable to the processor because it avoids paying the vendor's margin. Rather than cut back the vendors daily delivery on these difficult milk rounds, the processor does have the choice of another strategy. To attract vendors to the more difficult milk rounds, a higher payment could be offered (Easton, 1988). Without competitive pressure from outside companies (or enforcement by the Milk Authority), the processor is unlikely to choose this option.

Under special circumstances the Authority is able to modify home delivery districts. It can also determine the maximum price differential between home delivered and retail outlet supplied milk.

The Act expires on 31 March 1993. This sunset clause was included to emphasise that the Act offers only temporary protection for the home delivery service. If the vending service is able to meet the needs of consumers and improve its efficiency, then it need not fear total deregulation. However, as noted by the Commerce Commission (Vautier et.al. 1988), the home delivery service is politically sensitive and deregulation of the home delivery service may not end as planned.

There has been criticism over the inclusion of a sunset clause in the Milk Bill (Turnbull, 1988; Kimpton, 1988). The intention of this clause is positive. It provides a time frame for the industry to improve its performance. However, the projected expiry date of the legislation seriously concerns milk vendors. They face an uncertain future with no apparent support for the home delivery service beyond 1993. One of the main intentions of the Act was to preserve the home delivery service but this future promise of complete deregulation may lead to a reduction in current vendor commitment. The Milk Authority may not be able to act quickly to curb inadequacies in home delivery. Milk stations have the right of appeal should their performance be questioned but there is a risk that the consumer may have suffered for a long time before the results of the appeal are released (Mitchell, 1988).

However, it should be noted that the Government included the continued protection of the home delivery service in the Milk Act rather than continued protection for existing milk vendors. The home delivery service which continues after the expiry of the Act may be radically different to the present service and will exist in response to consumer demand rather than Government decree.

Among the administrative changes to the milk industry that came into effect on 1 September 1987 were some that affected milk processing companies. Limited competition among processors was encouraged by allowing them to compete for supermarket and the bulk user trade (mainly hospitals and large institutions) outside their home delivery district. Supermarkets and bulk users (i.e. buyers of more than 1500 litres of milk per week) are permitted to buy from any licensed processor. The price at which the processor sells milk to supermarkets is unrestrained but the supermarket retail price must not be less than a fixed margin (currently three cents per litre) below the lowest home vendor's retail price set in any of the supplying processor's home delivery districts. This supermarket competition is designed to help constrain processor's retail prices. If a processor can supply milk to a supermarket in another zone at a lower price than the near-by processor, this competition should help keep retail prices competitive.

It was noticeable that prior to the takeover of 60 percent of Auckland Co-op Milk Corporation (ACMP) by NZ Co-op Dairy Co (NZCDC) in Auckland, competition for the supermarket trade in Auckland city did not occur. There was a total lack of competition, even near the border of the two companies exclusive home delivery zones. The two companies also increased the price of bottled milk on the same day. There was more co-operation than competition evident between these two Auckland processor companies.

CHAPTER 4

INDUSTRY RESPONSES SINCE DEREGULATION

4.1 Milk Demand and Consumer Pricing

The demand for milk in New Zealand is very price inelastic. A study of the price elasticity of demand for New Zealand town milk was published in 1984 (Brodie et.al. 1984). The result indicated that there are few substitutes for fresh milk and milk is unresponsive to price change. The price elasticity of demand of -0.066 means that a ten per cent increase in the real price of milk would lead to less than a one per cent fall in consumption. However, this study of milk demand over a twenty year period to 1983 found that three quarters of the decline in milk consumption could be attributed to milk price increases. The other major reasons for the fall in milk consumption were the decline in the proportion of children in the population and seasonal factors. These results were consistent with similar studies undertaken overseas.

This study concluded that other factors, such as advertising and disposable income did not appear to have an important influence on milk consumption. It was suggested that because at the time of the study the period of media advertising and promotion expenditure had occurred only over the previous five years, further investigation would be needed to determine the exact effect of advertising.

Since 1967 the consumer price of milk has steadily increased (Table 3). Until 1986-87 total town milk sales and consumption have continued to fall (Table 4). Consumer demand peaked in 1974-75 at 134.7 litres per head. By 1986-87 demand had fallen to 101.9 litres per head.

Table 5 lists retail milk prices for cartoned and plastic bottled milk as at 1 February 1988. Alternative packaging is now available in nearly all districts throughout the country. There is a wide range of prices charged for one litre cartoned milk from 89 cents per litre (in New Plymouth and Timaru) to 108 cents (in Alexandra). Milk in two litre plastic containers ranges in price from 180 cents to 207 cents. The variation in these prices shows little evidence of competition in milk pricing by processors. Compared with milk purchased in bottles (at 83.33 cents per litre equivalent), milk in alternative containers is more expensive.

Table 3
Consumer Prices of Town Milk in New Zealand

From	Price Per 600 ml Bottle	Price Per Litre
	<u>Cents</u>	<u>Cents</u>
July 1967	4	6.6667
February 1976	8	13.3333
February 1977	9	15.0000
May 1978	10	16.6667
April 1979	15	25.0000
February 1980	18	30.0000
November 1980	21	35.0000
August 1981	25	41.6667
June 1982	30	50.0000
March 1985	35	58.3331
September 1985	40	66.6664
October 1986	45	74.9997
January 1988	50	83.3333

Source: New Zealand Milk Board Annual Reports 1972 to 1987

Table 4
Total Town Milk Sales Per Year

August Year	'000 Litres	Consumption Per Head Dec Year (Litres)
1966-67	345,384	122.2
67-68	345,133	123.5
68-69	352,713	124.8
69-70	364,950	127.6
70-71	375,906	129.4
71-72	382,348	128.9
72-73	394,228	130.1
73-74	410,232	132.5
74-75	422,634	134.7
75-76	414,410	131.6
76-77	399,469	126.7
77-78	395,383	125.4
78-79	386,292	122.6
79-80	375,008	118.5
80-81	365,887	114.5
81-82	357,849	113.5
82-83	352,762	110.8
83-84	350,354	106.2
84-85	349,422	105.5
85-86	339,338	102.3
86-87	336,466	101.9

Source: New Zealand Milk Board Annual Reports and
Monthly Abstract of Statistics

Table 5
Retail Prices of Milk in Cartons and Plastic Containers

Milk Station	1 Litre Carton (Cents Per Unit)	2 Litre Plastic Containers (Cents Per Unit)
Kaitaia	95	-
Bay of Islands	90	180
Whangarei	90	180
Ruakaka, Waipa, etc.	98	196
Dargaville	-	192
Auckland AMC	90	180
Ambury's	90	180
Hamilton	90	180
Thames	93	186
Coromandel	95	190
Te Aroha	90	180
Whangamata	93	186
Waitomo	-	190
Tauranga	90	180
Gisborne	100	-
Hastings	100	190
Maharahara	100	-
Taumarunui	98	200
New Plymouth	89	-
Hawera	-	185
Wanganui	90	-
Masterton	100	-
Palmerston North	95	190
Otaki	95	190
Hutt	95	190
Wellington	95	190
Blenheim	97	195
Nelson	-	195
Westport	-	-
Greymouth	100	-
Christchurch	100	200
Districts	100	200
Timaru	89	192
Oamaru	-	188
Dunedin	97	192
Alexandra	108	210
Balclutha	100	200
Invercargill	97	199
Bluff, Mataura	98	201
Riverton, Tuatapere	99	203
Te Anau, Lumsden	100	205
Athol, Kingston, Stewart Island	101	207

Source: New Zealand Milk Board. Annual Report for the year ended August 1987.

Deregulation has resulted in the relaxation of many controls within the industry. The relaxation of pricing controls from September 1987 has allowed processors to set their own prices, but significant price changes have not yet been evident. In the future the safeguards of limited competition for the supermarket trade may be insufficient to prevent monopoly pricing by processors. Milk has few close substitutes and demand shows little response to price change.

The January 1988 increase in the milk price to 50 cents per 600 ml bottle was approved by the Minister of Agriculture with some reluctance. In a letter to the Milk Board (quoted in the Milk Industry Bulletin of February 1988) the Minister pointed out "that the increase to 50 cents was not a justification for processors to increase the price to that level, but was recognition of the need to have more flexibility in the pricing of milk". The Minister acknowledged that some cost increases had occurred such as the increase in milk vendors' margins but the benefit processors had gained from the reduction in Milk Board levies should have more than offset those cost increases.

This demand for an increase in the milk price to 50 cents suggested that the government "objective of competition in the industry is not being met", while the Minister was disappointed at the lack of industry competition he accepted that "companies are now operating commercially and government is not involved in price setting."

4.2 Alternative Packaging

Prior to 1 October 1986 alternative packaging of fresh town milk was prohibited. Multi-trip refillable glass bottles had been the traditional packaging and this had helped protect the vendor system. Unfortunately this protection had acted to restrict the rationalization of the industry. The costs of distributing bottles over long distances was high. Alternative packaging offered the advantages to the industry of one-way transport and convenience to consumers.

Since alternative packaging has been permitted there has been a substantial capital investment by milk companies in cartoning machines and plastic packaging lines. Milk is now sold in a variety of sizes of cardboard cartons and plastic two litre bottles. Previously supermarkets, because of limited space, were less willing to handle milk in returnable bottles. For the first time since the price of milk started increasing in price (in 1975), milk consumption has stopped falling and started rising. In the 1986-87 August year milk sales fell by 0.9 per cent. But for the four months ending December 1987 milk sales rose by 1.9 per cent. The introduction of alternative packaging may have contributed to this increase in demand for milk. Consumers

now have a greater freedom of choice in both form of packaging and point of sale.

Increasingly consumers seem to prefer the new packaging, especially two litre plastic containers. In Auckland both milk companies introduced cartons and plastic packaging. By November 1987 in Auckland, ten per cent of town milk was sold in cardboard cartons, twenty-six per cent in plastic two litre containers and sixty-four per cent in glass bottles. In Tauranga the local milk company began supplying milk in plastic bottles in November 1987. This was a response aimed at regaining their lost market share from Tauranga supermarkets. NZCDC from Hamilton had started supplying Tauranga supermarkets with milk in cartons and plastic bottles. The Tauranga Milk Co had been supplying cartoned milk for 12 months but within two months of releasing milk in plastic bottles, consumers had responded by buying 20 per cent of their milk in plastic bottles and 16 per cent in cartons.

The home delivery service also offers milk in alternative packaging although most sales are still made in bottles.

The capital cost of blow moulding machinery needed to produce plastic bottles is high. The plants purchased by ACMP and PDL cost each company more than \$3 million. Some of the smaller milk processors have avoided this capital cost by obtaining their supplies from other blow moulding companies although moving empty plastic bottles incurs high transport costs. To service the high fixed costs a plastic packaging line requires increased throughput compared with a cardboard carton line. The rationalisation of increased throughput and other associated economies of scale allow a processing company to compete in a neighbouring market for bulk milk supplies. Small processors without plastic bottles are at a disadvantage.

4.3 Entry Barriers to Other Companies

There are a number of reasons why other firms (eg. a factory supply dairy company) cannot enter the town milk market including the preservation of the market dominance of existing town milk processing companies by the regulations of the new Milk Act.

The entry barriers to the industry include (after Bollard, 1988):

1. The difficulty of obtaining supplies of year-round milk on a consistent basis.
2. Even if a new entrant had access to year-round milk, it appears unlikely that the Milk Authority would reallocate a home delivery district to a new entrant.

3. Entry to the supermarket or bulk user sub-market requires a processing licence from the Milk Authority. This will not be granted unless the applicant has a viable home delivery district, although this can be in another area. This regulation prevents dairy manufacturing companies with occasional surplus milk from acting as a short term "hit-and-run" entrant.
4. Small processors with an existing town milk processing station and a vending system may also have trouble supplying supermarkets in another district. The returns in the new market must be sufficient to overcome the transport barrier. It may also be difficult to attract sufficient additional milk (especially in the winter) from their producers.

Processors located in more isolated districts may be tempted to take advantage of the inelastic demand for milk and increase the price of milk. This will incur considerable monopoly rents at their consumers' expense.

A new entrant seeking access to the contestible section of the market (including supermarkets) of another district faces additional costs. These costs include not only getting to the various supermarkets in the target city but also maintaining the quality of the product. Milk demands precise temperature (less than 4°C) and light control. To help gain market share a new brand of milk would also require extensive costly marketing and promotion support. However, these "barriers" are similar to those facing other perishable products and are not considered prohibitive.

While entry to the town milk bulk trade in another region seems possible, market penetration to this bulk market (which only represents about ten per cent of the total market) is likely to be limited. Entrants have to be traditional processor co-operatives. If twelve month supply is sought, the potential entrant has to obtain extra winter milk and it also has to meet the various other costs such as transporting the milk to the new market. These costs would make entry uneconomic unless higher consumer prices are being charged in the neighbouring region. If this was happening then the incumbent processing company would have been "enjoying very considerable monopoly rents. Consequently the competitive pressure on the incumbent to perform competitively, efficiently, and minimize prices to consumers would be very weak" (Bollard, 1988). However, if supply for the summer only was acceptable to the purchaser, a strong competitive situation could occur.

Supermarkets have the motivation to seek the least cost supplier of milk. In an area such as Auckland where the dominant processor has become NZCDC, a supermarket chain could develop countervailing power (Vautier, et.al.1988). In

a competitive retail environment a supermarket chain could buy or contract with an outside processor. The success of this venture would depend on how high NZCDC raised its prices. The price rises would have to be sufficient to allow the supermarket to overcome the transport cost barrier and the higher costs of packaging and a smaller production run.

Some concern has been expressed over the extreme difficulty potential processors would face trying to enter the town milk industry (Turnbull, 1988). The new legislation gives existing milk stations license to sell milk within exclusive regions and fix their own prices without any real competition.

4.4 Milk Supplied to Supermarkets

After the initial deregulation of the milk industry in 1987, some Tauranga and Nelson supermarkets sold milk supplied from processors outside their districts. The major cost which tends to limit the expansion of this competition for market share of milk supplied to supermarkets by "cross border" processors is the cost of transport. Often processing companies can achieve economies of scale by increasing throughput. This can help offset the additional costs (eg. transport) required to expand into another district.

Milk is a bulky product which requires expensive refrigeration storage. Supermarket milk is usually supplied in cartons or plastic bottles because milk quality in glass bottles is affected by display lights.

One effect of the change in packaging has been some relaxation of quality controls on retail milk. The quality of some milk products in some regions, notably cartoned milk purchased from shops and supermarkets, has been reported as being poor. Previously the Milk Board maintained strict quality controls and although these controls are still maintained by processors, there has been a relaxation of quality control by some retailers. Most processors now date stamp their milk with a "Use by" (or "Best Before") date instead of the date of bottling.

In Tauranga the milk supplied to supermarkets by NZCDC had a "Use by" date 10 days after bottling. The local Tauranga Milk Company had a "Use by" date which allowed a shelf life of four days. The shopper when confronted with both products in the one supermarket, tended to choose the later date stamped product (i.e. the one post-dated ten days ahead). The shopper expected the product with the later date stamp to be fresher.

Most supermarkets prefer to use their limited refrigeration storage space for high profit margin goods rather than milk. The supermarkets rely on receiving

frequent deliveries of milk often twice or three times a day especially on Thursdays and Fridays. It is convenient and more efficient for the supermarkets to hold smaller milk stocks and re-order from a near-by processor. The turn-around response time is quicker from a closer milk station than from one located over 100 kilometres away.

Milk has been supplied to some Tauranga supermarkets from NZCDC in Hamilton. Initially this milk was being received three days a week. Later deliveries were being received daily on week days, although it later reverted back to three days a week. To meet this outside competition the Tauranga processing company hired a marketing manager, introduced plastic bottles and also introduced a new supermarket wholesale price to match the selling price of NZCDC.

Although supermarket milk can be sold at three cents per litre less, it is unlikely to be regularly discounted and featured as a "loss leader" (Vautier et.al.1988). There are many other more convenient grocery products which could be used for this purpose. Supermarkets prefer to cater for the weekly, high-volume shopper and milk is still thought of as a daily purchase.

In Auckland around ten per cent of fresh milk sales are made by supermarkets. The bulk user and supermarket share of milk sales has grown quickly following limited deregulation. However the growth of this market (the "contestable" part of the market) has probably been due to the introduction of alternative packaging (eg. cartons and plastic bottles). Milk vendors are responding to this competition from supermarkets by improving their efficiency to protect their market share.

Overseas supermarket chains package milk under their own house brand. In New Zealand the design of existing supermarkets and the lack of bulk refrigeration storage facilities restrict these stores from accepting milk in large volumes. If the public become dissatisfied with the home vending service more milk may be sold by the supermarkets. If this trend develops supermarkets will quickly construct new facilities to meet this new demand. By then milk may be marketed by the larger supermarkets under their own generic or house brand.

Before the deregulation of the industry the Milk Board proposed that a national brand for milk and cream be established. This would have saved costs in both packaging and promotion. The two large Auckland companies rejected this proposal and went ahead and established their own distinctive national brand names. Among the many independent North Island home delivery districts there has been considerable cross-licensing of these brands. NZCDC sells standard milk in containers using the "Springtime", "Happy Valley", "Trim" and "Active" brands. Brand

franchising arrangements by NZCDC have been negotiated with seven of the eighteen independent North Island milk companies. Processors in eight other North Island districts have been licensed to use the ACMP "Country Maid" brand. In the North Island 93 per cent of town milk is supplied by processors using these brands.

The adoption of these national brands by other smaller processors avoids the high printing and cartoning costs that an independent brand would require. Some processors believe that national branding is useful if it helps protect their region against outside competition. One disadvantage is that the brand licensor can put restrictions on the areas of operation by the licensee. This restriction effectively prevents any regional licensee from shipping milk into the bulk markets controlled by NZCDC and ACMP (Bollard, 1988)

4.5 Milk Station Ownership Changes

Since the investigation by the IDC into the milk industry, the processing sector has undergone some rationalisation. While the investigation was proceeding, there was uncertainty as to the extent of the proposed deregulation of the industry. This resulted in only limited milk station reconstruction and plant replacement although by late 1986 a number of milk stations had installed alternative packaging equipment.

There have been a number of milk station ownership changes since 1985. Where more than one buyer has wanted to buy the milk company, the final price paid for the company assets and goodwill has tended to be higher.

The new Milk Act gives the Authority "very little discretion in terms of licensing, modification of licenses or exclusive milk zones" (Kimpton, 1988). It would be very difficult for the Authority to admit a new entrant even if the encumbrant processor's service is inadequate. Kimpton believes "licences could attain a spurious value based on unalienable rights bestowed by legislation". In the last two years there have been a number of mergers and take-overs of town milk processing companies by other dairy companies. Some of the high prices which have been paid for these companies with their exclusive milk zones, lends support to this view.

A total of thirty-eight milk stations were operating in August 1986. In the previous year Palmerston North had purchased the assets of the Raetihi Pasteurised Milk Supply Co Ltd, and closed it down. During 1986 both Tokoroa and K B Dairies in Ashburton were closed down. The Ashburton Company amalgamated with Timaru Milk Company.

On 1 December 1985 Rotorua Milk Company amalgamated with NZCDC. The price paid of \$1.7 million for all 20,000 shares was distributed among twenty-two suppliers. The

Waikato Milk Company in Hamilton amalgamated with NZCDC on 1 June 1986. The forty-five town milk producers received close to \$151 per share.

In the South Island, Metropolitan Milk (ChCh) Ltd amalgamated with Canterbury Dairy Farmers. Tai Tapu Dairy Co also put in an offer to buy the 19,700 shares of Metro. The successful bid of \$690,000 by CDF was shared among thirty-three producers (at \$35 per share).

From 1 September 1986 Warkworth Co-operative Milk Producers Ltd merged with ACMP. During the 1986-87 year a merger occurred between Milk Processing Palmerston North, Hutt Milk Corporation and the Wellington City Council. These three companies combined to form a new company called Capital Dairy Products.

In late 1987 three companies (Morrinsville-Thames Valley Co-op Dairy Co, NZCDC and the Western Bay of Plenty (Co-op) Milk Producers) were bidding for the shares of Thames Valley Milk Producers Ltd. The directors of Thames Valley Milk Producers decided to accept the \$1.3 offer from the nearby Morrinsville-Thames Valley company. There were a number of reasons for this choice despite the higher bid which had been offered by NZCDC. The nearby location of Morrinsville-Thames Valley meant management control would still remain in the region. The new owners also undertook to continue with the twenty-one suppliers' existing town milk contracts for three years. Each farmer's quota will be adjusted each year depending on consumer demand. Had the offer from NZCDC been accepted, not only would any local regional control have been lost, but there was a real risk that the Thames Valley Milk Producers plant would have been closed. Future milk for the region would probably have been supplied from Hamilton. After NZCDC took over Rotorua and Tokoroa, both milk treatment plants were closed down.

The Whakatane company of Eastern Bay of Plenty Co-op Milk Producers was also the subject of a takeover in 1987. This company was approached by three potential buyers; Western Bay of Plenty Co-op Milk Producers (the eventual purchaser), NZCDC and Morrinsville-Thames Valley. The twelve suppliers from the Whakatane based company shared the payment for the net realizable assets of the Whakatane plant of close to \$1.2 million. The plant was closed down in late 1987 and the bottling plant was later sold to Australia. Ten of the twelve Whakatane suppliers transferred to Tauranga.

The cost of this takeover by the small Western Bay of Plenty company could have disadvantaged their own suppliers. To avoid this, the Tauranga based company had their assets valued and issued their own twenty-five shareholders with ten year redeemable preference shares.

There is often a strong relationship between the size and type of dairy co-operative of the dominant company involved in a take-over (or merger) and the consideration given to existing town milk shareholders. When a small town milk processing company takes over another, the existing shareholders are often protected (eg. the Western Bay of Plenty issue of redeemable preference shares). When a large dairy co-operative (which is predominantly involved in factory supply dairy production with only a few town milk suppliers) takes over another town milk processor, the town milk farmers from the parent company receive little extra consideration. The small town milk sector has limited representation on the Board of Directors of these large manufacturing dairy companies.

A feature of the previous Milk Board's administration was the protection it offered to producers. The representation on the Board of industry representatives meant that Board activities could be expected to be designed to protect the existing industry (including producers) interests while meeting other requirements imposed by legislation. A number of major financial decisions, such as the setting of the producer milk price, were handled by the Board in Wellington. Since deregulation, producers (via their farmer directors) have had to make all their own decisions in a vigorous commercial world. In some regions the producers' own futures have suddenly been constrained to a two or three year time horizon. The assets of their own company, which their milk has paid for over many years, have sometimes been sold with limited opportunity for discussion by producers.

4.6 Winter Milk Options

There are a number of different ways of obtaining town milk during the winter months. The current system of quotas and 365 day production ensures a continual supply of good quality mid-lactation milk. This production system has worked well in the past but farmers, because of their high sunk costs in their industry, will be reluctant to change. The costs of transferring out of town milk supply are non-recoverable.

Another possible way of obtaining town milk is to use the low cost milk produced by factory supply farmers during the warmer months of the year. Winter milk could be supplied by other special winter milk producers. There are some problems with milk quality at the start and end of lactation from factory supply herds but this could be overcome by using fresh mid-lactation milk from winter milked herds during this period.

Compared with the existing year-round town milk production system it has been suggested (although it is still unproven) that there may be some cost savings if a farmer was given a winter quota only. The farmer would calve all the herd in the autumn and nine months later dry

the herd off in the summer. A number of farm management advantages over year round supply may result. Stock management would be easier with all the cows and heifers calving at the one time. During the early summer as lactation slows, more land could be set aside for silage and hay winter feed conservation.

Another advantage of this winter quota system is its ease of introduction to existing town milk farms. Under the current 365 day quota scheme, farmers are obliged to provide milk every day of the year. If the period of the new quota scheme was limited to the winter and adjoining months (e.g. March to August) farmers could receive premium payments for their milk for this period only. Any milk supplied during the rest of the year would receive the manufacturing price. Penalties, such as loss of future quota would apply only for the winter months. The premium for winter milk would need to be sufficient to encourage town milk farmers to change to winter quotas.

Another option for winter milk is toned milk. If there are insufficient supplies of fresh high quality winter milk, the existing supply could be supplemented by toned milk. Dried ingredients such as skim milk powder, buttermilk powder and anhydrous milk fat could be combined with fresh milk in a 40:60 or a 60:40 combination. It is claimed that it is difficult to taste the difference between fresh and toned milk.

Winter milk could be supplied from UHT milk, either alone or as a supplement. This may be more expensive than the current winter supplied milk. Another alternative is to stop all winter milk production and supply reconstituted, recombined or UHT milk.

A further option is to encourage the production of winter milk in regions with the comparative advantage of good winter grass growth. This milk can then be trucked to other regions which have high winter production costs. Tokoroa and Rotorua are already being supplied with winter milk from the NZCDC company at Hamilton. The current winter milk being produced by the Tokoroa and Rotorua town milk producers is diverted to nearby factory supply companies

4.7 Farmer Responses

Farmers have responded to the new deregulated environment with varying degrees of confusion. The main change affecting farmers is the change in the supervision of the quota system from the Milk Board to the local processing company. For many of the companies there has been no change to the system which has operated in the past, i.e. the quota system has remained unchanged. However, in other areas, there have been ongoing discussions over possible changes in the ways in which milk delivery to processors is to be organised. The main option which appears to be gaining

favour is the negotiation of a contract for supply of a given quantity over the winter for a negotiated price. These contracts can be with traditional town milk farmers or with factory supply farmers who consider that the winter supply price being offered is sufficient to cover their winter production costs.

There are major costs associated with a change from town milk supply to butter fat supply. These costs are mainly associated with the loss of a large part of the production for one year. Cows which are milked through the winter cannot be brought back into production until the following spring, resulting in a lag of some three to four months. Winter production also reduces grass availability in the spring and summer, meaning that seasonal supply of butterfat in the first year of the change over will be lower than the potential available.

The deregulation of the industry has brought about rationalisation activities, particularly in the northern part of the North Island, where NZCDC has become the major supplier through a series of corporate takeovers. As a result, suppliers to some of the smaller cooperatives which have been absorbed have been told that they will not be receiving any future quota allocations. These farmers are considering the options available to them but it is expected that most of them will convert to butterfat supply.

It should however be noted that the farmer members of cooperatives which have been purchased by NZCDC will have received compensation as a result of the sale in proportion to the quota they held with the cooperative. For some cooperatives, the compensation was quite substantial.

A major effect of the deregulation process has been the increase in uncertainty amongst farmers. Discussions with farmers yield very little information on the effect of the deregulation on the farm income or operation. However, farmers consider that over the past few years there has been a significant drop in profitability (not necessarily related to deregulation) and as a result of this and the uncertainty over future pricing arrangements, a significant number of farmers are continuing to leave the industry.

The most likely outcome of the process appears to be the adoption of a winter milk production contract, at a price which "compensates" for the cost of production over this period. Such production will only occur on the most suitable land with a climate which encourages some grass growth over the winter. This means that the production of winter milk will be mainly carried out on light land in warm areas. Milk produced over the spring and summer will attract factory supply (butterfat) prices and the concept of specialist town milk producers will disappear.

In areas south of Hamilton, there is ongoing uncertainty concerning the outcome of the deregulation process. The transfer of milk supply responsibility to the processing companies appears to have been received by some companies without much enthusiasm. In the past, the companies have only been responsible for the administration of a system controlled by the Milk Board. The change in the control with the increased responsibility of the companies has caused some difficulties for some companies in that they have not been in a position to effectively manage the new system. This has led to increased uncertainty amongst farmers. In addition, some farmers feel they have not received fair treatment from the companies in that the prices being paid have not retained the old linkage with the butterfat price. However, there is little justification for any linkage of this type as the products are sold in different markets, ie. local fresh milk of exported dairy products, and the returns are likely to be different.

In the southern North Island area, there is some concern amongst farmers with respect to the degree of influence being exerted by particular companies. For example, it is considered by some farmers that the Manawatu company has gained significant influence over the Wellington area, perhaps to the detriment of the original Wellington suppliers.

From the discussions held, it appears that the Palmerston North / Wellington area is continuing to develop new town milk supply farms with some very large herds being established particularly near Palmerston North. The Manawatu company has emerged as the dominant organisation in the southern North island area. Supplies of town milk are not necessarily adequate, especially given the poor grass growth conditions over the autumn and winter and it was considered that supplies may be required from NZCDC. The "problems" of "excessive" influence by butterfat producers do not appear to be as severe in this area.

In the Christchurch area, the dominant organisation in Canterbury Dairy Farmers (CDF). All Christchurch town milk is supplied by this company. The butterfat company is Alpine Dairy Products Ltd., which is an amalgamation of Tai Tapu Dairy Company and Temuka Dairy Company. Alpine does not have a town milk "licence". No changes have been made to the farmer arrangements (quotas) in the Christchurch area.

In South Canterbury, adequate milk supply has been achieved on a year round basis with surplus milk being supplied to Alpine and CDF. Winter supply problems do not appear to be evident.

Since deregulation, there appears to have been little change in the farmer arrangements. The number of suppliers had fallen substantially over previous years and a core of

suppliers remain in the area. It is anticipated that CDF might shortly express interest in becoming involved in the Timaru area. There is a strong possibility that farmers might be favourably inclined towards moving the herd to Autumn calving as milk production over the winter is less difficult. However, a surplus during the winter can already exist and demand for winter milk would depend on the situation in Christchurch.

In the Dunedin Area, concern was expressed over the potential for competition from CDF, especially as the Dunedin processing plant will shortly require an extensive upgrade. However, there have been few changes in the system in the Otago area. The butterfat factories and the town milk company have joint ownership of the local cheese factories and any surplus town milk goes for cheese manufacture.

There did not appear to be very much potential for exclusive winter milk production and it was anticipated that the supply arrangements would continue much as they had in the past. Changes would depend upon the possible influence of CDF.

Invercargill is in a similar position to Dunedin but the pressure on the local suppliers is likely to be less. If competition were to begin, it is expected to come from CDF but the longer distance would mean that the Invercargill people would be able to compete effectively.

Few changes in the supply system are expected in this area. The local company directors consider that as a result of being able to make decisions about their own operations, the efficiency of the industry will improve. However, this is not likely to bring about changes in on farm practices.

In summary, the effect of the deregulation process has been most significant in the North Island, particularly around Auckland, where NZCDC has been active in acquiring smaller town milk supply companies and in changing town milk supply arrangements. It appears that the main changes are likely to be the discontinuation of quotas for year round town milk supply and the introduction of winter supply contracts for any farmers who are willing to calve their herds in the autumn for this purpose. "Town Milk" will then be supplied from spring calving herds, whether the herd was traditionally used for butterfat production or town milk production, during the summer and autumn calving herds during the winter. It is anticipated that this may lead to some increased variability in the quality of the milk supplied, as there are significant differences in the milk quality from different parts of the lactation time.

In the southern part of the North Island, the changes are likely to be fewer with traditional town milk arrangements continuing. Some changes in company ownership

have been occurring but these changes have largely been within the traditional town milk sector rather than involving the factory supply sector. New large town milk supply herds are being established as there is the potential for a shortage of milk in this area. There is some speculation concerning the possibility of NZCDC supplying milk to the Palmerston North / Wellington area during times of local milk shortage.

In the South Island, there appears to be few changes occurring. CDF is the dominant company and there is some expectation that CDF could become involved in milk supply down to and including Dunedin. Changes in farmer arrangements have not been reported.

In the Otago area, the local milk supply company has arrangements with the local cheese factories for the use of surplus milk. Shortages of milk do not appear to be a problem. There was no reported discussion of possible changes to the town milk supply system as the present year round quota system appears to be suitably efficient in this area. Exclusive winter supply is considered to be a more difficult proposition than current arrangements. There was some discussion of the possibility of CDF becoming involved in Dunedin but transport costs would appear to weigh against this.

In Invercargill, little appears to have changed with respect to farmer operations. The potential for competition from outside the area is quite limited with Dunedin apparently not interested in acquiring a share of the Invercargill market. Deregulation appears to have been well received by the local company with the potential for more efficiency based on local decision making being stressed.

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