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**THE DEREGULATION AND RATIONALIZATION OF
AUSTRALIA'S DAIRY INDUSTRY—IMPLICATIONS FOR
THE U.S. AND WORLD DAIRY INDUSTRIES**

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THE DEREGULATION AND RATIONALIZATION OF AUSTRALIA'S DAIRY INDUSTRY—IMPLICATIONS FOR THE U.S. AND WORLD DAIRY INDUSTRIES

W.D. Dobson and Jeffrey Wagner*

Executive Summary

Introduction

- Termination of Australia's Domestic Market Support (DMS) scheme for manufacturing milk producers and the end of state market milk (fluid milk) pricing regulations on June 30, 2000 made Australia's dairy industry arguably the most deregulated in the world.
- Because of economic efficiencies and possible increases in competitiveness in dairy export markets to be gained from deregulation, expect pressures for deregulation to continue to surface in other countries.
- Useful lessons for the dairy industries of the U.S., EU, and other countries can be gained from analyzing the economic and political forces that made deregulation of Australia's dairy industry nearly inevitable.
- The restructuring package that Australia's dairy industry and Australia's government used to help milk producers adjust to the lower milk prices and lower farm asset values that will accompany deregulation is of particular interest. Proposals for dairy industry deregulation lacking such restructuring help and compensation for producers frequently will be nonstarters.

Characteristics of Australia's Dairy Industry

- The forces that caused Australia's dairy industry to be deregulated and rationalized can be better understood against a backdrop of information on the industry.
- Australia's dairy farms are relatively low-cost, pasture-based operations similar to those of New Zealand.
- Australia had about 13,150 dairy farms in 1999, down 55% from the 1975 total. Average dairy herd size in Australia in 1999 was 161 cows.
- In 1999, Australia's milk production was equal to 14% of the U.S. total and almost identical to Wisconsin's milk production.
- Victoria's milk producers accounted for approximately 62% of the milk produced in Australia in the 1990s.
- Market (fluid) milk utilization percentages declined in all Australian states in the 1990s, falling to an average for the country of 19% in 1999.
- Under state pricing systems, Australian farmers received prices for market milk during the 1990s that were approximately double those received by manufacturing milk producers. Thus, Australia's fluid differentials were much higher than those prevailing under U.S. federal milk orders.
- Prior to deregulation in mid-2000, milk production quotas supported the market milk pricing systems in New South Wales, Queensland, and Western Australia.

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- Australia's dairy exports were valued at AU\$2.17 billion (U.S.\$1.35 billion) in 1998/99. The country's exporters had about a 13% share of world dairy exports in 1998.
- Murray Goulburn, Bonlac Foods (now partly owned by the New Zealand Dairy Board), and the Dairy Farmers Group—the country's largest dairy cooperatives—account for over 60% of Australia's milk intake.
- The Australian Dairy Corporation (ADC) is a Commonwealth statutory marketing authority, which had gross sales revenue of AU\$299 (U.S.\$206 million) in 1998. The ADC does not have the monopoly exporting privilege afforded the New Zealand Dairy Board.

Termination of Australia's Domestic Market Support Scheme and State Market Milk Pricing—Economic and Political Pressures that Fostered Deregulation

- The deregulation of Australia's dairy industry has a lengthy history and received impetus from the Kerin Plan, the Crean Plan, the end of post-farmgate milk pricing, and the 1983 Closer Economic Relations Trade Agreement with New Zealand.
- The DMS scheme that was terminated on June 30, 2000 was a federal program that placed levies on all market (fluid) milk sold domestically (paid by producers of market milk) and all milk used to produce manufactured dairy products sold in Australia's domestic market (paid by processors). Proceeds from the levies were distributed to Australian producers of manufacturing milk.
- Payments to manufacturing milk producers under the DMS scheme were expected to be AU 0.95 cents/liter (U.S.\$0.27/cwt) to AU 1.15 cents/liter (U.S.\$0.32/cwt) for 1999/2000.
- Processors paid dairy farmers AU 40 cents/liter to AU 50+ cents/liter for market milk during the 1990s under state milk pricing programs.
- Victoria's powerful dairy groups proposed to end government regulation of milk prices in part because:
 - Dairy export markets were regarded as the growth market and Victoria dairy groups believed that they could be more competitive in export markets if the DMS scheme was ended.
 - State milk control practices had prevented or discouraged Victoria's dairy industry from selling fluid milk in other states.
- Producers in market milk states (Queensland, New South Wales, South Australia, and Western Australia) were powerless to resist deregulation, mainly because Victoria's producer organizations presented them with an offer that was difficult to refuse: Either accept deregulation of state market milk pricing with compensation or get deregulation without compensation.

The Restructuring Package Made Available to Australian Milk Producers After Deregulation

- Unmanaged deregulation of the dairy industry, it was widely believed, would lead to economic and social disruption, especially in market milk states.
- The AU\$1.74 billion (U.S.\$1.0 billion) required to finance the restructuring package will be provided by an AU 11 cent/liter (U.S. 6.3 cent/liter) government levy on all fluid milk products (including imported items) sold in Australia's domestic market.
- Restructuring payments will be made to eligible dairy farmers in the amounts of AU 46.23 cents/liter (U.S.\$11.69/cwt) for market milk and AU 8.96 cents/liter (U.S.\$2.27/cwt) for manufacturing milk produced in the 1998/99 base year. The average milk producer in the relatively high fluid utilization state of Queensland will receive about AU\$110,000 (U.S.\$63,250) to help him/her adjust to a deregulated industry.
- Restructuring payments will be made quarterly for eight years, beginning July 1, 2000.

- The Australian Dairy Industry Council negotiated with banks to establish an industry facility that will permit an individual farmer to obtain the discounted present value of his/her quarterly payments as an upfront payment regardless of whether the farmer plans to continue farming or leave the industry.
- Upfront payments were thought to be more valuable to farmers than quarterly payments stretched out over eight years for buying land, remodeling milking facilities, and making other adjustments needed to operate in a deregulated environment.

How Deregulation Will Affect Australia's Dairy Industry and the Exporting Capabilities of Australian Dairy Firms

- Milk production almost certainly will become concentrated on larger farms in low-cost production areas within Australia as a result of deregulation.
- The number of dairy farms in market milk states is expected to decline by 25% to 30% after deregulation.
- Small milk producers (less than 100 cow herds) are expected to account for a disproportionately large percentage of producers exiting from the dairy industry post-deregulation.
- Market milk prices will be set by commercial negotiations after deregulation. Under one set of estimates, farmgate prices for market milk eventually would decline under deregulation to about AU 27 cents/liter to AU 29 cents/liter in Tasmania, New South Wales, and South Australia (U.S.\$6.93/cwt to U.S.\$7.44/cwt) and to AU 33 cents/liter in Queensland (U.S.\$8.45/cwt).
- Prices for manufacturing milk in Australia will change little after deregulation and will continue to be heavily influenced by dairy product prices in international markets.
- Australia's milk production is expected to decline for a few years post-deregulation and then resume the upward trajectory of the 1990s.
- In 2000, the New Zealand Dairy Board acquired a 25% ownership interest in Bonlac Foods of Australia. Additional cross-Tasman agreements between Australian and New Zealand dairy exporting firms could create a New Zealand-Australia dairy exporting "powerhouse" with dairy exports exceeding that of the EU.
- Australia will have lower raw product costs and other advantages post-deregulation that will help that country's firms to expand dairy exports. But whether Australia's dairy exporters capitalize on advantages and opportunities to gain substantially larger and more profitable dairy export market shares remains to be seen.

Will the Economic and Political Pressures that Fostered Deregulation in Australia's Dairy Industry Produce Similar Results in the U.S., EU and Canada?

- Close parallels to the situation that forced deregulation of Australia's dairy industry do not presently exist in the U.S., EU, and Canadian dairy industries. Thus, the latter countries will not be under strong pressures to deregulate their dairy industries in the near future.
- The U.S. federal order system is substantially less vulnerable to deregulation pressures than was Australia's state market milk pricing regulations in the late 1990s.
- Immediate gains for the U.S., EU, and Canadian dairy industries from maintaining high border protection and pricing regulations will come at a cost. Australian dairy exporters—probably linked closely with New Zealand firms—will gain early mover advantages in Asian growth markets for dairy products, making it costly for North American and EU exporters to expand sales there.
- In the U.S. and EU, growth-oriented firms will take market share from weaker firms in the domestic market rather than seek export markets. For example, lacking export markets, three

firms that plan to expand California's cheese processing capacity by 40% within five years will compete for cheese market share against firms in the Upper Midwest and elsewhere in the U.S.

- U.S. and EU firms will seek to expand exports of highly differentiated dairy products that can be exported despite the high prices for dairy products in the home markets. The competitive advantage of U.S. and EU dairy firms increasingly will be found in exporting these products rather than bulk or modestly differentiated dairy products. Firms located in New Zealand, Australia, Argentina and a few other countries will be strongly positioned to dominate dairy export sales in the latter categories.

A Caveat

- The deregulation of Australia's dairy industry is described as an accomplished fact in the paper. Indeed, it is discussed in the past tense in much of the paper.
- While deregulation of Australia's dairy industry is likely to unfold as described in the paper, remember that deregulation of almost any country's dairy industry is a contentious thing. Thus, Australia's path-breaking deregulation measures could be short-circuited, delayed in whole or in part by unforeseen developments, and regulations could be partially restored at a future date.
- Even if such unlikely developments occur, the Australians have provided the world dairy industry with useful lessons about what is required to deregulate a country's dairy industry.

THE DEREGULATION AND RATIONALIZATION OF AUSTRALIA'S DAIRY INDUSTRY—IMPLICATIONS FOR THE U.S. AND WORLD DAIRY INDUSTRIES

W.D. Dobson and Jeffrey Wagner

Introduction

Developments in the 1990s and 2000 that culminated with termination of Australia's Domestic Market Support (DMS) scheme for manufacturing milk producers and termination of state market milk (fluid milk) pricing regulations on June 30, 2000 made Australia's dairy industry arguably the most deregulated in the world. One Australian official claimed that, after deregulation, the country's dairy industry will receive even less government support than New Zealand's dairy industry [15]. This is noteworthy because New Zealand's dairy industry receives little government support except for the monopoly exporting privilege afforded New Zealand's Dairy Board. Continued rationalization of Australia's dairy industry is accompanying deregulation to make Australia's dairy firms more competitive in both the domestic market and dairy export markets.

Longer-term trends suggest that the dairy industries of other major dairy countries will eventually be deregulated. However, economic and political pressures in the U.S., European Union (EU), and Canada are not yet strong enough to produce deregulation in these countries. One important impediment to deregulation elsewhere is the power of producer groups to resist measures that would reduce milk prices and farm asset values. Most EU and Canadian milk producers strongly oppose changes that would reduce the value of their milk quotas. U.S. milk producers do not have milk quotas, but they also resist deregulation measures that would reduce milk prices and farm asset values.

Because of the economic efficiencies and possible increases in competitiveness in dairy export markets to be gained from deregulation, expect pressures for dairy industry deregulation to continue to surface in other countries. Indeed, the U.S. government had scheduled the USDA's dairy price support program for elimination at the end of 1999. Faced with low farm milk prices in late 1999, the U.S. Congress and Administration reinstated the dairy price support program for a year. Subsequently, legislation has been introduced that would extend the USDA's dairy price support to as far into the future as 2002, allowing the program to be evaluated together with other major U.S. farm programs. Such legislation appears likely to pass in some form. How long the USDA's price support program will be extended after 2002 is unknown. Budget pressures, impacts of EU enlargement, and discontent with existing dairy price support regimes in a few member countries will create incentives for lower EU milk prices and perhaps elimination of EU dairy quotas during the next several years. Hence, useful lessons for the U.S., EU, and other dairy economies can be gained from analyzing the economic and political forces that pushed the Australians to deregulate their dairy industry.

Of particular interest is the restructuring and compensation package that Australia's dairy industry and Australia's government have opted to employ to help milk producers adjust to the reduced milk prices and lower dairy farm asset values that will accompany deregulation. It also will be useful to analyze whether Australia is likely to achieve increases in dairy exporting competitiveness as a result of deregulation and, if so, what impact this development will have on dairy exporters in other countries.

The analysis in this Discussion Paper will consist of:

- Background information on Australia's dairy industry.
- A discussion of the termination of the Domestic Market Support scheme and state milk pricing, including a description of the economic and political pressures that led to deregulation of Australia's dairy industry.

- A description and analysis of the impacts of the restructuring package made available to Australia's milk producers after deregulation.
- An assessment of the impacts of deregulation on Australia's dairy industry, especially impacts on the industry's dairy exporting capabilities.
- A discussion of whether developments that made deregulation and rationalization of Australia's dairy industry nearly inevitable will be felt in the U.S. dairy industry and in dairy industries elsewhere in the world.

This analysis benefited from interviews conducted in Australia during April 2000 with officials of the Australian Dairy Corporation, Murray Goulburn Cooperative, Bonlac Foods, the Australian Dairy Farmers' Federation, the United Dairy Farmers of Victoria, Rabobank, Monash University, and the Agricultural Counselor's office at the U.S. Embassy in Canberra.

Certain prices and sales figures in the paper are expressed in both Australian dollars and U.S. dollars. The exchange rates used to express figures in U.S. dollars correspond as closely as feasible to the dates to which the Australian dollar figures apply. In particular, the following exchange rates were used for the periods indicated below:

Dates	Exchange Rate
July 1996-June 1997	1 Australian dollar = 0.7844 U.S. dollar
July 1997-June 1998	1 Australian dollar = 0.6895 U.S. dollar
July 1998-June 1999	1 Australian dollar = 0.6213 U.S. dollar
July 1999-June 2000*	1 Australian dollar = 0.6349 U.S. dollar
Forecasts for July 2000 and later**	1 Australian dollar = 0.5750 U.S. dollar

*Estimated using exchange rate figures for July 1999-May 2000

**Made using exchange rates for May 2000 and early June 2000

Certain forecasts of payments to Australian milk producers under the restructuring plan will, when expressed in U.S. dollars, reflect the recent weakness of the Australian dollar in foreign exchange markets.

I. Characteristics of Australia's Dairy Industry

The forces that caused Australia's dairy industry to deregulate and rationalize can be better understood against the backdrop of information on the industry. The background material in this section includes information on the structure of Australia's dairy industry. Structure, as used in this paper, refers to the size, number and location of firms, firms' market shares, organizational arrangements used by firms, and the competitive strategies of firms.

Dairy Farming Characteristics

Dairying is an important part of Australia's agricultural economy. The farmgate value of milk production in Australia recently has been about AU\$3.0 billion (U.S.\$1.8 to \$1.9 billion) per year, placing Australia's dairy industry in third position behind only that country's wheat and beef industries [3, p.2].

Australia's dairy farms are relatively low-cost, pasture-based operations. Thus, they are similar to New Zealand's dairy farms. However, unlike New Zealand's dairy farmers who feed little or no grain concentrate to cows producing milk destined for production of manufactured dairy products, many Australian farmers now supplement pasture rations for dairy cows with grain concentrates.

Like New Zealand's milk production, Australia's milk production exhibits pronounced seasonality, reaching a peak in October and lows in June and July during the Southern Hemisphere winter.

Australia had about 13,150 dairy farms in 1999, down 55% from the 1975 total. Average dairy herd size in 1999 was 161 cows, more than double the figure for 1975 [3].

Figure 1. Australia's Dairy Regions and Average Percent of Australia's Milk Produced in Each State during the 1990s.*



* Source: ADC – Industry Organisations and Structure.
http://www.dairycorp.com.au/statistics/statistics_austdairy.htm.

The dairy regions of Australia are shown in Figure 1. While all areas in Figure 1 except the Northern Territory have dairy regions, Victoria is the dominant milk producing state. Victoria accounted for an average of 62% of the milk produced in Australia during the 1990s [3]. New South Wales and Queensland were in distant second and third positions, accounting for 13% and 9%, respectively, of Australia's milk production during the 1990s. As will be evident, Victoria's dominance in milk and dairy product production gave that state's dairy industry the market and political power needed to bring about and shape the nature of deregulation measures adopted in Australia's dairy industry.

Milk production in Australia can be separated into two broad categories, market milk (fluid drinking milk) and milk used to produce manufactured dairy products such as butter, hard cheese, and milk powders. Nearly all milk produced in Australia is of the quality required for the fluid market. Prior to deregulation in mid-2000, state milk authorities priced and regulated market milk. Manufacturing milk prices in Australia are heavily influenced by international prices for manufactured dairy products.

Market Milk Production

Market milk utilization percentages vary substantially from state-to-state in Australia. Market milk utilization averaged about 23% of total milk production in Australia during the 1990s (Table 1). The market milk utilization figures declined in all states during the 1990s, falling to an average for Australia of about 19% in 1999. Victoria and Tasmania recorded the lowest market milk utilization figures—both below 10% in 1999.

Table 1. Market Milk Production as a Percentage of Whole Milk Production in Australia—Average for the 1990s and 1999*

State and Country	Market Milk as % of Whole Milk Production	
	1990s	1999
New South Wales	53.5%	44.9%
Victoria	9.0%	6.9%
Queensland	48.8%	46.2%
South Australia	34.2%	28.6%
Western Australia	54.3%	47.6%
Tasmania	11.0%	8.1%
Australia	23.0%	19.0%

* Source: Australian Dairy Corporation, "Australian Dairy Industry in Focus 99," 1999.

Market Milk Regulation and Pricing

Before mid-2000, each state regulated the sourcing, distribution and pricing of market milk and monitored the quality of the milk throughout the production chain [3, p.29]. In the past, state dairy authorities also controlled post-farmgate pricing and distribution. This involved setting margins from processor to consumer and licensing milk vendors. The states ended post-farmgate regulation of pricing and distribution at different times during the 1990s (Table 2). Western Australia was the first to eliminate post farmgate pricing in January 1990 and Queensland was the last in January 1999.

As in other countries where milk price discrimination devices are used, prices paid Australian farmers for market milk have been considerably higher (approximately double in Australia) than the prices paid for milk used to produce manufactured dairy products. Milk production quotas supported the market milk pricing systems used in New South Wales, Queensland and Western Australia (Table 2).

The quota entitlements for the higher priced market milk in the three milk quota states varied from farm to farm. Quotas were tradable in the three states, and on many farms the quotas represented large investments ranging from AU\$200,000 (U.S.\$124,200) to AU\$1.0 million (U.S.\$621,300) [29, p.xv]. For obvious reasons, the prospect of loss of quota values under deregulation was a matter of concern for dairy farmers in the three quota states.

Under state pooling arrangements, an equal proportion of each farmer's milk was eligible for the market milk premium. Thus, states with pools operated pricing systems similar to those used in market-wide pooling mechanisms under U.S. federal milk marketing orders.

Table 2. Dates of Termination of Post-Farmgate Pricing of Market Milk and Mechanisms used to Distribute Payments to Farmers for Milk by State in Australia*

State	Date Post-Farmgate Price Regulations Terminated	Mechanism used to Determine and Distribute Milk Payments to Farmers
New South Wales	July 1998	Quota
Victoria	January 1995	Pool
Queensland	January 1999	Quota
South Australia	January 1995	Pool
Tasmania	July 1993	Pool
Western Australia	January 1990	Quota

* Source: Australian Dairy Corporation, "Australian Dairy Industry in Focus 99," 1999.

Inter-Country Comparisons of Milk Production

Additional perspective on Australia's milk production is provided by the figures in Table 3. In 1999, Australia's dairy farmers produced about 10,483 thousand metric tons of milk. Australia's milk production for 1999 was roughly similar to that of New Zealand and Argentina—other pasture-based milk producing countries. Australia's milk production for 1999 was equivalent to 9% and 14%, respectively, of EU and U.S. milk production for that year. The Australian total was smaller than California's milk production, and almost identical to Wisconsin's milk production in 1999.

Table 3. Milk Production in Australia, New Zealand, Argentina, the EU, U.S. and Selected U.S. States, 1999*

Country or State	Milk Production (1,000 mt)	Australia's Milk Production as % of Production for Other Countries and States
Australia	10,483	—
New Zealand	11,070	94.7%
Argentina	10,200	102.8%
EU	119,715	8.8%
U.S.	73,550	14.2%
U.S. - California	13,821	75.9%
U.S. - Wisconsin	10,483	100.2%
U.S. – New York	5,460	192.0%

* Sources: U.S. Department of Agriculture, Foreign Agricultural Service, "Dairy: World Markets and Trade," December 1999 and Wisconsin Agricultural Statistics Service, "Wisconsin Farm Reporter," Vol. 32, No. 4, February 24, 2000.

Export Market Shares

While Australia's milk production is relatively small compared to the EU, U.S., and even California, the country's milk producers recorded relatively large (5.6%) year-to-year increases in production during the 1990s. These increases suggest that Australia's dairy industry will gain importance as an international player if such increases continue [31].

Australia accounts for less than two percent of world milk production, but it is a large dairy product exporter. The equivalent of 50% of the country's milk production and more than 60% of

Australian manufactured dairy products are exported [4]. The country exported AU\$2.17 billion (U.S.\$1.35 billion) of dairy products in 1998/99. Cheese was the largest export item, accounting for 29% of the value of Australia's total dairy exports in 1998/99 [3]. Skim milk powder and whole milk powder were the next largest items in terms of value, accounting for 23% and 16%, respectively, of the value of Australia's dairy exports. Asia was the destination for about two-thirds (in value terms) of Australia's dairy exports in 1998/99.

While sales to the U.S. accounted for only about 5% of the value of Australia's dairy exports in 1998/99, the U.S. was the largest destination for Australia's casein exports. In 1998/99, Australia exported 5,596 metric tons of casein to the U.S.—60% of the country's total exports of the product for the year [3, p.23].

Australia's 13% share of the international dairy export market in 1998 placed the country's dairy exporters in third position behind only the EU and New Zealand, as shown below [3, p.4]:

Country	Dairy Export Market Share (Milk Equivalent, 1998)
EU	37%
New Zealand	31%
Australia	13%
U.S.	4%
Other	15%
Total	100%

The Key Players

Milk processing is carried out by both farmer cooperatives and proprietary companies in Australia. Cooperatives play an important role. Murray Goulburn, Bonlac Foods Limited (now partly owned by the New Zealand Dairy Board), and Australian Cooperative Foods account for over 60% of Australia's milk intake [3, p.9]. Other smaller cooperatives account for an additional 15% of the country's milk intake. Murray Goulburn and Bonlac Foods Limited—both headquartered in or near Melbourne, Victoria—specialize in producing manufactured dairy products and exporting. The New South Wales-based Australian Cooperative Foods (Dairy Farmers Group) is heavily involved in processing fluid milk. A competitor of the Dairy Farmers Group in Australia's Eastern regions, National Foods is Australia's largest proprietary fluid milk processor.

Sales totals for 1999 for Murray Goulburn Cooperative, Bonlac Foods, Australian Cooperative Foods, and National Foods appear below [23,9,17, and 24]:

Firm	Total Sales for 1999
Murray Goulburn	AU\$ 1.319 billion (U.S.\$ 0.82 billion)
Bonlac Foods	AU\$ 1.175 billion (U.S.\$ 0.73 billion)
Australian Cooperative Foods*	AU\$ 1.400 billion (U.S.\$ 0.97 billion)
National Foods	AU\$ 1.124 billion (U.S.\$ 0.70 billion)

*The Australian Cooperative Foods figure is for 1998.

Multinationals operate in Australia's dairy industry, including Nestle, Kraft, and Parmalat [3]. Meiji and Snow Brands of Japan have established joint venture operations in Australia with local cooperatives.

Parmalat established a strong presence in Australia's dairy industry in 1998 when the firm purchased the Queensland-based Paul's Dairy Group for AU\$436 million (U.S.\$276 million) [21]. Shortly after acquiring Paul's Dairy Group, Parmalat sought to acquire a financial interest in the Dairy Farmers Group. At the time of the study, the Dairy Farmers Group was resisting Parmalat's overtures.

Parmalat's merger and acquisition overtures reflect the belief of Parmalat officials and others in Australia's dairy industry that there is room on Australia's Eastern seaboard for profitable operations by only two large fluid milk processors, not three. If correct, this means that some shakeout or merger involving the three largest fluid milk processors (Parmalat, the Dairy Farmers Group, and National Foods) on Australia's Eastern seaboard is in prospect.

Bonlac Foods experienced financial problems in 1999-2000 that led to a downgrading of the firm's credit rating and prevented Bonlac from paying member producers prices for milk comparable to those paid by competing dairies. Bonlac's low pay prices caused some producers to sign on with other cooperatives and propriety firms. Bonlac investigated a number of options for dealing with the financial problems, including a merger with the Dairy Farmers Group. Ultimately, Bonlac entered into a financial agreement with the New Zealand Dairy Board (NZDB) which (if approved by Bonlac shareholders, NZDB Directors, and regulators) would include the following terms [32]:

- The NZDB would take a 25% interest in Bonlac. Bonlac supplier shareholders would hold the remaining 75%.
- The Australian consumer businesses of Bonlac and the NZDB would be merged into a separate 50/50 joint venture with about AU\$550 million (U.S.\$316 million) in annual revenue.
- The NZDB would handle all of Bonlac's export products—about 250 thousand metric tons per year.
- The NZDB would merge its Australian ingredients business into Bonlac.
- As the largest single shareholder in Bonlac, the NZDB would have up to three directors on Bonlac's board of directors.

As a companion rationalization measure, Bonlac would close four dairy manufacturing plants and reduce the firm's work force by about 300.

Australia has a large, complex group of industry organizations. As shown in Appendix Figure 1, The Australian Dairy Industry Council (ADIC) stands at the peak of the organization chart for the industry organizations. Representing farmers, dairy product manufacturers, fluid milk processors, and state authorities, the ADIC—through its constituent organizations—speaks for the organizations to the Australian government and governments of other nations and coordinates industry policy on many issues. The industry organizations will be restructured and rationalized as a by-product of deregulation.

The Australian Dairy Corporation (ADC) is a Commonwealth statutory marketing authority that has as its overall goal the improvement of the Australian dairy industry's profitability [5].

Commercial activities of the ADC—focusing on market development and trading on behalf of Australian companies—are carried out by Austdairy, the ADC's wholly owned subsidiary. The ADC is also involved in export markets, where the industry has identified opportunities to improve export returns by channeling product through a single coordinating agency. The ADC is the exclusive seller of Australian bulk cheese for processing or shredding in Japan, and of cheddar and closely related varieties under the EU quota. The ADC's gross sales revenues for 1998 were AU\$299 million (U.S.\$206 million) [17, p.15].

II. Termination of Australia's Domestic Market Support Scheme and State Market Milk Pricing—Economic and Political Pressures that Fostered Deregulation

Undoubtedly the most important elements of the deregulation of Australia's dairy industry occurred in mid-2000 when the Domestic Market Support (DMS) scheme and state milk pricing regulations ended. Accordingly, the analysis focuses on these two elements of deregulation. However, the deregulation of Australia's dairy industry has a lengthy history, and received impetus from the Kerin Plan, the Crean Plan, the previously mentioned end of post-farmgate pricing of market milk, and the 1983 Closer Economic Relations trade agreement with New Zealand.

The Domestic Market Support Scheme

Administered by the Australian Dairy Corporation, the DMS scheme was a federal program that placed levies on all market milk sold domestically and all milk used to produce manufactured dairy products sold in Australia's domestic market. Milk used to produce finished dairy products sold in export markets was exempt from the levies. Proceeds from the levies were redistributed to Australian producers of manufacturing milk.

The DMS grew out of the Kerin and Crean Plans introduced in 1986 and 1992, respectively. Under the Kerin Plan an AU two cents/liter levy was applied to all milk produced in Australia. The two-cent levy was used to provide an industry-financed export subsidy for all Australian dairy exports [29, p.21]. The Crean Plan modified the Kerin Plan to include a "sunset" provision that would end support for manufacturing milk in Australia on June 30, 2000, and provided for continued gradual reductions in the level of support for manufacturing milk.

The DMS scheme—introduced in 1995—initially provided essentially the same net domestic benefit for Australia's manufacturing milk prices as the Crean Plan [3]. However, it eliminated the export subsidy features of the Crean Plan and provided support for manufacturing milk producers that was compatible with Australia's dairy export subsidy reduction commitments (independent of export sales) under the Uruguay Round GATT/WTO agreement.

The levies employed under the DMS scheme in 1999/2000 and the payout to manufacturing milk producers for 1999/2000 under the scheme are shown below in AU cents/liter and U.S.\$/hundredweight [3, p.30]:

Type of Levy or Payment	Amount of Levy or Payment
Levy paid by farmers for market milk sold domestically	AU 1.9 cents/liter (US\$0.53/cwt.)
Processors' payment on milk used to produce manufactured dairy products sold in domestic market	AU 3.5 cents/liter (US\$0.98/cwt.)
Payment to producers of manufacturing milk	AU 0.95 cents/liter (US\$0.27/cwt.) to AU 1.15 cents/liter (US\$0.32/cwt.)

The payment per liter to manufacturing milk producers in 1999/2000 under the DMS scheme reflects the phase down of support under the program and the spreading of payment over a larger amount of manufacturing milk. In 1998/1999, manufacturing milk producers received a modestly higher AU 1.6 cents per liter (US\$0.44/cwt) payment under the DMS scheme.

In 1998/99, the DMS scheme provided a net gain of AU\$96 million (U.S.\$60 million) to Australia's dairy farmers [8, p.2]. Of this net total, AU\$85.6 million (U.S.\$53.2 million)—89%—was received by Victoria's dairy farmers. The DMS program was predicted to provide a net gain of approximately AU\$75 million (U.S.\$48 million) for Australia's dairy farmers for 1999/2000 [8]. While the figures reflect how much Australia's dairy farmers paid into the program and how much money they obtained from it, the figures fail to reflect impacts of

developments that would occur over a longer time period. The longer-run impacts include loss of additional market shares in Australia's cheese markets to New Zealand exporters and other secondary effects of the DMS program that would emerge over a longer time period.

State Milk Pricing and Control

The state milk pricing and control programs and associated quota and pooling arrangements were described in general terms in the previous section. Prices for fluid milk in Australia reflect impacts of price discrimination under which fluid milk—which has a more inelastic price elasticity of demand than manufactured dairy products—is priced at a higher level than manufactured dairy products in order to increase producer revenues from the sale of milk. The higher prices set by the states for fluid milk also compensated Australian milk producers for the added cost of producing milk year around for fluid markets.

The market milk or fluid differential in Australia varies from state to state and over time. For Australia during the 1990s, nominal prices paid by processors for market milk averaged approximately double those for milk used to produce manufactured dairy products [3, p.8]. Thus, processors paid Australian dairy farmers prices between AU 40 cents/liter and the low AU 50 cents/liter range for market milk during much of the 1990s. On the other hand, nominal average prices paid by Australian processors for milk used to produce manufactured dairy products averaged between AU 20 cents/liter and AU 25 cents/liter during much of the 1990s.

R. Greenaway, General Manager of Field Services and Strategic Issues for Murray Goulburn Cooperative, reported that during part of 1999/2000 Victorian processors paid about AU 44 cents/liter (U.S.\$12.29/cwt) for the 7% of Victorian producers' milk used as market milk, while processors paid AU 22 cents/liter (U.S.\$ 6.15/cwt) for the 93% of producers milk used to produce manufactured dairy products [18].

Why the DMS Scheme and State Milk Pricing were Terminated

The termination of Australia's DMS program and state pricing of market milk was a dramatic step. As might be supposed, public hearings, comprehensive analyses (eight alternative actions were evaluated), and political maneuvering involving representatives of Australia's dairy organizations and Australian government agencies took place before these two support programs were scheduled for termination. While economic forces might have made deregulation inevitable, the main reason that deregulation occurred when it did rather than later is summarized as follows in an Australian Senate Committee report on deregulation of the Australian dairy industry [29, p.xiii]:

Deregulation is supported by the large Victorian co-operatives and the United Dairyfarmers of Victoria. Because Victoria dominates production and the Victorian market is heavily concentrated in ownership and geared toward export production, Victoria's press for deregulation is of considerable weight.

Why Victoria's Dairy Farmer Groups Pursued Deregulation

What led Victoria's two large dairy cooperatives (Murray Goulburn and Bonlac) and United Dairyfarmers of Victoria to pursue deregulation? The reasons frequently advanced by Victoria's large dairy cooperatives and United Dairyfarmers of Victoria in support of deregulation include the following:

- The DMS scheme was scheduled to end on June 30, 2000 and there was no assurance that there was industry and government support for extending the program.
- Dairy export markets were regarded as the growth market and it was believed that Australian firms (mainly Victorian firms) could be more competitive in dairy export markets if the DMS scheme was eliminated. Conclusions about exports as a growth market reflect the fact that Australia's manufactured dairy product sales increased steadily in the 1990s,

partly in response to export demand, while fluid (drinking) milk production and consumption remained flat at about 1.9 billion liters during the last half of the 1990s [3].

- New Zealand's dairy exporters were not required to pay the levy imposed on Australia's manufacturing milk processors for milk used to produce manufactured dairy products sold in Australia's domestic market. Victorian dairy groups said that being exempt from this levy helped New Zealand's dairy industry gain about a 15% market share in Australia's domestic cheese market.
- The DMS and state milk pricing control caused price distortions and inefficiencies in Australia's manufacturing milk markets. It was claimed that cross subsidization of manufacturing milk production occurred in states with relatively high market milk utilization. This cross subsidization, it was alleged, increased manufacturing milk production in states that had previously produced milk primarily for fluid milk markets. This development, it was reasoned, increased competition for Victoria's manufactured dairy products, drove down domestic prices for manufactured dairy products, and spread DMS payments over a larger volume of manufacturing milk.
- State milk control practices had prevented or discouraged Victoria's milk producers from selling fluid milk in other states. The Dairy Industry Authority of Western Australia described the benefit to Victoria's dairy industry from milk deregulation as follows [11, p.39]:

The termination of national assistance measures will remove whatever limitations may be restraining the Victorian dairy industry from more actively pursuing all market opportunities in other states. This would have the effect of limiting the capacity of market milk states from capturing premiums in the fresh milk market.

While there was no assurance that the DMS program could be extended beyond the scheduled June 30, 2000 termination date, it is possible that the powerful Victoria dairy producer groups could have obtained an extension of the DMS scheme if they had chosen to do so. Hence, the other reasons probably influenced the deregulation decision at least as much as the "sunset" date on the DMS program.

Partly because of reductions in trade barriers between the two countries brought about by the Closer Economic Relations trade agreement of 1983, New Zealand's dairy industry had become strongly competitive in Australia, increasing cheese exports to Australia by 34% during the mid to late 1990s to gain the 15% share in Australia's cheese markets [8]. M. Fehring, President of United Dairy Farmers of Victoria, argued that dairy product prices in Victoria needed to be approximately "New Zealand plus freight" to make Victoria's dairy industry fully competitive in domestic and international markets [15]. Elimination of the levy paid by Australian dairy manufacturers on domestic sales under the DMS scheme is consistent with making the industry more competitive with New Zealand's dairy industry, which was characterized as a "pacesetter" by several people interviewed.

With one partial exception, other reasons in the list appear to be important for explaining why Victoria's dairy groups favored deregulation. The exception relates to claims about the occurrence of cross subsidization of manufacturing milk production in market milk states. It is not clear how a quota-based state pricing system would foster such cross subsidization. Under quota systems, marginal units of milk produced by a farmer in addition to quota amounts normally would be priced at the manufacturing milk price level. If the marginal cost of producing a unit of over quota milk exceeded the marginal revenue for such production, a producer would have no economic incentive to produce quantities of milk in excess of quota. However, under quota systems if there is no large penalty for over quota output, producers could overshoot quota production when milk production conditions turned out to be unexpectedly favorable. Moreover, if there was a transfer of funds from producer payments destined for fluid milk producers to manufacturing milk producers in market milk states with quota programs, then orthodox effects of cross subsidization would emerge.

State market milk pricing systems with pooling arrangements could provide incentives for production of manufacturing milk in excess of fluid milk requirements. Producers in such markets could be expected to equate marginal costs to a weighted average of the market milk and manufacturing milk prices (a blend price) to determine production levels. When a blend price rather than a lower manufacturing milk price determines output levels, this provides incentives for expanded production of manufacturing milk. Thus, Australia's state pooling systems could expand manufacturing milk output in much the same way as marketwide pooling arrangements used in U.S. federal milk orders.

Table 4. Total Cost of Raw Milk Production by State in Australia, 1996/97*

State	Total Cost of Milk Production (AU Cents/Liter)	% of Victoria's Cost of Milk Production
New South Wales	36.1 (U.S.\$12.46/cwt)	148%
Victoria	24.4 (U.S.\$8.42/cwt)	100%
Queensland	41.0 (U.S.\$14.15/cwt)	168%
South Australia	27.5 (U.S.\$9.49/cwt)	113%
Western Australia	28.7 (U.S.\$9.91/cwt)	118%
Tasmania	26.5 (U.S.\$9.15/cwt)	109%

*Source: Australian Bureau of Agriculture and Resource Economics (ABARE).

Victoria's dairy groups used figures on differences in milk production costs among the Australian states when discussing the impacts of cross subsidization and inefficiencies introduced by state milk pricing. Average total milk production costs in New South Wales and Queensland were 48% and 68% higher, respectively, than in Victoria in 1996/97 (Table 4). While the contribution of state milk pricing to expanded manufacturing milk production in the two states cannot be precisely determined, both New South Wales and Queensland recorded increases in milk production and increases in the percentage of milk used to produce manufactured milk products during the 1990s (see Table 1). Undoubtedly, technological improvements and factors in addition to state milk pricing contributed to the expansion of milk production in the two states. However, if a state market milk pricing system encouraged additional milk production in high cost states, the system would have negative impacts on the overall efficiency of Australia's dairy industry.

P. Margin, National Foods' Dairy Chief speaking at Australia's Outlook 2000, provided estimates of farmers' cash costs (not total costs) of milk production for the Australian states. Margin's estimates of cash costs of production, which differ moderately from the ABARE estimates of total milk production costs in Table 4, are as follows [20] :

- New South Wales: AU 33 cents/liter (U.S.\$9.22/cwt).
- Victoria: AU 23 cents/liter (U.S.\$6.43/cwt).
- Queensland: AU 34 cents/liter (U.S.\$9.50/cwt).
- South Australia: AU 26 cents/liter (U.S.\$7.26/cwt).
- Western Australia: AU 30 cents/liter (U.S.\$8.38/cwt).
- Tasmania: AU 23 cents/liter (U.S.\$6.43/cwt).

The major difference between Margin's estimates of cash costs of milk production and the ABARE estimates of total costs relates to Queensland. Margin's estimates show that Queensland's cash costs were only AU 34 cents/liter (U.S.\$9.50/cwt) as compared to the ABARE estimates of total costs of AU 41 cents/liter (U.S.\$14.15/cwt). The difference could arise from major differences between cash costs and total costs in Queensland attributable to a large non-cash cost component—e.g., depreciation—in Queensland, or a host of other reasons. The difference expressed in U.S. dollars per hundredweight also reflects differences in exchange rates used to

convert the Australian figures to U.S. dollars—the Australian dollar was substantially stronger during 1996/97 period for which the ABARE estimates apply.

Why Producer Groups in Market Milk States were Powerless to Resist Deregulation

The deregulation initiatives championed by the Victoria producer organizations were opposed by producer organizations in states where farms producing for fluid markets predominated. The New South Wales-based Dairy Farmers Group, in particular, strongly opposed deregulation of state milk pricing programs. The reasons that milk producers in states where fluid milk utilization percentages are higher than in Victoria were unable to prevent deregulation included the following:

- The Victoria dairy farmer groups were able to present producer groups in other states with an offer that was difficult to refuse: Either accept deregulation of state pricing arrangements with compensation or get deregulation without compensation.
- Erosion of fluid milk prices from commercial pressures—including interstate competition—was underway before deregulation occurred. In New South Wales, the regulated price dropped AU 3 cents/liter in July 1998 because of competitive developments [7, p.3]. In Tasmania, the farm gate milk price for milk used in flavored milk had been reduced by one-third and similar pressures were growing in Victoria.
- Victorian dairy groups stood ready to challenge "gentlemen's agreements" and other arrangements that had discouraged interstate competition for market milk sales. While state milk control agencies in relatively high fluid milk utilization states could have raised legal challenges to forays by Victorian processors into their markets, it was widely believed that these legal challenges would have been unsuccessful. In part, this was because Section 92 of Australia's constitution prohibits barriers to interstate competition.
- A few large, proprietary processors—apparently convinced that they could get market milk cheaper after deregulation—supported deregulation measures for fluid milk [12].

III. The Restructuring Package Made Available to Australian Milk Producers After Deregulation

As part of an effort to manage deregulation, a restructuring package was offered to Australian milk producers. It was widely believed that uncoordinated or unmanaged deregulation would lead to economic and social disruption, especially in market milk states. In the absence of the restructuring package, the economic disruption could have included a collapse of dairy farm asset values in some areas. The Commonwealth government agreed to the restructuring package under the condition that all states and territories agreed to deregulate their farm gate pricing arrangements effective July 1, 2000. The restructuring plan required the approval of federal ministers and the federal parliament.

Key Elements of the Restructuring Package

The key characteristics of the restructuring package are as follows [8, p.5]:

- Restructuring entitlements will be paid to eligible dairy farmers on the basis of AU 46.23 cents/liter (U.S.\$11.70/cwt) for market milk and AU 8.96 cents/liter (U.S.\$2.27/cwt) for manufacturing milk produced in the base year of 1998/99.
- Restructuring entitlements will be paid quarterly, in equal installments, for eight years, calculated from July 1, 2000. The quarterly payments will be treated as taxable income in the year paid.
- Where restructuring entitlements exceed AU\$350,000 (U.S.\$201,250), eligible dairy farmers will be required to demonstrate that a minimum of 70% of their total income in 1998/99 was earned from dairy farming.

- An eligible farmer can:
 - Take the restructuring entitlements in quarterly amounts over eight years and either elect to stay or leave the industry.
 - Use the industry facility described below to apply for an upfront payment, regardless of whether he/she decides to stay or leave the industry.
 - Apply for a AU\$45,000 (U.S.\$25,875) tax-free option if he/she decides to leave the industry for five years, and it provides a higher restructure payment than either actual entitlements paid over eight years or an upfront payment obtained via the industry facility.

The Industry Facility

The Australian Dairy Industry Council negotiated with banks to establish the industry facility. The industry facility will permit an individual farmer to obtain his/her quarterly payments as an upfront payment, regardless of whether the farmer plans to stay or leave the industry. The lump-sum, upfront payment was thought to be more valuable to farmers than quarterly payments for buying land, remodeling milking facilities, and making the other adjustments needed to operate in a deregulated environment. Alternatively, a farmer could use the upfront payment to finance an exit from the industry.

Bank loans required for the upfront payments to farmers were obtained at favorable interest rates under a tendering arrangement. The favorable interest rates became feasible because of the assurance of repayment provided by the quarterly government payments.

The industry facility is expected to provide the equivalent of AU 33 cents/liter (U.S.\$8.35/cwt) to AU 36 cents/liter (U.S.\$9.11/cwt) for market milk and AU 6.5 cents/liter (U.S.\$1.65/cwt) to AU 7 cents/liter (U.S.\$1.77/cwt) for producers of manufacturing milk [8, p.7]. The difference between these figures and the AU 46.23 cents/liter and AU 8.96 cents/liter payments that would be provided as quarterly payments takes into account inflation and the financial costs associated with providing the quarterly payments.

Financing the Restructuring Package

Funds required to finance the restructuring package will be provided by an AU 11 cent/liter (U.S. 6.3 cent/liter) government levy on all fluid milk products including whole milk, UHT milk, and flavored milk [8, p.7]. The levy would apply to both domestically-produced and imported fluid milk products. It would be imposed at the retail level, but would be collected by wholesalers.

The projected AU\$1.74 billion (U.S.\$1.0 billion) that would be collected by the levy provides AU\$1.63 billion (U.S.\$0.94 billion) for payment of entitlements to dairy farmers, borrowing costs to payment entitlements, and administrative costs.

What the Restructuring Payments Represent

D. Harris, Manager of Corporate Intelligence at Bonlac Foods, said that architects of the restructuring package developed an estimate of the size of the consumer transfers under state milk pricing that was used for figuring the size of the restructuring payment to market milk producers [19]. The consumer transfer (the value of the ability to trade in the market) was estimated to be approximately AU 15 cents/liter. Thus, the AU 46.23 cent/liter payment would be equivalent to about three years of consumer transfers under the state milk pricing systems.

Any such summary of the value of payments to producers ignores complexities. For example, under the restructuring package for fluid milk producers, the approximate equivalent of consumer transfers for three years would be paid to the milk producers over eight years. Quarterly payments made over eight years have a smaller discounted present value than similar payments made over three years.

Viewed as an adjustment facilitating payment, the AU 46.23-cent payment would allow a fluid milk producer about three years to adjust to operating in a new unregulated environment.

According to A. Taylor of Paul's Dairy Group in Queensland, the average milk producer in Queensland—a relatively high fluid milk utilization state—will receive about AU\$110,000 (U.S.\$63,250) under the restructuring program to help him/her adjust to a deregulated industry [30].

As noted earlier, the payments to manufacturing milk producers under the DMS scheme for 1999/2000 were estimated to be AU 0.95 cents/liter to AU 1.15 cents/liter. Thus, averaged over eight years ($[AU\ 8.96\text{cents/liter}/8] = AU\ 1.1\text{ cents/liter annually}$), the restructuring payments for manufacturing milk producers approximate the average yearly payments that these producers would have received if the DMS program had continued at 1999/2000 rates for eight years. Again, this AU 1.1 cent/liter figure fails to reflect the lower discounted present value of the payments distributed quarterly over eight years.

Impact on Consumer Prices

The state market milk regulations have created a fluid differential for producers. When state price regulations were removed, it became necessary to establish farmgate milk prices by commercial negotiations [8, p.7]. The Australian Dairy Industry Council predicted that setting prices by commercial negotiation will cause farmgate market milk prices to drop by AU 11 cents/liter (U.S.\$2.78/cwt) to AU 15 cents/liter (U.S.\$3.80/cwt) [7, p.5]. Therefore, the imposition of AU 11cent/liter levy should produce approximately a wash or a small reduction in retail milk prices. The reduction in farmgate prices for market milk should approximately offset the AU 11 cent/liter levy imposed to finance the restructuring program (if the smaller farmgate price reduction figure materializes), leaving retail milk prices about the same.

R. Zeitner, the FAS-USDA Counselor for Australia, said that he expected little or no reduction in consumer milk prices to flow from deregulation of state milk pricing during the time the AU 11 cent/liter levy is in effect [34]. This will be the case, he argued, because margins on fluid milk in many Australian food stores are low. Thus, according to his argument, any reduction in the cost of milk to food stores stemming from deregulation likely will be used to increase margins on fluid milk rather than reduce retail fluid milk prices. Whether this will be the case depends partly on the intensity of competition among food stores for fluid milk sales.

IV. How Deregulation Will Affect Australia's Dairy Industry and the Dairy Exporting Capabilities of Australian Firms

Assessments of the impacts of deregulation on Australia's dairy industry are, of necessity, speculative. Milk production undoubtedly will become more concentrated on larger farms and in low cost production areas within Australia as a result of deregulation. Indeed, deregulation is likely to bring about a sweeping rationalization of farm milk production in Australia. Further concentration of milk processing is also likely, although the effects of deregulation on processing concentration are less direct than on farming. The impacts on Australia's dairy exporting capabilities are perhaps most uncertain of all.

Impact of Deregulation on Farmgate Pricing of Market Milk

As noted above, one estimate puts the decline in farmgate prices for market milk resulting from deregulation as AU 11 cents/liter to AU 15 cents/liter. Evidence supporting such a projection was obtained during interviews conducted for the study, as noted below:

- D. Harris of Bonlac Foods predicted that cost considerations will require a broad group of Australian farmers to receive at least AU 32 cents/liter (U.S.\$8.10/cwt) for producing market milk [19]. His arithmetic puts the deregulation-induced reduction in farmgate market milk prices at about AU 15 cents/liter (U.S.\$3.80/cwt) in market milk producing

areas. Harris noted that his estimate also reflects the belief that large producers who now produce manufacturing milk seasonally will require AU 5 cents/liter (U.S.\$1.27/cwt) to AU 7 cents/liter (U.S.\$1.77/cwt) to convert to year-round production of market milk. He also pointed out that manufacturing milk processors such as Bonlac Foods and Murray Goulburn will require compensation for manufacturing milk "give-up" costs incurred before they will channel manufacturing milk into fluid uses—a development that will limit the erosion of the fluid differential by competing supplies of manufacturing milk. However, Harris also conceded that processors will seek to pay less than AU 32 cents/liter for market milk after deregulation. How effective processors will be in obtaining supplies for less than AU 32 cents/liter remains to be determined.

- R. Zeitner predicted that at least an AU four cent/liter (U.S.\$1.01/cwt) to AU five cent/liter (U.S.\$1.27/cwt) premium for market milk over manufacturing milk will persist after deregulation [33]. Zeitner's estimate assigns less weight to the opportunity cost considerations mentioned by Harris and puts Australian farmgate market milk prices in the mid to high AU 20 cent/liter range after deregulation.
- A few proponents of deregulation commented that farmers in fluid milk states should not count on receiving more than the Victoria price for fluid milk plus freight. In his Outlook 2000 comments, P. Margin of National Foods reported the estimates of freight costs appearing in Table 5 for shipping fluid milk from Victoria to other states, excluding Western Australia. These figures, plus the ABARE estimates of total costs of milk production reported earlier, give estimates of the Victoria plus freight figures that may serve as an upper limit on fluid milk prices in other states over the medium to longer-run. The Victoria price plus freight estimates agree rather closely with Zeitner's estimates.

Table 5. Milk Production Costs in Victoria, Freight Charges for Shipping Milk to Other States, and Computed Upper Limit on Fluid Milk Prices in Other Australian States.*

State	Milk Production Cost in Victoria (AU cents/liter)	Freight Cost from Victoria (AU cents/liter)	Upper Limit on Fluid Milk Price
New South Wales	24.4	5.0	29.4 (U.S. \$7.44/cwt)
Queensland	24.4	9.0	33.4 (U.S. \$8.45/cwt)
South Australia	24.4	4.0	28.4 (U.S. \$7.19/cwt)
Tasmania	24.4	3.0	27.4 (U.S. \$6.93/cwt)

* Sources: ABARE and P. Margin, "Market Milk—The New Environment," OUTLOOK 2000.

Impact of Deregulation on Industry Structure

What impacts will farm numbers, process concentration, and other structural variables of lower prices have on market milk in Australia?

J. McQueen, Chief Executive Officer of the Australian Dairy Farmers' Federation, predicted that the following structural adjustments in dairy farming and dairy processing would occur within about five years of deregulation [22]:

- There will be 30% fewer dairy farms.
- Average herd size will increase to 250 to 300 cows.
- The Dairy Farmers Group will pay different prices in the different states post-deregulation. The firm will pay a fluid price in Queensland and lower prices elsewhere.
- Aggregate milk production in Australia will increase.
- The number of dairy cooperatives will decline.

- The previously-mentioned consolidation of fluid milk processors on Australia's Eastern Seaboard will materialize, reducing the number of large fluid milk processors serving the area to two.
- Capital—highly critical in the past for processors—will become even more critical in the future. Firms will need access to large amounts of capital to develop international brands.

R. Greenaway of Murray Goulburn Cooperative expects the following developments to occur post-deregulation [18]:

- The number of milk producers in New South Wales and Queensland will decline by 30%.
- Victoria will witness a decline of 300 to 400 producers—a 4% to 5% reduction from 1999 totals. The reduction will be concentrated among smaller producers.
- It may be difficult for producers and processors in other states to remain in business if they can't produce milk and sell it for less than Victoria prices plus freight costs.
- Australia's inexpensive grain will give the country's milk producers an advantage over New Zealand's producers. New Zealand will bump up against a pasture availability constraint that will limit that country's ability to expand milk production. Australia's dairy industry will experience fewer problems with pasture constraints because of the industry's ability to supplement pasture rations with low-cost grain.

Greenaway's predictions about the post-regulation decline in the number of dairy farmers in New South Wales and Queensland are similar to A. Scott's estimate of the decline in dairy farmer numbers in Western Australia. Scott, former General Manager of the Dairy Industry Authority of Western Australia, indicated that Western Australia might lose 25% of its dairy farmers as a result of deregulation [28].

Deregulation clearly will have uneven impacts on producers. Several Australian dairy industry officials interviewed predicted that small milk producers (fewer than 100-cow herds) will account for a disproportionately large percentage of those exiting the industry post-deregulation. In addition, producers in New South Wales, Queensland, and Western Australia who purchased quota recently may find it difficult to pay off debts incurred for quota purchases. Some of the hardest hit may bring legal suits against state milk control agencies to seek compensation for loss of quota values. However, the problem may have been reduced if, as is likely, relatively few producers purchased quota in 1999 because the prospect of deregulation made the quotas of uncertain value.

Some state governments will supplement the restructuring package provided by Australia's federal government. For example, the New South Wales state government will provide AU\$2.0 million (U.S.\$1.15 million) to provide the services of financial and other counselors to farmers affected by deregulation [1]. The counselors will provide farmers with social and stress management counseling and help them to develop management plans for operating in the post-deregulation business environment.

Australian dairy industry officials expressed the view that post-deregulation Australian milk production will decline for a few years and then resume the upward trajectory of the 1990s. Using 1999 state milk production figures as a base, scenarios describing the short-run impacts (three-year impacts) of deregulation on Australia's milk production were developed.

The estimates in Scenario No. 1 assume that the number of milk producers in each state falls by the percentages shown in this first scenario and that each exiting farmer produces the same quantity of milk as the average producer in the state:

Scenario No. 1:

- Decline in milk production from 1999 in:
—Queensland, New South Wales, South Australia (-30%)

- Western Australia (-25%)
- Victoria and Tasmania (-5%)

- Impact on Australia's total milk production compared to 1999 base (-12.6%)

Scenario No. 2:

- Same number of producers exit from dairy farming as in Scenario No. 1, but on average the producers leaving the industry from each state are only half as large as the average producer, causing the decline in Australia's milk production to be only 50% of that under Scenario No. 1.
- Impact on Australia's total milk production compared to 1999 base (-6.3%)

Scenario No. 3:

- The same number of producers exit from dairy farming in each state as in Scenario No. 1, but on average the producers leaving the industry are only half as large as the average producer, causing the decline in milk production to be only 50% of that under Scenario No. 1.
- In addition, milk producers remaining in business in each state record the same average annual increase in milk production per cow over the three-year period as in 1991-1999. For most Australian states, this adds about 9% to the milk production under Scenario No. 2.
- Impact on Australia's total milk production compared to 1999 base (+3.0%).

While other assumptions could be used for the analysis, the results suggest that the recovery of milk production anticipated by Australian dairy industry officials post-deregulation is possible—indeed even likely. ABARE analysts forecast that Australia's milk production will increase to 11.6 million metric tons by 2004-2005—up 10% to 11% from the 1999 total [21,25]. This figure exceeds—by one to two percentage points—the increases in milk production that would be produced by extending Scenario No. 3 (with its 3% to 4% annual increases in milk production per cow) to five years rather than three years. The bottom line is that Scenario No. 3 or the ABARE projections could readily materialize.

Impact on the Dairy Exporting Capabilities of Australian Firms

There appears to be an "article of faith" within Australia's dairy industry that the industry will be able to expand dairy exports substantially after deregulation. Points supporting such a belief appear below:

- Australia—already a low-cost producer of milk—will become still more efficient as milk production becomes more concentrated on larger farms.
- Australia has a relatively strong presence in Asian dairy markets that are widely regarded as growth markets for dairy exports. As noted in Table 6, in 1998/99 Asian markets were the destination for about two-thirds of Australia's total dairy exports and about 80% of the country's milk powder exports. Australian firms should be strongly positioned to expand sales in these growth markets.
- Cheese is Australia's leading dairy export item, accounting for 29% of the country's dairy exports (in value terms) in 1998/99. Asia's share of the international cheese trade rose from 14% to 22% between 1990 and 1999 [21]. Thus, cheese consumption is growing in an area where Australia has a strong dairy exporting presence.
- Australia's firms will gain early mover advantages in dairy export expansion over U.S., EU, and other firms that decide at some later date to expand unsubsidized dairy exports.

Table 6. Value and Destination of Australian Dairy Exports, 1998/99*

Product	Asia	Europe	Americas	Other	Total
(AU\$ Million and % of Export Sales by Destination)					
Cheese	\$371.4 59.3%	\$85.5 13.7%	\$25.7 4.1%	\$143.7 22.9%	\$626.3 100.0%
SKP/BMP	\$405.9 81.6%	\$4.0 0.8%	\$23.1 4.6%	64.6 13.0%	497.6 100.0%
WMP	\$275.0 78.0%	\$15.7 4.4%	\$15.3 4.3%	\$46.8 13.3%	\$352.8 100.0%
Butter/AMF	\$108.4 38.3%	\$27.2 9.6%	\$49.6 17.5%	\$98.0 34.6%	\$283.2 100.0%
Other Products	\$78.3 54.1%	\$4.4 3.0%	\$0.7 0.5%	\$61.3 42.4%	\$144.7 100.0%
Components	\$171.7 85.8%	\$0.9 0.4%	\$0.1 0.1%	\$27.4 13.7%	\$200.1 100.0%
Total	\$1464.1 67.4%	\$138.5 6.4%	\$116.2 5.3%	\$454.4 20.9%	\$2173.2 100.0%

*Source: Calculated from Australian Dairy Corporation, "Australian Dairy Industry in Focus 99," 2000.

- The Bonlac-NZDB combination under which the NZDB—one of the world's largest and most experienced dairy exporters—will handle Bonlac's dairy exports should permit Bonlac to realize greater efficiencies in exporting. The Bonlac-NZDB agreement may foreshadow additional cross-Tasman working arrangements that will strengthen Australia's dairy exporting capabilities. Additional cross-Tasman joint efforts might create firms capable of raising capital needed to develop international brands. If the cross-Tasman working agreements produce an Australia-New Zealand exporting block, the block's dairy exports would exceed those of the EU. Under a favorable scenario, a New Zealand-Australia dairy exporting "powerhouse" could emerge.

The above points represent advantages that may allow Australia to realize significant gains in dairy exports.

Questions and Impediments Relating to Exports

However, questions and impediments relating to Australia's ability to expand dairy exports remain. Will Australian firms increase the percentage of dairy products exported as high profit, differentiated dairy products? Will Australian dairy exporting firms be able to raise the capital required to establish international brands that help the firms obtain the financial benefits of brand-based product differentiation? Will Asian economies continue to recover and expand the demand for Australian dairy exports? How strong will international prices for dairy products be during the early to mid-2000s?

ABARE analysts, noting that world prices for dairy products were low in 1999-2000, made the following forecast of cheese prices in international markets in the mid-2000s [21]:

...Rising export demand for cheese, as well as a predicted 38% increase in world spot cheese prices by 2004-2005 will further stimulate this sector in Australia.

The ABARE forecast of a 38% increase in world spot cheese prices is more optimistic than some other forecasts. This forecast might materialize if continued large reductions in EU subsidized cheese exports were in prospect—a development that is improbable given that no further reduction in those exports will be required by the WTO after 2000/2001. Thus, while export demand for Australia's cheese may strengthen in part because of increases in demand from

fast-food restaurants in Asia, it is questionable whether prices for the product in international markets will increase by as much as 38% by 2004-2005.

Mr. Chris Phillips of the Australian Dairy Corporation described how Australia's dairy exports might be expanded and noted challenges associated with those efforts as follows [26]:

The key to the Australian dairy industry's profitability will be to maximize returns from all levels of the supply chain from farm gate to manufacturing....We will need to look to new export markets as well as to increasing exports to current markets in order to improve returns to our suppliers. However, we are likely to face additional challenges as more countries begin to use technical barriers, rather than tariffs and quotas for restricting trade.

The Policy Environment for Expanding Australia's Dairy Exports

In a comprehensive study of the competitiveness of Australia's dairy industry, the Australian Dairy Farmers' Federation (ADFF) commented on the forces that affect Australia's dairy exports. The ADFF described how the EU and U.S. influence prices received by Australian firms in dairy export markets as follows [6, p.24]:

The prices that our exporters can achieve in export markets are largely driven by Government support for European and (to a lesser extent) US exporters.

Among other things, this comment implies that subsidized exports of dairy products from the EU in particular drive prices for bulk dairy products in international markets down to approximately the EU domestic price minus the EU export subsidy. In dairy export markets where the EU is a large player, this is an accurate description of the impact of EU dairy export subsidies. Presumably, the comment also means that Australia's limited access to the U.S. and EU dairy markets puts negative pressure on prices received by Australian dairy exporters.

The ADFF evaluated progress toward policy reform in the EU as follows [6, p.24]:

- The progress of trade reform is likely to be slow.
- The EU is not likely to modify the quota regime until at least 2006. The best hope for earlier reform lies with enlargement of the EU, which is likely to render the Common Agricultural Policy (CAP) unsustainable.
- While a few EU countries would like to break the quota and intervention pricing system, a strong farm lobby remains in France and Germany, which compels EU governments to move slowly on changes in the CAP for social policy reasons.
- If quotas and prices are tinkered with in the next few years, there is a risk that governments will get the signals wrong and foster overproduction that would push even larger amounts of surplus dairy products onto the world market.

The ADFF's view of the prospects for dairy trade policy reform and market rationalization in the U.S. were as noted below [6, p.24]:

- Internal restructuring is occurring in the U.S. market that will test the ability of the regulated pricing system to stay in place. Lower cost production is displacing more expensive milk out of traditional areas, and proprietary processors are competing with cooperatives for supply.
- There is no strong export culture, but the industry is beginning to focus on export markets.
- The U.S. is likely to keep the barriers to its dairy industry high.
- A potential risk is that the U.S. will pool its dairy export returns across all milk.

Faced with the situations described above, the ADFF advanced three modest trade priorities for consideration by Australia's government [6, p.25]:

- Continue to argue for reduced dairy export subsidies.

- Improve access to Asian markets.
- Support or only passively resist the retention of domestic market protection practices of the U.S. and EU dairy industries.

The last trade priority is puzzling. Among other things, it reflects mixed feelings on the part of the Australians regarding changes in U.S. policies that might make the U.S. dairy industry more open and more export oriented. There is particular concern over impacts of a "Class IV" arrangement under which returns from U.S. dairy export sales would be pooled with fluid milk and other domestic dairy product sales to determine producer pay prices in the U.S.

The Australians' fears about export pooling by the U.S. appear exaggerated. It should be noted that those fears were expressed before the WTO panel's 1999 decision on Canada's Class 5 dairy export subsidy program. The WTO panel's decision regarding Canada's Class 5 pricing system suggests that U.S. dairy exports under a Class IV pooling arrangement would have to be counted against subsidized export sales permitted under the Uruguay Round GATT/WTO agreement [13]. Moreover, the constraints on subsidized exports of U.S. dairy products under the USDA's Dairy Export Incentive Program are so stringent that only relatively small amounts of dairy products could be exported under such a Class IV arrangement.

The ADFP study suggested that export pooling might be carried out by U.S. corporate or dairy industry groups. It is unclear whether a U.S. industry-financed export subsidy program for dairy products would attract a WTO challenge. Arguably, the U.S. could construct a program that would be WTO-compatible if the U.S. government was not involved in the program and industry participation was voluntary—conditions that would be difficult to achieve [13].

The questions about the export expansion capabilities of Australia's dairy industry post-regulation might be summarized as follows: Australia undoubtedly will have lower raw product costs post-deregulation, which will help to foster expanded dairy exports. Whether the country's dairy exporters will gain substantially larger and more profitable export market shares, however, remains to be seen.

V. Will Economic and Political Pressures that Fostered Deregulation in Australia's Dairy Industry Produce Similar Results in the U.S., EU and Canada?

The short answer is "not soon." Australia's dairy industry faced a unique set of circumstances in the late 1990s and 2000 that fostered deregulation of that industry:

- The DMS scheme was scheduled to end on June 30, 2000 and there was uncertainty about whether the program could be extended. Victoria's powerful dairy organizations decided not to pursue extension of the program.
- Victoria accounted for 62% of the milk produced in Australia in the 1990s. As representatives of the dominant milk-producing state in Australia, the Victoria dairy groups had strong economic and political influence. For reasons noted earlier, they could essentially dictate that deregulation would occur throughout Australia once they decided that it should happen.
- Australia's dairy industry was able to persuade the government to provide a restructuring package to reduce losses that would be sustained by Australia's market milk producers.
- New Zealand's dairy industry was gaining market share in Australia's cheese market partly because of Australia's DMS scheme.
- There were good reasons to believe that Australia's future in dairying resided in dairy export markets. The good reasons included a history of success in expanding dairy exports and the lack of substantial growth in Australia's fluid milk markets.

Do Similar Pressures Exist in the U.S., EU or Canada?

Parallels to the Australian situation that would foster deregulation of the U.S., EU, and Canadian dairy industries do not currently exist.

In the U.S., there are dairy groups that favor deregulation. Certain dairy groups in the Upper Midwestern dairy industry favor reform or elimination of the federal milk order system, arguing that the system favors producers in the Eastern and Southern regions of the U.S. In addition, dairy groups in the Upper Midwest occasionally call for eliminating the dairy price support program, contending that the program favors dairy processors in California and elsewhere in the Western U.S.

However, the Upper Midwestern dairy farmer groups are outnumbered by producers located elsewhere in the U.S. and lack the political clout needed to bring about such changes. Indeed, no state or regional groups in the U.S. have the power to bring about sweeping changes of the magnitude produced by the Victoria groups in Australia. Even the Dairy Farmers of America (DFA)—the largest U.S. dairy cooperative—represents only about 22% of the U.S. milk supply. While DFA possesses political clout, the cooperative would find it difficult to force other U.S. dairy groups to accept nationwide deregulatory changes that would cause opposing groups to sustain large losses or absorb large adjustment costs.

U.S. federal milk orders are substantially less vulnerable to deregulation pressures than were Australia's state milk pricing programs in the late 1990s. Specifically, the U.S. federal milk orders face no threat comparable to that mustered by Victoria's dairy industry against Australian states that wished to retain high state regulated fluid milk prices. To see why, consider this scenario: A group of U.S. milk producers might decide to vote out their federal milk order with the objective of acquiring additional fluid milk sales in other federal order markets. If processors in the producers' federal order market became unregulated as a result of the producer action, then they would no longer be required to pay the minimum prices specified by the order and could, it might be supposed, undercut fluid milk prices in the other orders and gain additional fluid milk sales. If this could be done, it would confer benefits on the processors and their producer-suppliers in the process. But processors previously regulated in the area where the federal order was voted out would, in almost all cases, instantly become regulated under a different federal order (and be required to pay the minimum prices of the different order) where the firm had significant fluid milk sales, eliminating most of the economic advantage for the processors and producers who voted out the order. There is also a widespread preference in the U.S. dairy industry for maintaining high border protection for dairy products.

The EU's dairy industry arguably faces more tangible pressures for deregulation than the U.S. The EU is scheduled to expand into Eastern Europe within the next few years. It will not be feasible for the EU to extend the current milk quota and domestic dairy price support system into Poland, Hungary, the Czech Republic, Slovenia, Estonia, and possibly Slovakia—the countries involved in the EU accession. The basic choices open to the EU appear to be to (a) require Poland and the other Eastern European countries involved in the accession to agree to a lengthy transition period during which they would not share fully in CAP dairy program benefits, or (b) end EU milk quotas and high domestic dairy price supports and allow the Eastern European countries access to current EU dairy markets.

There is support for an end to EU milk quotas and at least partial deregulation from dairy industry groups in Denmark, the UK, Italy, and Sweden. Certain dairy groups in these countries argue that they could compete effectively in international dairy markets with less government support. However, strong opposition to deregulation and elimination of milk quotas from Germany and France reduces the chances for substantial deregulation of the EU's dairy industry.

One possibility for bringing about deregulation of the EU's dairy industry lies in producer compensation. If problems associated with EU expansion and CAP budget problems should force partial deregulation of the EU dairy industry, a large producer compensation package could be

developed to make the measure more acceptable to producers. Without such a compensation package, deregulation of the EU dairy industry would likely be a nonstarter. Australia's restructuring package might be a useful model for the EU in this situation.

U.S. and other dairy exporters would like to gain greater access to Canadian dairy markets. However, Canada maintains a milk quota system and domestic price supports that would be unsustainable without high tariffs on dairy imports. Canadian producers are especially resistant to deregulatory measures that would cause loss of quota values. Hence, expect no substantial deregulation of Canada's dairy industry any time soon.

The immediate benefits to the U.S., EU and Canadian dairy industries from maintaining high border protection and regulation will come at a cost. Australian dairy groups—probably linked to a greater extent with New Zealand dairy groups—will gain early mover advantages in dairy exporting and obtain strong positions in Asian markets, making it expensive for U.S. and EU exporters to expand sales there.

In the U.S. and EU, strong, efficient firms will capture market share from weaker firms in the domestic market rather than seek export markets. This is particularly true in the U.S. where three firms are building large cheese plants in California that will expand that state's cheese processing capacity by about 40% within five years. This cheese will not be competitive in foreign markets because of high U.S. cheese prices that reflect impacts of restrictive tariffs and the USDA's dairy price support program. Lacking export markets for the cheese, the three firms will compete for domestic market share against cheese firms in the Upper Midwest and elsewhere in the domestic market.

Developments that will have similar impacts in the domestic market are occurring in the EU. For example, when EU firms were forced to reduce exports of subsidized cheese by the Uruguay Round GATT/WTO agreement, MD Foods of Denmark rapidly expanded cheese sales within the EU at the expense of other EU firms [14]. Competitive moves of the type pursued by MD Foods are being replayed by other firms elsewhere in the EU.

U.S. and EU firms are likely to seek to expand exports of highly differentiated dairy products that can be exported despite the high prices for dairy products in the home market. Indeed, this is probably where the competitive advantage of many U.S. and EU dairy exporters will reside. U.S. and EU firms are likely to be well positioned to carry out the R&D and to acquire the capital needed to expand export sales of highly differentiated dairy products. Australia, New Zealand, Argentina, and perhaps others are becoming strongly positioned to secure more of the bulk or modestly differentiated dairy export product market.

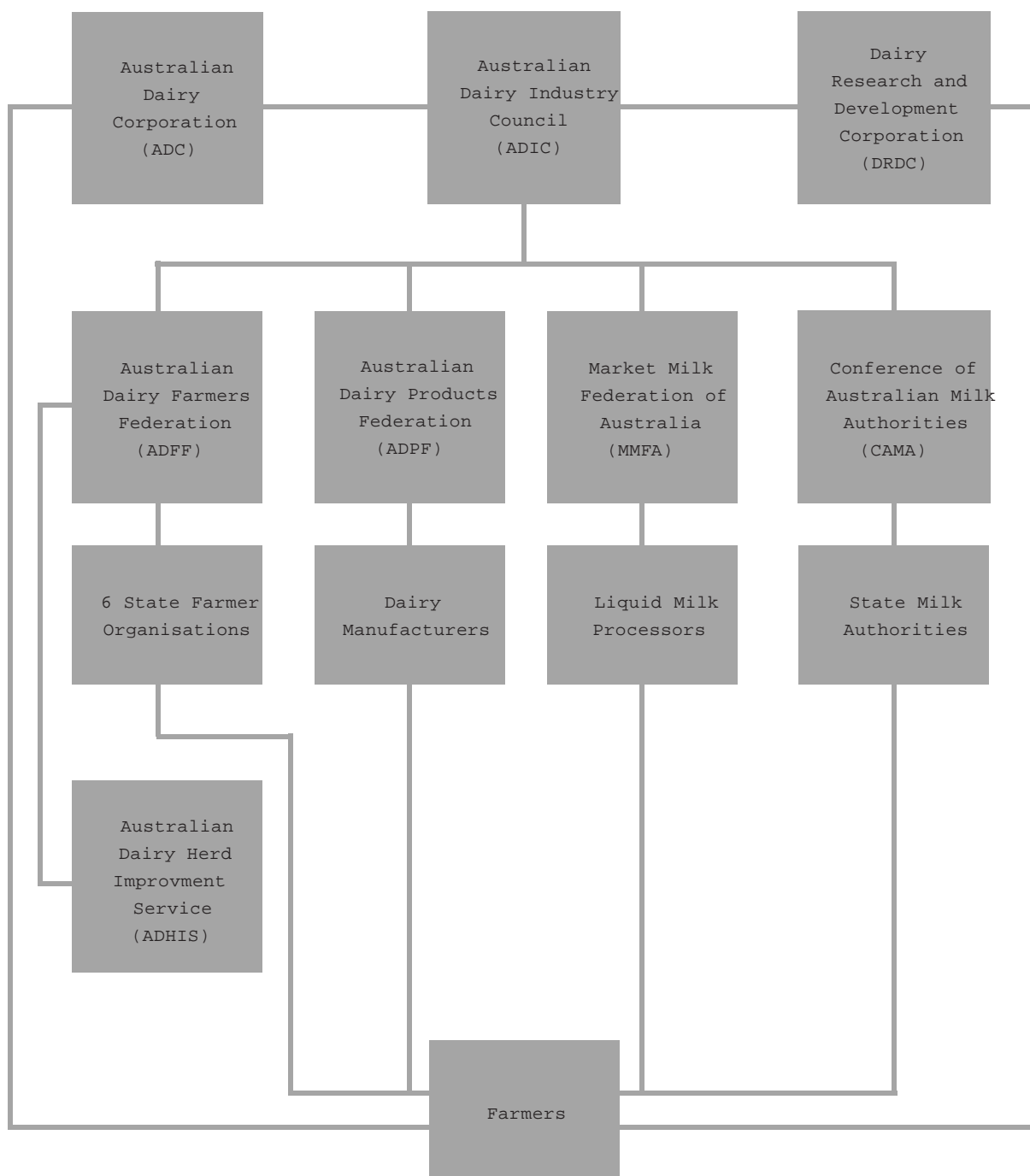
In summary, it is unclear how long the current border protection and price regulations will persist in the dairy industries of the U.S. and EU, but there is little on the horizon to provide incentives for Australia-like deregulatory developments in the U.S. and EU.

REFERENCES

1. AAP NEWSFEED, "NSW: Dairy farmers to receive advice under state package," May 2, 2000.
2. AAP NEWSFEED, "Truss applies double standard on dairy deregulation," April 14, 2000.
3. Australian Dairy Corporation, "Australian Dairy Industry in Focus 99," 2000.
4. Australian Dairy Corporation, "Australian Dairy Industry, An Important Rural Industry, a Major Exporter," 1999.
5. Australian Dairy Corporation, "Industry Organizations and Structure," 1999.
6. Australian Dairy Farmers' Federation, "Taking Responsibility for the Future, Advancing Dairy Australia," Final Report of the Working Group, June 1999, 82 pages.
7. Australian Dairy Industry Council, "ADIC Activity Report, The facts about deregulation and the restructure package," ADIC Annual Report, 1999, 25 pages.
8. Australian Dairy Industry Council, "Milk Matters, The Australian Dairy Industry—Facts about Deregulation and the Restructure Package," December 1999.
9. Bonlac Foods Limited, Annual Report 1999.
10. Coats, S., "Comments made during Interview Conducted by W.D. Dobson at Bonlac Foods Headquarters," Melbourne, Australia, April 18, 2000.
11. Dairy Industry of Western Australia, Annual Report 1999.
12. Davison, A., "Comments made during Interview Conducted by W.D. Dobson at Robobank's Australia Branch Office," Sydney, Australia, April 14, 2000.
13. Dobson, W.D., "Canada's Class 5 Pricing System, the EU's Dairy Export Restitution Program, and the U.S.'s DEIP—An Update on Impacts of Dairy Export Subsidy Programs," Babcock Institute Discussion Paper No. 99-1, 1999, 30 pages.
14. Dobson, W.D., "The Evolution and Strategies of MD Foods of Denmark and the Danish Dairy Board—Implications for the U.S. and World Dairy Industries, Babcock Institute Discussion Paper No. 98-1, 1998, 29 pages.
15. Fehring, M., "Comments made during Interview Conducted by W.D. Dobson at Headquarters of United Dairy Farmers of Victoria," Melbourne, Australia, April 18, 2000.
16. Gifford, D., "Comments made during Interview Conducted by W.D. Dobson at Australian Dairy Corporation Headquarters," Melbourne, Australia, April 10, 2000.
17. Ginns, D., "Agribusiness Leaders—Top 200 Agribusinesses," Australian Farm Journal, September 1999, pages 14&15.
18. Greenaway, R., "Comments made during Interview Conducted by W.D. Dobson at Murray Goulburn's Headquarters," Brunswick, Australia, April 12, 2000.
19. Harris, D., "Comments made during Interview Conducted by W.D. Dobson at Bonlac Foods Headquarters," Melbourne, Australia, April 18, 2000.
20. Margin, P., "Market Milk—The New Environment," OUTLOOK 2000, pp. 171-172.
21. Marsh, V., "Commodities and Agriculture: Australia's Milk Shake-up," London Financial Times, March 24, 2000, p. 42.
22. McQueen, J., "Comments made during Interview Conducted by W.D. Dobson at Offices of the Australian Dairy Farmers' Federation," Melbourne, Australia, April 17, 2000.
23. Murray Goulburn Cooperative Co. Limited, Annual Report 1999.
24. National Foods Limited, Annual Report 1999.
25. Paterson, I., "ABARE tips prices, exports to rise," The Australian Dairyfarmer, March-April 2000, p. 15.

26. Phillips, C., Comment appearing in OUTLOOK 2000 media release dealing with the "WTO Challenge for Dairy."
27. Phillips, C., "Dairy manufacturing—The new Environment in Australia," OUTLOOK 2000.
28. Scott, A., "Private Communication Relating to Deregulation of Western Australia's Dairy Industry," January 7, 2000.
29. Senate Rural and Regional Affairs and Transport References Committee, Deregulation of the Australian Dairy Industry, October 1999, 199 pages.
30. Taylor, A. (Paul's Limited, Queensland, Australia) Comments made about the impacts of deregulation on Australia's dairy industry to FAO Dairy Outlook List, June 2, 2000.
31. U.S. Department of Agriculture, Foreign Agricultural Service, "Dairy: World Markets and Trade," December 1999.
32. Waikato Times, "NZDB set to become big player in Australia after Bonlac purchase," May 2, 2000, p. 14.
33. Wellington Evening Post, "Kiwi's get foothold in Aussie dairy industry," April 29, 2000, p. 20.
34. Zeitner, R., "Comments made during Interview Conducted by W.D. Dobson at U.S. Embassy," Canberra, Australia, April 13, 2000.

Appendix. Figure 1: Australian Dairy Industry Organizations*



* Source: ADC – Industry Organisations and Structure.
http://www.dairycorp.com.au/statistics/statistics_orgstructure.htm

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