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CER AND AUSTRALIA-NEW ZEALAND DAIRY PRODUCTS TRADE+

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ABSTRACT

In June 1988 the Australian and New Zealand Governments negotiated changes to the implementation of the Closer Economic Relations (CER) agreement. From July 1 1990 dairy product trade across the Tasman will be "free and fair" in a single integrated trans-Tasman market. The objective in this paper is to make some preliminary assessments of the likely incentives for trans-Tasman trade in dairy products and the likely impacts on the Australian industry of such a trade.

While previous work has defined a number of factors which will influence the extent of dairy product trade under the new provisions for dairy products, several major changes in conditions may limit the relevence of those previous conclusions. Therefore the major factors which will provide incentives or disincentives for New Zealand exports to Australia are reviewed. These include the dairy industry outlook in each country, the general economic outlook with particular emphasis on exchange rates, the export capacity of New Zealand, the dairy industry support arrangements in each country and the effect of such arrangements on the relationship between Australian and import prices.

In the second half of the paper an econometric model of the Australian dairy products market is used to simulate the impacts on the Australian industry of firstly, variations in some of the major factors which are thought to provide incentives for trade, and secondly, the commencement of shipments of dairy products from New Zealand from 1990/91 onwards.

The results basically confirm our prior notions of which factors enhance the potential profitability of trans-Tasman dairy product trade. An increase in world prices for dairy products, an appreciation of the $NZ relative to the $A, and an increase in assistance through higher market support payments all benefit the Australian industry and in general help in protecting the domestic industry from import competition. The domestic industry is worse off and the incentives for imports from New Zealand are strengthened by decreasing world prices, a depreciating $NZ and declining domestic price support.

New Zealand imports are projected to have some major impacts on the Australian dairy product market. There are substantial price falls which flow onto the farm level, substantial shifts in the mix of products manufactured and exported, and significant reductions in the gross value of milk production and exports.

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1. INTRODUCTION

In June 1988 the Australian and New Zealand Governments negotiated changes to the implementation of the Closer Economic Relations (CER) agreement between the two countries. As well as the overriding desire of both governments to speed up the implementation of the provisions of the CER agreement, there was pressure for increased liberalisation of dairy product trade. In the initial agreement it was stated that quantitative import restrictions and tariff quotas on all goods were to be eliminated by 30 June 1995, and it was a stated objective of the 1988 discussions to bring this forward to 1992. Trade in dairy products under CER will be subject to the existing Memorandum of Understanding (MOU) until July 1 1990. This existing agreement prohibits imports of dairy products from New Zealand, except for cheese where the access level increases with growth in the Australian market. From July 1 1990 dairy product trade across the Tasman will be covered by an exchange of letters between the relevent Ministers in the form of treaty documents. Trade will be "free and fair" in a single integrated trans-Tasman market. A notable component of the treaty will be that trade from New Zealand will be on an individual firm basis rather than by the New Zealand Dairy Board.

The question arises of the likely impacts these new provisions for dairy products in the CER agreement will have on dairy product trade and on the Australian and New Zealand dairy industries. Our objective in this paper is to make some preliminary assessments of the likely incentives for trans-Tasman trade in dairy products and the likely impacts on the Australian industry of such a trade.

2. PREVIOUS WORK

The relevant issues in assessing the impact of trans-Tasman trade liberalisation in dairy products were addressed in detail by BAE (1981) and Campbell and Blank (1983), and have been summarised recently by Small, Green and Griffith (1988).

BAE (1981) aimed to provide a comparative overview of the dairy industries in each country, including the marketing arrangements which operated, and to provide "bench-mark indications of the possible effects of freer trade on the Australian dairy industry at the farm and industry levels" (BAE 1981, p. 8). Based on the economic conditions during 1977/78 and 1979/80, the study found that the two most important factors in assessing the competitiveness of imports from New Zealand was the form of protection each industry received and the outlook for world dairy markets.

Campbell and Blank (1983) had the objective of assessing the impact of developments following the 1981 study and the likely future level of competitiveness based on apparent economic trends, both domestically in the two countries and for the world markets in general. Attention was restricted to the economic incentive to compete, ie, at what price would Australian markets become as attractive as third markets to New Zealand and what would be the level of disruption to the Australian industry implied by that price?

Their major conclusions were that the principal influences on the future competitiveness of New Zealand product in Australia were the relationship between Australian domestic prices and world prices, and the relationship between trans-Tasman and other ex-New Zealand freight rates. Other influences were thought to be exchange rate movements, levels of inflation and developments on world markets. The overall conclusion was that market conditions "are expected to maintain or increase the competitiveness of New Zealand dairy products in Australia into the late 1980s" (Campbell and Blank 1983, p. 17).

Based on the analysis of these two reports, the Australian government sought to protect the dairy industry from immediate import pressure at the 1983 CER negotiations. Dairying was explicitly excluded from CER, but was covered by a more limiting industry specific treaty called a Memorandum of Understanding (MOU). The relevant details from that MOU included (Department of Trade 1983):

(a) the formation of a Joint Dairy Industry Consultative Committee to oversee the provisions of the MOU, including exchanging information on changes in the respective levels of production and trade, industry attitudes, marketing activities and intentions, and policies and practices;

(b) with the exception of cheese, the banning of New Zealand dairy product imports into Australia as long as the Australian industry has the ability to service its own markets (thus New Zealand is the preferred supplier in the event of a domestic shortfall in production);

(c) New Zealand's access level for cheese to increase in relation to the growth in the Australian market; and

(d) the Committee to consult in the event of a major collapse in the world market as to how to respond in the best interests of both partners.

While previous work has defined a number of factors which will influence the extent of dairy product trade under the new provisions for dairy products , several major changes in conditions may limit the relevance of those previous conclusions.

Therefore it is worthwhile to review the major factors which will provide incentives or disincentives for New Zealand exports to Australia.

3. FACTORS INFLUENCING TRANS-TASMAN DAIRY PRODUCT TRADE [1]

3.1 Characteristics of the Australian and New Zealand Dairy Industries

The Australian and New Zealand dairy industries are divided into two distinct sectors by marketing arrangements: milk for human consumption and milk used for manufacturing purposes. The different marketing arrangements result in significantly different effective rates of protection, with the support being higher for the fresh milk producers who receive higher farmgate prices. In Australia this differential is forecast to be about 16c/L this year (ABARE 1988a). The recent partial deregulation of New Zealand's town milk sector is likely to result in a reduction in the farmgate price, at least in some regions, during surplus production periods.

In both Australia and New Zealand the majority of production is used for manufacturing purposes - approximately 72% in Australia and 88% in New Zealand. Of this manufactured production, some 30% and 75% is exported by Australia and New Zealand respectively. Thus the New Zealand industry is more dependent on the world dairy products market. Further, although New Zealand presently enjoys preferential access to the more lucrative UK and US butter and cheese quota markets, this access is being reduced over time.

3.2 Marketing and Protection Arrangements

Marketing arrangements for manufactured milk products have changed in both Australia and New Zealand since Campbell and Blank (1983), resulting in a reduction in the level of support given to manufacturing dairy products in both countries. Further in late 1987 the New Zealand town milk sector was partially

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1. This section is based on the analysis in Small, Green and Griffith (1988).

deregulated, and currently in Australia there is some pressure for change in the arrangements for market milk. Thus it is important to reassess the comparative levels of support provided to the two dairy industries.

New dairy marketing arrangements for manufactured milk products became effective on 1 July 1986. The new arrangements effectively reduce the level of support provided to the dairy industry and were expected to lead to "the development of a more efficient and profitable dairy industry, able to respond...to changing market conditions and technology" (DPI 1986, p.1), and able to compete with imported dairy products. An implicit objective of the arrangement was to encourage a "national" approach to production and marketing decision making, rather than the fragmented state approach which still exists for market milk. A further objective was "to encourage the exploitation of the more profitable export markets and in particular, to discourage production for export than returns a net loss to Australia".

The key elements of the new arrangements are (DPI 1986; Davis et al 1986):

1. removal of cost and revenue pooling within product types and between markets (cost "allowances" were terminated on 30 June 1985);

2. replacement of the previous stabilisation arrangements by a market support system funded by a levy on all milk production and designed to provide a more uniform level of assistance to all exported products;

3. provision of market support payments for all dairy products rather than for the traditionally supported products (prescribed or leviable product), that is, butter, leviable cheese (cheddar-like cheese), skim milk powder (SMP), whole milk powder (WMP) and casein;

4. a progressive reduction in domestic price support to "fair" import parity prices for New Zealand dairy products, that is, the price at which undumped, unsubsidised product could be landed in Australia;

5. provision of additional price support for leviable cheese and butter/butteroil through a supplementary market support levy; and

6. the provision of underwriting by the Commonwealth Government for traditional leviable product at 85 per cent of a long term export trend price.

Under the new arrangements a levy is paid by farmers on all milk produced on the basis of the butterfat component, for supply as either market or manufacturing milk, for the domestic or export market. In 1986/87 the levy was 35c/kg butterfat (or for the average milk of about 4.25%, 1.52c/l) and has increased since then. Market support payments from this fund are made to manufacturers of exported dairy products. Unlike the old arrangements, all milk based products and some dairy product components of mixtures are eligible for support. For the previously prescribed products the rate of market support payment was set at 30 per cent of the currently received average export price. For the other products, for example condensed milks and non leviable cheese, the rates were based on technical relationships with prescribed products and those established for the prescribed products.

Additional support for butter, butteroil and leviable cheese is also provided via the supplementary support fund, usually at a uniform percentage of the market support payment. The purpose of this extra support is to provide for a smooth transition from previous arrangements. The funds required to pay supplementary support are derived from levies on domestic sales of butter, butteroil and leviable cheese. The initial rates of product levies were set so that the new Domestic Price Support Values exceeded 1985/86 domestic bulk

wholesale prices by five percent for butter and by eight percent for cheese. The supplementary levy and support for cheese will be phased out gradually by 1 July 1989, while for butter/butteroil the support was to be reduced by half by 1 July 1989. However the supplementary support for butter/butteroil will now be phased out by 1 July 1989 as well.

Domestic price support for manufactured product is provided implicity through the export price support arrangements. The domestic prices for all products except butter/butteroil and leviable cheese are equivalent to the average export price plus the market support payment. For butter/butteroil and leviable cheese the domestic price also includes a margin to cover the levy payable and the supplementary market support payment. In this way, as with the old arrangements, a manufacturer will be indifferent between domestic and export sales.

Underwriting of the export price at 85 per cent of the long term trend line is also a provision. "This arrangement results in market support assistance being increased in the event of a substantial collapse in world market prices and hence in putting a floor to domestic prices" (DPI 1986, p.4).

The new arrangements were expected to (a) make manufacturers more responsive to market conditions through the removal of the revenue pooling within product types and the equalisation between export markets and between the domestic and export market; (b) provide clearer price signals to the producers of all dairy products by the removal of the distortions toward the 'leviable' products and within the 'leviable' products and the evening out of assistance across all dairy products; and (c) make producers more responsive to market conditions by placing greater emphasis on the marginal return from export markets rather than on the average return. Milk production was expected to decline as a result, and in fact manufacturing milk output in 1987/88 was little different from 1985/86, although it is expected to be higher this year.

Assistance is also provided through a range of measures which reduce domestic production costs, though these are not specific to dairying. They include various taxation exemptions, concessions, rebates, etc.; government provision of services free or at low cost; and subsidies for certain types of input purchases. With the change in the marketing arrangements and the general tightening up of input and taxation concessions, the effective rate of protection to Australian dairy producers is likely to be significantly lower since 1986.

Further, when the data are examined, this raduction in assistance may have been somewhat greater than planned in 1986. The data in Table 1 show that the imputed market support payment for all major products in 1988/89 is actually about 20% of the minimum export price rather than the 30% stated in DPI (1986).

Protection arrangements have recently changed in New Zealand as well. The concessional overdraft facility of the New Zealand Dairy Board at the Reserve Bank has been terminated, and borrowings are now made at commercial rates. However the conversion in 1983 of the existing overdraft to a 40 year $NZ750m loan at 1% is estimated to have provided a significant degree of assistance to the industry in subsequent years. Further, the Supplementary Minimum Price Scheme was terminated in 1983/84, although the dairy industry was supplemented in only one year of the Scheme. The buffer fund stabilisation scheme on export sales of dairy products still operates, but the account has generally been in credit and thus has not provided assistance to the industry.

Generalised agricultural input assistance measures are also provided to New Zealand dairy producers, but major policy changes since 1983 have significantly reduced the level of subsidy provided.

Table 1: Minimum Export Prices, Market Support Payments and Domestic Wholesale Prices, Major Products, 1986/87- 1988/89

Product	1986/87	1987/88	1988/89(a)
Butter			
Domestic wholesale price	2088	1964	1984
Market support payment	578 (38%)	546 (39%)	351 (21%)
Minimum export price	1510	1418	1633
Cheese			
Domestic wholesale price	2297	2554	2909
Market support payment	680 (42%)	725 (40%)	555 (24%)
Minimum export price	1617	1829	2354
Skim milk powder			
Domestic wholesale price	1574	2123	2660
Market support payment	437 (38%)	530 (33)	451 (20%)
Minimum export price	1137	1593	2230
Whole milk powder			
Domestic wholesale price	2051	2242	2697
Market support payment	611 (42%)	561 (33%)	467 (21%)
Minimum export price	1440	1681	2230
Casein			
Domestic wholesale price	4021	5470	7392
Market support payment	1094 (37%)	1302 (31%)	1172 (19%)
Minimum export price	2927	4168	6220

Source: Australian Dairy Corporation.

(a) First 7 months data.

Another type of assistance to New Zealand dairy producers is that given by restrictions on the import and manufacture of margarine in New Zealand, and the special access given to the UK butter market and the US cheese market. Both are premium markets which allow scope for cross-subsidisation of exports to other markets, including Australia. The access to the UK butter market has been and is being reduced at present, thereby reducing the assistance given to New Zealand dairy producers. Australia also has access to the US quota cheese market, although New Zealand's level of access has traditionally been greater.

Recent estimates of the effective rate of protection to the New Zealand manufacturing milk sector show a decline from 25% in 1980, to 8% in 1983, and to between 1% and -5% since (Small, Green and Griffith 1988).

3.3 The Outlook for the Australian Dairy Industry

ABARE have forecast total milk production to increase to 6250 ML in 1988/89 in response to increased prices for both manufacturing and market milk of 13.0% and 3.9% respectively (ABARE 1988a).

Following a period of herd buildup, dairy cattle numbers are forecast to decline in both 1989 and 1990 in Australia in line with the steady decline in dairy farm numbers. Total dairy cattle numbers are forecast to be 1.66 and 1.65 million head in 1988/89 and 1989/90 respectively. Milk yield per cow is expected to continue to increase in 1988/89 to 3720L/cow and to over 4000L/cow by 1991/92 (ABARE 1988a).

Export prices for dairy protein products are expected to continue to strengthen in the medium term as demand on world markets for milk powders and cheese continues to improve (USDA 1988). World prices for milk powders have doubled in the past two years and cheese prices have risen by 50%. However world butter prices, although showing some increase, are unlikely to improve beyond the current level (GATT minimum). In response to these outlooks and the expected growth in domestic per capita consumption of cheese while butter consumption continues to decline, the product mix for the manufacturing sector is likely to alter in 1988/89. Total cheese production is forecast to increase by 5.7% in 1988/89 to 186 kt and production of wholemilk powder is expected to increase by 9.4% to 70 kt. In contrast, butter production is expected to decline by 2.1% to 92 kt in 1988/89 with a corresponding decline in the byproduct, skim milk powder.

As a result of the improvement in export market returns and higher prices on the domestic market for manufactured product, manufacturing milk prices at the farm gate are forecast to rise in nominal terms for 1988/89 and, depending on the stability of domestic marketing arrangements, into the early 1990s (ABARE 1988a).

The projected rise in total production is greater than the rise in total domestic consumption, resulting in an increase in the amount of product available for export except for butter.

Reflecting the continued improvement in world markets for cheese and milk powders during 1988, GATT minimum prices for all major products were increased in September 1988 by between 11.5% and 16.7%. The ability to sustain these increased prices will largely depend on the continued success of the production-limitation schemes in the US and EC and of the efforts to reduce stock levels.

3.4 The Outlook for the New Zealand Dairy Industry

Following a record year in 1985/86 with production rising by 5% to 349 million

kg of milkfat, there was a 14% decline in production in 1986/87 to 301 million kg. The removal of the majority of assistance afforded New Zealand market milk producers, a buildup of stocks (particularly butter), depressed returns from world markets being reflected in farm gate prices and poor seasonal conditions were contributing factors (NZMAF 1988). However declines of up to 40% in some regions were estimated. Five million kgs of milkfat were estimated to have been removed from production in response to the Dairy Board's voluntary Milk Limitation Scheme for 1986/87. Given more normal seasonal conditions, milk production reached about 330 million kg in 1987/88 and is forecast to increase in 1988/89 to 340 million kg (NZMAF 1988).

Dairy cow numbers increased in 1986/87 to 2.27 million but are estimated to have decreased in 1987/88 to 2.26 million head, with similar numbers expected for 1988/89. Although yields per cow in 1986/87 decreased markedly to 133 kg milkfat per cow, an increase to more normal levels of around 150 kg milkfat per cow occurred in 1987/88 and is forecast to be maintained in 1988/89.

Changes in the mix of manufactured product in New Zealand also reflects current and expected future conditions on world dairy markets. The production of cheese is estimated to have increased by 18.4% to 135kt in 1987/88 while the production of wholemilk powder is estimated to have increased by 24.1% to 211 kt, and the output of both products is estimated to continue to increase in 1988/89. Despite the depressed nature of world butter markets, the production of butter is estimated to have increased by 4% to 250 kt in 1987/88, and is forecast be higher again in 1988/89. This reflects both the preferred access to the UK market and the storability of butter. Skim milk powder is forecast to return to 1986/87 output levels by 1988/89, while casein output should remain relatively constant.

As the New Zealand industry is heavily dependent on world markets, the farmgate price for manufacturing milk fluctuates in line with expectations of world prices for dairy products. Thus the opening (basic) price for the depressed 1986/87 season was $2.25 kg/milkfat, a sharp decline from the $4.00 paid in 1985/86. The price however was raised to $3.55 by the end of the season. The opening farmgate price for 1987/88 was set at $3.10 but was revised up several times during the year to end at $3.60. Price is forecast to be $4.20 in 1988/89 in line with the expected improvement in world prices for products.

3.5 The General Economic Outlook for Australia and New Zealand

The Australian CPI is expected to rise 6.5% in 1988/89, compared with 7.3% in 1987/88. Inflation is projected to decline to a rate of 5% by the 1990s (ABARE 1988b), and to be maintained at that level. This will probably be a little above the levels of Australia's major trading partners however.

The annual increase in inflation in New Zealand was 13.2% in 1986, however this rate is expected to decline in 1987 and 1988 in response to wage restraint, continuing reductions in protection and tight monetary policy (NZMAF 1988).

The competitiveness of New Zealand's product on the Australian market will depend largely on the outlook for the $A/$NZ exchange rate. The outlook for the New Zealand economy will depend on the rate of world economic growth and the consequent opportunities for its exports. A reduction in inflation rates plus a persistently high current account deficit will exert downward pressure on the $NZ. Thus the currency is expected to depreciate, perhaps by around 10%, against the major currencies in 1988/89 and into the medium term.

From the Australian viewpoint, the nominal bilateral exchange rate with New Zealand declined by some 24% between 1984/85 and 1987/88, but the rate is forecast to be about $NZ 1.23 or some 10% higher in 1988/89 (ABARE 1988c).

Higher rates of inflation in New Zealand relative to Australia would imply however that the rate of the real effective depreciation will be less than 10%. However in the medium term, the $NZ is forecast to weaken relative to the $A, restoring its competitiveness.

Thus it is likely that the $A will appreciate relative to the $NZ in the short and medium term. In general, this would imply an improvement in the competitive position of New Zealand producers relative to Australian producers, both in Australia and on world markets. However Campbell and Blank (1983) argue that the direct implications for trans-Tasman trade are that movements in the real effective $NZ/$US exchange rate will have only a minimal effect on the desirability of the Australian market to New Zealand exporters. This is because although the impact of exchange rates on production costs will influence the absolute level of profitability of export markets, it will not influence the relative profitability of each market. This is determined by the individual domestic prices on those markets. However a depreciation of the $NZ relative to the $A will increase the competitiveness of New Zealand product on Australian markets.

An appreciation of the $A relative to the $US (the currency in which world dairy prices are written), will increase New Zealand's competitiveness because returns from the Australian domestic market, expressed in $NZ, would increase relative to third markets. Although an increase in competitiveness on Australian markets is likely, there may be some adverse impact of the forecast devaluation of the $NZ relative to both the US and Australian currencies, through the increase in the cost of westbound trans-Tasman freight rates. Any depreciation in the $NZ will increase the cost of fuel to New Zealand and will impact on the cost of freight. This may offset some of the gains in competitiveness.

3.6 Export Capacity of New Zealand

Product required for increased exports to Australia would be sourced from increased production in New Zealand and/or from diversion of exports from third markets. The BAE (1981) assessed the ability of the New Zealand industry to supply the Australian market by estimating the likely import parity price levels in Australia, using the marginal cost of production approach and determining the decline in production in Australia that this price would imply. On this basis, about 10% of total Australian production (550ML) was displaced.

Currently New Zealand access to the UK butter market is being reduced from 74.5 kt per year to 55 kt per year by 1992. This will release a significant amount of butter, or 550 ML of milk, for non-UK trade. As this represents the quantity of imports (on a milk equivalent basis) required in the BAE (1981) worst-case scenario, New Zealand could adequately service the Australian market. Further, given the high stocks of dairy fat products in New Zealand as a result of stagnant world market conditions and the continuing reduction in access to the UK market, the ability of New Zealand to adequately meet Australian import requirements is enhanced.

Finally, with farmgate prices in New Zealand forecast to be back to mid 1980s levels, the potential ability of New Zealand to supply the Australian market is not likely to be reduced.

3.7 Import Parity Price Levels

Campbell and Blank (1983) concluded that the Australian dairy industry could protect itself from imports by setting domestic prices between import and export parity levels. The calculation of import parity prices is a complex process however and the price level calculated is highly dependent on the approach taken (Purtill and Skinner 1986). Using five different approaches, they estimated

import parity price ratios for butter, cheese and skim milk powder for the period 1977/78 to 1984/85. Results for their approach 1(b) (based on average export returns from world markets in the absence of current premium markets for New Zealand plus cif to Australia), are shown in Table 2.

The figures presented in the Table indicate that butter was capable of entering Australian markets profitably between 1977/78 and 1984/85, however the incentives for trade were only marginal in 1981-83. For cheese, profitable opportunities existed between 1977/78 and 1984/85 with the exception of 1978-80. For SMP, trade would have been mostly breakeven or at a loss until 1984/85.

Assuming the support rate of 20% is an adequate reflection of the difference between export and import parity prices, the Australian manufacturing sector should, by July 1 1989, be operating near the defensible position of import parity pricing. Any remaining difference in prices arises from the existence of some premiums on domestic sales which are available because of the reduction in competition provided by tariffs and the NOU. The competitiveness of New Zealand product on the Australian market therefore has been partially (perhaps substantially) reduced by reductions in the level of price support afforded Australian producers.

As shown in Table 2, butter trade would have been marginal or non-existent between 1985/86 and 1988/89. Only in 1988/89 has there been an incentive for trade in cheese, and for SMP there were few incentives in the early years but more recently profitability has increased.

3.8 Competitiveness in Third Markets

Even in the absence of trans-Tasman trade in dairy products, Australia will need to be competitive with New Zealand in third markets. Even though the current outlook for world dairy product demand is improving, the increase in the levels of export surplus for non-UK trade in New Zealand suggests there will be an increase in competition for overseas markets. The possible contractionary pressure on the Australian dairy industry as a result of competition from New Zealand in third markets is likely to be more significant than the pressure resulting from free trade between the two countries, because of the improvement in the competitiveness of Australian product domestically as a result of the new dairy marketing arrangements.

Table 2: Import Parity Price and Australian Domestic Price

	Domestic Price (a)	Import Parity (b,	Ratio
Butter			
1977/78	1495	1083	1.38
1978/79	1457	1110	1.31
1979/80	1533	1244	1.23
1980/81	1694	1457	1.16
1981/82	2040	2022	1.01
1982/83	2366	2334	1.01
1983/84	2437	1944	1.25
1984/85	2439	2103	1.16
1985/86	2438	2422	1.01
1986/87	2112	2193	0.96
1987/88	1990	2261	0.88
1988/89(e)	2012	1975	1.02
Cheese			
1977/78	1159	1043	1.11
1978/79	1234	1213	1.02
1979/80	1376	1349	1.02
1980/81	1597	1428	1.12
1981/82	1898	1667	1.14
1982/83	2213	1963	1.13
1983/84	2272	1706	1.33
1984/85	2273	1754	1.30
1985/86	2273	2369	0.96
1986/87	2321	2484	0.93
1987/88	2580	2731	0.94
1988/89(e)	2923	2437	1.21
Skim Milk Powder			
1977/78	517	455	1.14
1978/79	560	554	1.01
1979/80	637	704	0.90
1980/81	870	941	0.92
1981/82	1008	1071	0.94
1982/83	1143	1122	1.02
1983/84	1173	970	1.21
1984/85	1174	1018	1.15
1985/86	1178	1128	1.04
1986/87	1198	1234	0.97
1987/88	2149	1607	1.34
1988/89(e)	2708	2070	1.31

Source: Purtill and Skinner (1986) for 1977/78-1984/85.

(a) Australian domestic price for levy purposes, plus ex-factory transport costs ($/t). Values for 1985/86-1988/89 calculated as domestic wholesale price plus imputed transport costs adjusted for inflation.

(b) New Zealand FOB (specific products excluding premium markets, except for SMP which is aggregate product to all markets), plus CIF to Australia. Values for 1985/86-1988/89 calculated as New Zealand FOB (bulk, all markets) plus imputed CIF to Australia adjusted for inflation.

(e) Estimate only.

4. EMPIRICAL ANALYSES OF THE PROFITABILITY FACTORS

In this section of the paper empirical analyses are conducted of some of the factors identified above which influence the profitability of potential trans-Tasman trade in dairy products. The analyses employ simulation experiments with an econometric model of the Australian dairy products market.

4.1 The Model

The model is a simultaneous equation model containing some 76 endogenous variables covering seven manufactured dairy products (butter; cheese; SMP; WMP; casein; condensed, concentrated and evaporated (CCE) milk products; and other dried powders in the infants, invalids and health (IIH) group). It is partitioned into nine blocks (dairy cow numbers and milk supply for fluid and manufacturing purposes; domestic demand for fluid and each of the manufacturing products; supply of each product ; exports of each product; imports of cheese; export price linkages for each product; domestic price linkages for each product; farm price linkages; and accounting identities for gross values of production and exports) and is reported in Griffith, Robertson and Lattimore (1989a). While a detailed description of the model is not warranted here, the main elasticity estimates are given in Table 3.

This model was designed as a component of a larger analytical framework for investigating world dairy product policies and prospects (Griffith, Robertson and Lattimore 1989b; Lattimore, Robertson and Griffith 1987; Robertson, Griffith and Lattimore 1987,1989a,b). This larger model contains modules for the EC, US, New Zealand, Australia and a Rest of World residual. It is set up so that world prices and domestic policies determine domestic prices, supplies, demands and trade volumes in each region, and then equilibrium between net exports and net imports of all regions determines world prices. While this formulation is relatively standard for models of this type, it does place limitations on analyses which use only part of the larger framework.

The model is simulated from 1985/86 out to 1994/95 with exogenous variables from 1989/90 set at their estimated or actual 1988/89 values. This is done to define a base simulation against which various experimental simulations can be compared. While the simulated values are checked to ensure a reasonable correspondence with recent history, no attempt is made to forecast likely trends. The means of some of the endogenous variables over the period 1989/90-1994/95 are reported in column 2 of Table 4. Definitions of the variables discussed in the analyses below are given in Table 5.

4.2 World Market Conditions

In the first two experiments, the levels of world prices feeding into the model are increased and decreased by 10% respectively. In the context of the larger world dairy trade model, world prices are taken to be New Zealand FOB export prices (although world dairy product trade is typically conducted in $US). These are converted to $A for input into the Australian model. So a 10% increase in the world price in $A is equivalent to the same increase in the world price in $NZ, if the $NZ/$A exchange rate is unchanged.

The results for the experiment with the 10% increase in world prices are reported in Table 4, as percentage changes from the base simulation. First, the change in world prices causes changes in the Australian FOB export prices of between 1.2 and 10% depending on price transmission elasticities, and subsequent changes in the array of domestic prices. Domestic wholesale prices rise by between 1.1 and 9.1%. The mix of product manufactured is altered, with more butter, SMP, IIH and CCE products, and less cheese, WMP and casein. With only minor changes in domestic demand, changes in export surpluses reflect changes in

4. EMPIRICAL ANALYSES OF THE PROFITABILITY FACTORS

In this section of the paper empirical analyses are conducted of some of the factors identified above which influence the profitability of potential trans-Tasman trade in dairy products. The analyses employ simulation experiments with an econometric model of the Australian dairy products market.

4.1 The Model

The model is a simultaneous equation model containing some 76 endogenous variables covering seven manufactured dairy products (butter; cheese; SMP; WMP; casein; condensed, concentrated and evaporated (CCE) milk products; and other dried powders in the infants, invalids and health (IIH) group). It is partitioned into nine blocks (dairy cow numbers and milk supply for fluid and manufacturing purposes; domestic demand for fluid and each of the manufacturing products; supply of each product ; exports of each product; imports of cheese; export price linkages for each product; domestic price linkages for each product; farm price linkages; and accounting identities for gross values of production and exports) and is reported in Griffith, Robertson and Lattimore (1989a). While a detailed description of the model is not warranted here, the main elasticity estimates are given in Table 3.

This model was designed as a component of a larger analytical framework for investigating world dairy product policies and prospects (Griffith, Robertson and Lattimore 1989b; Lattimore, Robertson and Griffith 1987; Robertson, Griffith and Lattimore 1987,1989a,b). This larger model contains modules for the EC, US, New Zealand, Australia and a Rest of world residual. It is set up so that world prices and domestic policies determine domestic prices, supplies, demands and trade volumes in each region, and then equilibrium between net exports and net imports of all regions determines world prices. While this formulation is relatively standard for models of this type, it does place limitations on analyses which use only part of the larger framework.

The model is simulated from 1985/86 out to 1994/95 with exogenous variables from 1989/90 set at their estimated or actual 1988/89 values. This is done to define a base simulation against which various experimental simulations can be compared. While the simulated values are checked to ensure a reasonable correspondence with recent history, no attempt is made to forecast likely trends. The means of some of the endogenous variables over the period 1989/90-1994/95 are reported in column 2 of Table 4. Definitions of the variables discussed in the analyses below are given in Table 5.

4.2 World Market Conditions

In the first two experiments, the levels of world prices feeding into the model are increased and decreased by 10% respectively. In the context of the larger world dairy trade model, world prices are taken to be New Zealand FOB export prices (although world dairy product trade is typically conducted in $US). These are converted to $A for input into the Australian model. So a 10% increase in the world price in $A is equivalent to the same increase in the world price in $NZ, if the $NZ/$A exchange rate is unchanged.

The results for the experiment with the 10% increase in world prices are reported in Table 4, as percentage changes from the base simulation. First, the change in world prices causes changes in the Australian FOB export prices of between 1.2 and 10% depending on price transmission elasticities, and subsequent changes in the [illegible] of domestic prices. Domestic wholesale prices rise by between 1.1 [illegible] The mix of product manufactured is altered, with more [illegible], SMP [illegible] products, and less cheese, WMP and casein. With only [illegible] changes in export surpluses reflect changes in

Table 3: Estimated Price Elasticities in the Australian Dairy Products Model

Product	Supply		Demand		Price
	SR	LR	SR	LR	SR Only
No. Cows	0.19(a)	0.56			
Yield	0.15(b)				
Milk			-0.20	-1.32	
Butter	0.33		-0.29(c)		0.74(d) 0.67(e) 0.70(f)
Cheese	1.49		-0.05(g)	-0.21	0.20(d) 0.80(e) 0.76(f)
SMP	0.50		-0.01(h)	-0.03	0.96(d) 1.21(e)
WMP	-0.15	-0.42	0.05(h)	0.16	0.70(d) 0.46(e)
Casein	0.52				0.90(d) 0.87(e)
CCE products			-0.14(i)	-0.29	0.21(j)
IIH products	1.07(i)				1.23(k)
Cheese imports			-2.12(l) -0.44(m)		0.31(l) 1.17(m)

Notes: (a) wrt a ratio of the price of all milk to the index of prices paid.
(b) wrt a ratio of the average of the price of all milk and the implied guaranteed price of manufacturing milk to the index of prices paid.
(c) wrt a ratio of the price of butter to the price of margarine.
(d) the FOB price wrt the world price in $A.
(e) the assessed/minimum export price wrt the FOB price.
(f) the retail price wrt the wholesale price.
(g) wrt a ratio of the price of cheese to the price of beef.
(h) wrt the wholesale price as no consistent retail series available.
(i) wrt the export price as no consistent wholesale series available.
(j) the FOB unit value wrt the world price of butter in $A.
(k) the FOB unit value wrt the world price of SMP in $A.
(l) total imports.
(m) imports from New Zealand.

Table 4: The Impact on the Australian Dairy Product Market of Changes in the Factors Influencing the Profitability of Imports, Mean Values for the Period 1989/90-1994/95

Variable	Base Value	World Prices Up 10%	Domestic Assistance Up from 20% to 30%
		(% Changes from the base)	
COW	1699.79	0.5	0.5
YIELD	3.601	0.1	0.1
MILK	6120.50	0.6	0.6
XPB	1112.56	5.5	
XPC	1666.54	1.4	
XPSMP	1034.56	8.1	
XPCA	2589.79	7.9	
XPWMP	1363.37	5.6	
XPCCE	726.96	1.2	
XPODP	3646.76	10.0	
XB	41.52	2.0	5.5
XC	43.90	-2.9	3.1
XSMP	62.36	1.0	11.2
XCA	9.19	-4.0	-9.2
XWMP	72.69	-1.8	-8.8
XIIH	13.40	2.3	-1.0
XCCE	7.98	44.7	39.2
GVX	361.44	6.0	0.8
QSB	99.50	0.6	1.6
QSC	168.05	-1.2	0.2
QSSMP	119.65	2.1	5.8
QSCA	10.19	-3.3	-8.3
QSWMP	97.42	-1.2	-6.5
QSIIH	30.40	1.0	-0.5
QSCCE	57.74	5.9	5.4
PSB	990.67	2.6	6.9
PSC	1235.91	1.1	6.9
PSSMP	1183.32	9.1	6.9
PSCA	2508.16	7.1	6.9
PSWMP	982.26	2.5	6.9
PDB	1698.47	1.3	3.5
PDC	2082.82	0.8	4.9
WTDPM	152.28	7.2	6.9
PSMM	126.42	6.4	6.2
PSAM	151.44	3.8	3.6
GVMM	545.95	7.3	7.0
GVAM	898.63	4.4	4.3
DCB	3.654	-0.4	-1.1
DCC	8.969	-0.1	-0.1
DCSMP	2.953	3.9	
DCWMP	0.942	0.5	
DCCCE	3.281	-0.3	
MC	19.54	-2.1	
MPC	2287.55	2.4	

Table 5: Variable Definitions

XPB: Average FOB export unit value of butter (including butteroil in commercial butter equivalent), $/t , Australia.
XPC: Average FOB export unit value of cheese, $/t, Australia.
XPSMP: Average FOB export unit value of skim milk powder, $/t, Australia.
XPWMP: Average FOB export unit value of whole milk powder, $/t, Australia.
XPCA: Average FOB export unit value of casein, $/t, Australia.
XPCCE: Average FOB export unit value of condensed, concentrated and evaporated products, $/t, Australia.
XPODP: Average FOB export unit value of invalids, infants and health products, $/t, Australia.
PSB: Domestic bulk wholesale price of butter, $/t, Australia.
PSSMP: Domestic bulk wholesale price of skim milk powder, (includes SMP/BMP mixtures), $/t, Australia.
PSC: Domestic bulk wholesale price of cheese, $/t, Australia.
PSCA: Domestic bulk wholesale price of casein, $/t, Australia.
PSWMP: Domestic bulk wholesale price of whole milk powder, $/t, Australia.
PDB: Domestic retail price of butter, $/t, Sydney.
PDC: Domestic retail price of cheese, $/t, Sydney.
WTDPM: (PSB/23.4) + (PSSMP/11.0).
PSAM: Unit gross value of all wholemilk production, c/l, Australian average, valued at farm gate.
GVMM: Gross value of manufacturing milk production, $m, Australian average, valued at farm gate.
GVAM: Gross value of all wholemilk production, $m, Australian average, valued at farm gate.
COW: Dairy cows in milk at 31 March. '000 hd.
YIELD: Output of milk per cow, 000 lt, at March 31, Australia.
MILK: Total milk production, Hl, Australia.
DCC: Per capita consumption of cheese, kg/head/year, Australia.
DCB: Per capita consumption of butter (including as defined for production) kg/head/year, Australia.
DCWMP: Per capita consumption of whole milk powder, kg/head/year, Australia.
DCSMP: Per capita consumption of skim milk powder, kg/head/year, Australia.
DCCCE: Per capita consumption of CCE products, kg/head/year, Australia.
MC: Imports of cheese, '000t, Australia.
MPC: Average CIF unit value of total cheese imports, $/t, Australia.
XB: Exports of butter (including as defined for production), 000t, Australia.
XC: Exports of cheese, 000t, Australia.
XCA: Exports of casein, 000t, Australia.
XSMP: Exports of skim milk powder, 000t, Australia.
XWMP: Exports of whole milk powder, 000t, Australia.
XCCE: Exports of condensed, concentrated and evaporated products, 000t, Australia.
XIIH: Exports of invalids, infants and health products, 000t, Australia.
GVX: Gross value of export sales, $m, Australia.
QSB: Production of butter, butteroil, anhydrous milk fat, 000t, Australia.
QSC: Production of cheese, 000t, Australia.
QSCA: Production of casein, 000t, Australia.
QSSMP: Production of skim milk powder and buttermilk powder, 000t, Australia.
QSWMP: Production of whole milk powder, 000t, Australia.
QSCCE: Production of condensed, concentrated and evaporated products, 000t, Australia.
QSIIH: Production of invalids, infants and health products, 000t, Australia.

Sources: Australian Bureau of Agricultural and Resource Economics, Quarterly Review of the Rural Economy and Commodity Statistical Bulletin (various). Australian Dairy Corporation, Annual Reports (various).

product supplies, and overall, the gross export value rises some 6%. The rise in the prices of dairy products leads to an increase in the price of milk for manufacturing purposes of around 6.5%, and an increase in the price of all milk of 3.8%. Gross values of production rise accordingly. A minor expansion in the dairy herd is stimulated as are greater yields per cow, and milk production rises about 0.6%. The combination of the relatively higher price of imports and reduced domestic demand results in a decline in cheese imports, including imports from New Zealand. Thus the Australian dairy industry benefits from this set of conditions in world dairy markets.

For a 10% decrease in world prices, the results are approximately equal and negative. FOB and domestic prices fall; the mix of output and exports changes in favour of cheese, WMP and casein; milk production falls; and gross values of production and exports fall. Cheese imports are encouraged. Overall the domestic industry is worse off.

The effect of these simulated conditions in the world market on the profitability of potential imports from New Zealand can also be seen from Table 6. Here the ratio of the domestic wholesale price to the imputed CIF import price of New Zealand product is calculated by the model (as defined earlier in Table 2). Note that the base level calculations are not forecasts, just model projections for comparative purposes. Given a 10% rise in world prices the ratio initially falls from the base value by about 9% for each product. For butter and cheese the ratio then recovers partially, while for SMP the ratio over-reacts to a level slightly above the base. Thus an increase in world prices protects the domestic butter and cheese markets from imports, but has little impact on assistance received by the domestic SMP market. For a fall in world prices the impacts on the profitability ratio are reversed. The ratio rises some 20% in the first year for all products, falls back partially for butter and cheese but for SMP falls to a level slightly below the base. Thus a decrease in world prices increases the incentive for trade in butter and cheese and has little impact on assistance to SMP.

4.3 Exchange Rates

In the next two experiments, the Australian-New Zealand exchange rate is increased and decreased by 10% respectively. Thus in the first case the assumed level of $NZ0.77=$A1 is raised to $NZ0.85=$A1. Now a 10% increase in the $NZ/$A exchange rate (an appreciation of the $NZ) is equivalent to a 10% increase in the world price in $A, if the world price in $NZ is unchanged. Therefore the results from column 3 of Table 4 are also applicable for this experiment. FOB and domestic prices rise; the mix of output and exports changes; milk production rises; and gross values of production and exports rise. Cheese imports are discouraged. The Australian industry prospers.

For the opposite scenario of $NZ0.70=$A1 (which is coincidently similar to the present situation with the rates), FOB and domestic prices fall, the mix of output and exports changes, milk production falls, and gross values of production and exports fall. Cheese imports are encouraged. Overall the Australian industry suffers from a depreciation of the $NZ relative to the $A.

The effect of these simulated variations in the trans-Tasman exchange rate on the profitability of potential imports from New Zealand can also be seen from Table 6. Here, as in Table 4 above, the results for the exchange rate experiments are identical to those of the world price experiments. An appreciation of the $NZ compared to the $A leads to greater protection for the domestic butter and cheese markets, while a depreciation increases the incentive for trans-Tasman trade in these products.

Table 6: Australian Domestic Price: Import Parity Price Ratio for Selected Simulation Experiments, 1989/90-1994/95

Product/ Year	Base Value	World Price Changed		Domestic Assistance Changed	
		Up 10%	Down 10%	20% to 30%	20% to 10%
Butter					
1989/90	0.95	0.87	1.05	0.95	0.95
1990/91	0.96	0.88	1.06	1.04	0.88
1991/92	0.96	0.91	1.02	1.04	0.88
1992/93	0.96	0.91	1.02	1.04	0.88
1993/94	0.96	0.91	1.02	1.04	0.88
1994/95	0.96	0.91	1.02	1.04	0.88
Cheese					
1989/90	0.96	0.88	1.07	0.96	0.96
1990/91	0.96	0.89	1.05	1.04	0.89
1991/92	0.96	0.89	1.05	1.04	0.89
1992/93	0.96	0.89	1.05	1.04	0.89
1993/94	0.96	0.89	1.05	1.04	0.89
1994/95	0.96	0.89	1.05	1.04	0.89
Skim Milk Powder					
1989/90	1.09	0.99	1.20	1.09	1.09
1990/91	1.09	1.10	1.07	1.18	1.00
1991/92	1.09	1.10	1.07	1.18	1.00
1992/93	1.09	1.10	1.07	1.18	1.00
1993/94	1.09	1.10	1.07	1.18	1.00
1994/95	1.09	1.10	1.07	1.18	1.00

4.4 Degree of Assistance to Australian Producers

In the final two experiments of this section, the degree of protection afforded Australian dairy product manufacturers is increased and decreased respectively. To simulate increasing protection, the ratio of the market support payments to the Australian Dairy Corporation minimum export prices for the major products is raised from the current level of 0.20 to 0.30 (the level proposed in the 1986 changes to the dairy marketing arrangements). This is equivalent to 8.3% on the minimum export price or 6.9% on the domestic wholesale price. To simulate decreasing protection, the ratio is lowered to 0.10. This is equivalent to 9.2% off the minimum export price or 7.0% off the domestic wholesale price.

The results are reported in Table 4, column 4, for the case of increased assistance. The 6.9% increase in the domestic wholesale prices causes increases in the retail prices of butter and cheese of 3.5 and 4.9% respectively, and an increase of 6.2% in the price for manufacturing milk. The average price for all milk rises 3.6% with the gross value of milk production increasing by over 4%. These changes in prices result in small declines in butter and cheese consumption, but little measurable effects on the demand for the other products. The production of butter, cheese, SMP and the CCE group of products expands at the expense of WMP,casein and the IIH products. Export volumes change in line with the changes in output mix, and overall the gross value of exports increases by less than 1%. The increase in the farm price of milk stimulates expansion of the dairy herd so that milk production increases by 0.6%.

For the case of decreased assistance, the impacts are opposite in sign and approximately equal in magnitude. Domestic wholesale prices fall by 9.2%, milk production contracts marginally, the mix of production and exports changes, the gross export value falls by less than 1% and the gross value of production falls by over 4%. Thus the domestic industry suffers from a reduced level of assistance.

Again, the effect of these simulated variations in the degree of assistance on the profitability of potential imports from New Zealand can be seen from Table 6. Here the effect of an increase in assistance via an increase in market support payments is an increase in the calculated ratio of about 8%, the same as the increase in the market support payment. This occurs for each product and provides a strong incentive for imports. When assistance is reduced the opposite impacts result, with the calculated ratio falling some 9% below the base level. Greater protection against potential imports is afforded the domestic markets. For butter and SMP these last experiments result in the largest changes to the incentives for imports, while for cheese the world price/exchange rate experiments provide the greater changes.

5. THE IMPACT OF INCREASED NEW ZEALAND IMPORTS

In this section of the paper simulation experiments are conducted to assess the likely impacts on the Australian dairy product markets of increased imports from New Zealand, irrespective of whether the appropriate incentives exist at the time. Four separate experiments are run over the period 1990/91, when trade will be free, to 1994/95 - imports of butter, cheese and SMP separately at levels approximating 5% of the base level of domestic consumption, and then the same level of imports of all three products. For cheese the simulated import levels are additional to current import quantities. The relevant quantities are 2.75, 5.75 and 2.50 kt for butter, cheese and SMP respectively. These three products are chosen because they have the largest domestic markets (although the CCE group also has sales of around 55 kt annually).

Apart from adding these quantities into the domestic market balance identities, some assumptions had to be made about price impacts because of a limitation of

the model mentioned earlier, ie. market price changes are sourced in the international market and in this use of the Australian model standing alone, are treated as exogenous. The relevent domestic demand elasticities are used to cause initial price reactions from the increased quantities flowing onto the domestic market. Because of the inelastic nature of the domestic demand for dairy products, these price reactions are quite large. The relationship between dairy policy settings and domestic demand parameters has recently been reviewed by Griffith, Lattimore and Robertson (1989).

The results of these four experiments are reported in Table 7, together with a new set of base simulation mean values for the period 1990/91-1994/95. For the case of imports of butter only, domestic butter prices fall and this flows on into reduced farmgate milk prices and a decline in the gross value of production of some 2.4%. Cow numbers decline and milk production drops about 0.3%, while domestic consumption expands about 2%. The unilateral fall in butter prices causes a reduction in butter production, together with the SMP and casein byproducts, and a fall in CCE output. Output of the other products rises. Export volumes change to reflect the change in supplies, with a large swing evident in cheese production and export. The gross export value rises 2.8%.

For cheese imports at a greater level than the base level (5.75 kt on about 20 kt), domestic cheese prices fall and demand increases slightly. However there are no flow-on effects to the farm level because the implied value of dairy products, which determines the farm price of manufacturing milk, is calculated from the prices of butter and SMP. The fall in cheese price causes a drop in the production of cheese of some 15% and an increase in the output of all other categories. Export volumes change in the same pattern, with cheese exports falling 44%, and gross export value falls just over 1%.

SMP imports result in substantial wholesale price falls because of the very inelastic demand for SMP. The pattern of the ensuing effects is similar to that for butter, although considerably greater because of both the higher initial price impact and the greater price transmission elasticities for SMP. The farm price of manufacturing milk falls 21% while the farm price for all milk falls 13%. The gross value of total milk output falls 14%. Domestic demand is stimulated only marginally, and milk production decreases by 2%. There is a substantial substitution between the two byproducts of butter production, with SMP output falling 27% and casein output increasing 53%. CCE output also falls substantially. This pattern is reflected in exports with very large shifts in SMP, casein and CCE shipments. The gross value of exports falls 6.5%.

For the final simulation of imports of all three products entering the Australian domestic market from 1990/91, the aggregate results are essentially additive across the components. Thus there are substantial price falls for these products, which flow on to the farm level; substantial shifts in the product mix of dairy manufacture and export; and more moderate impacts on domestic demand and milk production. The gross value of production of all milk falls by 16% while the gross value of export shipments falls by 6%.

It is recognised that the form of this version of the Australian dairy products model does prevent feedback into the domestic market of the repercussions of the change in export mix on the world prices for the various products. Thus the simulated impacts are upper bounds to possible effects, although the extent to which these bounds exceed a more comprehensive evaluation is difficult to measure.

Table 7: The Simulated Impact of Imports on the Australian Dairy Product Market, Mean Values for the Period 1990/91-1994/95

Variable	Base Value	Butter Only	Cheese Only	SMP Only	All Three Products
		(% Changes from the base)			
COW	1698.57	-0.3		-1.7	-1.9
MILK	6116.18	-0.3		-2.0	-2.3
XB	41.30	-13.9	3.3	1.9	-8.7
XC	43.05	27.8	-43.6	2.1	-17.7
XSMP	61.54	-1.9	0.6	-51.4	52.7
XCA	9.20	-7.0	2.2	58.6	53.9
XMMP	74.58		19.1		19.1
XIIH	13.40	1.9			1.9
XCCE	8.03	-23.5	76.8	-100	-67.2
GVX	361.74	2.8	-1.3	-6.5	-5.8
QSB	99.25	-4.4	1.4	0.8	-2.2
QSC	167.84	6.7	-15.3		-8.7
QSSMP	118.96	-1.0		-26.6	-27.3
QSCA	10.20	-6.3	2.0	52.8	48.6
QSMMP	99.33		14.4		14.4
QSIIH	30.40	0.8			0.9
QSCCE	57.56	-3.3	10.72	-16.8	-9.4
PSB	992.04	-13.3			-13.3
PSC	1235.91		-17.5		-17.6
PSSMP	1133.32			-33.6	-33.6
PDB	1699.64	-6.7			-6.7
PDC	2083.57		-12.4		-12.4
WTDPM	152.34	-3.9		-24.7	-27.6
PSMM	126.44	-3.5		-21.1	-24.6
PSAM	151.49	-2.1		-12.5	-14.5
GVMM	545.58	-3.9		-23.3	-27.0
GVAM	898.23	-2.4		-14.1	-16.4
DCB	3.65	2.2			2.2
DCC	9.01		0.4		0.4
DCSMP	2.96			0.9	0.9

6. CONCLUSIONS

The future level of competitiveness of New Zealand on the Australian dairy market will be related to a number of factors including exchange rate movements, levels of inflation and developments in world demand. The most significant factors however will be the relationship between Australian domestic prices and world prices, and between trans-Tasman and other ex-New Zealand freight rates.

The medium term outlook for world dairy markets is encouraging, particularly for dairy protein products, although there is unlikely to be any significant price recovery for butter in the medium term and prices are likely to remain around GATT minimum levels. However the heavy dependence of New Zealand on world markets will result in continued pressure to seek most profitable markets. This pressure will be stronger because of the reduction in New Zealand's access to the UK butter market, which will release considerable quantities of milk for export to alternative destinations. The geographic proximity of the large and potentially profitable Australian market is likely to result in more than a cursory glance across the Tasman.

Both the Australian and New Zealand currencies are forecast to weaken relative to the US and EC currencies. However a forecast greater relative depreciation for New Zealand will result in some appreciation of the $A with respect to the $NZ. This will imply an improvement in the competitive position of New Zealand producers relative to Australian producers, both in Australia and on world markets. Thus the incentives for trans-Tasman trade from New Zealand in dairy products are likely to be increased, and the competitiveness of New Zealand product in third markets will be at least maintained.

The ratio of Australian domestic prices ex-factory for major products with "average" New Zealand FOB prices CIF Australia indicated that New Zealand was capable of entering the Australian market profitably over the period 1977/78 to 1984/85. This may have been attributable mainly to the domestic marketing arrangements which operated in Australia over this period, which had the effect of maintaining domestic prices above the equivalent world prices. Changes to the arrangements on July 1 1986 are likely to reduce the profitability of trans-Tasman trade (if not eliminate it entirely), as a policy of New Zealand import parity pricing has been adopted and is being implemented. Thus the same ratios calculated for 1985/86 to 1988/89 indicate that on average Australia would have been an unprofitable market for New Zealand product.

Simulation experiments with an an econometric model of the Australian dairy products market attempt to measure firstly, variations in some of the major factors which are thought to provide incentives for trade, and secondly, the commencement of shipments of dairy products from New Zealand from 1990/91 onwards.

The results basically confirm our prior notions of which factors enhance the potential profitability of trans-Tasman dairy product trade. An increase in world prices for dairy products, an appreciation of the $NZ relative to the $A, and an increase in assistance through higher market support payments all benefit the Australian industry and in general help in protecting the domestic industry from import competition. The domestic industry is worse off and the incentives for imports from New Zealand are strengthened by decreasing world prices, a depreciating $NZ and declining domestic price support.

New Zealand imports are projected to have some major impacts on the Australian dairy product market. There are substantial price falls which flow onto the farm level, substantial shifts in the mix of products manufactured and exported, and significant reductions in the gross value of milk production and exports.

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