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**Evaluating the Performance  
of Dairy Marketing Systems:  
a Stimuli Response Approach**

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# 1. Introduction

Modern agricultural marketing systems are often highly complex structures with a range of inter-linking players operating within diverse trading environments. To compare the effectiveness of one agricultural marketing system against another is no easy task. It is typically attempted by assessing which system has the greatest effect on farm level prices, or at best the aggregate economic benefits to the economy as a whole<sup>1</sup>. In such analyses it is normally reasoned that competitive marketing systems provide the norm against which existing systems are compared, because it is further assumed that market solutions are welfare maximising<sup>2</sup>. Such reasoning is the basis of the Structure, Conduct and Performance paradigm that has been widely used in industrial organisation studies and has often been used as the basis for recommending change to marketing systems or for industry legislation<sup>3</sup>.

While this approach may be useful for analysing situations where there are high levels of intervention, it may be limiting where interventions are more subtle or where there may be considerable differences in the industry structures. The UK and New Zealand dairy marketing structures are analysed in this paper as an illustration of such a problem.

Both have markedly different industry structures involving quite different institutional forms. The New Zealand dairy sector is co-operatively owned and operates largely free from Government intervention, but under the statutory export control of the farmer owned New Zealand Dairy Board (NZDB). The UK dairy industry was de-regulated in 1994 with the disbanding of its statutory buyer and seller of raw milk, the Milk Marketing Board (MMB). However, the UK industry still operates within the confines of the European Union Common Agricultural Policy (CAP).

Furthermore, the New Zealand industry is heavily export orientated with around 95% of milk production going to international markets. The UK on the other hand, is dominated by domestic fresh pasteurised liquid milk processing, which accounts for around 50% of all UK milk supply. New Zealand 'dries off' most cows over winter months, whereas in the UK, milk is produced all year round. These differences are probably a result of history and the trade focus of the two industries, but make it difficult to evaluate possible relationships between structure and performance.

Both industries are considered to have low levels of intervention and both would claim to be efficient: New Zealand through the extent of its vertical integration and unified approach to international markets; the UK through the disbanding of its statutory marketing board and its competitive market based structure. The remaining level of intervention has still been a source of discussion within each country and in international comparisons. These comparisons are made extremely difficult because of the complexities of the policies and structures, and the varying level of trade dependence<sup>4</sup>.

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<sup>1</sup> For example Martin S K and Zwart A C "Marketing Agencies and the Economics of Market Segmentation" *Australian Journal of Agricultural Economics*. 31(3) 1987.

<sup>2</sup> See for example discussion in Carter C A, McCalla A F and Sharples J A " *Imperfect Competition and political economy*" Westview Press 1990.

<sup>3</sup> ACIL " *Agricultural Marketing Regulation: Reality vs Doctrine*" A report prepared for the New Zealand Business Roundtable, 1992.

<sup>4</sup> The differences and complexities in some of the world dairy industries are outlined in: OECD, " *Reforming Dairy Policy*", Paris, 1996.

An alternative approach to measuring performance is proposed in this paper. The objective is to measure how such different and complex marketing systems respond to a range of different economic stimuli, by assuming there are a basic set of behavioural norms that we might expect to see in an efficient industry. Comparing these responses and explaining why they occur may shed greater light on the relative strengths and weaknesses, and thus performance of each system. This approach is a basic application of workable competition analysis, in that rather than focusing on the structure of the different marketing systems, the conduct or behaviour of the industry is studied to derive implications about the performance.

## **2. Expected Industry Response**

After outlining the complex structure of the two marketing systems, each is analysed through their response to a series of economic and stimuli and marketing situations, in an attempt to compare respective behaviour.

In each case it is expected that an efficient or appropriately performing industry would respond in a particular manner. The stimuli and expected responses are described in more detail below. The responses are defined in terms of the manner in which dairy farmers and processing firms are expected to respond to changes in the marketing environment, or to capture the benefits of normal marketing activity.

The suggested responses outlined above could be argued, but they are presented in an attempt to identify responses that might reasonably be expected, from both an economic and marketing perspective, to occur in an industry that is efficient and responsive to marketing opportunities. In order to understand how the respective industries might respond it is necessary to understand in some detail, the price setting and contractual arrangements that are important to the industries. In the approach taken here these are seen to be more important than the political or industrial structure as they define the manner in which market information and pricing signals are relayed between the key decision makers in the industry.

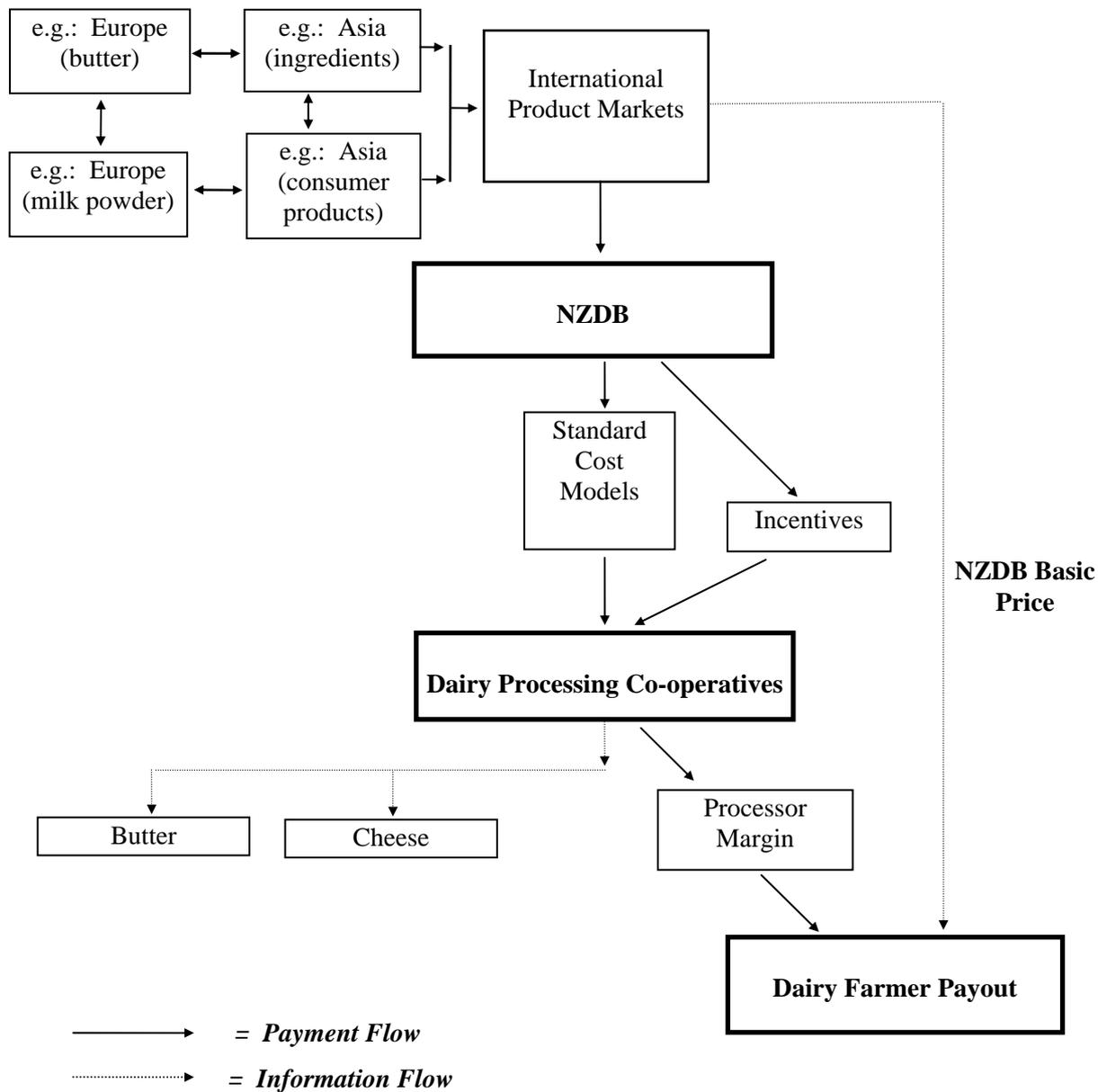
The structure of the New Zealand and UK dairy industries are examined below and the following sections describe how the different industries might respond and react to the different market circumstances.

**Table 1**  
**Expected Market Response - Behavioural Norms**

| <b>Market Stimulus</b> | <b>Example Situation</b>                                                                                               | <b>Expected Processor Response</b>                                                                                         | <b>Expected Farm Level Response</b>                                                                                                                            |
|------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Demand shifts          | A short- medium term increase in the demand for dairy products in the world market, e.g. emerging new market           | Prices and production should increase. Price increases should be passed on to producers                                    | Prices should increase and output respond to meet the market opportunities.                                                                                    |
| Supply shifts          | A short- medium term increase in production in the industry concerned, e.g. fall in competing output price             | Increased throughput results in changed output of all products and marketed with minimal price fall or stock accumulation. | Increased supply marketed without stock build up. Expect prices to fall and supply to adjust accordingly                                                       |
| Specific price change  | An increase in the return for one of the specific products, e.g. an increases in the demand/price for Cheese           | Product mix would change and prices to producers should reflect any increase in aggregate demand                           | Prices and production should respond to the extent that aggregate returns change                                                                               |
| Product development    | The extent to which the industry is able to invest in and respond to opportunities to develop new products             | There should be incentives for individual firms to invest in and capture the benefits from such activity                   | Producers should be able to supply firms or organisations that make suitable investments in such activity. Farmers should influence industry level investments |
| Value adding           | The extent to which the industry identifies and responds to opportunities to develop products to consumer requirements | There should be incentives for individual firms to identify and capture benefits from adding value                         | Producers should be able to supply firms that make suitable investments in such activity. Farmers should influence industry level investments                  |
| Industry promotion     | The level of generic and product based promotion across the industry                                                   | Firms should have opportunities to develop brand promotion, and be supportive of generic promotion                         | Producers should have a choice of brands to support and should be able to evaluate and control the level of generic promotion                                  |

### 3. The New Zealand Dairy Market

New Zealand currently produces 11,121 thousand tonnes of milk, around 95% of which is exported<sup>5</sup>. This is almost all sold through the NZDB which has full control over the exporting of dairy products.



**Figure 1**  
**An Overview of the New Zealand Dairy Industry Structure**

<sup>5</sup> MAF, (1997), Sonza - Situation and Outlook for New Zealand Agriculture, Wellington.

Figure 1 simply illustrates the major players in the New Zealand dairy industry and how they inter-relate. The NZDB is owned by the co-operative processing companies, themselves farmer owned. It is charged with finding export markets for dairy output. The industry is free from institutional support, other than the Government's sanctioning of the NZDB to act as the statutory single seller of New Zealand dairy exports. Although the NZDB can, and does, grant export licenses to allow other companies to export direct, this is relatively small scale. Unlike the UK, only 5% of milk production is sold domestically. The domestic market is free and competitive, with virtually no link to the NZDB export system.

However, the pricing mechanisms used by NZDB in exporting 95% of milk supplies dominate the market. After extensive market analysis, the NZDB negotiates with dairy processing co-operatives to acquire the range of products to match its market forecasts. The NZDB pays processors for product supplies mainly on the basis of the 'standard cost models', with some additional 'incentives'. The anticipated NZDB 'basic price' is known to farmers as the base price they are likely to receive over the season. Processing companies pay this to back to farmer members as they receive it from the NZDB. In addition, the processing companies attempt to pay any additional processing profits wherever possible on top of the NZDB base price, at the year-end.

The cost models are engineering representations of what is required to make a dairy product in a well designed, efficient factory of a given size. There is a separate cost model for almost all dairy products produced. There are four basic pricing elements to the cost models: milk value, manufacturing costs, milk collection costs and administration.

The value of milk plays a key role in the models. The NZDB place a value on the milk by examining returns from all product sales to overseas markets over previous seasons and expected market returns for the coming season. These valuations for milk constituents, fat and protein, are then used in all of the different product standard cost model calculations. Thus, the processing co-operatives receive the same 'pooled' value for the milk they process, whatever the product - effectively making them indifferent to product mix (as far as the milk value element of the cost model is concerned, at least.)

The cost models also make additional payments relating to manufacturing costs, milk collection costs and administration costs of building and running the 'standard' plant.

The principals behind the cost models are to distribute the industry profit through the base price pool at the same rate for each product type and to reimburse manufacturers their costs, not to give them a profit margin. In reality however, a profit margin is available for an efficient plant and this puts a powerful driver in the industry to improve efficiency over, or 'beat', the cost model.

On top of the standard cost model basic price, the Dairy Board can pay incentives to companies direct, to encourage supplies of certain products or types of products to match market demand. The NZDB try to ensure that 80% of production is contracted to processors at the start of the season. 20% is left as slack in the system to provide cover for climatic variations etc. On this 20% (only), the NZDB may pay an additional price incentive - a differential - for certain product categories. Any differential is then applied to all products within that category. If the NZDB wanted a specific product from a specific site, they could negotiate direct with that company alone, by paying a 'diversion'. However, paying by this mechanism is expensive and creates financial imbalances between companies.

Once production is in the correct product categories, the NZDB has to ensure that suitable proportions of products are made to suitable market specifications. To achieve this, 'incentives' are used. Products not of a standard specification may attract an incentive, which works on a matrix scoring system. The total points awarded are then multiplied by a fixed NZ\$ rate to give the final incentive payment.

The NZDB base price is paid to processors monthly, although the NZDB are unlikely to be receiving payment for their products so regularly. On top of these payments from the NZDB, processing co-operatives may add year-end bonus payments. The level of such pay-out depends upon several factors. It may be the result of some efficiency gain over the cost model - low transport costs, or a low debt level; it may reflect a higher return obtained from the local market; or may reflect profits from non-dairy activities.

In summary, New Zealand processing co-operatives are competitive and have a strong emphasis on production efficiency. The NZDB is the main focus for marketing the products overseas and thus play a major role in the transmission of price signals to the processing firms. The discussion above has highlighted the role that the costing model plays, in attempting to treat all of the firms in an equitable manner, and yet ensuring that production is responsive to changing demands.

## 4. The UK Dairy Market

The UK has around 37,000 milk producers. The average herd size is nearly 70 cows, which compares to a New Zealand average of 199. Around 80% of UK milk comes from England & Wales and as such, the English & Welsh dairy sector will be referred to here to as the UK. The UK milk market was de-regulated in November 1994 after 60 years of statutory monopoly. The old Milk Marketing Board (MMB)<sup>6</sup>, was the statutory buyer and seller of all milk produced. Its abolition allowed farmers to sell milk direct to any buyer.

Figure 2 shows the main players in the UK dairy sector and the relationships between them. It can be seen that farmers sell milk in one of three ways: about 5% of milk is sold through local farmer owned 'milk groups' who typically negotiate supply deals with processors based on the volume of milk they can provide; about 35% of milk is sold direct to processing companies by individual farmers; and around 60% of milk is sold to Milk Marque, a national farmer owned co-operative<sup>7</sup>. Milk Marque emerged in England & Wales as a voluntary successor to the MMB. It does not currently process milk, but purchases milk from farmer members and sells on to the process sector.

Whilst the UK industry has been 'de-regulated', it still operates within the confines of the CAP dairy regime. This works through a system of production quotas, intervention buying for skimmed milk powder (SMP) and butter and export subsidies/import tariffs.

As in New Zealand, milk in the UK is purchased from farmers on dairy company supply contracts. In the UK, milk is paid for according to the constituents (fat and protein) within the milk, adjusted for hygienic quality, volume, transport and season<sup>8</sup>. In New Zealand, milk is

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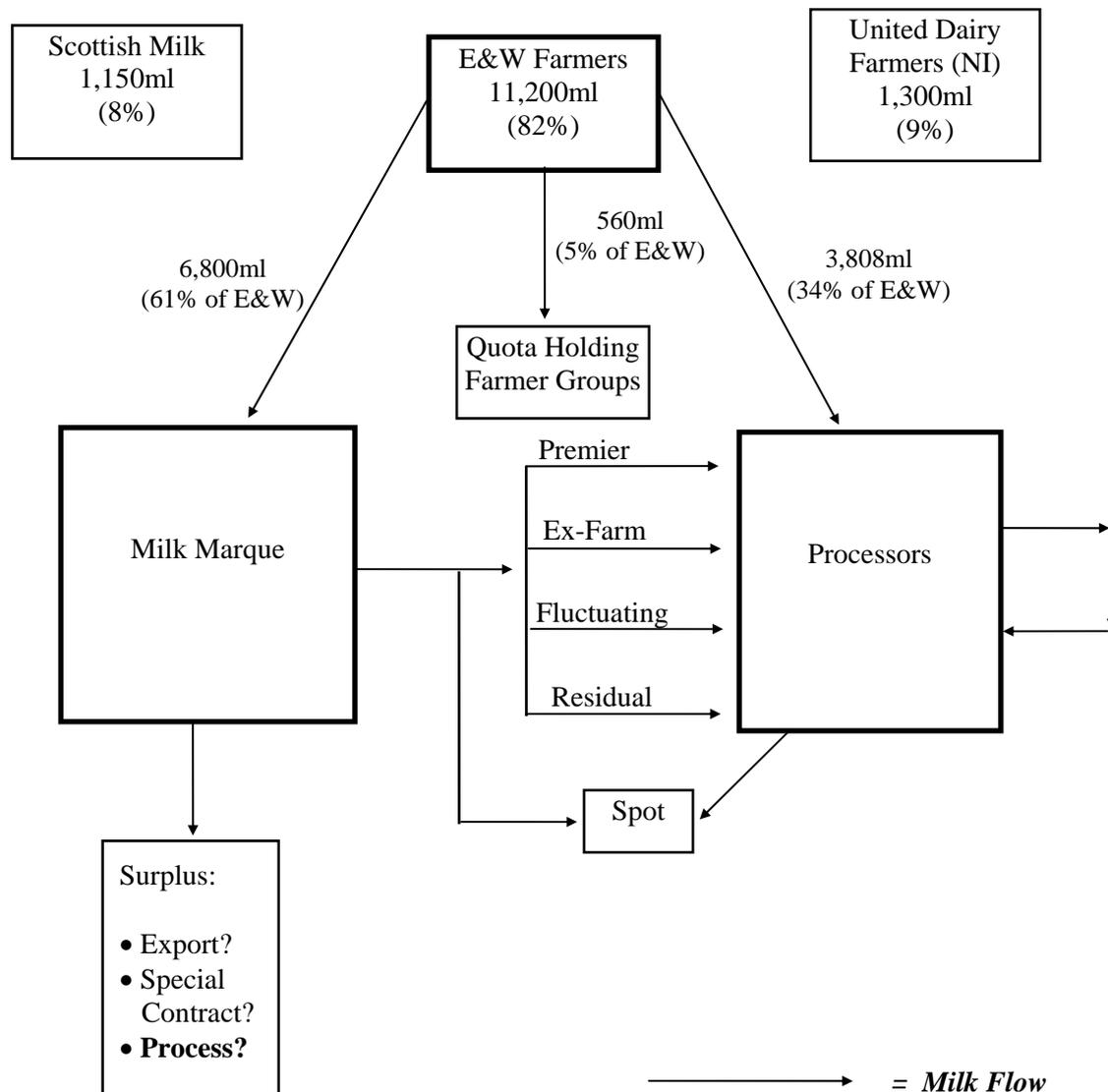
<sup>6</sup> In fact there were five boards, one in England in Wales, three in Scotland and one in Northern Ireland.

<sup>7</sup> For an explanation of this split, see Bates, S.A.E., and Patisson, N., (1997), "UK milk prices and farmers" attitudes towards them since market de-regulation", *British Food Journal*, 99/2, pp.50-56.

<sup>8</sup> For a more detailed discussion of farm gate milk prices in the UK, see Bates, S.A.E., (1996), "Factors affecting UK milk prices since market de-regulation", *Farm Management Journal*, Vol. 9, No.6, pp.277-286.

also paid for on the level of fat and protein in the milk, but is paid as kilograms of milk solids rather than per litre as in the UK. New Zealand typically does not have seasonal price adjustments.

Again in contrast to New Zealand, most traditional ‘year-end’ bonuses in the UK are spread across the year. Spreading the bonus across monthly payments would improve the perception of that company’s milk price relative to others in the intensely competitive UK market. A company paying a conservative price through the year plus a large year-end bonus, as happens in New Zealand, in the UK would appear to be paying a relatively low price on a month by month price comparison.



**Figure 2**  
**An Overview of the UK Dairy Industry Structure**

In the UK, the price Milk Marque pays to its farmer members is seen by many as a benchmark. Processing companies typically have paid higher prices than Milk Marque in order to attract direct milk supplies. In some cases, these have been targeted at larger farms closer to factory sites. As such, many farmers face a choice of supply contract, usually at least a choice between Milk Marque and a local dairy or milk group.

Unlike New Zealand, the UK processing sector is largely non co-operative, with some of the largest UK players - Northern Foods, Unigate, Dairy Crest and Robert Wiseman Dairies - being limited companies, listed on the London stock exchange. However, as a result of the size of Milk Marque, almost all UK processors, despite their direct farm supplies, have to buy some of their raw milk requirement from Milk Marque, as is illustrated in Figure 2.

Milk Marque sell milk to the processing sector through a six monthly bidding process. Milk Marque offers its milk for sale on a range of contract types at different prices. Companies then place sealed and binding bids for volumes of milk required on each of the contracts at the prices initially set by Milk Marque. If there is an over demand, prices rise and bidding begins again. If there is an underbid, prices fall and bidding begins again. In theory, this is repeated until a market balance of supply and demand is achieved.

In summary, the UK market system is considerably different from New Zealand. This is more than just that the UK is focused on the domestic market whilst New Zealand is export orientated. UK processors are less co-operative, many being private companies. However, even within this system, there is still debate over the market power of Milk Marque, the private companies and the constraints of the quota system. It appears that the selling system operated by the central co-operative, and the diverse contracts offered by the private firms play a major role in affecting how the individual firms respond to the market conditions.

## **5. Market Stimuli**

As a means of trying to making to sense of these complex marketing systems, each is subjected to the following market stimuli in an attempt to explore the likely market response, the appropriateness of the signals transmitted and thus the overall suitability of each market structure.

### **5.1 An Unexpected Increase in Aggregate Demand**

The New Zealand market system should be able to cope adequately with an unexpected increase in aggregate demand. The NZDB would pick up market changes through its market analysis. It would then be able to adopt an appropriate industry response through its buying mechanism from the processing co-operatives

The 20% of New Zealand production which the NZDB does not buy on 'committed' contract could be used to meet the increased demand in the short term, but this might be limited by the availability of producers to the short term. The NZDB may also release any stocks it had onto the market to meet the demand. Volumes of product planned by the NZDB could be increased for the next season. A limit to the effectiveness of the New Zealand market response might be the NZDB's statutory requirement to purchase all of the dairy products produced. The co-operative processors also have limited power to control their raw milk supplies. Whilst most processors do now require a capital contribution from new co-operative members the capital contribution is likely to bring a corresponding fall in land prices. The co-operatives could ultimately refuse additional membership, however, they do have to accept all supplies from existing members.

At farm level, any gains obtained by the NZDB would ultimately pass back to New Zealand dairy farmers through the co-operative processing companies. The weakness here is that farmers receive a 'bundled' price, which may include profits from other non-dairy related

activities<sup>9</sup>. If for example, there was an unexpected drop in aggregate demand, profit from non-dairy activities undertaken by the NZDB or processing companies, might sustain farm incomes, potentially blurring the market signal to the farmer.

The response from the UK market system is arguably clearer due primarily to the existence of production quotas. An unexpected increase in aggregate demand would therefore be met by increased prices from a processing sector dealing direct with the market. Those processors may then use higher market returns to source more of their milk requirement direct from farmers - having to pay them a higher price to do so, in a market where competition for a fixed milk supply is intense.

Alternatively the companies, many of whom are non co-operative, may attempt to retain the higher returns. However, as a result of the increase in product prices, Milk Marque would attempt to extract a higher price for their raw milk sold to the processing sector. If successful, Milk Marque, as a farmer owned supply co-operative, would pay any increased return to farmer members. If Milk Marque increased their farm gate milk price, other companies would likely follow - to maintain their premium over the Milk Marque price in order to retain farmers.

Thus, all UK farmers would benefit, including those who do not sell directly to Milk Marque. The question arising from the UK model is whether increasing prices for a fixed supply is an optimum market response. Thus, although its market response may be clearer, the UK market mechanism does not have the flexibility of response that the New Zealand sector does.

In addition, in the short run, the Milk Marque selling system, which occurs every six months<sup>10</sup>, may enable UK processors to adjust their production quicker than in New Zealand, where the NZDB would re-negotiate its contracted 'commitment' product volumes each season.

## **5.2 An Unexpected Increase in Aggregate Supply**

In New Zealand, most plants are designed to cope with peak milk supplies and thus rarely run at full capacity. The aggregate industry should be able to process an unexpected increase in supply. The NZDB, as seller for almost all exports, has some influence over how any increased supply would be processed and works closely to ensure the range of products made match market demand. The NZDB has a broad international network and much experience of selling on world markets, assisted by New Zealand's competitive advantage in low cost milk production. Thus at processor level, the New Zealand market ought to be able to handle and unexpected increase in aggregate supply. Whilst the NZDB may find markets for the increased supply, not all the markets would provide a similar return. Thus, an appropriate signal would be sent to farmers because a significant increase in aggregate supply would dilute the NZDB market return (assuming it was not offset by any gains from non-dairy interests) and thus the payout to farmers.

The UK market would face a problem from this market shock, again because of the quota system operated under the CAP dairy regime. Over the year, the market mechanism does not allow for any increase in aggregate milk supply. The range of penalties applied if the country/ firm/ farmer do exceed quota, blur any aggregate market response. That said, there may be

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<sup>9</sup> See Hussey, D., (1992), *Agricultural Marketing Regulation - Reality Versus Doctrine*, Report for the New Zealand Business Round Table, ACIL.

<sup>10</sup> Companies can buy milk from Milk Marque on 6, 12 or 18 month contracts. Clearly those processors buying on 18 month contracts would not have this flexibility advantage.

cases where the industry faces short term increases in aggregate supply, such as the result of unexpected weather conditions. Although most companies milk supply contract includes some seasonal price adjustment in an attempt to level out seasonal supply peaks and troughs, if an unexpected increase in supply did occur, some processors may struggle to cope. This may be particularly so for UK processors of packaging liquid, who could reduce their price, but the aggregate industry, faced with a near flat consumer demand profile for this highly perishable product, would typically process (or sold on to be processed) this excess milk into commodity products such as butter and skimmed milk powder. Returns on these products are usually low for UK manufacturers, who struggle to compete on world markets without subsidy. Such returns would dilute company profits in the short term. However this could only ever be a short term phenomenon because of milk quotas which fix UK milk production at around only 90% self sufficiency.

Having looked at possible responses to broad aggregate demand and supply shifts in each market, responses to the following, more subtle, stimuli are examined in an attempt to see through the complexity of the marketing systems and the interactions within them.

### **5.3 An Increase in Demand for a Specific Product Category, Cheese**

The NZDB would again pick up any increase in market demand for cheese through its market analysis. If the demand increase was short term, some of the 20% NZDB flexible supply might be directed towards cheese production through the incentive system. However, a difficulty with the cost model system might arise if the increase in demand for cheese was sustained. The milk value component of the cost model is a pooled price of all the NZDB market returns. As a simple example, a company supplying cheese would receive the same equivalent milk price as a company who were producing butter, even though world butter demand might have dropped as cheese demand grew. This may cause sub-optimal investment decisions by processors who may therefore continue to invest further in butter processing facilities. If this persisted, the NZDB might be left increasingly reliant on the incentive system, which is costly and also, by its very nature, rewards some processing companies more than others. At farm level, farmers again receive a pooled price. Farmers supplying the butter processor would benefit as much as those supplying the cheese processor and thus would receive no signal to reduce milk production or switch supplier.

In the UK, the market response would again be clearer. As in the response to an aggregate demand increase, UK processors dealing direct with the market, would switch production. Those manufacturers producing cheese would, all things being equal, divert more resources into cheese production and increase cheese output. Some firms producing butter would switch to producing cheese. If a butter manufacturer did not switch to cheese, in the short run, they would receive relatively lower returns. A resultant relatively lower price to farmers may produce a signal for farmers to switch company. However, the switch from butter into cheese should ultimately lead to a higher butter price from the falling butter supply. Thus, the market would readjust with more cheese having been produced.

### **5.4 New Product Developments**

At a broad level, the New Zealand dairy industry has a good track record of innovation. This can be seen through the recent launches of spreadable butter in Europe and the development of the 'Analene' calcium enriched milk powder brand for the SE Asian market. In the case of new product developments like spreadable butter, the industry developed the product and therefore the NZDB is responsible for selling it overseas under their 'Anchor' brand.

However, spreadable butter is not available on the domestic New Zealand market yet because of debates as to who actually owns the brand. As the product was developed through the NZDB, which deals purely with exports, it is unclear which of the competing co-operative companies owns the rights to sell the product on the potentially lucrative *domestic* market. Questions over ownership may lead to less than optimal rates of adoption.

In addition, some processing co-operatives undertake their own new product development as well as wider joint industry initiatives. For example, Kiwi Dairies, New Zealand's second largest, has its own private research subsidiary company, KiwiTech, as well as a group within Kiwi Dairies working on joint industry initiatives. This reflects questions about reward from the current system. To develop a collective new product benefits the industry. Obtaining a company patent would benefit that company's farmer members. Thus in terms of new product development, the current system in New Zealand does work reasonably well, but there are 'grey' areas within it, particularly regarding ownership and reward.

In the UK, a de-regulated market should enhance new product developments by specific companies dealing direct with the market. However, the UK has not been strong in this area. This is partly a hangover from the previous system of agreed pricing where companies received guaranteed returns. Under the old 'end-use pricing' system, companies bought milk on a hierarchy of agreed prices from the MMB, dependent on the end use the milk was going to<sup>11</sup>. Those who paid the lowest price for milk under that system have seen the largest increase in raw material price since de-regulation - now that all companies compete at 'one' price for milk supplies. Coupled with fairly static retail prices, this has put intense pressure on some processing company margins. The dairy companies have also argued that Milk Marque's presence in the market has prevented them earning enough of a return to invest in the industry. Milk Marque however, has argued the companies are simply inefficient after sixty years of agreed pricing. Such discussions raise another problem for the UK industry, that of uncertainty. With prolonged political machinations over the new market structure, uncertainty may also be restricting investment. However, these concerns should ease as the market mechanism settles down. The weaker role of co-operatives in UK processing mean farmer signals from company new product developments are likely to vary and will not necessarily be passed on. Milk Marque does have a small technical research group, but are not currently involved in milk processing.

## 5.5 Opportunities to Add Value

Again, the New Zealand industry does add value, but the issue is complicated by some weak market signals and some 'grey' areas of debate. The NZDB's current policy is to sell more of its products into value added markets. Whilst the NZDB is trying to be market led, the wider industry is production driven. Processors do add value, for example, by sending representatives into the market to service their customers and to tailor production. However, they do not get substantially more money for doing so under the payment mechanism which is cost, rather than value, driven. The processing companies may attract some additional incentive payments, but these are relatively small. As a result, they are more reliant on the NZDB correctly translating the market signals to them.

Whilst the industry is trying to address this issue, potentially a longer term concern is that of capital. Currently, NZDB growth and investment (in New Zealand, at least) are funded out of

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<sup>11</sup> For a more detailed discussion of the UK market in the run up to de-regulation, see Fearn, A. and Ray, D., (1996), "Price determination and discovery in a de-regulated milk market: perspectives on the price of milk", Food Policy, Vol. 21, No. 2, pp.171-189.

retained farmer earnings. Some within the industry argue the NZDB, with its substantial asset base, is well able to fund a greater emphasis on value added. Others disagree, citing the large levels of capital required to build brands which frequently do not provide returns for several years. The failure rate of new brands may also expose farmers to a greater degree of risk. The complexities of separating out value added benefits in a co-operative, yet competing industry, are illustrated by the way the industry has evolved its brand ownership. Whilst in practise this system works, the largest co-op, NZDG, established the 'Anchor' name and owns that brand domestically. However overseas, 'Anchor' is owned by the NZDB (bought from the NZDG). Thus, *any* New Zealand processor could be contracted by the NZDB to processor 'Anchor' products for overseas markets, but only NZDG can use the 'Anchor' brand in the domestic market. At farm level, the co-operative structure means that farmers do benefit from higher market returns. However, the 'bundled' milk price may blur that signal to an extent. If higher farmer returns come from the NZDB's success in adding more market value to existing milk supplies, the only way a farmer can participate more in the industry is by increasing milk production.

Much UK milk production is sold domestically, unlike New Zealand. The much larger, more developed UK consumer market provides opportunities to build relations with retailers through concepts such as category management and offers some UK processors opportunities to add value. Equally, at farm level, most farmers face a choice of milk supply contract. Non-Milk Marque contracts may pay for milk in a variety of ways, often dependent upon the product mix of the dairy processing company. It is not uncommon for the same company to pay different milk prices for milk going to different factory sites. In addition, the de-regulated environment has enabled farmers to add value through production techniques. This may become more significant in the wake of the UK BSE crisis. UK retailer Marks & Spencer, for example, have a contract with Unigate through which they sell liquid milk from 'specially selected farms' who adhere to strict production and animal welfare codes.

## **5.6 Aggregate Industry Promotion**

The New Zealand industry would appear to react well to opportunities to promote its industry. Whilst there is intense competition between co-operatives the New Zealand market system is integrated in that farmers own the processing co-operatives, who in turn own the NZDB. The NZDB, selling almost all New Zealand exports, promotes aggregate New Zealand products. Farmer retained earnings fund the NZDB and all such international marketing and promotional activities. In addition the NZDB funds support services such as the Livestock Improvement Agency (LIA) and the Dairy Research Institute (DRI). Although there is no current generic milk promotion domestically, the strong role of company brands in the domestic liquid milk mean that individual companies undertake their own promotion.

The UK market response to such a need is relatively weak. Generic industry promotion ended with de-regulation. Many of the functions of the old MMB, such as statistics gathering, have either been privatised, or in the case of statistic gathering, were restructured and incorporated into another body. Companies do promote their own consumer brands, but the power of the multiple retailers means strong UK dairy company brands are limited, not least because liquid milk is predominantly sold as 'own-label' supermarket milk. The uncertainty and the lack of profitability in the industry outlined above also have limited promotional activity. Farmers are levied to fund the Milk Development Council(MDC)which funds wider research projects into the dairy sector. Milk Marque is also actively promoting itself and has developed its own brand logo. However in the UK, and also in New Zealand to some extent, an element of promotion within the industry is linked to political posturing.

## 6. Results and Conclusions

The two industries described have very different structures and contractual arrangements and the detailed discussion has attempted to describe how the firms and organisations might react to changing market circumstances. The discussion presented above is summarised in the following table. In each case, the authors have attempted to identify the extent of the response from both the processing and producing firms in each country, and these are loosely ranked, with a score of Y+ representing the most appropriate response, and ?? suggesting that there is an uncertain or inappropriate response. The comments identify some of the significant differences between the industries and why these differences occur.

This paper attempts to provide a simple and interesting approach to comparing highly complex marketing structures. The results of the practical illustration shown in Table 2 suggest that whilst both the UK and New Zealand market mechanisms respond favourably to market conditions they have some weaknesses. There are some distinct differences in the manner in which both markets respond to circumstances such as relative shifts in product prices, and generic promotional opportunities.

At aggregate level, both market mechanisms perform reasonably well, despite their very different structures and given the UK quota system under the CAP. Yet, when one examines deeper, more subtle changes, weaknesses in the complex market structures are highlighted. The key relative weaknesses in the UK system would appear to be with regard to industry promotion and in developing new products, and there may even be a correlation between the two. The main relative weaknesses in the New Zealand system appear to lie in signals to add value and signals relating to specific product demand

While the specific judgements may be argued, it would appear that a careful analysis of the price setting mechanisms and contractual arrangements between the key players in the industry has provided some insights into the behaviour of the industries. These characteristics are normally associated with high performing industries, and provide a common basis for comparing performance.

Although this approach is subjective, what is perhaps of greater significance is that by evaluating likely market responses to a series of economic shocks, a more detailed and explanatory means of comparison is possible. This highlights the relative position of the marketing systems and also the individual strengths and weaknesses within each. It is likely that such a method would provide a more useful mechanism for comparing even more divergent industry structures where there are more significant government policies and market interventions, and conventional comparisons of industry structures or performance are not possible

**Table 2**  
**The Appropriateness of Market Signals in Each System**

| <b>Market Shock</b>        | <b>Industry Player</b> | <b>New Zealand</b>             | <b>The UK</b>                  | <b>Summary of Main Difference</b>                                                                                                                                                                                                                                                                                     |
|----------------------------|------------------------|--------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |                        | Appropriate Signal & Response? | Appropriate Signal & Response? |                                                                                                                                                                                                                                                                                                                       |
| Aggregate demand shift     | Processor              | YY                             | Y+                             | NZ unable to control supply; farmer receives ‘bundled’ price.                                                                                                                                                                                                                                                         |
|                            | Farmer                 | Y?                             | YY                             |                                                                                                                                                                                                                                                                                                                       |
| Aggregate supply shift     | Processor              | YY                             | ?Y                             | UK restricted by production quota.                                                                                                                                                                                                                                                                                    |
|                            | Farmer                 | YY                             | ??                             |                                                                                                                                                                                                                                                                                                                       |
| Increase in product demand | Processor              | ??                             | YY                             | NZ pooled prices to companies and farmers.                                                                                                                                                                                                                                                                            |
|                            | Farmer                 | ??                             | YY                             |                                                                                                                                                                                                                                                                                                                       |
| New product development    | Processor              | Y?                             | ??                             | NZ OK, but blurring of ownership and incentive. UK blurred by market uncertainty, squeezing of processors; and inefficiencies from previous system.                                                                                                                                                                   |
|                            | Farmer                 | Y?                             | ??                             |                                                                                                                                                                                                                                                                                                                       |
| Adding value               | Processor              | ??                             | Y?                             | NZ blurred by lack of processor incentive and pooled farm price. Capital issue potentially a concern? UK better, particularly at farm level where milk supply contracts can be factory specific. Processors deal direct with market - but opportunities partly because UK sells mainly to domestic market, unlike NZ. |
|                            | Farmer                 | ??                             | Y?                             |                                                                                                                                                                                                                                                                                                                       |
| Aggregate promotion        | Processor              | YY                             | ??                             | NZ integrated industry - funding of LIA, DRC etc.; UK weak generic promotion post de-regulation. Farmers do fund MDC. UK should improve as uncertainty subsides and as sector profitability increases                                                                                                                 |
|                            | Farmer                 | YY                             | ??                             |                                                                                                                                                                                                                                                                                                                       |

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