

Sinclair, Geoff

Working Paper

Costs and Benefits of Producer Board Deregulation

New Zealand Treasury Working Paper, No. 99/04

Provided in Cooperation with:

The Treasury, New Zealand Government

Suggested Citation: Sinclair, Geoff (1999) : Costs and Benefits of Producer Board Deregulation, New Zealand Treasury Working Paper, No. 99/04, New Zealand Government, The Treasury, Wellington

This Version is available at:

<https://hdl.handle.net/10419/205407>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

TREASURY WORKING PAPER

99/4

Costs and Benefits of Producer Board Deregulation

Geoff Sinclair*

ABSTRACT

This paper considers evidence on whether deregulation of single-buyer Producer Boards is likely to yield net benefits to producers, relevant industries and the New Zealand economy. It assumes some familiarity with industry structures and the ongoing debate. The discussion focuses on the static and dynamic effects of the statutory single buyer powers of the Dairy, Apple & Pear and Kiwifruit Boards, and concludes that on balance, the benefits of deregulation are expected to significantly outweigh the risks posed.

The paper also considers the implications of the cooperative industry structures inherent in the producer boards for dairy, apples and pears, and kiwifruit, noting evidence that the cooperative payment systems of Producer Boards impose an economic cost.

**Paper edited for publication by Kevin Guerin, NZ Treasury.*

This working paper represents the views of the New Zealand Treasury as at November 1998. It was developed from the Treasury's 10 December 1998 report to the Treasurer titled 'Producer Boards ¾ Costs and Benefits'. The Treasury recently released that report under the Official Information Act 1982.

Table of Contents

Executive Summary	2
Basic Industry Facts	4
1. Introduction	5
Historical Context	5
Legislative Backing	5
Objective of Agricultural Marketing Regulation	6
Issues in the Producer Board Debate	6
2. Arguments and Available Evidence on Deregulation	7
Statutory Single-buyer Status (“the Single Desk”)	7
Static effects of statutory single-buyer status	7
Market power	7
Does New Zealand have market power?	8
If New Zealand can exercise market power, is a statutory single-buyer the best way of doing so?	11
Transparency and Accountability	15
Different Terms of Payment	15
Summary of the static benefits and costs of deregulation.....	15
Dynamic effects of the statutory single-buyer status.....	16
Other arguments on deregulation	20
3. Cooperatives	22
4. Summary of Potential Benefits and Risks of Deregulation	25
Appendix 1:	
References Quoted in Text.....	26
Appendix 2:	
Static Breakeven Analyses for Apple and Kiwifruit Industries	28

EXECUTIVE SUMMARY

This paper considers evidence on whether deregulation of single-buyer Producer Boards is likely to yield net benefits to producers, relevant industries and the New Zealand economy. It focuses on the static and dynamic effects of the statutory single buyer powers of the Dairy, Apple & Pear and Kiwifruit Boards, and concludes that on balance, the benefits of deregulation are expected to significantly outweigh the risks posed.

New Zealand dairy exports account for less than 2% of world dairy production; apple exports 1.7% (11% in season) and kiwifruit exports approximately 25% (63% in season). The Dairy, Apple & Pear and Kiwifruit Boards are not single sellers in the world market, but are the sole buyers of New Zealand products intended for export. There are static and dynamic effects of statutory single buyer status:

Static effects:

- The hypothesis that has been advanced by the Producer Boards is that single buyer status allows them to exercise market power, influencing price received by varying the quantity of supply. The paper notes that:
 - there is no compelling evidence that New Zealand can exercise market power in world food markets;
 - even if New Zealand had a large market share, it is unlikely we would be able to charge a price premium for quality products because our competitors would undercut us and we would lose market share; and
 - price premiums do not necessarily indicate market power, but can reflect differences in product quality, reliability of service and the relationships that New Zealand *marketers* have built up with customers over time.
- If the market power hypothesis is accepted:
 - a The evidence suggests that any market power can be exercised – even to a greater degree – without statutory enforcement of the single buyer status.
 - b There are offsetting static costs of the statutory single buyer status:
 - There is widespread evidence that statutory monopolies become inefficient and ineffective because they do not have to compete;
 - Single buyer Producer Boards do not have to compete *for supply*; therefore any inefficiencies come directly out of producer returns;
 - Some evidence suggests that alternative exporters (and, indeed, the Boards) could export more effectively, at lower cost, and with higher producer returns, without statutory single buyer status.

- Deregulation will also encourage greater transparency and accountability and is likely to lead to better terms of payment being offered to producers;
- “Weak selling” refers to the possibility that New Zealand exporters will compete against each other in world markets; thereby bargaining away any gains from market power. However:
 - it is unlikely that New Zealand can exercise market power;
 - weak selling is commercially irrational (and therefore probably temporary), and may be less likely due to trends in supply chain management; and
 - the static benefits of deregulation – including better incentives for efficiency and effectiveness, better accountability, better terms for producers and the ability to diversify risk – are likely to outweigh any risk of weak selling.

Dynamic effects:

- The dynamic benefits of a competitive market are likely to be significantly greater than the static benefits. These include:
 - greater opportunities and incentives to innovate;
 - more flexibility and responsiveness to markets;
 - more investment and use of technology;
 - more efficient capital utilisation, leading (over time) to better returns on producers’ investments (both on-farm and off-farm);
 - an ability for producers to access their off-farm capital; and
 - more opportunities to add value to primary produce.
- Although it is not possible to definitively prove the case for or against statutory single buyers of agricultural and horticultural produce, a balanced assessment of the evidence is that the risks of maintaining statutory enforcement of Boards’ single buyer status are likely to significantly outweigh the risks of liberalisation.

Compulsory cooperatives

- There is mixed evidence as to whether cooperatives perform as well as standard corporates. The inability of the Producer Boards to choose alternate corporate forms is likely to blunt performance and accentuate several inherent potential disadvantages of the cooperative form.
- The evidence suggests that the cooperative payment systems of Producer Boards impose an economic cost. This cost is likely to be diminished over time by deregulation.

BASIC INDUSTRY FACTS

There are nine producer boards established under a variety of legislation.

New Zealand Apple and Pear Marketing Board	Apple and Pear Marketing Act 1971	Export monopsony.
New Zealand Meat Producers Board	Meat Board Act 1997	No monopsony.
New Zealand Game Industry Board	Game Industry Board Regulations 1985	No monopsony.
New Zealand Pork Industry Board	Pork Industry Board Act 1997	No monopsony.
New Zealand Raspberry Marketing Council	Raspberry Marketing Regulations 1979	monopsony over export and domestic marketing of NZ produce.
New Zealand Hop Marketing Board	Hop Marketing Regulations 1939	monopsony over export and domestic marketing of NZ produce.
New Zealand Kiwifruit Marketing Board	Kiwifruit Marketing Regulations 1977	Export monopsony.
New Zealand Dairy Board	Dairy Board Act 1961	Export monopsony.
New Zealand Wool Board	Wool Board Act 1997	Export monopsony.

The agriculture and horticulture¹ sectors are important parts of New Zealand's economy. In 1997, agriculture comprised 5.6% of GDP and 53.4% of the value of our exports (Situation and Outlook for New Zealand Agriculture and Forestry 1998). Agriculture forms the basis of many of New Zealand's rural activities and underpins a considerable amount of commercial activity in the major cities. Agricultural industries governed by Producer Boards are heavily export-oriented.

However, profitability has consistently dropped over a long period. Many producers are now highly indebted and are facing liquidity problems. MAF's Farm Monitoring Reports forecasted in July 1998 that, in 1998/99:

- a typical 73ha Waikato dairy farm milking 196 cows would make a profit (after labour and capital costs) of only \$33,217 or \$0.58 per kg of milksolids;
- a typical 10ha Hawkes Bay pipfruit orchard would make a loss (after labour and capital costs) of \$12,732 or \$0.56 per carton; and
- a typical 5ha Bay of Plenty kiwifruit orchard would make a profit (after labour and capital costs) of \$930 or \$0.03 per tray.

Real farmgate returns have consistently fallen in all three cases and poor profitability is forecast to continue through 1998/99. This is for a number of reasons, the most important of which is a general decline in world commodity prices.

¹ For convenience, this paper will refer to both the agricultural and horticultural industries as "agriculture".

1. INTRODUCTION

This report reviews the arguments and evidence for and against deregulation of Producer Boards and assesses whether deregulation is likely to generate net benefits for producers and the New Zealand economy. The report focuses on single desk Boards (primarily dairy, apple and pear and kiwifruit).

Deregulation has both potential costs and benefits. This paper concludes that benefits are likely to outweigh costs. However, neither this conclusion, nor the case for single-buyer status, can be definitively proven. (The perceived benefits of deregulation will therefore rest heavily on the degree to which, on the basis of experience in other industries and overseas, contestability is likely to deliver better incentives for efficiency, innovation and investment.) The arguments in this report are generally supported by the experiences of other countries which have deregulated their single desk agricultural exporters.

Each Producer Board industry is unique, and specific features of each are discussed. However, many of the arguments for and against deregulation are common to all relevant industries because they relate to the benefits of contestability and (potentially) demutualisation.²

Historical Context

Producer Boards were generally formed in New Zealand before World War 2 to (a) coordinate exports to Britain and (b) attempt to countervail the purchasing power of large British buyers. However, single desk powers were not generally conferred until World War 2 and shortly afterwards, when they were seen as a way to coordinate produce flows, thereby combating problems with disrupted transport (Purvis and Chan, 1995).

Apart from introduction of the Kiwifruit Marketing Board in 1988-89, the general trend since the 1970s has been one of decreasing Government intervention in agricultural marketing, eg. removal of Supplementary Minimum Prices.

Legislative Backing

The three Boards which this paper focuses on all have legislative backing. The Dairy Board is formed by the Dairy Board Act 1961; the Apple and Pear Marketing Board is established by the Apple and Pear Marketing Act 1971; and the Kiwifruit Marketing Board is formed by the Kiwifruit Marketing Regulations 1977 under the Primary Products Marketing Act 1953. Although each is different in some respects, the statutes and regulations generally give the Boards the power to:

² The Dairy, Apple and Pear, and Kiwifruit Boards are all structured as cooperatives. Shares in the Dairy Board are deemed to be owned by the various dairy processing cooperatives which supply it, and to which all dairy farmers belong.

- acquire and market all produce intended for export;
- determine quality standards and payments to producers;
- provide and take funds from marketing revenues for various industry-wide activities including representation and research and development; and
- undertake the commercial actions of a “natural person” in doing so.

It is an offence for other individuals or corporations to export products controlled by the Boards without a licence. The issue of export licences is controlled by the Boards.

Objective of Agricultural Marketing Regulation

For the purposes of this paper, the assumed objective is to provide maximum net sustainable benefits to the New Zealand economy. Because consumers of exported produce are not in New Zealand, this equates to ensuring that the resources used in generating those exports in New Zealand, including in farming and orcharding, earn the highest possible return over time.

Issues in the Producer Board Debate

Debate over Producer Board deregulation often confuses two separate issues – the incentive and governance effects of cooperatives and the effects of the single-buyer structure. Issues raised by deregulation therefore include:

- allowing Boards to undertake normal commercial practices, including changing corporate form, diversification of their businesses, raising equity, etc. (“cooperative” issues); and
- allowing other firms or individuals to export without statutory restriction, thereby giving producers the ability to choose how and by whom their produce is exported (“single desk” issues).

A number of other issues, including funding for research and development and management of access to tariff quota markets, are related to the debate. However, these issues can be addressed in alternative ways and should not, therefore, be central to the deregulation decision³.

³ It is possible that it may make sense to have a single franchise for exports to tariff quota markets and deregulate all other markets, although further work needs to be done before this can be properly determined.

2. ARGUMENTS AND AVAILABLE EVIDENCE ON DEREGULATION

Statutory Single-buyer Status (“the Single Desk”)

The most important of all potential Producer Board reforms is allowing producers a choice of exporter. This paper, in referring to “deregulation”, is primarily concerned with removing the barriers to contestability in agricultural export marketing.

The Dairy, Apple and Pear, and Kiwifruit Boards are formed by statutes and regulations which makes them the sole licensed New Zealand exporters of produce for their industries. This does not, however, make them monopoly sellers because they compete against exporters from other countries. New Zealand dairy exports account for less than 2% of world dairy production; apple exports 1.7% of the world total; and kiwifruit exports approximately 25%⁴ They are also relatively small when compared to their competitors (see table 1 below).

However, these Boards are the monopsonistic⁵ buyers of New Zealand produce intended for export (this can also be expressed as monopolistic suppliers of marketing services to New Zealand producers). New Zealand export producers therefore have no choice of marketer and single-buyer Producer Board legislation acts to restrict competition for their supply.

The effects of this statutory monopsony can be divided into **static** effects – as at a point in time – and **dynamic** effects – on the industry’s resource re-allocation over time and medium-term growth rate. The static benefits and risks of contestability include those related to market power, weak selling and incentives for efficiency and effectiveness. The dynamic benefits and risks of contestability include incentives to innovate and use capital productively, commercial flexibility, investment and technology and value added.

Static effects of statutory single-buyer status

Market power

Market power enables a firm to exercise dominant influence over the production, acquisition, supply, or price of goods or services in a market. If Producer Board legislation allowed New Zealand to exercise market power in the relevant markets, and the exercise of the power resulted in an increase in returns to New Zealand (net of the costs imposed by the monopsony), the

⁴ New Zealand’s market share in fruit exports is higher during the Southern Hemisphere season – approximately 63% for kiwifruit and 11% for apples - but this is being eroded by greater ability to store Northern Hemisphere produce in Controlled Atmosphere storage.

⁵ A monopsonist is a single buyer (as opposed to a single seller). This means that it can exert its dominance over the people or firms who it buys goods from. In this case, Producer Boards can exert dominance over producers.

New Zealand economy would be better off. The points that need to be determined are therefore:

- a whether New Zealand has market power in offshore dairy, apple and pear, and kiwifruit markets;
- b if there is market power, whether the statutory single-buyer is the most efficient means of exercising that power (including whether it is necessary to do so); and
- c if market power is exercised, whether the benefits are returned to New Zealand.

Does New Zealand have market power?

Market power could be exercised either on the entire world market⁶ or by allocating produce between different markets in accordance with conditions in those markets (thereby enabling supply restriction and exercise of market power in markets where it exists - Zwart and Martin (1987)). Until recently there have been few robust attempts at estimating whether New Zealand has market power in these markets, although the existence of market power has been widely claimed and questioned.

Market share is commonly used as an indicator of market power. As noted above, New Zealand dairy exports account for less than 2% of world dairy production⁷; apple exports 1.7% of the world total; and kiwifruit exports approximately 25%. Our share of in-season (ie Southern Hemisphere) production of apples and kiwifruit in 1996/97 was 11% and 62% respectively (Source: Decofrut, USDA). However, even if New Zealand had a very large (90% or over) market share, it does not necessarily follow that we are able to consistently exercise market power. Market power also depends on factors such as the behaviour of competitors (in the specific product *and* substitute products), the responsiveness of consumers to price changes, or barriers to entry (Goldberg and Knetter 1995)⁸.

If New Zealand produce earns a price premium in some markets, this does not necessarily imply that we have market power. In some cases, an observed price premium may be offset by payment of promotion incentives to customers. In other cases, the price premium may be due to better quality produce, better customer service or a range of other factors unrelated to market power. We are

6 The dairy market is highly distorted by trade barriers; therefore the existence of a "world" market is questionable. This report therefore defines the "world" dairy markets as those markets which are accessible to New Zealand, outside of quota markets.

7 The fact that New Zealand accounts for approximately one third of internationally traded dairy produce is irrelevant because many of the markets we sell into have substantial domestic production.

8 Steele (1995) argues that the Boards do have market power.

therefore only concerned with whatever market premium exists *solely due to the existence of market power*, and how much of that is passed back to New Zealand.

In 1996, the Treasury commissioned agricultural economists Walter Thurman (North Carolina State University) and Frank Scrimgeour (Waikato University) to undertake an empirical study of some of the economic effects of single desk Producer Board regulation.⁹

The study used econometric models and large datasets to try to measure some of the costs and benefits of single desk regulation. It attempted to measure New Zealand's market power by comparing movements over time in revenue per unit of dairy produce, apples, pears and kiwifruit with changes in New Zealand production. Price increases in a time of reduced production may indicate the existence of market power. The study found that:

- a New Zealand may have some market power in the dairy, apple and kiwifruit industries, although the amount of power is small;
- b Producer Board price pooling and return bundling impose a small cost on Producer Board industries and the New Zealand economy; and
- c Although the effect of unbundling returns would be to decrease farmgate returns (and have separate dividends paid to shareholders), output of the dairy, apple and pear and kiwifruit industries, in the absence of single desk status, would be considerably higher due to improvements in overall efficiency.

The Thurman study found a weak statistical relationship along the lines of dairy products and kiwifruit, but the opposite relationship for apples (ie an increase in volume supplied is followed by an increase in price). The study estimates the potential benefits of exercising market power at \$81-113 million per year¹⁰. This can also be viewed as the potential cost of weak selling. The Thurman study therefore tests some of the arguments for and against deregulation. However, it does not purport to be a complete analysis for the sake of informing policy analysis.

These results must be interpreted carefully because:

- the methodology does not provide a definitive measure of market power or weak selling. It indicates a relationship between supply and world prices, not the effects of changes in market structure;

⁹ Copies of the study, appendices and the peer review are available from Treasury. A fee may be charged for costs of reproduction.

¹⁰ Consisting of \$37-69 million for dairy, \$19 million for apple & pear and \$25 million for kiwifruit.

- there were significant data problems which affect the validity of the market power finding, especially in light of the counter-intuitive results for apples;
- the study does not determine whether the Boards are actually capturing the benefits of any market power (through higher prices); nor whether they are passing them back to producers and New Zealand (benefits may be offset by inefficiencies within the board structures);
- the ability of the Boards to exercise market power is limited by the requirement for them to market all produce intended for export (once quality standards are set). The only counterbalancing factor is the ability to allocate product between different markets; and
- if the Boards currently exercised market power in individual markets, this could be expected to accelerate erosion of market share as producers from other countries entered New Zealand's markets to capture the rents we were trying to exploit. The Apple and Pear and Kiwifruit Boards have been consistently losing market share to other Southern Hemisphere producers (and Northern Hemisphere produce stored under controlled atmosphere) (Deloitte 1996; Decofrut; USDA).

The Dairy Board has increased its share of the internationally traded dairy market, but this has been primarily due to the need to dispose of increased milk production in New Zealand rather than demand for New Zealand dairy produce.

On balance, the Thurman Study's findings do not appear to provide substantial evidence that New Zealand can exercise, or even has, market power. Firstly, variations in production in New Zealand may reflect variations in Southern Hemisphere or World production due to, for example, the El Nino effect. This would cause variations in a much larger proportion of World production than just New Zealand's (we are not aware of evidence on this issue). Secondly, even if New Zealand does have a large share of the market at a particular point in time, we may not be able to charge a higher price than our competitors for the same product *as a result of it* because those competitors (albeit small) would likely undercut¹¹. Thirdly, the Thurman methodology, data limitations and counter-intuitive results produce a net effect so small (given the size of the industries) as to be almost trivial.

¹¹ A similar example is oil production. Although Saudi Arabia produces a large proportion of the World's oil supply, and would cause an increase in the world oil price if it significantly decreased its production, experience indicates that it is not able to price its oil at a premium to other oil-producing countries. New Zealand food exports may be more differentiable than oil, but premiums for differentiation can be captured without a single desk.

If New Zealand can exercise market power, is a statutory single-buyer the best way of doing so?

The Thurman report does not attempt to determine whether a statutory single-buyer is the only way to capture the benefits of any market power. It is more likely that a large marketer, irrespective of statutory enforcement, would capture any benefits of market power. In this context – and as illustrated in table 1 – the Dairy, Apple and Pear and Kiwifruit Boards are all very small compared to their competitors¹².

Table 1: Comparative sizes of agricultural produce marketers – 1997

Annual revenues of NZ Producer Boards (US dollars)	Annual revenues of competitors (US dollars)
Dairy: \$4,064 million	Kraft: \$10,852 million Nestle: \$47,883 million
Apple & Pear: \$520 million Kiwifruit: \$357 million	Dole: \$4,344 million Chiquita: \$2,434 million

Sources: NZDB; various annual reports and 10Ks

It is probably the case, given increasing purchaser power and the move towards year-round integrated food *marketers*, that critical mass is the key factor in exercising market power. In this respect, even the Dairy Board is less than one-tenth the size of one of its major competitors. Indeed, Producer Board legislation may be constraining Board growth and their ability to exercise market power by restricting the nature (and therefore size) of Boards' businesses and their ability to raise external capital.

There is no evidence to suggest that statutory single-buyer status is necessary for Producer Boards to achieve critical mass and exercise market power in offshore markets. Indeed, another study of the dairy trade has yielded results which suggest that Australia – with competitive exporting – exercises market power to a greater degree than does New Zealand (Bururu 1996). Claims that the Boards achieve efficiencies through size and that the industry would “fragment” under deregulation (with multiple exporters) do not appear to be valid arguments against deregulation because, if there were true commercial value in such size, it could be expected to occur even under deregulation. Current dairy industry amalgamations may be driven by the desire to achieve “competitive” scale before deregulation.

Weak selling

Weak selling refers to the possibility that, without single-buyer legislation, multiple New Zealand exporters will undercut each other in offshore markets

¹² In a deregulated environment, a reasonable amount of competition for supply is necessary to ensure that any benefit of market power are passed back to producers (who are also owners – agent/principal issues are discussed under the cooperatives heading).

and thereby decrease overall profits to New Zealand. This would only be possible if New Zealand had market power (as otherwise we would have no influence on the world price), and would represent a loss of any market power premium. A decrease in price realised may not, however, represent weak selling. It may reflect a changing balance between demand and supply in world markets or a deliberate strategy to increase market share. The latter is a widely used commercial strategy.

In the case of fruit, weak selling may occur if everyone tried to sell their fruit in the same market at the same time because fruit is seasonal and perishable. However, the experience of Israel and South Africa suggests that exporters quickly realise this is not in their interests and either collaborate or develop alternative markets. It is therefore likely to be primarily a transitional concern.

Another factor to consider with regard to weak selling is the trend in supply chain management towards “preferred supplier” relationships. Supermarkets are entering into, typically, an annual contract with a limited number of suppliers for guaranteed supply of the product category. They expect these suppliers to assist with “category management” – logistics, shelf space allocation etc. As a result, supermarkets may be less likely to “play off” suppliers to get price reductions because this would disrupt supply and category management.

Incentives for efficiency and effectiveness

Even if statutory single-buyer status allows Producer Boards to exercise market power, the concern should be with what is returned to producers and the New Zealand economy rather than prices realised in offshore markets. Producer Boards effectively subtract all of their costs from revenues and return the residual to producers, who have no choice but to accept that return.

Efficiency and effectiveness are becoming increasingly important in agricultural exporting as commodity prices continue to decline. It has been widely shown that companies with a statutory monopoly are significantly less cost efficient and/or effective than competitive companies – a phenomenon commonly known as “X-inefficiency”¹³. This is because monopolies do not have to compete, and therefore can get away with sub-optimal performance without losing business.

Producer Boards have limited incentive to be efficient because they do not have to compete *for supply*, and can transfer all costs of any inefficiency directly to producers. Indeed, Producer Boards return a relatively small proportion of revenue to producers: the Dairy Board returned 43% of revenue to farmers last year; the Kiwifruit Board 48% of revenue and the Apple and Pear Board 32% of revenue. These figures do not automatically mean that the Boards are inefficient, although they are relevant. In the fruit industry which involves less

¹³ See for example Leibenstein (1989); Primeaux (1977); World Bank (1995). These studies tend to find that organisations protected from competition by statute are between 5% and 20% less efficient than competitive companies.

processing than dairy, Chilean fruit exporters typically return approximately 58% of revenue and Sunkist 72%¹⁴.

To examine Board efficiency, we have conducted a series of benchmarking exercises. Because of difficulties in obtaining accurate information on Board costs and allocating them to standard classifications, the results should be seen as indicative only. Nevertheless, in total they suggest that producer returns are lower than could otherwise be the case because all three single desk Boards do not appear as efficient as their overseas counterparts.

In the case of apples and kiwifruit, our analysis indicates that¹⁵:

- in comparison to Chilean fruit (export of which is deregulated), while average Chilean apple and kiwifruit FOB export returns per tray/carton are significantly lower than New Zealand's, this is primarily because Chilean fruit is smaller and/or of poorer quality. In many cases, Chilean producers are receiving higher returns for good quality fruit than New Zealand producers (see table 2);
- the Kiwifruit Marketing Board's controllable costs per tray (excluding freight and duty) are approximately three times those of a typical Chilean exporter's;
- the Apple and Pear Board spends significantly more per carton than a typical Chilean exporter on administration and offshore logistics; and
- the only area where New Zealand's costs are significantly lower are in apple and pear packing and packaging.

When compared to other fruit companies (including Dole, Chiquita, Sunkist, Calavo and a Canadian fruit cooperative)¹⁶:

- the Kiwifruit Marketing Board spends considerably more than the norm on marketing and distribution (29% of revenue compared to 10-12%); and
- the Apple and Pear Board spends considerably more on onshore coolstorage, transport and administration.

Discussions with a number of fruit importers in New Zealand's major markets also suggest that fruit growers could probably get considerably higher returns by exporting independently. Our most recent discussions with industry sources

¹⁴ Decofrut Chile; Sunkist annual reports; Industry sources (see table 2)

¹⁵ Sources: Decofrut Chile; Asoexport Chile; Apple & Pear and Kiwifruit Boards' annual reports; industry sources. Results were benchmarked for 1996 year.

¹⁶ Sources: various 10K's/annual reports; Apple & Pear and Kiwifruit Boards' annual reports; industry sources. Results were benchmarked for 1996 year.

have revealed that Chilean growers can get the same or more for Braeburn and Royal Gala apples than New Zealand growers (table 2)¹⁷.

Table 2: Comparison of European importers' orchard gate returns to Chilean apple producers with New Zealand apple orchard gate returns, 1997-98, NZ dollars per 18kg carton.

	Chile	New Zealand*
1998		
- Royal Gala	20.90	14.80
- Braeburn	31.10	14.20
1997		
- Royal Gala	14.80	13.03

Orchard gate returns to Chile have been calculated by subtracting Enza onshore costs from FOB returns, which are generally higher than Chilean costs. 1998 season prices in the market were very good. Chilean returns reflect this; New Zealand returns appear not to. This is unlikely to be because of exchange rate management because the return differential is similar in US dollars.

* forecasts for 1998

Sources: Industry sources; Apple and Pear Marketing Board

The efficiency and effectiveness of the Dairy Board is more difficult to assess because of the range of its business. However, when we adjust for the inclusion in New Zealand farmgate returns for milk of a return on off-farm equity and rents from the UK butter quota market, Australian dairy farmers received milk returns on average 20% higher than New Zealand dairy farmers between 1993/94 and 1996/97¹⁸.

This could be the result of (i) the Board receiving lower prices than Australian firms; (ii) a higher cost structure; or (iii) the Board earning a relatively poor return on assets. The latter possibility is supported by Ireland Wallace's (1994) study of dairy industry off-farm assets, which found that they appear to be earning poor returns.

The dairy processing and export sector in Australia has a mix of cooperatives and standard corporates. The better performance in Australia suggests that competition itself will generate significant efficiencies, regardless of corporate

¹⁷ Although this data is limited to certain varieties and opportunities, opportunities are likely to exist for other varieties and markets.

¹⁸ Sources: Australian Dairy Corporation; New Zealand Dairy Board. The Dairy Board has argued that Victoria is a more valid comparison (Dairy Farmer October 1998; 118-119), in which case Australian farmers get an even higher return compared to New Zealand. The Dairy Board has also argued that some milk is sold to cooperatives in Australia; and therefore a return on off-farm capital should be subtracted from Australian returns. However, Australian dairy farmers (Victorians in particular) have a choice between contributing capital to a cooperative or using a corporate; and the corporates generally pay the same milk returns as the cooperatives. Because Australian dairy farmers *can* sell their milk for a given return *without* having to contribute capital, it is therefore appropriate to not subtract a return on capital from Australian milk returns.

form. However, because cooperatives pay roughly the same returns as corporates (who also have to pay dividends), it is likely that the cooperatives are still earning an inferior return on capital.

Transparency and Accountability

Deregulation is likely to make the Boards, and other exporters, more transparent and accountable because at least some producers will be able to choose between exporters based on the returns they offer. Although some producers may not have a choice of exporter, the “demonstration effect” of other exporters’ performance and the mere threat of competition would likely have the same effect on the efficiency of an exporter which was a single buyer in a particular area. The current lack of any other New Zealand benchmark makes it extremely difficult to determine Producer Board performance.

Different Terms of Payment

In a deregulated environment, terms for payment to producers can be customised to suit the requirements of producers and exporters. In many deregulated markets producers are paid in advance for produce. This means that exporters, rather than producers, are exposed to the risk of changes in market price. All three Boards do not currently finalise payments until the end of their seasons.

Summary of the static benefits and costs of deregulation

Although there appears to be some evidence that variations in New Zealand production have an influence on prices in offshore agricultural commodity markets, there is no evidence to suggest that Producer Board legislation allows New Zealand to exercise market power. Indeed, the discussion above suggests that (a) being able to exercise market power is a function of size (ie critical mass), not regulation; and (b) if there were true commercial value in having critical mass, producers would have an incentive to continue marketing through (what are currently) the Boards in a deregulated environment. Boards would be able to out-bid alternative exporters.

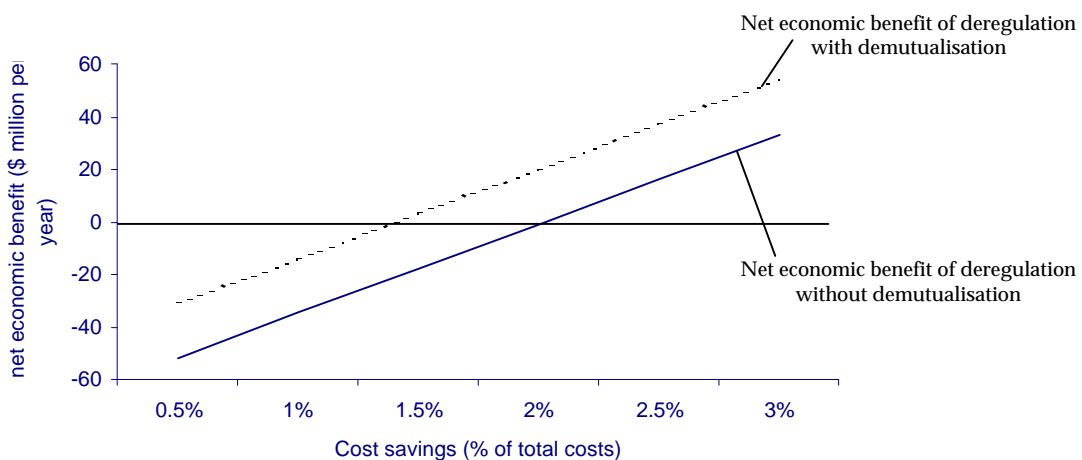
However, in the unlikely event that deregulation were to cause a loss of market power premiums, these premiums and hence any losses would be small in relation to the size of the industries concerned. Further, there are a number of offsetting benefits of deregulation including better incentives for efficiency, innovation and investment and, potentially, benefits of demutualisation.

Figure 1 shows a hypothetical case for the dairy industry where all of the potential benefits of market power (as quantified in the Thurman report) are lost and compares potential efficiency gains against net economic benefits. It suggests that, if the Dairy Board did not demutualise upon deregulation, additional cost efficiencies of only 2% of total costs would yield a net economic

benefit. If the Board did demutualise, this figure would reduce to less than 1.5%.

These required efficiencies are far less than the empirical estimates of typical inefficiencies of statutory monopolies noted above and may be overstated because the ability of corporates to compete for supply will likely force cooperatives to adopt more market-based pricing systems.

Figure 1: Net static economic benefits of deregulating dairy export marketing assuming any potential market power premiums are completely lost, \$ million per year



Sources: Thurman; Producer Board annual reports (1997/98) and Treasury analysis

Similar analyses for apples and kiwifruit are in Appendix 2.

The numbers above, however, underestimate the likely gain from deregulation as they exclude the benefits of increased transparency and accountability and the dynamic benefits of deregulation. They are also very small in relation to the size of the industries concerned. Given the degree of statistical uncertainty surrounding the Thurman estimates, it may therefore be more useful to concentrate on the dynamic benefits of deregulation, which are excluded from the analysis above.

Dynamic effects of the statutory single-buyer status

Dynamic benefits of reform are generally realised over a period of time, and are likely to be reflected by increasingly efficient resource use. Dynamic benefits largely flow from competition. To capture them it is therefore important to allow competitive exporting and competitive neutrality between exporters.

The potential dynamic benefits of Producer Board deregulation are likely to derive from:

a Greater opportunities for, and incentives to, innovate

Deregulation will reduce restrictions on innovation in products, market development and marketing techniques. Potentially innovative exporters must currently apply to the Producer Boards for an export consent, in the process divulging confidential product and market information. In practice, this has proven to be a barrier to exporting and consents have been given only for relatively small volumes. More innovation will, over time, generate a faster export and industry growth rate.

South Africa provides an example of the potential for innovation in a deregulated market where, since grape exports were deregulated, the number of brands grapes are exported under has increased from 4 to about 40.

b More flexibility and responsiveness to markets

Deregulated industries are likely to be more responsive to market conditions because (a) they will have direct access to market information, including prices (this will decrease the costs of return bundling (dairy) and return pooling); and (b) exporters will have a strong incentive to adjust quickly to market conditions so as to ensure they can retain producers' supply by offering the best returns.

Deregulated Boards will also have greater commercial freedom and flexibility to pursue market opportunities and raise capital, because they will not be impeded by the need to seek legislative change.

c More investment and technology

Considerable new investment in marketing activities, production and post-harvest infrastructure has occurred post-Producer Board deregulation in the Israeli and South African fruit industries¹⁹. In Israel, this has taken place despite significant restriction of foreign investment.

Producer Board legislation generally excludes the raising of equity from investors outside the dairy, apple and pear, and kiwifruit industries. Deregulation will increase opportunities for new investment, from New Zealand and from overseas. Foreign investment, in particular, is likely to significantly benefit to the industry because it is likely to be accompanied by new technologies from overseas and be associated with access to wider marketing channels. Inflows of overseas technology are also likely to occur as overseas customers assist producers to develop their capability in meeting market demands.

¹⁹ The experience of the South African deciduous fruit and citrus industries is more appropriate than the experience of other deregulated South African industries because the fruit industries are export focused.

d More efficient capital utilisation

Over time, deregulation can be expected to lead to better investment decisions because:

- i market signals are less likely to be confused. As such, true returns will be factored into investment decisions, which will improve the quality of investment decisions; and
- ii boards and dairy companies will have clearer objectives and will therefore be more able to concentrate on value creation. Boards and dairy companies will also be able to invest capital outside producer board industries if this is a value maximising strategy.

Although Boards' capital productivity performance is difficult to determine due to a lack of information and counter-examples, the available evidence suggests that it is likely to be sub-optimal. Ireland Wallace and Associates (1994) studied returns on off-farm assets in the dairy industry and found that there was probably a far lower-than-competitive return on capital. The Apple and Pear Board appears to be overcapitalised onshore and has found it difficult to divest coolstores. This capital is sunk but new investments would be subject to more constraints.

More efficient capital utilisation will benefit producers - as the owners of boards and dairy companies – through an increase in the value of their shareholding. It will also have wider economic benefits as New Zealand's scarce capital stock becomes used more productively.

e Ability of producers to access their off-farm capital

Under the current “compulsory cooperative” system, producers involuntarily contribute capital to the Boards (and, in the case of dairy, processing cooperatives). At book value, this amounts to approximately \$200,000 per average dairy farm; \$65,000 per apple orchard and \$6,500 per kiwifruit orchard²⁰. In a deregulated system, producers would have control over where they chose to invest that money (again, this is largely a “compulsory cooperative” problem).

Allowing investors choice of where to invest their funds would provide strong incentives for the Boards – regardless of the corporate form they choose – to use capital efficiently, and therefore give a satisfactory return on equity. Capital tied up unproductively could also be used in other industries or to fund industry growth.

²⁰ Source: Annual reports (NZDB and dairy companies, Kiwifruit New Zealand, Apple and Pear Marketing Board)

f More opportunities to add value

Deregulation is also likely to mean that downstream industries will have greater opportunity to add value to New Zealand, if they find it profitable. This is currently impeded by the fact that organisations wanting to export products which have a significant component of, say, dairy produce²¹, must apply to the Dairy Board for an export consent.

The foregone opportunities to add value represent costs to the wider economy of the current regulations. However, deregulation would also provide a benefit to producers by potentially increasing demand for their produce.

It is not possible to model the dynamic effects of Producer Board deregulation with any accuracy. However, the dynamic benefits of competition and regulatory reform have been well investigated. Empirical estimates of dynamic gains in areas as diverse as intra-European Union trade liberalisation and the impact of introducing competition to various sectors suggest that the dynamic benefits of reform are often between 1.5 and 8 times as large as static benefits.

Examples include Cecchini (1988); Romer (1994); Blöndal and Pilat (1997). Some of these benefits may have accrued to consumers (and in the case of Producer Boards, this would not necessarily contribute to the New Zealand economy but would require pre-existing market power). However, all of the benefits discussed above – and the dynamic benefits discussed in the literature – suggest that dynamic benefits will also accrue to producers.

As illustrated in table 3, other countries that we are aware of which have deregulated their Producer Board structures have all experienced higher export growth rates post-deregulation²².

Table 3: Deregulation experience of other countries

Country	Product	Year of deregulation	Export growth rate pre-deregulation	Export growth rate post-deregulation
South Africa	Citrus, Deciduous Fruit ²³	1997	8% per year (4 years preceding deregulation)	23% per year*
Israel	Citrus	1991	-7% per year (7 years preceding)	4% per year

²¹ In the case of dairy, an export consent is required for all products containing over 30% dairy products. This covers products such as shortbread and ice cream.

²² Deregulation was undertaken in these countries for a number of reasons. In contrast, New Zealand would be primarily concerned with the economic outcomes, which this report examines.

²³ All agricultural products were deregulated but the figures in this table are for oranges and deciduous fruit.

			deregulation)	
Uganda	Coffee	1990	Flat (5 years preceding deregulation)	18.6% per year
Morocco	Fruit & vegetables	1986	Flat (5 years preceding deregulation)	approx. 17% per year
Ivory Coast	Pineapples	1990/91	-3% per year (4 years preceding deregulation)	4% per year

*this is growth in volumes of deciduous and citrus fruit exports in the first deregulated season.

Sources: DFPT (1998); Citrus Marketing Board of Israel; International Herald Tribune (1997); Uganda Coffee Trade Federation; Azoulay (1995).

OTHER ARGUMENTS ON DEREGULATION

There are a number of other arguments on deregulation. These are briefly noted below.

Against	For
Research and development funding will be lost, thereby removing New Zealand's ability to "lead the field" in product innovation in agricultural markets.	It is not necessarily the case that deregulation would lead to a reduction in R&D funding. If R&D were commercially profitable, there would be a strong incentive for producers and exporters to undertake their own R&D, and any "free-rider" problems can be addressed through the Commodity Levies Act. The South African deciduous fruit export industry has moved to a voluntary levy mechanism while increasing expenditure on R&D.
"Irresponsible exporters" will fail to deliver on promises of high returns.	Producers will have an incentive to check the credentials of exporters and, if some exporters do not meet expectations, producers will have the ability to change exporter. It is also unlikely that supermarkets would choose to deal with disreputable traders.
The industry will "fragment".	The industry will only "fragment" if producers choose not to stay with the Boards. In South Africa, Unifruco (deciduous fruit exporter) has retained approximately 80% of supply while Capespan (European marketing joint venture for citrus and deciduous fruit) has retained considerably less due to poorer performance. It should also be noted that "fragmentation" is only "bad" if it leads to a decrease in overall returns (in fact, it might benefit producers as exporters compete for their supply);
Deregulated exporters will not buy all of what is produced or will pay low returns for some produce; and therefore deregulation will benefit a few at the expense of many.	The Boards currently do not buy all of what is produced (in particular the fruit Boards) because they set high quality standards. The Apple and Pear Board has historically dumped or processed approximately 30% of the export crop; the Kiwifruit Board approximately 10%. All Boards are moving towards greater reflection of market conditions in farmgate returns regardless of deregulation (for example, prices for different varieties of apple are increasingly reflecting market demands). Producers will therefore need to adjust their production mix regardless of whether the Boards are deregulated. Faster adjustment would create additional costs but bring earlier benefits.

<p>Deregulation will “destroy value” in the Boards.</p> <ul style="list-style-type: none"> • an increase in farmgate returns could decrease the shareholder value of the Boards by increasing the cost of goods sold. • a decrease in revenues achieved for sale of produce. • transfer of volume to alternate exporters may decrease the size of the Boards’ businesses; thereby decreasing shareholder value. 	<ul style="list-style-type: none"> • Because producers are both shareholders and suppliers, there will be no net change in value to them. • This would require pre-existing market power and the total loss to the economy would not exceed that discussed above. • This value will not be “lost”; it will merely be transferred (presumably on the basis of merit with winners and losers among producers). Furthermore, if critical mass has true benefits we could expect the Boards to be able to pay higher farmgate returns than other potential competitors (and thereby retain volume), in which case there will be minimal loss of value. If critical mass does not yield true benefits, there will be no net loss in value to the industry²⁴ if the Boards fail to retain all of the volumes
<p>“New Zealand” trade mark will be damaged.</p>	<p>The argument that there ought to be only <i>one</i> New Zealand trade mark is not convincing. A good trade mark does not have to be confined to a particular country, and overseas consumers are likely to be intelligent enough to distinguish between better and poorer trade marks emanating from one country, as they do in the case of clothing, motor vehicles and other products²⁵;</p>
<p>The risk of “free riders” – where small exporters trade around a generally cooperative structure, benefiting from collectively-provided goods and services but not contributing to their cost.</p>	<p>Many of these goods and services can be structured so that those who don’t pay are excluded from their use.</p>
<p>The Boards have already improved considerably over recent times without loss of the single desk.</p>	<p>Without a competitive benchmark it is impossible to tell whether they have could have improved more. Much of this improvement may also be a result of the threat of deregulation, and may be lost if deregulation does not occur.</p>
<p>The type of change might be wrong.</p>	<p>The status quo also presents very significant risks, not least of which is the risk that producer profitability will continue to be lower than it should otherwise be. Real returns for milk, apples, pears and kiwifruit have all consistently decreased over the past decade.</p> <p>There is a risk that failure to deregulate will generate complacency by preventing Producer Board industries from changing rapidly in response to a rapidly evolving market place.</p>

²⁴ which includes exporters

²⁵ Kassier (1992); 40

3. COOPERATIVES

Cooperatives (in the case of Producer Boards) are distinguished from other firms by the fact that they are owned by their suppliers, capital is non-tradeable, and shareholding and voting rights are linked to supply. If a producer changes their supply to the cooperative, his/her share entitlements will change in proportion to their change in supply.

The Dairy Board currently has a cooperative ownership structure and is owned by dairy companies. Dairy companies must be cooperatives to own shares in the Dairy Board. Although the Apple and Pear and Kiwifruit Boards do not currently have a defined ownership or corporate form, they are likely to propose implementation of cooperative ownership structures in the near future.

The cooperative form is a structure which provides bargaining power and accountability that tends to be well suited to small, “intimate” firms. The Boards have outgrown this status and are now large semi-commercial organisations. It is normal for aggregations of capital of this size to be publicly listed companies because, in such large organisations, cooperatives tend to have several inherent disadvantages:

- a because members are unable to trade their shares, their liquidity (in terms of their shareholdings in the Boards) is extremely limited;
- b they often have confused objectives, including (i) per-unit return maximisation; (ii) receiving and selling all product grown and intended for export; (iii) maximisation of profit and shareholder value; and (iv) ensuring “equitable sharing” of returns between producers. Profit maximisation is different from per-unit return maximisation in that maximising per-unit returns may require greater reductions in sales volumes. In many cases this decreases both producer profitability (by decreasing the amount of their produce sold) and overall profitability (by not selling some produce which could have added to total profit but would decrease the average (per unit) return. From an economic and industry point of view, profit (and therefore value) maximisation is preferable²⁶;
- c the requirement to receive all product and share returns “equitably” tends to focus attention on volume marketed, rather than profit earned. It also tends to generate a political, rather than commercial, approach to making some commercial decisions;
- d the threat of take-over – which is a strong driver of performance for listed companies – does not exist. Measurement of performance is more difficult and commercial accountability is muted (Porter and Scully 1987). This may lead to inefficient operations;

²⁶ Copeland (1996); Helmberger (1971).

- e they may face a more severe capital constraint than a normal corporate because they are generally unable to raise equity capital from external parties. This becomes more important as industries grow and mature, needing more capital in the process. It is a major reason why cooperative mutual companies have been demutualising and raising more capital from owners over the recent past;
- f the restriction to trading in a certain product prevents the cooperatives from diversifying their businesses. In increasingly risky and difficult agricultural markets, this intensifies the risk which members, as shareholders, face on their capital investments;
- g market price signals are distorted by a tendency to (i) bundle profits from off-farm capital into per-unit returns, thereby artificially raising the price paid to producers; and (ii) pool sales revenue and average returns across products (eg different varieties of apple) or time.²⁷ The Thurman study estimated that these practices impose an economic cost of \$20 million per year in the case of kiwifruit; \$34 million per year in the case of apples and between \$11 million and \$21 million per year in the case of dairy. ACIL and Tasman Asia Pacific (1996) have estimated the loss for dairy at \$68 million, considerably more than Thurman's estimate²⁸.

The relative performance of cooperatives has an impact on producer welfare. Any inefficiency or ineffectiveness will be directly reflected in either lower farmgate returns or lower returns on capital (and, therefore, producers' shareholding) (see Godden 1987; 185).

International evidence on the relative performance of cooperatives is mixed. Some studies have found that cooperatives use resources up to 30% less efficiently than corporates (Porter and Scully 1987) whereas others have found that their performance is similar (Lerman and Parliament 1990). However, these studies have been conducted in an environment where cooperatives and investor-owned firms coexist and compete against each other.

²⁷ Price pooling is where revenues are pooled and returns averaged across products/varieties and/or time. This generally penalises production of products in high demand and rewards production of unpopular products. Return bundling is inclusion of a return on off-farm equity into farmgate returns for fruit or milk (since the dairy industry is organised on a cooperative basis, dividends are embedded in product prices). It artificially raises the price of fruit and milk, thereby giving false price signals to produce more.

The Dairy Board's Business Development Project attempts to decrease the problems posed by bundling and price pooling. However, as noted above, there are problems associated with a cooperative structure and the degree to which the gains are realised depends on corporate form chosen post-deregulation.

²⁸ The difference may be due to different modelling techniques (ACIL used a general equilibrium model whereas Thurman used a partial equilibrium model) or different datasets. In either case, the economic cost of price distortions is small.

There are some argued benefits of the cooperative form – including that they are a way of preventing profit-motivated buyers who are in a dominant position from forcing down the farmgate return. However, this effect can also be achieved by a reasonable degree of competition for supply. A desire to share in profits from downstream activities – including processing and marketing – can also be achieved by investment in standard shares.

Producer Boards, however, are “compulsory cooperatives” – ie the cooperative form is dictated by statute – and do not compete for producers’ supply against other organisations with a different form. The problems outlined above are therefore likely to be exacerbated by statutory compulsion; especially by the fact that many current producers were not voluntary members of Producer Board cooperatives because they were required to join to be able to export their produce. It should be noted that some Boards – especially the Dairy Board through its Business Development Plan – have actively sought to overcome some of the problems associated with bundling and pooling.

Deregulation will not remove the ability of individuals to form cooperatives. However, deregulation will allow choice, competition and comparison between alternative organisational forms, which is likely to drive better performance.

4. SUMMARY OF POTENTIAL BENEFITS AND RISKS OF DEREGULATION

It is not possible to definitively prove the case for or against statutory *single-buyer* powers for agricultural and horticultural produce on currently available evidence. However, this paper has reviewed the significant costs imposed by the current structure, and the evidence suggests that the sole potential benefit (market power overseas) is both too uncertain and too small to offset those costs.

In particular the estimated benefits of market power are partially or completely offset by the estimated costs generated by the bundling of returns into a single product price.

This is without considering the other negative effects relating to lack of cost pressures, reduced flexibility and innovation, and lack of risk diversification. The medium term benefits from eliminating these effects are likely to provide the greatest gains from deregulation.

It has been suggested that “value” will be destroyed by deregulation. This analysis indicates that it is doubtful whether such “value” actually exists and even if it does, its loss is likely to be more than offset by the potential for new value creation in an open environment.

APPENDIX 1: REFERENCES QUOTED IN TEXT

ACIL (1992) *Agricultural Marketing Regulation: Reality versus Doctrine* New Zealand Business Roundtable

ACIL and Tasman Asia Pacific (1996) *The Economy-Wide Effects of Bundling Milk and non-Milk Returns* New Zealand Business Roundtable

Azoulay (1995): Presentation by Jacques Azoulay to the Workshop on Single Channel Exportation of Fruit from South Africa, 10 November 1995

Blöndal and Pilat (1997) "The Economic Benefits of Regulatory Reform" *OECD Economic Studies* No. 28, 1997/1

Bururu, R.K. (1996) *Price Discrimination, Exchange Rates and Markups in Export Markets: A Comparison of the New Zealand and Australian Dairy Industries* Master of Commerce and Management (Economics) thesis, Lincoln University

Cecchini (1988) *The European Challenge* Wildwood UK

Copeland, Tom; Koller, Tim; Murrin, Jack (1995) *Valuation: Measuring and Managing the Value of Companies* 2nd edition John Wiley & Sons August 1995

Deloitte (1996) "Financial Analysis of the Kiwifruit Industry"

DFPT (1998): Statistics from the South African Deciduous Fruit Producers Trust

Godden, David (1987) *Agricultural and Resource Policy: Principles and Practice* Oxford University Press

Goldberg and Knetter (1995) "Measuring the Intensity of Competition in Export Markets" *National Bureau of Economic Research Working Paper 5226* August 1995

Helmberger and Blake (1971) "Estimation of Structure-Profit Relationships with Application to the Food Processing Sector" *American Economic Review* 61(4) September 1971; 614-27

International Herald Tribune (1997): "With Monopoly Ended, Coffee Sector Perks Up" *International Herald Tribune* 24 September 1998; 11

Ireland, Wallace and Associates (1994) *New Zealand Dairy Industry Off-farm Assets: A valuation and assessment of returns* Prepared for the New Zealand Business Roundtable April 1994

Kassier; de Wet; du Toit; Kügel; van Zyl; Vink; van der Merwe (1992) *Report of the Committee of Inquiry into the Marketing Act* South African Government, Stellenbosch, December 1992

Leibenstein, Harvey (1989) "Allocative Efficiency versus X-Efficiency" in Button, Kenneth (ed) *The Collected Essays of Harvey Leibenstein* New York University Press 1989

MAF *Farm Monitoring Reports* North & North Central July 1998

Porter, Philip K and Scully, Gerald W (1987) "Economic Efficiency in Cooperatives" *Journal of Law and Economics* 30(2) October 1987; 489-512

Primeaux, Walter J (1977) "An assessment of X-Efficiency Gained through Competition" *Review of Economics and Statistics* 59(1) February 1977; 105-08

Purvis, Nicola and Chan, Rachael (1995) *The Historical Development of the Producer Boards* internal paper prepared for the Treasury 8 May 1995

Romer (1994) "New Goods, Old Theory, and the Welfare Costs of Trade Restrictions" *Journal of Development Economics* 43(1) February 1994; 5-38

SONZAF (1998): *Situation and Outlook for New Zealand Agriculture and Forestry* Ministry of Agriculture and Forestry 1998

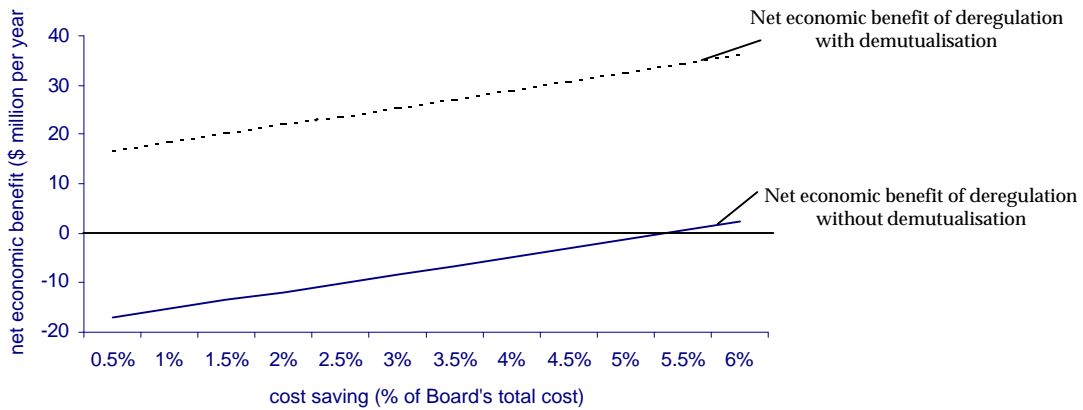
Thurman, Walter and Scrimgeour, Frank (1997) *An Economic Analysis of Agricultural Marketing Structures in New Zealand* prepared for the New Zealand Treasury December 1997

World Bank (1995) *Bureaucrats in Business*

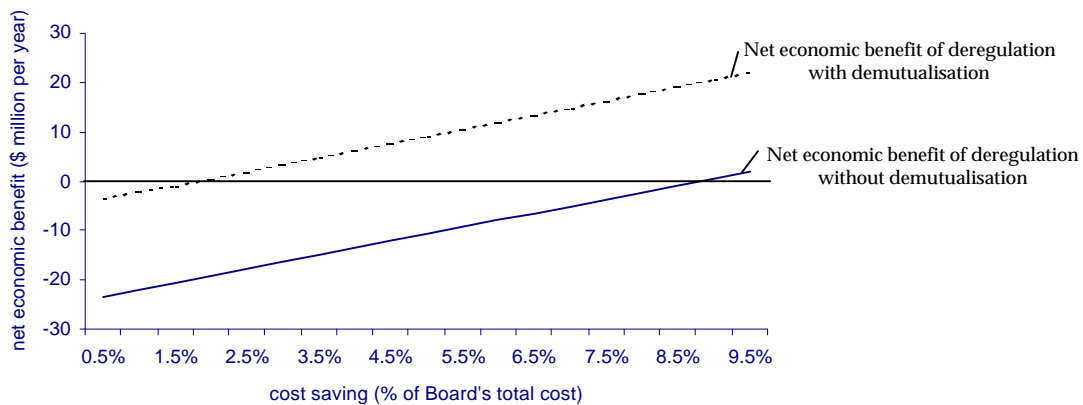
Zwart, A C and Martin, S K (1987) "Marketing Agencies and the Economics of Market Segmentation" *Australian Journal of Agricultural Economics* 31(3) December 1987; 242-55

APPENDIX 2: STATIC BREAKEVEN ANALYSES FOR APPLE AND KIWIFRUIT INDUSTRIES

Apple



Kiwifruit



Note: the above estimates are based on a “worst-case scenario” where:

- Market premiums are due solely to market power;
- All market premiums are totally lost upon deregulation; and
- No allowance is made for the dynamic gains from deregulation.

Even in this unrealistic scenario, static efficiency gains of up to only 5.5% for Apple & Pear and 9% for kiwifruit are required. These gains are within the normal static efficiency gains from deregulation (see footnote 13).