



# COMPETITION & REGULATION TIMES

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## THE GROWTH RACE at the OECD stadium

**Nobel-prize-winning economist Robert Lucas has commented that once one starts thinking about economic growth then it's hard to think about anything else. The Treasury's Bob Buckle and Nathan McLellan\* agree.**

### EDITORIAL

Over the period 1971 to 2002<sup>1</sup> New Zealand's per-capita GDP increased by more than 40%. But if its average growth over the same period had been half a percentage point higher, per-capita GDP would have increased by around 70% – and would have represented a substantial increase in material living standards.

Zealand's per-capita GDP was around 10% greater than the OECD mean; by 1992 it was around 20% lower than the OECD mean. This was not a steady decline: it occurred in two five-year periods. In the second half of the 1970s, New Zealand's OECD per-capita GDP ranking fell from 9th to 18th and it was overtaken by a number of middle-income countries. In the second half of the 1980s, New Zealand's per-capita GDP ranking only fell one further position (to 19th); and this was in spite of New Zealand's experiencing a substantial decline in its per-capita GDP. This shows that while a country's per-capita GDP ranking provides some useful information about its level of per-capita GDP relative to other countries, it can also conceal information about a country's relative growth performance.

Raising living standards is like a long distance race. Proper preparation is required to sustain growth and keep pace with other countries. And a country must be capable of short bursts of speed when the conditions suit, in order to catch up with the leading bunch or to get ahead.

Although New Zealand's per-capita GDP increased from 1971 to 1992, most other OECD countries had higher growth. So New Zealand continued to move forward over this period, but was passed by 11 other OECD runners. This is a familiar story: we all know it. What's less well known is that, since the early 1990s, New Zealand picked up the pace and ran at a slightly faster speed than the average OECD runner.

Since the early 1990s New Zealand has had a sustained increase in per-capita GDP growth. As a result, New Zealand has held its relative per-capita GDP level against the OECD average. This is seen in Figure 1.

#### Lifting our performance

The familiar story of New Zealand's relative per-capita GDP growth is told in Figure 1 (see next page), which shows New Zealand's and other selected OECD countries' per-capita GDP as a proportion of the OECD average.<sup>2</sup>

New Zealand has experienced other periods where per-capita GDP growth was similar to the OECD average – for example, the first half of the 1970s and the first half of the 1980s. However, the period 1992 to 2002 is unique. It's the longest period since 1971 in which New Zealand's average per-capita GDP growth has matched the pace of the OECD average. And in fact New Zealand's average per-capita *to page 2*

Because New Zealand grew slower, it experienced a relative decline during the 1970s and 1980s. In 1971 New



PHOTO: IMAGE SERVICES

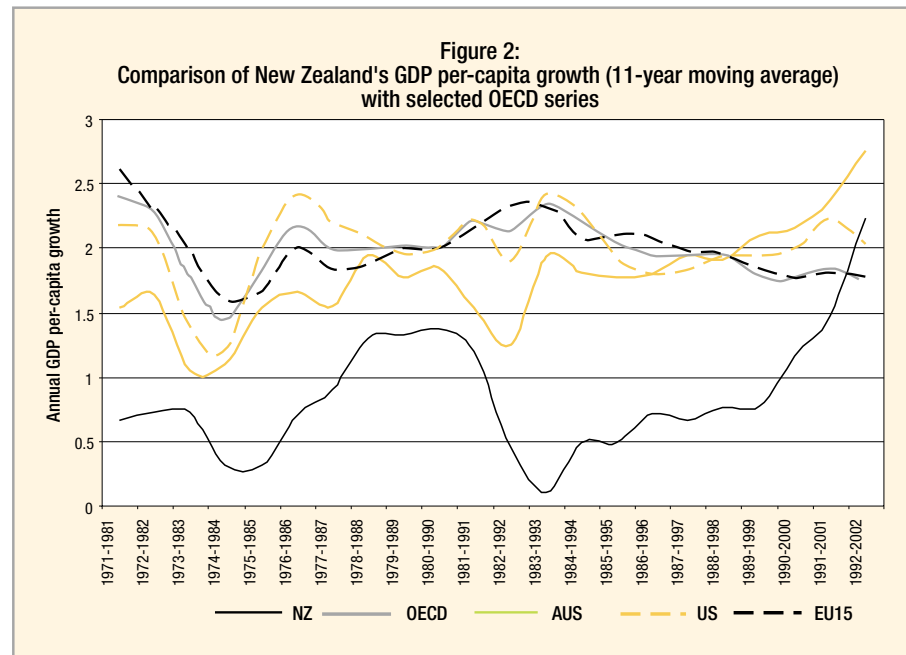
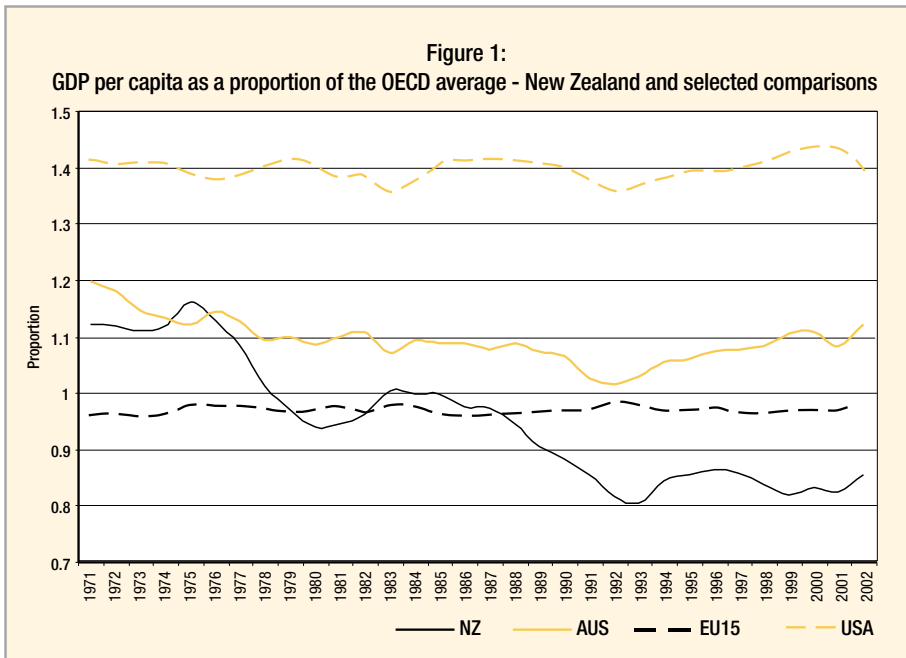
**\*Robert A Buckle** is a Principal Advisor, The Treasury, and an Adjunct Professor of Economics, Victoria University of Wellington. Prior to joining Treasury in December 2000 he was Head of the School of Economics and Finance at Victoria University where he specialised in open-economy macroeconomics and business cycles. Bob currently leads the Treasury research programme on New Zealand economic growth.

**\*Nathan McLellan** joined Treasury as a Policy Analyst in February 2000 after completing a Masters degree in Economics and Finance at Massey University. He has been a member of Treasury's Macroeconomic Forecasting team and is currently in the Policy Coordination and Development section, specialising on research into New Zealand economic growth, productivity, and business cycles.

*\*Although this article draws on research from Treasury's growth programme, the views expressed are those of the authors and do not necessarily reflect the views of The Treasury. Some of this research has been published in Treasury Working Papers (which are available from <http://www.treasury.govt.nz/workingpapers>). For further enquiries readers can contact the authors at The Treasury, telephone (04) 471 5252.*

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*cont'd from page 1*

GDP growth rate exceeded the EU15 and OECD averages over this period. All this is illustrated by Figure 2.<sup>3</sup>

The same picture also emerges when we look at aggregate GDP growth instead of growth in GDP per capita. What is more, this improved growth occurred even though New Zealand faced some adverse shocks, including the Asian financial crisis and two adverse climate shocks in

the late 1990s. Our preparation for the big race would appear to have improved.

What are the factors that contributed to the recovery in New Zealand's economic growth beginning in the early 1990s? This question can be approached from a number of angles. We could look at the contributions to aggregate growth from the inputs to production (such as labour and capital) and productivity. Alternatively, we could examine which sectors have contributed

to the recovery in aggregate GDP growth. Ultimately, we would also like to be able to explain, for example, why some sectors have contributed more to the recovery in GDP growth or why growth in the labour input has been a feature of the recovery in economic growth since the early 1990s.<sup>4</sup> This type of information helps us understand why growth occurred – and also the contribution of policy changes to this growth.

The recovery in New Zealand's economic growth has coincided with a change in New Zealand's industrial structure. This is evident from Figure 3 (see back page), which shows each sector's production as a percentage of aggregate GDP.

When a particular sector's GDP share is increasing, this indicates that the sector is growing faster than aggregate GDP. Between the late 1970s and 2002 there has been considerable change in New Zealand sector shares. The primary sector has had a rising sector share throughout the entire period; and the service sector has had a substantial rise in its share of total GDP since the mid 1980s. By contrast, manufacturing, construction, and government and community services have grown more slowly and have experienced declining shares.<sup>5</sup>

An alternative way of showing how the different sectors have contributed to the recovery in New Zealand's economic growth since the early 1990s is to examine the contributions to average GDP growth in the periods before and after 1992. This has the advantage of capturing increases in the contribution to aggregate growth from a particular sector, even if this sector is growing more slowly than the entire economy. This is seen in Figure 4 on the back page.

One of the striking features of Figure 4 is the substantial increase in the service sector's contribution to aggregate GDP growth, and to a lesser extent increases in the government and community services sectors' contributions. The manufacturing and construction services sectors contributed more to aggregate GDP growth in the period after 1992 than they had before – although the manufacturing sector grew more slowly than the economy as a whole, which is why its sector share declined. *to back page*

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# Junk Mail for Sale

Imagine if advertisers could not only put advertising leaflets in your mailbox, but make you pay for the cost of printing and delivering them. Farfetched as it might seem, that's exactly what happens in the world of e-mail. Richard Frogley explains.

In most traditional forms of advertising, advertisers bear the financial costs. For example, advertisers must pay for circulars to be designed, produced and distributed. Consumers still have to dispose of the leaflets, and take time to look at them, but most of the cost is borne by advertisers.

E-mail is different, because the cost to the sender is virtually the same no matter how many people a message is sent to.<sup>1</sup> By contrast, each recipient of the message uses bandwidth to download it. Even users on fixed monthly plans ultimately pay for this, as ISPs increase prices to reflect additional bandwidth costs. Consumers also spend valuable time looking at and deleting messages. For a widely distributed message, consumers bear most of the costs.

It's not surprising then that advertisers tend to be much less discriminating about what they promote by e-mail. Where a leaflet campaign might need a 1 in 50 response rate to be worthwhile, even 1 in 10,000 is still profitable for an e-mail advertiser.

The result has been an explosion in the amount of unsolicited e-mail advertising, known as spam. In the United States, the Federal Trade Commission estimates that more than 40% of incoming business e-mail is now spam, costing US businesses \$10 billion a year.<sup>2</sup> Webmail provider Hotmail filters out 2.4 billion incoming messages per day.<sup>3</sup> E-mail users now have to sift through a mountain of spam to find their legitimate e-mail.

There is a demand for, as well as supply of, information – not all advertising is unwanted by consumers. Most New Zealand households elect to receive mailbox leaflets, rather than opting out with the familiar 'no circulars' sign. This indicates some level of demand by consumers for information about products and special deals.

Similarly, there will be some level of demand for product information by e-mail. Websites now exist which allow e-mail users to provide information about themselves and so hear about products

likely to interest them. Some even go to the lengths of paying consumers to read this advertising.<sup>4</sup> But with almost all the cost and inconvenience of e-mail advertising borne by consumers, there is a flood of unsolicited advertising for products of no interest to the vast majority of recipients.

With such a small proportion of e-mail advertising carrying useful information, it's not surprising many users would rather put up the electronic equivalent of a 'no circulars' sign. Consumers have responded: numerous software programs are now in use that attempt to identify and filter out spam. But instead of allowing customers to opt out, spam senders now continually change their e-mail address and use deceptive subject lines to disguise their promotions as legitimate messages.

Telemarketing is another example of the problem where advertisers incur a small cost, while imposing a larger cost on consumers. While telemarketers can complete up to 20 calls an hour for low wages, most people receiving calls value the inconvenience much more highly. The US Congress has just passed legislation launching a national do-not-call register, and telemarketers can be fined \$11,000 for calling a listed number.<sup>5</sup> Consumers who place a high value on their time

and who have a low interest in products offered by telemarketers now have the choice to opt out.

Both spam and telemarketing make networks harder to use for their proper purpose. According to the US National Telecommunications and Information Administration, 55% of the residents of California pay a fee to have an unlisted telephone number.<sup>6</sup> Of these, more than half state their primary reason for having an unlisted number as avoiding telemarketing calls. Similarly, authors of online content are increasingly reluctant to publish their e-mail address. As Jeffrey Simpson at the Canadian Globe and Mail has said, providing your e-mail address at the end of your articles to encourage discussion isn't such a good idea.<sup>7</sup>

The conclusion is simple. Suppliers of e-mail advertising pay too small a proportion of the cost of their advertising, so they advertise too much. Consumers are responding.

**Richard Frogley** is a Masters student in economics and a research assistant at ISCR.

1 The estimated marginal cost of sending e-mail is 0.00032c per recipient ([http://www.unc.edu/~clea/Webpage/unsolicited\\_email.htm](http://www.unc.edu/~clea/Webpage/unsolicited_email.htm)).

2 *The Washington Times* ([www.washtimes.com/business/20030629-103835-5128r.htm](http://www.washtimes.com/business/20030629-103835-5128r.htm)).

3 Bill Gates, "Why I Hate Spam" ([www.microsoft.com/presspass/ofnote/06-23wjsjspam.asp](http://www.microsoft.com/presspass/ofnote/06-23wjsjspam.asp)).

4 [www.sendmoreinfo.com](http://www.sendmoreinfo.com)

5 [www.donotcall.gov](http://www.donotcall.gov)

6 [www.ntia.doc.gov/reports/privacy/selfreg1.htm](http://www.ntia.doc.gov/reports/privacy/selfreg1.htm)

7 [www.globeandmail.com/servlet/ArticleNews/TPPrint/LAC/20030628/COSIMP28/TPComment](http://www.globeandmail.com/servlet/ArticleNews/TPPrint/LAC/20030628/COSIMP28/TPComment)



# Governance of Māori Assets

Around \$500 million has already been distributed to Māori under the current Treaty settlements process; the Treaty of Waitangi Fisheries Commission is about to distribute further assets and interests under the 1989 and 1992 fisheries settlements; and a foreshores and seabeds settlement could now be in the offing. It's timely, says Richard Meade, to consider what protections are proposed or in place to ensure these settlements endure – and, in particular, that their value is protected for the enjoyment of future generations of Māori.

## GUEST ARTICLE



JOCELYN CARLIN/PHOTONEWZEALAND.COM

**T**he Māori desire to protect settlement assets is understandably strong, not least because these assets represent the best opportunity for Māori to claw back a measure of economic self-determination after 150 years of dispossession and privation. The wider New Zealand community is equally concerned to see the assets protected, since the costs of settlements can only increase if future generations of Māori do not enjoy the benefits of current settlements and so seek to have grievances settled once again.

A common response to the desire to preserve Māori assets for future generations has been to restrict the bodies that manage them.<sup>1</sup> Such restrictions often take the form of prohibitions on the transferability of these bodies, and they give rise to significant examples of 'agency' problems arising from the separation of ownership and control.

### Agency costs

Separation of ownership and control arises when asset owners cannot collectively manage their asset and instead delegate management to others (or to a subset of themselves). Problems arise because the asset managers' incentives diverge from those of the owners, giving rise to so-called 'agency costs'.

These costs can include those of managers

placing short-term considerations above the owners' long-term interests, managers paying themselves excessive remuneration and/or not working as hard as the owners might prefer, and direct costs such as audit costs. Agency costs are common to all manner of collectively-owned organisations – including public companies.

An additional source of agency costs arises where the interests of the current owners of an asset diverge from those of future owners. These costs, too, are not unique to corporately-owned Māori assets: most family trusts are set up for the benefit of future generations whose interests the trustees must consider.

In the case of Māori assets to be protected for future generations, however, these costs are potentially more severe. Trusts have limited lives and hence a proscribed number of potential future beneficiaries, whereas Māori-asset-owning bodies are apparently required to preserve the relevant asset for an endless succession of future owners whose interests are impossible to specify (let alone accommodate).

Various mechanisms are commonly employed to mitigate agency costs, by better aligning the interests of the asset owners and managers and by imposing sanctions on poor

management performance. Managers' remuneration can be tied to financial performance – and, where owners find manager performance hard to monitor, external debt can be used so that lenders undertake similar monitoring instead (and financial statements can be audited so that their veracity is independently warranted).

Where ownership in an entity is freely tradable, the threat of takeover – in which underperforming managers risk being replaced if their entity changes hands – provides an all-important sanction against poor performance. Owners also retain the ultimate sanction of exiting their investment if they disapprove of its management.

In the case of Māori entities that manage collectively-owned assets for future generations, non-tradable ownership is a mechanism commonly employed to ensure ongoing ownership of such assets. However, non-tradable ownership also limits the mechanisms available for mitigating agency cost.

While these entities enjoy the potentially unique corrective mechanisms that can be exercised by the wider family or cultural group in the event of poor management, they lack the all-important ability to quit the asset. At the same time, there is clear potential for conflict between current and future generations of owners: as a consequence of the inability to quit, future generations will find themselves holding the assets regardless of whether doing so is in their interests. Security of ownership is in this case traded off against performance disciplines on managers and (potentially) against the interests of future generations.

The importance of the absence of these mechanisms cannot be underestimated. The Treaty of Waitangi Fisheries Commission has recently proposed to allocate around \$630 million of fish quota and 'income shares' (non-voting dividend



rights) in Māori fishing company assets to Māori, neither of which will be tradable outside of Māoridom. Indeed, 'control shares' (voting rights) in the fishing companies are to be held in trust, potentially forever, and cannot be sold by Māori.

### The risks of non-tradable ownership

Entrenched restrictions on transferring control in fishing company assets to non-Māori owners in the event of poor or declining performance at best risks dooming those assets to underperformance and at worst heightens the risk of failure. It also ensures that future Māori own shares in fishing companies whether they like it or not – and these shares are, in effect, just shares in a volatile and risky commodity-based investment.

This would appear all the more problematic given advances in aquaculture and biotechnology that threaten the value of companies whose fortunes are tied to wild-stock fish quota, and given the potential harm to resource-based industries that results from global warming. These problems are accentuated for those iwi for whom the fisheries allocation will constitute essentially all of their asset base, tying them to an undiversified position.

Such control-transfer restrictions also raise the very real additional risk of constraining the fishing companies' ability to raise capital just when new capital is most required: that is, when their ongoing viability depends on it. After all, who would fund a failing fishing venture if they cannot then control the venture they have bailed out; who would entrust further capital to the very managers who presided over the demise of the venture in the first place?

If in the 19th century railroad shares had been settlement assets requiring protection for future generations, then it would have seemed a brilliant idea to lock Māori into owning such assets. Contemporary railroad experience would belie this.

The problem of locking Māori into any one industry sector by such restrictions is that it increases the risk that they will be 'ghetto-ised' in the increasingly globalised and technology-based world economy. They will be prevented from realising their collective investment in that industry before any decline sets in, and will be unable to divert their investment into industries more likely to benefit future generations.

Direct evidence on the consequences of such tradability restrictions is from the Alaskan Native

Claims Settlement Act passed in 1971, which transferred almost US\$1 billion and 40 million acres of land to 13 regional corporations owned by Alaskan natives. Various restrictions were placed on these corporations, notably on the sale of shares by their owners. The effects of this restriction were investigated by Karpoff and Rice,<sup>2</sup> who concluded:

*... the primary motive for the share transferability restrictions was a paternalistic desire to keep control of the corporations in Native hands. We believe the parties involved in the ANCSA legislation did not appreciate the importance of unrestricted residual claims [i.e. tradable shares] for the efficiency of the open corporation as an organisational form. That is, the restrictions on the organisational form of ANCSA firms resulted in the dissipation of Native wealth rather than its protection.*

These researchers also attributed increased rates of manager and board turnover, and heightened shareholder conflict, to this restriction.

More immediate consequences of a tradability restriction – in this case a 10% shareholding cap – can be seen in the recent disorderly control contest for Tower Corporation which followed dramatic falls in Tower's share price. This turmoil and the associated risk of Guinness Peat Group's obtaining significant influence (if not control) over Tower at a value discount rather than premium might have been avoided if the cap had not been in place. While it was initially justified as protecting Tower's policyholders-turned-shareholders from corporate raiders, the cap entrenches management and thwarts takeovers which could add or preserve value.

### Setting goals for governance

In principle it is preferable to specify goals in positive terms, rather than to impose restrictions which cannot improve the attainment of those goals. Entities for holding Māori assets might be better designed with the specific objective of maintaining and enhancing the value of such assets and, as in the Trustee Amendment Act, with specific reference to the need to consider the interests of future generations. Such a formula was adopted by Ngāi Tahu in its tribal 'charter'. This might also provide for processes governing the transfer of ownership which balance the interests of both present-day and future owners.

In doing this, Māori entities would strike a balance between unfettered and nil transferabil-



**Richard Meade** is principal of Cognitus Advisory Services Limited, a provider of commercial advisory services seeking to assist clients with strategic or analytical issues by drawing on the disciplines of economics, corporate finance, and quantitative analysis. With degrees from Victoria University (BCA, BSc, BSc [Hons]), Richard was an investment banker with Credit Suisse First Boston until 1998, specialising in mergers and acquisitions, privatisations, company and derivative valuation, and economic and corporate financial advice. He advised and represented Ngāi Tahu in its successful Treaty settlement negotiations with the Crown, and has advised various parties on fisheries allocation and other matters related to Treaty settlements. The views expressed in this article are the author's alone.

ity, and hence between unconstrained value-maximisation and the value loss imposed by the absence of transferability-based sanctions. They would also impose on asset managers a need to articulate what the interests of future owners might be, to make the tradeoffs between their interests and those of current owners more transparent and hence subject to critical appraisal and review.

The essence of these suggestions is that asset protection is not so much about imposing restrictions – it is more about instituting arrangements which ensure those assets are well managed, both now and in the future.

<sup>1</sup> It is also common to use restrictive bodies such as trusts to hold and manage those assets, and/or to encumber the assets themselves. A proper discussion of this is beyond the scope of this article.

<sup>2</sup> J M Karpoff and E M Rice. 1989. 'Organizational Form, Share Transferability, and Firm Performance: Evidence from the ANSCA Corporations'. *Journal of Financial Economics* 24 pp69-105.

# BUILD IT AND THEY MAY LEAVE!

## Asset-Stranding: Risk and Regulation

The modern economy presents many challenges for regulators and firms alike. One major concern is the ability of demand fluctuations – caused by competition or technological innovation – to strand the very infrastructure assets on which the new economy relies. As these vital assets are often subject to regulation, it is essential to understand how different regulatory regimes perform in this new economic environment. Steen Videbeck reports on recent research from ISCR's Lewis Evans and Graeme Guthrie which reveals that the type of regulation used has some very important implications for firms and their customers.



PHOTO: NICK SERWAN/PHOTONZEALAND.COM

**I**nfrastucture assets, such as telecommunication and electricity networks, require large irreversible investments in long-lived assets, which could be rendered redundant by declining demand. For example, fibre-optic networks have very long physical lives; and it would be very costly, if not impossible, to recover and reuse such networks if demand fell significantly.

The potential for such demand fluctuations is large in the modern economy. Possible sources of such 'customer churn' include technological change, industry competition, or even something as simple as a population shift. For example, a population movement from south to north may not affect total demand – but the southern part of the network will be under-utilised while the northern part must be expanded.

Thus the combination of irreversibility and uncertainty means that assets' physical lives are likely to be longer than their economic lives, a phenomenon commonly known as asset stranding.

The risk of stranding is compounded when the firm has a universal-service obligation, forcing it to service all potential customers. Short-term increases in demand then require the firm to expand capacity (unless it has previously built excess capacity into the network); but irreversibility means that if demand falls back to its original level then the firm is left with too much capacity. In effect, the firm is granting its customers an option to abandon the firm at some future date. As with many options, this one is most valuable (or, from the firm's point of view, most expensive) when volatility is high.

Infrastructure industries have been heavily regulated in the past, with the incumbent typically protected from entry. But the regulatory regime is changing and regulators are actively encouraging competition. This change in approach will lead to even greater demand fluctuations, as consumers now have the option to switch to the regulated firm's competitors – which in turn makes asset stranding more likely.

Another change in the regulatory regime has had an even greater impact on the risk of stranding. Traditionally, infrastructure assets were subject to rate-of-return regulation. With this type of regulation, a regulated firm's allowed revenue was based on the historical cost of its assets, and the rate of return was set in such a way that the firm recovered its costs over the physical lifetime of these assets. Now regulators around the world are favouring an alternative approach – incentive regulation.

### **New ways – new rules**

Under incentive regulation, the asset base from which allowed revenue is derived is the replacement cost of the firm's assets. This cost reflects the current demand for the network, as well as the state of technology. Thus if customers leave the network, or if a new and cheaper technology becomes available, the firm's allowed revenue will fall. This is quite different from what happened under traditional rate-of-return regulation: the

firm is no longer guaranteed the recovery of its actual investment cost, and so is exposed to the risk of asset stranding.

Since traditional rate-of-return regulation guarantees the firm its money back, it is reasonable that the firm be allowed to earn the risk-free interest rate on its actual investment. However, if the firm must bear the risk of asset stranding (as will be the case under incentive regulation) then it needs to be allowed to earn a higher rate of return.

We can think of this as an insurance premium which the firm earns for bearing the risk of asset stranding, or as the value of the abandonment options which it grants its customers when they join its network. This premium should be high enough for the firm to be financially viable, and low enough for customers to pay no more than is necessary. Any trend in demand affects this premium: if demand is expected to rise over time, the probability of stranding will be low and so the premium can be small; but if demand is expected to fall, then stranding is more likely and so the premium is relatively high.

Another key determinant of the premium is the variability of demand, since large changes in demand have a disproportionate impact on the risk of stranding. A large increase in demand which is quickly reversed leaves the firm with considerable excess capacity, while a smaller increase (which is also quickly reversed) is less costly. Simulations calibrated to actual networks suggest that this premium could be as high as two percentage points.

#### Who bears the risk?

These two forms of regulation allocate the risk of asset stranding in different ways. Under traditional regulation, if customers abandon an asset then the burden falls on those who remain (because the allowed revenue is calculated on the historical cost of the asset). Therefore consumers bear the risk of asset stranding. By contrast, the higher allowed rate of return under incentive regulation means that customers pay for their option to abandon the network while they are still connected. The risk of asset stranding is borne by

the firm's shareholders and, because shareholders are better able to diversify this risk, overall welfare is higher under incentive regulation than under traditional regulation.

The two forms of regulation have different effects on the regulated firm's investment incentives. If a firm is guaranteed recovery of the cost of any investment (which is what happens under traditional regulation), it may 'gold plate' assets and even invest when doing so is unnecessary. Traditional regulation thus results in inefficient investment. Not only do consumers bear the risk of asset stranding, but this risk is also greater than it need be. Incentive regulation, however, allows the regulator to delegate investment decisions to the firm – since the firm's investment policy coincides with one which maximises welfare.

#### And the winner is ...

While traditional regulation may be feasible when entry is prevented, serious problems arise where a regulated incumbent competes with unregulated entrants. Traditional regulation will accelerate the decline in customer numbers: if customer numbers fall, the burden of generating the regulated firm's guaranteed revenue falls on the remaining customers – who are thus more likely to abandon the network in favour of one of its competitors.

Furthermore, the regulator's commitment to guaranteeing the regulated firm a reasonable revenue flow is not credible: a regulator is unlikely to allow the incumbent to collect more revenue from each of its remaining customers after it loses market share to a competitor. Nor will a regulator levy the entire industry to support an incumbent firm's loss of customers to competitors, since to do so will inhibit the process of competition.

So which is the better regulatory regime? Under incentive regulation, not only is the risk of asset stranding reduced because of powerful investment incentives; the remaining risk is also allocated more efficiently, as those who are best able to bear this risk do so. Thus in a world where the threat of asset stranding is so real, incentive regulation emerges as the clear winner.

*The full paper entitled "Asset Stranding is Inevitable in Competitive Markets" is available at [www.iscr.org.nz](http://www.iscr.org.nz). Lewis Evans presented this paper at the Advanced Workshop in Regulation and Competition's 16th Annual Western Conference in San Diego in June.*

**Lewis Evans** is the Executive Director of the ISCR and **Graeme Guthrie** is a Senior Lecturer at the Victoria University of Wellington's School of Economics and Finance. **Steen Videbeck** is a Masters student in economics and a research assistant at ISCR.



## Measuring and Developing the Performance of New Zealand's Power Market

**ELECTRICITY MARKETS WORLDWIDE** are in a state of flux. The New Zealand market has its own distinctive features.

This seminar reports on recent research into aspects of the New Zealand wholesale electricity markets relevant to market evolution.

To be held on **Thursday  
4 September** at the  
**Duxton Hotel**,  
Wakefield Street, Wellington.

Registration fee: \$300 per person (includes GST). Contact ISCR for further information  
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fax 04 463 5566.



# Commercial Law and Regulation: Harmonisation vs Competition



PHOTO: NICK SERVIAN/PHOTONZEALAND.COM

**In the last five years there has been considerable discussion of the benefits of harmonising New Zealand commercial law and regulation with that of Australia or with an OECD norm. Neil Quigley believes this discussion has placed too little weight on commercial law and regulation being efficient in terms of the specific institutional features of the New Zealand economy.**

**D**uring the period of economic reform from the mid 1980s until the mid 1990s, New Zealand actively pursued a policy of adopting laws and regulations which provided low compliance and transaction costs for firms – even if these laws and regulations were different from those of its major trading partners. In effect, these policy interventions were a form of regulatory competition.

The international literature on regulatory competition focuses on states which operate within a framework of mutual recognition such as that provided by federal systems (the US, Canada and Australia) or the European Union. This approach has limited applicability to New Zealand because of our high degree of political independence from even our closest trading partner (Australia) and because of our geographical isolation.

## **The relevance of regulatory competition**

The concept of regulatory competition has relevance to New Zealand when the competition is viewed as being that required to attract investment and labour. New Zealand competes for internationally mobile capital and labour which will be applied to activities based in New Zealand – and the more efficient its commercial regulation, the more of both factors of production it attracts.

While commercial regulation may not be the pre-eminent factor in a business investment decision, it is likely to have a significant impact on the expected return from the investment and thus on the aggregate amount of investment in the economy. This suggests that competition focused on providing the most efficient commercial regulation (in the context of the relevant markets in New Zealand) may have a net positive effect on social welfare.

For New Zealand, the key lesson from the regulatory competition literature is that cross-country heterogeneity in law and regulation may be efficient. Such heterogeneity allows New Zealand to implement the most efficient environment within which firms can operate and grow. Regulatory competition focuses attention on the need to ensure first and foremost that the legal and regulatory framework is conducive to maximising the long-term growth of all commercial entities in New Zealand. Whether this is a framework that is unique, incorporates elements of regimes from other countries, or is exactly the framework of other countries, is at best a secondary issue.

## **The illusion of harmonisation**

Recent enthusiasm for harmonisation has been based on the view that policy independence and



regulatory competition are associated with high costs for the New Zealand economy. This approach emphasises that:

- (i) It is unlikely that such a small country can consistently produce 'better' laws and regulations than larger countries.
- (ii) Harmonisation of commercial law and regulation would increase the body of precedent, analysis, and interpretation that is available to guide New Zealand firms and policymakers.
- (iii) Harmonisation of commercial regulation with Australia or an OECD norm is likely to result in more firms locating in New Zealand and in New Zealand firms expanding more rapidly. Superior growth prospects for New Zealand firms are claimed to flow from the fact that the firms' cost of capital will be lower than under regulatory competition (because investors will be more willing to invest in them if they operate within a familiar framework of commercial regulation) – and also from the fact that overseas expansion will be easier because firms will already comply with international standards of commercial regulation.

It is, however, easy to overstate the economy-wide benefits from harmonisation.

The harmonisation of laws may provide benefits to those firms who operate in more than one jurisdiction. But it may impose higher transaction and compliance costs on the vast majority of firms who operate only in the domestic market. By creating a regulatory or legal regime that is inefficient in terms of the unique features of New Zealand's economy, harmonisation may also make New Zealand investment opportunities less attractive to foreign and domestic investors. Thus harmonisation may provide short-term gains – but it may, in the long term, slow the growth of domestic firms and of the economy as a whole.

Where mutual recognition agreements can be negotiated, these will lower the transaction costs associated with trade and multinational investment. The costs of mutual recognition per se are not high (provided that legislative change is not required and that no additional compliance costs are imposed). However, there will be clear net

benefits from mutual recognition only if such a regime leaves New Zealand free to adopt laws and regulatory frameworks which maximise the long-term growth of all firms in New Zealand.

Even if New Zealand and Australia had a comprehensive mutual-recognition regime covering all aspects of commercial regulation, New Zealand would not necessarily be in competition with Australia to attract firms wanting to supply the Australian market. Such firms will certainly find the costs and risks of operating from New Zealand to be too high, no matter how efficient New Zealand's commercial regulation is. This is because the costs of being at a distance from the largest markets and

## “ THE FOCUS OF DEBATE ABOUT COMMERCIAL LAW AND REGULATION IN NEW ZEALAND SHOULD CONTINUE TO BE ON THE LONG-RUN EFFICIENCY OF LEGAL AND REGULATORY FRAMEWORKS. ”

from the managers of the operating divisions of the firm outweigh any of the benefits associated with more efficient regulation.

Harmonisation of laws may provide the benefits of a wider body of precedent and interpretation. If local interpretation of laws and regulations is required, however, then precedents and interpretations from other jurisdictions will be of more limited value. As well, the transaction costs imposed by the need to understand unique elements of the legal and regulatory regime in each country are unlikely to be reduced to any significant extent.

As long as commercial laws are interpreted by New Zealand regulators, enforced by New Zealand courts, and subject to change through political processes in New Zealand, then investors in firms domiciled in New Zealand will still have to acquire an understanding of the local environment rather than simply utilising their knowledge of Australia's. Unless the adoption of harmonised laws and regulations is accompanied by the adoption of a single legal and regulatory framework for enforcement, net social benefits from harmonisation are unlikely even in the most optimistic scenarios.

New Zealand will benefit most from regulatory competition designed to create a regulatory environment that is efficient in the context of New Zealand markets rather than one that is efficient in the context of Australian markets. Adopting laws and regulations that are optimal for the firms New Zealand does have, rather than adopting laws and regulations that offer the vain hope of attracting Australian firms into New Zealand, seems likely to provide the greatest benefits to New Zealand.

### **Focus on superior efficiency**

The focus of debate about commercial law and regulation in New Zealand should continue to be on the long-run efficiency of legal and regulatory frameworks in promoting commercial activity in New Zealand. In most cases the benefits from harmonisation per se are unlikely to be large enough to drive the adoption of exogenous legal and regulatory frameworks.

New Zealand may wish to adopt Australian laws where they are considered to be superior to those in New Zealand. However, this is purely a matter of superiority, not a matter of harmonisation. Any case for the adoption of exogenous legal and regulatory frameworks must therefore be made on the basis of the superior efficiency of the foreign approach.

**Neil Quigley** is Pro Vice-Chancellor (International) and Professor of Economics at Victoria University of Wellington and a Research Principal of ISCR.

# IT'S THOSE PIPES AGAIN!

Telecoms companies have pipes and not enough water, reckons Bronwyn Howell.

In the world of telecommunications companies, it's no secret that average revenues per user (ARPU) from services provided on traditional fixed-line networks or the 'plain old telephone system' (POTS) have been steadily declining over recent years.

While some of this decline has resulted from lower prices to customers as a result of increased competition in what were once regulated monopoly markets, evidence from both the United Kingdom<sup>1</sup> and New Zealand<sup>2</sup> shows that the number of minutes of voice traffic on the local loop has also been declining. In markets such as the United Kingdom, where local calls are charged on a per-minute basis, this is resulting in a 'double hit' on ARPU. In New Zealand, where local calls are unmetered or 'free' under the Telecommunications Service Obligation (TSO – previously known as the 'Kiwi Share'), declining local call volumes have a lesser impact upon ARPU. But in both markets there's considerable evidence suggesting that consumers are substituting calls on mobile networks for some calls which previously occurred on the local network. The consequence is a declining ability to increase revenue from voice-based calls on POTS.

Since widespread diffusion of the internet from the mid 1990s, however, telecommunications companies have been insulated against the effects of declining local voice call minutes by very large increases in data traffic on the POTS. Indeed, in New Zealand, for every minute spent on

local voice calls nearly three are spent connecting dial-up modems to the internet (Figure 1). Steady growth of internet data traffic has more than compensated for declines in local voice traffic. As a consequence, data traffic is seen as the salvation of POTS. As long as there is growth in data, the value of the POTS remains – even though ARPU is declining. The ARPU challenge becomes one of adjusting charging models to extract more revenue out of increasing data traffic.

## Hitting the wall

This scenario appears to offer some promise to the telecommunications industry, but for one snag. New Zealand evidence shows that average monthly data traffic per internet account has reached a plateau, and that it's beginning to decline in the classic manner exhibited by all other mature telecommunications infrastructures (Figure 2).

This decline in traffic cannot be accounted for by transfers of dial-up customers to broadband technologies, as the switch to these technologies in New Zealand has been very low compared with that in other OECD countries. Instead the evidence suggests that, with New Zealanders having been amongst the earliest adopters and most avid users of dial-up internet access, maturity has now been reached – at least for the current uses to which internet access is being put. The new adopters of dial-up internet are late

adopters whose use of the technology is low compared with that of existing users.

Furthermore, the evidence suggests that existing users have stopped increasing their use of dial-up – either because they've undergone all the learning that's required to maximise the benefits of current applications, or because there are very few new applications that they want to use.

## Have pipe – need data

What does this analysis mean for telecommunications companies who have 'bet the farm' on a future with increased data traffic? It suggests that focusing on building more 'pipes' to carry data may be flawed. The real driver of increases in ARPU lies in creating compelling data-based applications that will offer users larger benefits from increased use of the internet.

The 'pipes' that already exist must have 'water' flowing through them to generate an income. New Zealand evidence suggests that the internet-data deluge is starting to dry up, and that more challenges to ARPU lie ahead if the applications issue is not addressed.

**Bronwyn Howell** is a Research Principal of ISCR and is completing her PhD.

1 Oftel. 2001. *The UK Telecommunications Industry: Market Information 2000/01* (<http://www.oftel.gov.uk>).

2 MED. 2001. *New Zealand Telecommunications 1987-2001*. New Zealand Telecommunications Information Publication No. 8. Ministry of Economic Development Resources and Networks Branch, Wellington.

3 OECD. 2003. *Communications Outlook 2003* p139.

Figure 1: Total PSTN and Mobile Market

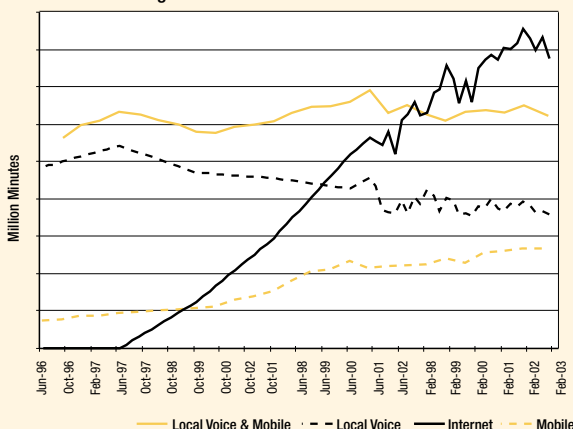
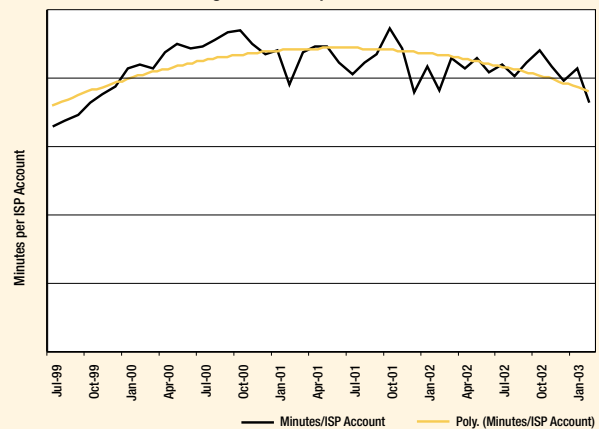


Figure 2: Dial-Up Utilisation



# GOING, GOING, ... GONE, GONE AND GONE

## Auctioning an Item with Multiple Units

Auctions are an established method of valuing items in transactions that go as far back as 500 B.C. More recently, their use has been encouraged by the availability of e-communications – bringing more buyers and sellers together at lower cost. Auctions for multiple units of a single item are also growing in popularity. The list of examples is expanding – it includes telecommunications spectrum or emissions permits with a number of similar licences, Treasury bills with a number of bills of the same term, and electricity markets with identical units of electricity. Kevin Counsell provides an insight into ways such auctions are run and their implications for bidder behaviour.

**A**s in a single-unit auction, bids in a multiple-unit auction can be either announced by bidders (an open auction) or submitted privately by each bidder (a sealed-bid auction). Most multiple-unit auctions are sealed-bid auctions, although some (such as spectrum auctions) are open auctions.

In a sealed-bid multiple-unit auction, bidders submit a bid detailing how many units of the item they are prepared to buy at specific prices. For example, a bidder may bid \$10 for one unit, \$5 for a second unit, and \$2 for a third. Another bidder may submit respective bids of \$9, \$7, and \$1. The units will then be allocated from the highest bidder downwards until the total supply of units is exhausted. In the example above, if there were three units available, the first bidder would win one unit (with a highest bid of \$10) with the other two units going to the second bidder (with the next two highest bids).

### The complexities of pricing

Of course the amount each bidder actually pays for the units they win depends on the auction's pricing rule. Two common rules are uniform pricing and pay-as-bid. Under uniform pricing, all winning bidders pay the same price – the lowest winning bid – on all units won. And this lowest winning bid ensures that demand completely exhausts supply (\$7 in the example above). On the other hand, with pay-as-bid, winning bidders pay exactly what they bid for each unit won – and this may differ across bidders.

The question of which pricing rule is the best is the subject of much debate, and it depends on the circumstances.

In a competitive uniform-price auction,



bidders will bid at their true value for the item – if they bid below this they risk not winning, but if they bid above they risk winning units but paying more than they value them at. However, a bidder with market power (that is, bidding for a relatively large number of units) might expect that one of their bids will be the lowest winning bid which will then determine the 'uniform price'. Hence that bidder has an incentive to submit a bid that is lower than their own value of the units. This lowers the price that they pay on all units of the item they win, even the price of units they bid for at a higher price. To go back to the earlier example: if the second bidder knew the bid of \$7 would set the uniform price, they may have bid

lower at say \$6 – still winning two units but paying a lower price all round.

Pay-as-bid auctions have their problems too. A bidder will always want to obtain the lowest price possible for the item. In the example, the first bidder bid \$10 for one unit of the item – but the lowest winning bid turned out to be \$7. In a pay-as-bid auction, the bidder could have bid closer to \$7 and still won one unit of the item (but at a lower price). So bidders have an incentive to estimate the lowest winning bid and to bid only slightly above that. This can disadvantage smaller bidders, who may have fewer resources available to estimate this price. It may even discourage them from entering the auction in the first place. In contrast, a uniform-price auction may encourage entry by small bidders who can free-ride on the low prices set by dominant bidders.

One further drawback to a pay-as-bid auction: guessing the price introduces the phenomenon of the 'winner's curse'. A bidder who wins units of the item is likely to be the bidder who has most-overestimated the lowest winning bid. Hence this bidder is likely to have paid more for the item than it is actually worth. Knowing about the 'winner's curse' induces bidders to bid more cautiously.

And the key lesson? It's that no auction format is perfect. Indeed, in some markets (such as electricity) the two forms of auction are combined – but that's another story.

**Kevin Counsell** is a Masters student in economics and a research assistant at ISCR.

<sup>1</sup> An early and famous example occurred in A.D 193 when the entire Roman Empire was overthrown and auctioned to the highest bidder.

<sup>2</sup> A full paper comparing uniform-price and pay-as-bid auctions is available from the ISCR website ([www.iscr.org.nz](http://www.iscr.org.nz)) under Work in Process.



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The construction sector grew at a similar rate to the economy. The primary sector's contribution to aggregate GDP growth remained fairly constant over the whole period.

### Deregulation as a catalyst for change

There are a number of possible explanations for the changing industrial structure and for the rapid growth of the services industries. Services are an increasingly important component of most modern economies. Nevertheless, industry deregulation appears to have been an important catalyst for the change in New Zealand's industrial structure and the recovery in economic growth.

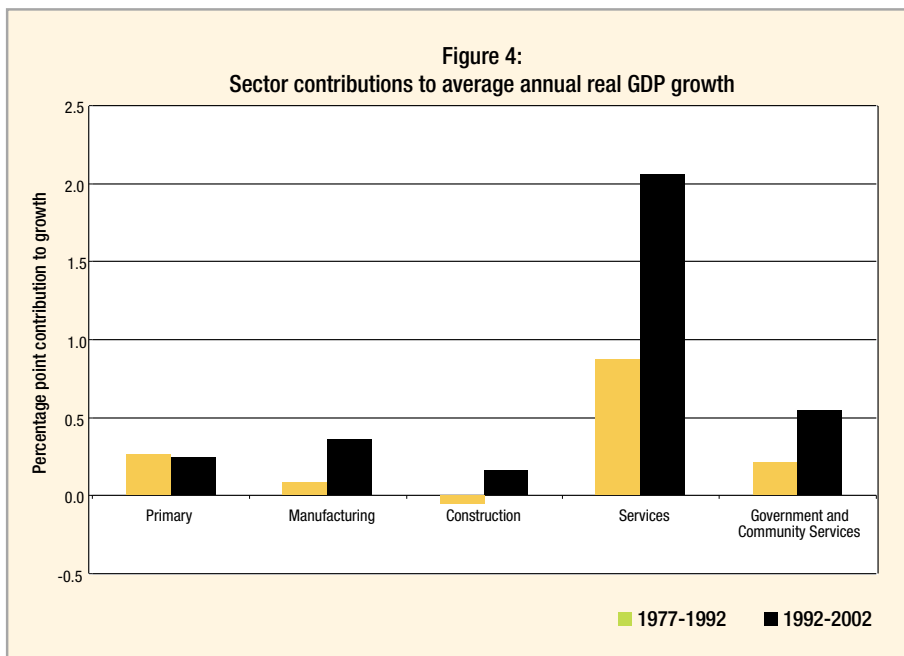
To take one example: the deregulation of foreign-exchange trading, the end of restrictions on ownership of financial institutions, and the removal of credit-growth guidelines and interest-rate controls is likely to have facilitated the jump in the finance and business services industry's share of GDP in the second half of the 1980s.

Likewise, the increase in the transport and storage industry's share of GDP may reflect the impact of deregulation on the transport industry in the 1980s. This industry had previously been regulated to benefit government-owned rail at the expense of road transportation; and the removal of quantity restrictions on road and rail carriage and the removal of quantity licensing of trucking (both of which occurred in the mid 1980s) are likely to have increased the flow of transport activity. The opening up of domestic aviation and the corporatisation of ports are also likely to have spurred activity in transport and storage.

Industry deregulation and a changing industrial structure, coupled with changes in policy institutions that have meant an end to abrupt policy changes, appear to be important explanations for the recovery in New Zealand's economic growth. These changes could be interpreted as improving the ability of the New Zealand economy to sustain the long-distance race and preparing it for the occasional burst of speed when conditions are suitable. Indeed, these conditions emerged with the improvement in the terms of trade and the long international boom during the 1990s. During this period New Zealand managed to pick up the pace and keep in touch with the leading bunch of OECD countries – although Australia sprinted ahead.

There are other perspectives that could be used to investigate the improvement in New Zealand's economic growth. For example, has this burst of growth come from increased productivity, or from labour and capital inputs to production? And why did Australia manage to sprint ahead? These questions will be addressed in a subsequent article.

- 1 All years are March years. All GDP data are in real terms.
- 2 The OECD average is population weighted and excludes the former Soviet bloc countries – the Czech Republic, Hungary, Poland, and the Slovak Republic.
- 3 Per-capita GDP growth is calculated using a geometric growth rate as used in: P Mawson. 2002. *Measuring economic growth in New Zealand*. New Zealand Treasury Working Paper 02/14 (<http://www.treasury.govt.nz/workingpapers/2002/02-14.asp>).
- 4 For a discussion of the contribution of different shocks to New Zealand business cycles see: R A Buckle, K Kim, H Kirkham, N McLellan, and J Sharma. 2002. *A structural VAR model of the New Zealand business cycle*. New Zealand Treasury Working Paper 02/26 (<http://www.treasury.govt.nz/workingpapers/2002/02-26.asp>).
- 5 Further discussion of changes in New Zealand's industrial structure is provided in: R A Buckle, D Haugh, and P Thomson. 2001. *Calm after the Storm? Supply-side contributions to New Zealand GDP volatility decline*. New Zealand Treasury Working Paper 01/33 (<http://www.treasury.govt.nz/workingpapers/2002/01-33.asp>).



**Figure 3: Shares of New Zealand GDP – by individual sector**

