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how CAN you know... what you DON'T (or CAN'T) know?

In January 2010 the Government introduced a continuous disclosure regime for New Zealand's nine largest state-owned enterprises (SOEs). But what's the purpose of continuous disclosure for firms with no tradable ownership interests? And will the regime achieve its objectives? Talosaga Talosaga and Dave Heatley investigate.¹

Inherent in the separation of ownership and control in publicly listed companies (PLCs) is the problem of asymmetric information: the board and managers of a firm have better information about the firm than do the shareholders. In particular, as they exercise day-to-day control, they know what they intend to do with the company's assets in the future, something that the shareholders cannot know unless the board and managers specifically inform them. Such asymmetric information creates three types of risk for shareholders: insider trading; trading on the basis of out-of-date information; and managerial opportunism.

The three risks of asymmetry

Insider trading occurs when a person (an 'insider') who has material information that's not widely available about a PLC uses that information to profit from trading shares with someone who does not have the same information (an 'outsider'). Outsiders, fearing that the counter-party in any trade may be better informed, will discount the price they are willing to pay or will expend resources trying to acquire the inside information. Continuous disclosure reduces this information-asymmetry risk by requiring the information be released as soon as it becomes known to the firm's managers.

Even if no insider trades occur, asymmetric information creates a risk for investors of making trades based on out-of-date information. Fearing that their information is stale, investors

may lower the price they are willing to pay. Once again, continuous disclosure reduces this risk by ensuring that everyone is trading on the basis of up-to-date information.

The third risk from asymmetric information arises because managers do not always act in the interests of shareholders, who consequently need effective mechanisms to incentivise and monitor management performance. These mechanisms enable shareholders to sanction poor, and reward good, performance; but their effectiveness is constrained by the quality and timeliness of the relevant information. For example, managers can delay bad news in the expectation (or hope) of being able to blunt it with subsequent good news. Such actions give shareholders a misleading picture of management performance, and undermine their ability to select and retain a management team that maximises returns. When managers are required to release information that they would rather withhold (including evidence of managerial opportunism) shareholders are better able to constrain management.

Continuous disclosure must be credible

A continuous disclosure regime will only be able to reduce these risks if the regime itself, as well as the information provided, is credible. If investors believe the regime is not being fully complied with, then the investor risks remain. Full compliance requires the effective deterrence of non-

compliance – and effective deterrence requires identification, detection, and punishment.

Identification in this context means that it must be possible to evaluate whether or not a particular piece of information is subject to the disclosure regime or not. The 'material effect on the share price' criterion is helpful here, as share price responses to new information (however released) are readily observable.

Detection means it must be possible to identify when a specific instance of non-disclosure has occurred. After all, if there is no possibility of a non-disclosure being detected, then withholding will likely occur – even when a disclosure obligation exists. Those who monitor and enforce disclosure agreements 'can never know what they cannot discover'. An act of insider trading actually aids enforcement of a disclosure regime, as a significant share-price change otherwise unexplained by information releases would indicate that investigation of non-disclosure is warranted.

Punishment refers to the consequences of non-compliance. To ensure compliance, severe sanctions for non-compliance are required. A verbal warning or proverbial slap with a wet fish will not suffice. By way of comparison, insurance contracts often include terms to address non-disclosure of information that may have a material effect on the risk associated with cover – and (typically) the lower the

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probability of detection, the higher the penalty. Thus non-disclosure of a criminal record may lead to the whole policy being declared void. Stiff penalties imposed on those caught not disclosing become a strong deterrent for other potential non-disclosers.

In the case of NZX-listed companies, the Financial Markets Authority can issue a disclosure order (which carries a maximum penalty of \$30,000 if not obeyed) and the courts can impose fines of up to \$1,000,000 per defendant.

Effect on a firm's performance

Although the primary focus of continuous disclosure is on reducing investor risk, other stakeholder relationships with the firm can be affected by asymmetric information. Risks for a firm's suppliers, customers, debt-providers and employees are all reduced by accurate and timely information about the firm's financial state. As these risks can be expected to be priced into input factors, continuous disclosure thus has wider economic benefits for the firm and also for its owners.

What happens without tradable shares?

So what is the purpose of imposing continuous disclosure on SOEs? As they are fully owned by the government and have no tradable shares, the first two risks from asymmetry (insider trading and out-of-date information) are not applicable. And because government ownership provides an implicit guarantee of the SOE's financial state, risk levels for the SOE's other stakeholders are already low – which reduces increased disclosure's potential benefits for those who trade with the SOE.

However, the risk of managerial opportunism remains. For the continuous disclosure regime to reduce or eliminate this problem it firstly needs to be credible – otherwise observers will assume that at least some relevant information is being withheld. Secondly, those receiving the information must have a mechanism for controlling the selection and retention of the management team. In the PLC case, this control mechanism is tied to share

ownership. There is no obvious analogy in the SOE case, except perhaps an extremely weak political accountability: citizens (who bear the ultimate risks of poor financial performance by SOEs) have poor incentives to monitor and little ability to influence the shareholding ministers who exercise control rights over the SOEs.

Is the SOE regime credible?

SOE managerial performance is subject to scrutiny by the Crown Ownership Monitoring Unit (COMU), giving shareholding ministers access to information not normally provided to shareholders of listed firms. However, an additional benefit from an SOE continuous disclosure regime might be the board's and managers' voluntary disclosure of information that is relevant to the SOE's performance but is neither observable from trading activities nor discoverable by COMU in the course of its monitoring activities.

If such a disclosure regime is to be credible, there must be some possibility of non-compliance being discovered *and* severe penalties when it is. But curiously, under the new regime, SOE managers face no formal penalties for non-disclosure: there is simply an expectation from the relevant shareholding ministers that the regime will be complied with. Moreover, no agency has been assigned the responsibility for detecting non-compliance.

SOEs are poor disclosers

In the absence of either a reasonable risk of detection of non-disclosure or meaningful sanctions if it ever was discovered, there would seem to be few incentives for SOE boards and managers to actually disclose any additional information under the SOE continuous disclosure regime – and, almost certainly, less information would be disclosed than if the SOE was listed on the NZX.

Empirical evidence appears to bear this out. We paired up each SOE with a PLC of a similar size from the same industry, and compared the number of price-sensitive disclosures made by each group of nine companies over the first sixteen months of the SOE continuous disclosure regime (see Table 1). The PLCs in

our sample made more than three times as many disclosures as their paired SOEs did. As the paired firms are of similar size, it is unlikely that the listed firms had been four times busier than the SOEs. The most likely explanation is that, as predicted, the SOEs failed to make all disclosures that should have been classed as material (and that would have been disclosed, had the firm had a defined ownership interest and been listed on the NZX).

Table 1

| Number of disclosures | SOEs | PLCs |
|-----------------------|------|-------|
| Average | 4.33 | 15.11 |
| Highest | 11 | 39 |
| Lowest | 1 | 3 |

Operation through other mechanisms

Transferring a tool from one institutional environment to another gives no guarantee of success in the new environment. We have shown that, in the case of continuous disclosure, the underlying rationale from the PLC environment does not translate simply into the SOE environment. Key benefits from a continuous disclosure regime rely on a tradable shareprice. Furthermore, continuous disclosure in listed firms relies on independently verifiable evidence that relevant information has not been fully disclosed and on strong penalties when non-disclosure is detected – neither of which feature in the SOE regime.

If the SOE continuous disclosure regime is to have a positive effect on SOE performance, penalty and monitoring arrangements must change. Alternatively, partial or full listing on the NZX would provide access to the benefits that rely on tradable shares and the credible deterrence of non-disclosure.

¹ This article is based on: T Talosaga, D Heatley & B Howell (2011) 'Can continuous disclosure improve the performance of state-owned enterprises?' (available at www.iscr.org.nz/f648,18373/18373_Continuous_disclosure_Final.pdf).

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The Day the Music Died?¹

Bronwyn Howell finds evidence that rumours of music's demise have been greatly exaggerated.

Submissions from the recorded-music industry in support of increased powers of copyright enforcement give the impression that Napster and other file-sharing software signalled the arrival of the anti-Christ. Visions are conjured up of great Satanic powers laughing with delight at sacrificial burnings of the very sources of creative endeavour. Without virtuous legislators crusading against copyright infringement, the returns will be so insecure that artists will reduce the effort they put into creating great music, its quality and quantity will fall, and we'll be left sitting in Don McLean's chevy at the levee drowning our sorrows (silently?) in 'whiskey and rye'.

On the other side of the debate, however, it's argued that whilst Napster et al may alter the economics of music distribution, the effect on the underlying incentives to create are at worst unaffected and at best increased. With lower costs of distribution, more talent will be heard by more people, reducing barriers that might otherwise have retarded the cream of great talent rising to the top. Metaphorically speaking, the deaths of Buddy Holly (and Ritchie Valens and The Big Bopper) in the 1959 plane crash that initially inspired Don's song were tragedies - but in the wake of bourbon-fuelled mourning, an arguably even greater creativity within Don McLean had its chance. What's more, with improved and cheaper technology, Buddy, Don, and their heirs and successors can make even more of us smile.

Up till now, the debate between the opposing 'death of music' camps has been based more upon ideological positioning than empirical evidence. However, Joel Waldfoegel (the killjoy who calculated the deadweight

loss of unused and unloved Christmas and Hanukkah gifts in 1993 at over US\$40 billion)² has recently compiled a novel dataset that sheds some light on the subject.³ This dataset enables a quality-controlled comparison of the quantity of new (post-Napster) music albums against both the level and trend of releases pre-Napster. It also allows insights to be gained on the volume of new songs released since iTunes revitalised the cult of the 'single'.

Waldfoegel collected data from professional critics' retrospective rankings of songs and albums from multiple years since 1960. As these rankings are from different years, there's a time-constant quality threshold for inclusion: the critics will include a recent item only if its quality surpasses that of an older item. If the quality of music has fallen post-Napster, then it would be expected that the critics' post-Napster preference lists would include a larger number of older items. By counting the number of new items that enter the critics' lists each year, the

quantity of new post-Napster quality items can be compared against what would be expected from pre-Napster observations.

Using a number of econometric tests and cross-checking against other data, such as the sales of albums over time, Waldfoegel concludes that his data show no statistically significant evidence that the number of post-Napster quality items released is any different from what was released before Napster. Nor does he find any evidence that the number of emerging new artists has been affected. Whilst it was not directly part

of his econometric analysis,

Waldfoegel notes that the greatest effect of Napster has likely been on the industrial organisation of the music industry, with a greater proportion of new music now being released by 'independent' labels. This supports the thesis that lower distribution costs related to internet distribution are having an impact upon the way new artists are being 'discovered'.

So it would seem that whether or not music can save your mortal soul, lonely teenage broncin' bucks with pink carnations and pickup trucks aren't (yet) going to be out of luck. The music hasn't died after all.

¹ With apologies to Don McLean and his 'Bye Bye Miss American Pie'. Lyrics courtesy of www.lyricsfreak.com/d/don+mclean/american+pie_20042099.html (the author having been too busy discoing away in the 1970s to have them perfectly etched in memory).

² J Waldfoegel (1993) 'The Deadweight Loss of Christmas' *American Economic Review* 85(5) pp1328-36.

³ J Waldfoegel (2011) 'Bye Bye Miss American Pie? The Supply of New Recorded Music Since Napster' NBER Working Paper 16882 (available at www.nber.org/papers/w16882).

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A SMART evaluation of ELECTRICITY investment

Smart grids are all the rage internationally. But what makes a smart grid – and smart meters in particular – a smart investment decision? Stanford Levin outlines an eight-step programme for evaluating the costs and benefits of smart meters.¹

Electricity utilities and policymakers around the world are all talking about smart grids – a combination of hardware, software, communications, monitoring, and control equipment that's designed to improve the performance of the electricity grid. This 'definition' is not precise, however, and it will evolve as technology develops and as utilities gain additional experience.

A smart grid can help with faster recovery from service outages (although it probably won't help much with reliability and outage notification). It can also help with the integration of variable or intermittent energy sources such as wind or solar technologies and distributed or micro generation; and it can provide consumers with information that allows them to make more efficient energy choices and, if they desire, reduce their electricity consumption.

Is dumb better?

A smart grid sounds like something everyone should have. After all, it's smart. But sometimes dumb is better.

It's helpful to consider a smart grid in its component parts: smart generation, smart transmission, smart distribution, and smart meters (and their associated data and communications requirements). Each part of the smart grid can be deployed independently – smart meters in particular are separate from the rest – but in some cases the potential benefit of deploying smart grid technology

in one segment will be increased if it is also deployed in another segment.

All about meters

Benefits can be separated into private and societal benefits. Smart generation, transmission, and distribution technologies are put in place when there is a good business case (which is to say the private benefits to the companies exceed the costs).

The same logic applies in the deployment of smart meters. When the private benefits from these meters exceed their costs, large commercial and industrial customers generally adopt them. Remote meter reading is also often deployed for residential and small commercial and industrial customers because the private benefits exceed the costs.

Smart meters, though, are capable of other functions such as communicating (with the customer, retailer, and distribution company); remote connecting and disconnecting service; monitoring of usage, quality, and outages; communicating with appliances; and measuring usage in ways that allow for multi-period or real-time pricing. Residential and small commercial and industrial customers are generally not asking for smart meters to be installed for these reasons, however – and this is an indication that the private benefits to these customers from smart meters are less than the cost of the meters. So subsidies would be required.

But subsidies are not automatically beneficial or justified. If they are to be justified for smart meter deployment to residential and small commercial and industrial customers, it will be because there are societal benefits that exceed the cost of the meters. These societal benefits would result from more efficient use of resources, primarily from multi-period pricing. In addition, there might be an environmental benefit. A precise methodology is required to measure and compare these costs and benefits in order to determine if a subsidy is justified.

An eight-step programme

1. **Determine the extent of deployment.** What is the geographic area to be covered – and which customers?
2. **Determine the 'time' arrangements.** Will there be real-time pricing, or multi-period pricing?

If there is multi-period pricing, how many time periods will there be? The number of time periods might be determined at least in part by an analysis of the costs, because time periods should have significantly different costs in order to generate any societal benefits. If the costs are nearly the same in (say) two time periods, then their resulting prices will be nearly the same – and so there will be little benefit from establishing them as two separate time periods.

In determining the time periods, it is also important to remember that it will only be beneficial to implement time periods to which customers can respond. Most customers will find it difficult to remember too many time periods – and if they cannot remember the different time periods and their associated prices, then there will not be a large response.

If there is real-time pricing, customers will not be able to react to it without automated controls – which will be an additional expense.

3. **Determine the costs (in net present value).** This would include any stranded investment from the removal of non-smart meters – as well as the incremental cost of the smart meters and their installation, data and communications costs, and ongoing expenses.
4. **Estimate elasticities.** Elasticities will indicate how much the customers will increase or decrease their electricity use in each time period, given the price change in that period. Elasticities should be calculated for each time period and for each customer class. A study could be undertaken, or elasticities could be used from elsewhere or from a pilot study.
5. **Calculate each time period's change in electricity use.** This is done by combining elasticities, the price change, and the initial electricity use in each period.
6. **Determine the benefits (in net present value).** Only the additional benefits from the deployment of smart meters should be counted. If there are benefits that could be achieved from the existing meters, they should not be counted. For example, seasonal cost-based pricing could be charged using dumb meters – so the benefits from deploying smart meters are only those benefits that can be attained from cost-based pricing that goes beyond seasonal pricing.

It does not appear that private operational and customer benefits exceed the cost of smart meter deployment (except sometimes for remote meter reading). If they do, however, then the analysis can be ended and the meters can be deployed. When the private benefits do not exceed the costs, then societal benefits must be calculated. This will determine whether private and societal benefits together exceed the costs of smart meter deployment.

Societal benefits result from the more efficient use of resources. An example will illustrate this. For simplicity, assume that there are only two time periods during the day: peak and off-peak. Initially, customers are charged 20c/kwh at all times. Costs, however, are 30c during the peak period and 5c during the off-peak period. During the peak period, customers consume electricity that is worth, at the margin, 20c/kwh to them; but society uses 30c/kwh to generate the electricity. This is a loss to society of 10c/kwh of value – that is to say, customers consume more than an efficient quantity of electricity. Conversely, in the off-peak period, customers are consuming electricity as if it costs 20c/kwh when in fact it costs only 5c/kwh – so customers consume less than an efficient quantity of electricity. Moving to multi-period pricing with a price of 30c/kwh during the peak period and 5c/kwh off-peak would result in an efficiency gain to society of 10c/kwh for each kwh of reduced consumption during the peak period and a gain of 15c/kwh for each kwh of increased consumption off-peak.

Societal benefits from the more efficient use of resources will be greater when price elasticities are greater, when current prices are further from cost, and when load and costs vary more over the day and over the year.

However, one further issue arises when electricity retailing is competitive. If societal benefits are required for benefits to exceed costs and if these societal benefits depend on multi-period pricing, then the (overall) benefit will be difficult to capture in a competitive retail environment because retailers have no incentive to introduce multi-period pricing.²

7. **Determine any other benefits (in net present value).** There may be a reduction in greenhouse gases from pricing that reflects costs more closely and hence is more efficient, but this is a complex issue and the effect on greenhouse gases is not always what it may seem at first glance. A change in load (reducing peak use and increasing off-peak use in response to cost-based pricing) will cause a change in the mix of generation facilities used. This means a reduction in peak-load facilities, which generally emit fewer greenhouse gases, and an increase

in base-load facilities, which generally (with the exception of nuclear) emit more greenhouse gases.³ Off-peak elasticities are greater than on-peak elasticities; and so customers will boost their off-peak consumption by relatively more than they reduce on-peak consumption in response to a price change. Therefore, depending on how much prices change to bring them into line with costs, there could be either an increase or decrease in greenhouse gases in most countries.

8. **Compare the costs and the benefits.** The net present value of the costs of deploying smart meters should be compared with the net present value of its benefits. If the total of the private and societal benefits exceed the costs, then a subsidy would be justified.

It may also be worthwhile to compare the costs and benefits of smart meter deployment for sub-groups of customers, such as large residential customers who have greater electricity use and consequent larger benefits.

Smart and smarter?

Even after the societal benefits are taken into consideration, it is not clear that the benefits from smart meters exceed their costs – and so there may be no justification for subsidies. Yet smart meters are unlikely to be deployed for residential and small commercial and industrial customers (other than for remote meter reading) without subsidies.

Furthermore, competitive retailing makes it difficult to put in place the multi-period pricing that is necessary to capture the societal benefits from smart meters.

In these cases, dumb may be better.

1 The author participated in a study which led to the *Alberta Smart Grid Inquiry* report prepared by the Alberta Utilities Commission in January 2011. This article is based in part on that report and in particular on Appendix 5 (the full report is available at www.auc.ab.ca/items-of-interest/special-inquiries/Documents/smart_grid/Alberta_Smart_Grid_Inquiry_final_report.pdf).

2 Capturing the benefits would require re-regulating the retail sector.

3 New Zealand's hydro power is fully utilised and so cannot be used to meet an increase in off-peak demand.

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Privatisation Perspectives

What makes some privatisations work, but others fail? Ross Clark reflects on what can be learned from rail and other transport-sector privatisations as played out in New Zealand and Great Britain. It turns out that the structure of the industry in which the privatised firm operates has a crucial bearing upon the likelihood of privatisation succeeding.¹

In the 1980s and 1990s, the Governments of both New Zealand and Great Britain privatised many transportation businesses. The track record of these firms post-privatisation has been somewhat patchy. Some have become extremely successful. Others have failed, necessitating repurchase and recapitalisation by the successors of the Governments that sold them.

Many privatised firms have become successful commercial businesses operating in competitive markets – an example is the Intercity bus group, once part of government-owned New Zealand Rail before it was separated out in 1991. These successes are examples of businesses which face competition in the market. However, many of the privatised businesses are subsidy-dependent: they face competition for the market. Examples of this are the former municipal bus operations in Auckland and Wellington now owned by Infratil. They rely on public subsidy (contract income, as distinct from fares) for over forty percent of their annual income. There are no real public-policy issues arising from the privatisations of these businesses: this is probably because the bus and coach industry faces reasonably straightforward entry and exit, which in turn is a consequence of the transparent competitive tendering processes as well as the industry deregulation that occurred at the same time as privatisation (and removed protections previously enjoyed by the government-owned operator).

Privatisation has tended to become more problematic (and especially contentious) when the business concerned is a natural monopoly such as a telcoms company or an airport.

New Zealand examples include Telecom and the Wellington and Auckland airport companies. Privatisation of these businesses has occurred in the context of a transparent regulatory regime which by and large seems to have facilitated the creation and operation of successful privately-owned firms while limiting consumers' exposure to the most egregious consequences of exertion of market power (although rapid technological change in the telcoms industry has rendered the regulatory task increasingly more complex). A New Zealand example of this sort of firm – which could have been privatised, but which hasn't been – is the Airways Corporation. Its equivalent in the United Kingdom is partially privatised, with the private share held by a number of the larger airlines.

So far so good. But, when it comes to privatising railways, why has this policy frequently failed to result in economically sustainable businesses? Addressing two fundamental questions provides some insights: to what extent can a business cover its costs and – separately – to what extent can the business be considered monopolistic?

The X factor(s)

Plotting these dimensions on a two-by-two matrix gives the four cells in Figure 1. Cell 1 contains businesses which are both profitable and operating in a competitive market. These firms (such as Intercity) are 'competing in' the market. Cell 2 contains the subsidised firms 'competing for' the market (one example is Infratil; others are given in the equivalent cell in Figure 2). Cell 3 contains profitable firms that have monopoly status but are subject to

regulation. Their monopoly status suggests they could be compared with the rail firms – yet, as Figure 2 shows, many firms in cell 3 have been successfully privatised. The crucial difference is in the dimension of profitability: this is what places rail firms in cell 4 and distinguishes them from the regulated monopoly firms in cell 3. (Figure 2's cell 4 shows businesses which share with rail the characteristics of monopoly provision and the need for subsidies.)

The conclusion is that while privatisation of a business which is either subsidy-dependent or a natural monopoly (or neither) is likely to succeed, the privatisation of a business which is *both* subsidy-dependent *and* a monopoly supplier will generally not work.

Tranz Rail and Railtrack show why: the fundamental issue is business risk. First, it is too risky for a government to have a subsidy-dependent monopoly in private hands, because it faces the possibility that the private operator will 'hold up' supply in order to obtain greater subsidies. Second, it is too risky for a private business to be beholden to a government for its funding because the government can 'hold up' the private operator by withholding subsidies, leaving it with stranded assets unable to be deployed elsewhere. Third, both governments and businesses alike face risks from whatever independent regulatory regime is in place. This was a major issue for both sides in the British situation: the presence of a regulator did not stop the old Railtrack going bust, and arguably contributed to its demise.²

Choo-choo no-nos

So how does Figure 1 help us understand the Tranz Rail issues? Tranz Rail was privatised

on the basis that it would be commercially viable. However, for all sorts of reasons – fundamentally related to long-term trends within the New Zealand economy – the freight business proved to be commercially unviable. This became evident within five years of privatisation. The problem for the government was not that Tranz Rail was a monopoly supplier of freight services (because it wasn't: most of the freight services it offers can be duplicated by truck or coastal shipping companies in the private sector). However, it was *definitely* a monopoly supplier of the external benefits to society from having a railway network – notably the road safety benefits arising from moving freight on rail rather than on the state highway system, but also regional-development and environmental benefits.

Whatever was said in public, it is highly unlikely that a Government of any political persuasion would have allowed the old Tranz Rail to engage in a systematic culling of the

network in order to make itself profitable or at least solvent. (And the financial difficulties associated with peripheral parts of the system are well documented.) Faced with a private owner threatening to shut down much of the system, as Toll was threatening to do after 2005, the then Government opted in 2008 to secure the continued flow of external benefits by returning the firm to direct public ownership. Likewise, in the UK, Railtrack was eventually returned to de facto public ownership after it went bankrupt. However, its replacement (the 'not-for-dividend' company Network Rail) has proved difficult to regulate – leading to the possibility of its return to the core public sector, as this offers much clearer government control.

A distinction must also be made between the privatisation of *operations* and the privatisation of the *networks*. The railway operations in Great Britain have mostly remained in private hands – railway franchising

is an excellent example of competition for the market. Likewise, in Europe, there is increasing private involvement in railway operations, but the networks have remained consistently in public hands. While a separation of operations from the network was considered for New Zealand, it was not carried out until 2004 – which is when the Government repurchased the network, forming Ontrack. However, Toll failed under these arrangements ultimately because it *wasn't* subsidised: Ontrack charged Toll for track access on the basis that the government received a commercial return on investments made in track upgrades, even though Toll was, in effect, required to provide unprofitable services in order to generate external benefits.

Up in the air

The model also explains the government's continued ownership of Air New Zealand. This firm faces significant competition in the market; and if it wasn't there, other suppliers such as Qantas and Emirates would continue to provide services. Yet the government continues to own the company, because of the strategic benefits its continued New Zealand ownership is meant to provide – presumably, a continued visibility for 'New Zealand' in a variety of overseas markets (although how this can be valued is another matter).

Into the future

So what does the model suggest about the proposed partial privatisations of Solid Energy and the electricity generator-retailer SOEs? Despite some scale economies, none are true natural monopolies and all appear to be commercially viable without subsidies. As they occupy cell 1 in Figure 1, the risks of privatisation appear low – unless, of course there is some yet-to-be-identified 'hidden social benefit' that cannot be obtained without subsidies.

Figure 1: Subsidy and competitive provision in theory

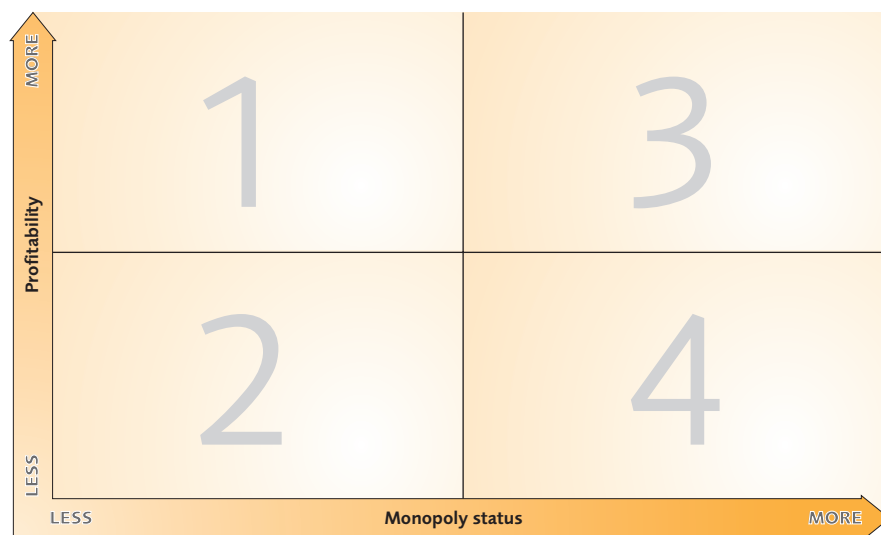
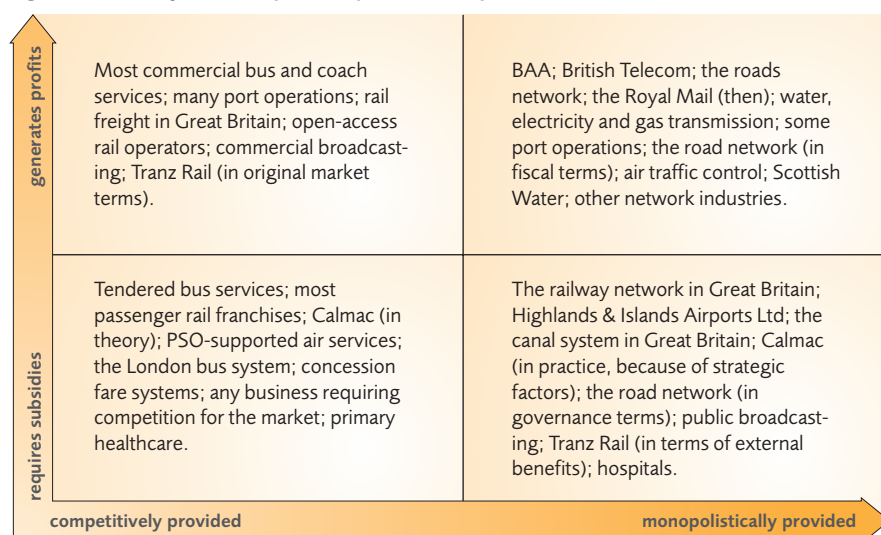


Figure 2: Subsidy and competitive provision in practice



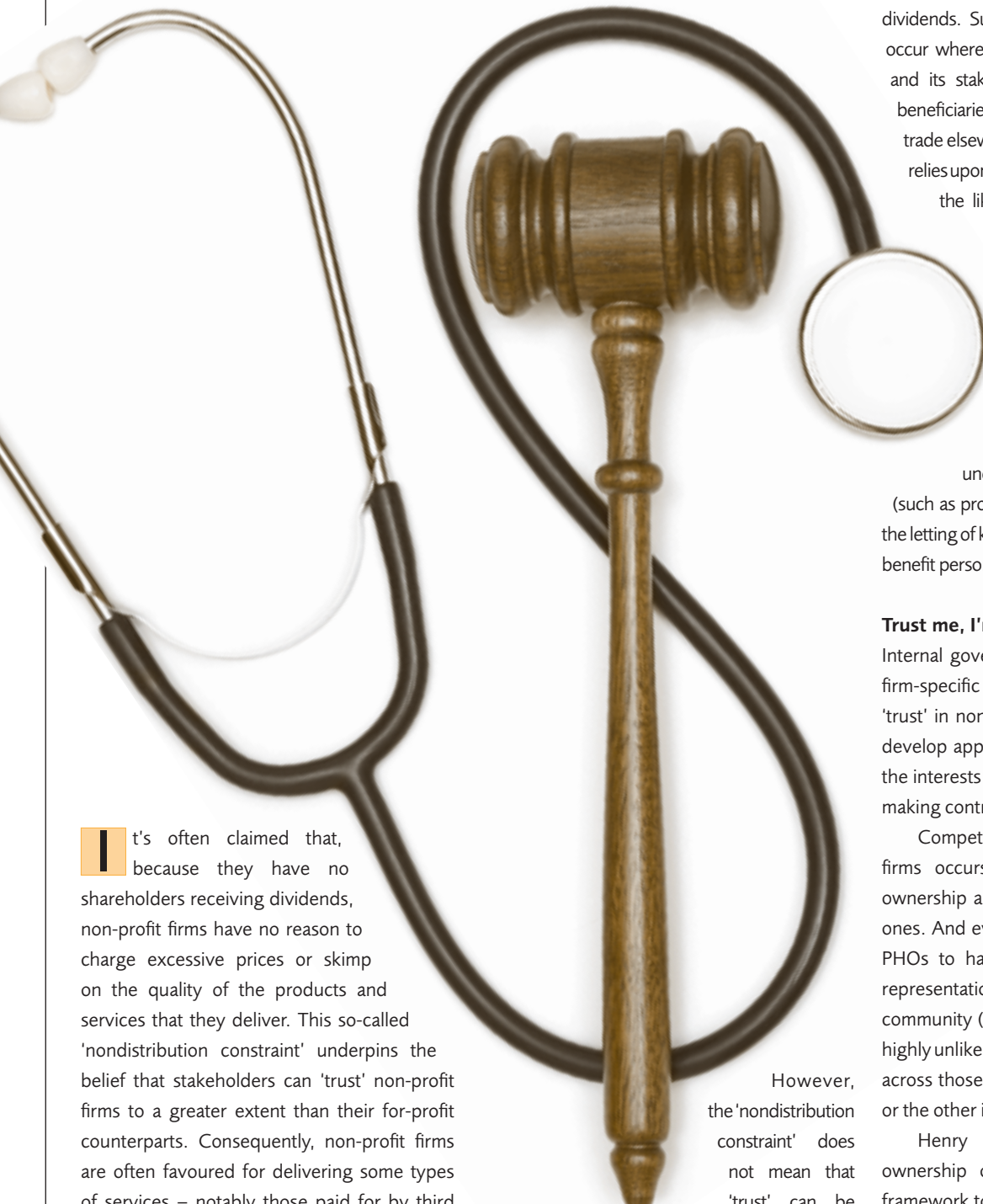
1 This article is based on: R Clark (2010) 'Full Circle: rail industry privatisation in New Zealand and a new theory of its fundamental conceptual weaknesses' (available at www.iscr.org.nz/f630,17980/17980_ETC_2010_paper.pdf).

2 'The costs of running scared of running late' *Competition and Regulation Times* issue 4 p4.

Ross Clark is Rail Performance Manager at Transport Scotland and was formerly employed by Tranz Rail and Transit New Zealand. He will present a seminar at ISCR in early September on his privatisation research.

Not for Profit But for Whom?

Past ownership patterns dominate both the formation and allocation of controlling interests in PHOs – the non-profit 'primary health organisations' that the government funds to deliver its primary healthcare services. But the origins of these controlling interests isn't just a matter of historical interest. Recognising their different forms helps identify the risks of healthcare funding being directed away from the government's objectives; it also helps identify measures for mitigating such risks. Carolyn Cordery and Bronwyn Howell report.¹



It's often claimed that, because they have no shareholders receiving dividends, non-profit firms have no reason to charge excessive prices or skimp on the quality of the products and services that they deliver. This so-called 'nondistribution constraint' underpins the belief that stakeholders can 'trust' non-profit firms to a greater extent than their for-profit counterparts. Consequently, non-profit firms are often favoured for delivering some types of services – notably those paid for by third parties, such as healthcare funded by charity, government or insurance. For example, under the New Zealand Primary Health Care Strategy (NZPHCS), the government requires that PHOs be non-profit entities 'to guard against public funds being diverted from health gain and health services to shareholder dividends'.²

However, the 'nondistribution constraint' does not mean that 'trust' can be blindly applied. Even though they may not have shareholders receiving dividends,³ non-profit firms can still charge higher prices and use the proceeds to underwrite private purposes – for example they can prioritise 'pet' projects or pay higher salaries to staff who, if they owned the firm, would have appropriated the same as

dividends. Such expropriation is more likely to occur where the firm faces limited competition and its stakeholders (suppliers, customers or beneficiaries) are 'locked in' with few options to trade elsewhere. In these circumstances, 'trust' relies upon further explicit measures which limit the likelihood of vested interests within the firm diverting firm resources for personal benefit. For example, the governance arrangements of many non-profit firms preclude staff members and suppliers of the firm's goods and services from sitting on the board and thereby exerting undue influence on key decisions (such as project prioritisation, salary-setting and the letting of key contracts) from which they might benefit personally.

Trust me, I'm a ...

Internal governance arrangements that target firm-specific risks of expropriation thus support 'trust' in non-profits. To identify the risks and develop appropriate countervailing measures, the interests that hold the balance of decision-making control must be identified.

Competition for the control of non-profit firms occurs as surely as competition for ownership and control of shareholder-owned ones. And even though the NZPHCS requires PHOs to have decision-making bodies with representation from both service provider and community (patient) stakeholding groups, it is highly unlikely that control will be evenly spread across those interests. In any given PHO, one or the other is likely to hold the balance.

Henry Hansmann's theories of the ownership of enterprise⁴ provide a useful framework to help understand which interests will likely prevail, given the nature of the economic environment in which healthcare-delivery firms operate.

Hansmann theorises that firms will ultimately be owned (or, in the case of non-profits, controlled) by the stakeholder group whose ownership (control) leads to the lowest

joint costs of 'ownership' and market contracting. Stakeholders are the firm's suppliers⁵ or its customers. The costs of 'ownership' include those of communicating with shareholders, making decisions, influencing, lobbying, ensuring that management runs the firm efficiently, using incentives, and avoiding losses from imperfect agency relationships. The costs of market contracting include transaction costs as well as those from market-power imbalances (including information asymmetries), contractual incompleteness, bounded rationality and contractual hold-ups.

Hansmann further suggests that non-owned (non-profit) firms will emerge endogenously when the costs of maintaining defined ownership stakes outweigh the benefits. In these circumstances, the costs are least when the controls and disciplines typically applied by shareholder-owners (either suppliers or customers) on the directors and managers of the firm are replaced by a set of fiduciary obligations. These fiduciary requirements will specify in whose interests the assets of the firm will be applied and how its revenues will be used. If the firm would otherwise have been owned by suppliers (such as doctors or nurses), the fiduciary duties could be expected to reflect interests beneficial to those suppliers. Alternatively, if the ownership interests would otherwise have been vested in customers, then the fiduciary duties could be expected to reflect interests beneficial to those customers.

You can't escape your past

So how does Hansmann's reasoning help us to understand the dynamics in the markets for control of PHOs? Principally, it enables us to examine how economic factors influencing the costs of ownership and market contracting shape the ownership and control of primary healthcare firms. We can examine these prior to the NZPHCS, and then see how the NZPHCS requirement for firms to align with non-profit PHOs would influence the balance of governance control in those new PHOs.

Prior to the NZPHCS, as Hansmann's framework predicts, most primary healthcare firms were owned by providers – usually medically qualified practitioners (GPs), operating typically as for-profit sole practices.⁶ However, 'independent' GPs frequently collaborated together as independent practitioner associations (IPAs), which had started out as local co-operatives set up to

provide education, locum provision and advocacy services to their GP owner-members and which gradually expanded into the co-ordination and delivery of a range of additional government-contracted primary care services. Although IPAs exhibited a range of institutional forms, almost all had a non-profit objective as well as fiduciary duties clearly focused upon furthering the interests of their for-profit GP members.

A very much smaller number of primary-healthcare firms operated as consumer-controlled entities. These tended to hire providers as salaried employees – but they had two very different origins.

The first were effectively consumer-controlled co-operatives, set up to serve the interests of a clearly defined and relatively homogeneous consumer community that was already linked together for a variety of other reasons. They included clinics and collectives providing care to specific communities of interest such as marae, trade unions and student associations. The costs of 'owning' and governing these bodies were low – most likely because they could be shared across many other services provided to the same consumer groups and because the homogeneous interests of the consumers meant fewer disputes about the types of care provided or the allocation of benefits.

The second were non-profit entities formed in (usually rural) communities where independent GPs were unwilling to assume the high costs and risks of practice ownership, given the alternative returns available elsewhere. As the costs of service provision in these areas were necessarily higher (for example, a GP or nurse might have to be employed on a 'full-time' basis for a part-time workload), revenue had to be carefully husbanded using methods such as the charitable donations and tax-exempt status available exclusively to non-profit entities.

It's a worry

It is unsurprising to find that primary-healthcare firms used their existing collaborative relationships to form new non-profit entities which would meet the NZPHCS's requirements. Of the 77 PHOs in existence in 2004 (covering 95% of the population), 30 had their origins in community-led organisations and 47 emerged from practitioner-led IPA initiatives. The PHOs with community origins delivered services to 8.3% of the registered population.

The PHOs emerging from IPA initiatives covered the remaining 91.7%.

We contend the primary healthcare sector is dominated by supplier-controlled PHOs which favour service-provider interests. There are risks that these PHOs may divert funds either towards rewarding supplier interests financially or towards 'pet' projects not necessarily aligned with government purchasing purposes.

A minority of PHOs are dominated by community interests. Those whose community control arises from failures in the market for GP ownership are likely to have higher costs associated with control and market contracting, which may lead to compromises in service quality. Other community-control PHOs serve 'niche' consumer interests – and so their services will reflect those interests, which may diverge from the government's.

The government should not rely solely on trust in these PHOs' non-profit status to protect the public interest. Its contracts with these entities must reflect the different risks their control differences invoke.

1 B Howell & C Cordery (2011) 'From Providers to PHOs: an institutional analysis of non-profit primary health care governance in New Zealand' (available at www.iscr.org.nz/f650,18412/18412_Health_non-profit_governance_in_NZ_May_24.pdf).

2 Minister of Health (2001) *The Primary Health Care Strategy* p14.

3 A firm may have defined owners (shareholders) and a non-profit objective, or have no defined owners (be non-owned) and a non-profit objective. A co-operative exemplifies the first; a charitable trust the second.

4 H Hansmann (2006) *The Ownership of Enterprise*. The Belknap Press of the Harvard University Press. Cambridge, Massachusetts.

5 These are suppliers of raw materials, labour and finance (this last includes both equity and debt).

6 Some 'group' clinics existed: these were usually GPs sharing common overheads such as premises and administration but maintaining individual professional autonomy. Low capital requirements meant GPs had little need to form equity-sharing partnerships.

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Please hold for your connection

Australia's national broadband network (NBN) is a government-funded next-generation access network that's intended to provide broadband over a passive optical network to 93% of homes and businesses. Rob Nicholls illustrates the importance of competitive analysis in determining the number and location of the new network's 'points of interconnection' (POIs).¹

The NBN will replace Telstra's existing fixed-line copper-based access network. Like New Zealand's ultra-fast broadband (UFB) network, it will be structurally separate from the retailers who provide broadband local access ('last mile' services) to end users.

You're breaking up on me

A key assumption underpinning the NBN is that the 'last mile' is a natural monopoly – that is, it would be wasteful of resources to have more than one network providing services to Australian businesses and households (at least in non-metropolitan areas). However, as Figure 1 shows, the 'last mile' is only one component of broadband infrastructure. At the local level, it provides the link by which an end user connects to the service provider at a local POI. The service provider will typically have a 'point of presence' (PoP) in each capital city. This means that each POI may be networked via multiple 'transmission' cables. The service providers interconnect with each other to make up the domestic internet; they also acquire international capacity, which links them to the global internet. Whereas the 'last mile' might be a natural monopoly, it is quite feasible and common for there to be (oligopolistic) competition in the provision of transmission services.

Under the 'local loop unbundling' access regulations that govern Telstra's copper access network, local telephone exchanges effectively served as either actual or potential POIs. Telstra's competitors could lease the 'last mile' to serve individual customers (including installing equipment on the exchanges to provide differentiated services if they so wished) and either lease the transmission capacity provided by Telstra or lay their own cables to the exchange in order to carry traffic to their PoPs and the internet. When three or more operators were providing cables into an exchange, it was deemed that sufficient competition had emerged and Telstra was no longer required by regulation to provide 'domestic transmission capacity services' (DTCS) in that location. While competition was limited in regional areas, DTCS was able to be deregulated in many metropolitan areas and capital-regional routes where real competition had emerged.

Please check that number

Given the imminent replacement of copper 'last mile' services with fibre-optic NBN connections, the government asked the Australian Competition and Consumer Commission (ACCC) to recommend the optimal number

and location of POIs for the new network. This was an important design issue, with significant economic and competitive consequences.

NBN Co, the company building and operating the NBN, favoured a centralised model with 14 POIs in five locations: four in Sydney, four in Melbourne, and two in each of Perth, Adelaide and Brisbane. This configuration facilitated the political requirement for universal national pricing of wholesale services and lower entry costs for retailers. However, Telstra, SingTel Optus and other existing service providers who had already invested in transmission capacity under the copper access regime favoured a more distributed POI model. As it already had fibre linking its existing exchanges, Telstra's management proposed instead that there be 800 POIs. In order to avoid both the stranding of their existing investments and inefficient overbuilding of Telstra infrastructure, existing transmission providers also favoured a distributed system (but with many fewer POIs than Telstra's 800).

The ACCC, like New Zealand's Commerce Commission, is required to make its recommendations based on an assessment of the 'long-term interest of end users' (LTIE). Broadly, this interest is pursued via three

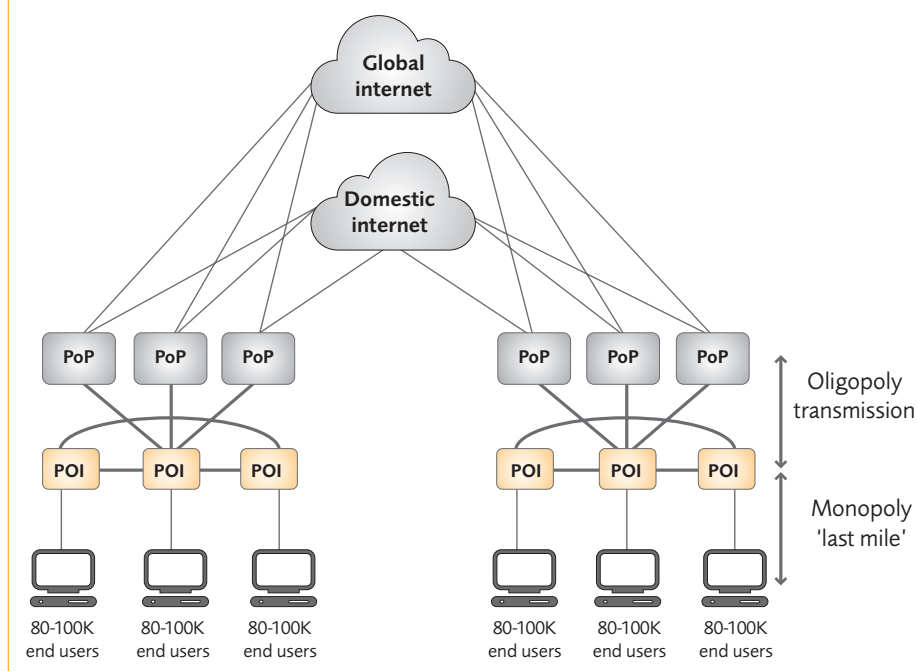
objectives: promoting competition; achieving any-to-any connectivity in relation to carriage services that involve communication between end users; and encouraging economically efficient use of (and economically efficient investment in) infrastructure. In applying these objectives, 'long term' has an economic meaning, derived by balancing the flow of costs and benefits to end users over time in relation to the objectives. The analysis also assumes that economic efficiency has the three components of productive efficiency, allocative efficiency and dynamic efficiency. In many cases, LTIE may be promoted through achievement of two or all three elements simultaneously; in other cases, there may be some trade-off between the elements that must be considered.

And the regulator said ...

In applying these objectives to the POI question, the ACCC was required to make an assessment of a technological issue: that is, where the boundary of the natural monopoly lay within the NBN. If this had been a completely new network, with no existing infrastructure used, the number of POIs could be determined optimally using technological cost models (usually termed 'scorched earth', as all existing assets are considered redundant). However, as NBN Co and Telstra had entered into an agreement where existing Telstra exchange space, ducts and lead-ins would be utilised in the roll-out of the new network, the cost modelling had to take into account the existing network architecture and investments in transmission assets. The ACCC's analysis was therefore based on a 'scorched node' approach: the replacement of existing technologies (copper) with optimal technologies that are able to deliver functionally equivalent services (fibre) while still using the optimal transmission technologies that connect to these nodes, with some existing nodes being shifted (or concentrated) if this leads to improved efficiency.

The ACCC concluded that the LTIE would be best achieved by a semi-distributed POI structure. The centralised POI structure favoured by NBN Co was likely to have a detrimental effect on competition in the transmission markets, as existing competition would be reduced and existing infrastructure would be bypassed. By contrast, a semi-distributed model would preserve existing competition and allow for future development as the NBN was deployed. However, the ACCC's approach here differed from that used

Figure 1: Architecture of a broadband network



to determine the locations at which DTCS could be deregulated when actual competition had emerged. The POIs had to be determined so that the potential for the development of future competition in transmission services was maximised. This led to the development of a set of 'competition criteria' that recognised the greater risks from placing a POI in a location which disrupts or displaces existing competitive markets (compared with the risks of placing it in a location where competitive outcomes were expected, but not yet realised).

The competition criteria were that the POIs should be located where:

- it is technically feasible to allow interconnection (this is usually at the fibre exchange for each locality)
- there are, within a nominated distance from the site, at least two optical fibres that connect the site to an optical fibre network (which in turn is connected to a capital city) and that deliver wholesale transmission services to service providers who wish to connect to the NBN at that location.

These criteria were then developed into a practical set of 'planning rules' to identify feasible and optimal POIs. The first assumption was that existing Telstra exchanges would be used if at all possible, with new facilities being constructed (or 'virtual interconnection' being facilitated) if the existing exchanges were unsuitable. The second assumption was in determining whether a particular route was, or would be likely to become, competitive: the ACCC considered that competition would be

feasible in metropolitan areas serving 80,000 premises and in outer metropolitan and regional areas serving 100,000 premises.

Applying the criteria and planning rules led to the ACCC recommending 120 POIs located across the country. Following consultation with interested stakeholders (including NBN Co and existing providers), it was proposed that five POIs be relocated, two new POIs be added, and one consolidated – leading to a final proposal for 121 POIs. While there may still be some movement in the location of the POIs, the number has now been settled.

Putting you through now

The principled analytical framework provided by the LTIE allowed pragmatic and original advice to be provided to the government on an important network design element of the NBN. The process shows that competition agencies can play a constructive role in the optimal design of new government-funded networks which affect the viability of investments made by private-sector industry participants.

1 This article is based on R Nicholls (2011) "Please hold for your connection": determining points of interconnection for open access broadband presented at the International Telecommunications Society's Asia-Pacific Conference in Taipei, Taiwan, 26-28 June 2011.

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Insightful Insiders?

Do insiders trade more when a company renegotiates its debt? Research into untimely disclosures in the US around the time of companies' debt-covenant waivers suggests they do.¹

Paul Griffin (University of California, Davis) and David Lont and Kate McClune (University of Otago) provide ample evidence on this by tracking insiders' transactions before and after the disclosure of a company's receipt of a debt-covenant waiver.²

The paper documents increased insider selling prior to the waiver disclosure (when stock prices dropped, partly because of the uncertainty of bankruptcy), followed by increased insider buying after the disclosure (as stock prices recovered in response to the turnaround). According to the authors, this V-shaped pattern of insider selling followed by insider buying during covenant-disclosure month is unusually distinct and compelling (see Figure 1). It is also logical – because there is typically quite a gap

between insiders' knowledge of a covenant waiver and when outside investors receive that information in a press report.

The study also examined whether insiders simply mimic the swings in stock price or actually place their trades ahead of the market, using their so-called 'insight'. Its statistical analysis clearly shows that insiders sell one to two months ahead of the pre-disclosure market decline and buy one to two months ahead of the market recovery.

The authors looked for other obvious explanations for the trading (such as earnings reports or other filings) but found none.

Although the study shows circumstantial evidence of what can be seen as illegal insider trading, the risk of liability or prosecution for

the insider is low because the trading typically takes place weeks or months before the public disclosure (when investors push prices lower). And despite negative market responses to the disclosures in the three days around the announcement (see Figure 2), it can still be extremely difficult to establish a 'smoking gun' connection between the trade and the unfair profits from it.

Insiders' profits appear to be substantial. The authors calculated the unfair gain to insiders (and the losses they avoided) from buys and sells around the time of 1718 covenant-waiver disclosures between 2000 and 2007: it comes to roughly US\$1.97 billion.

However, a 2003 requirement for insiders to report their trades to the Securities and Exchange Commission within two days of the transaction date seems to have lowered insiders' propensity to trade ahead of the market, which is good news for the regulators and the average investor.

The paper makes a timely contribution to the larger canvas of studies on insiders' activities during debt renegotiation. The behaviour evidenced empirically in this paper has also been demonstrated in studies of creditors' committees. Furthermore, the Securities and Exchange Commission has brought several actions of insider trading (in stock and debt) by members of such committees who allegedly have breached confidentiality agreements. It is hoped that this literature will lead to better informed decisions by US regulators and prosecutors when they seek criminal charges against the accused.

1 PA Griffin, DH Lont, & K McClune (2010) 'Insightful Insiders? Insider Trading and Stock Return Around Debt Covenant Violation Disclosures' UC Davis Graduate School of Management Research Paper 07-10 (available at <http://ssrn.com/abstract=1685973> and at www.iscr.org.nz/f661,18650/18650_258.pdf)

2 A debt-covenant waiver is an important step taken by a lender in resolving a company's debt problems to help bring a company back to financial health. Companies disclose the waiver in an SEC filing (Form 10-K, Form 10-Q or Form 8-K), which was the source of data for this study.

The paper on which this review is based won the ISCR Best Paper Prize at the 2011 New Zealand Finance Colloquium, held in Christchurch on February 10 and 11.

Figure 1: Insider trading leads stock return

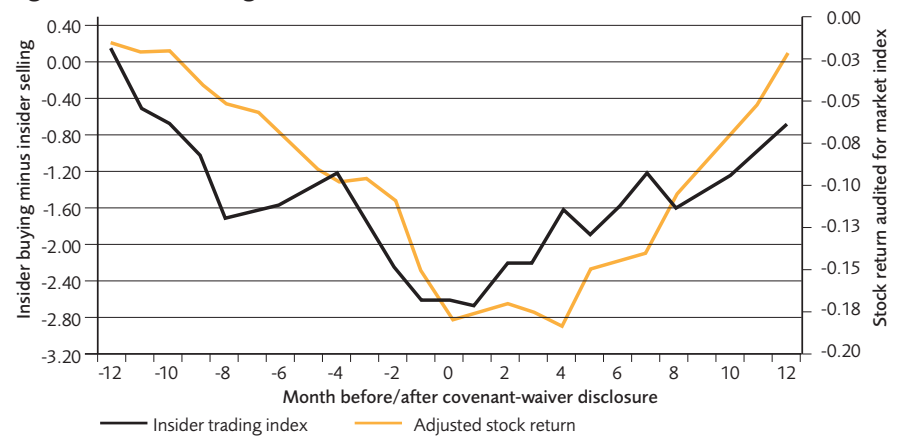
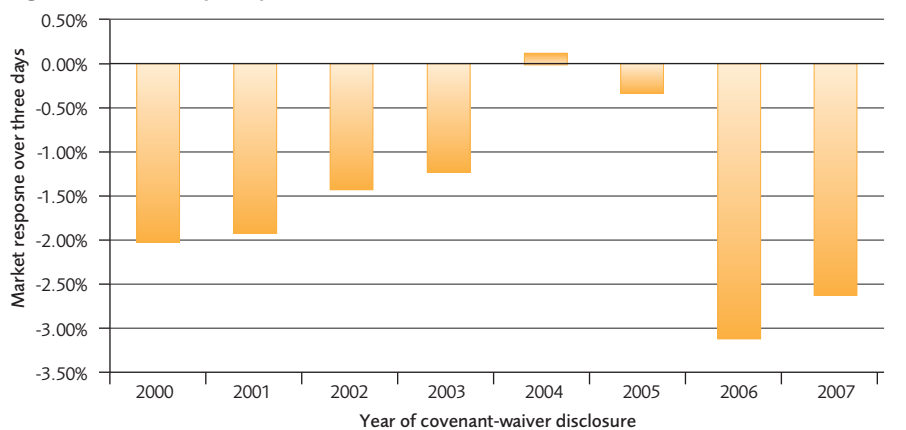


Figure 2: Investors push prices lower



Note: This shows the sum of excess returns for the day before disclosure, the day of disclosure, and the day after.