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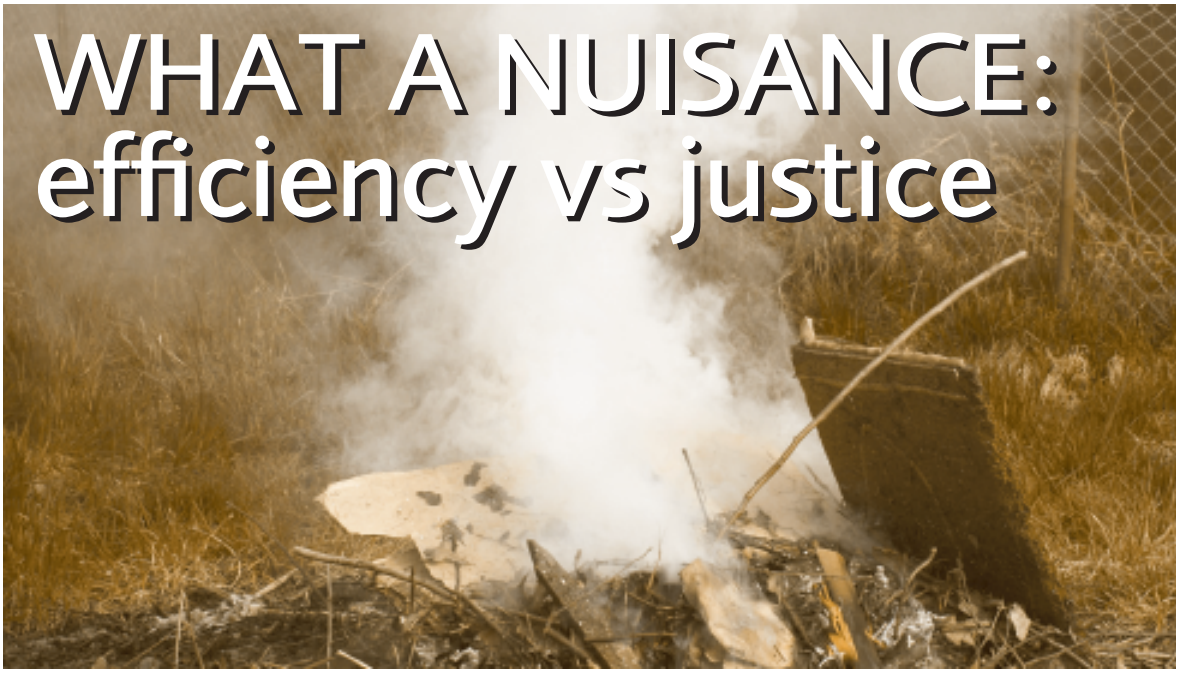
IN THIS ISSUE

WHAT A NUISANCE: efficiency vs justice



The tort of nuisance challenges the right of one property holder to indirectly disturb the rights of another. It's one of the oldest causes of action in common law, dating from 1610 when William Aldred, disgusted at the foul emanations from his neighbour's pigs, took suit and won. But despite – or possibly because of - this weight of history, decisions in nuisance cases follow well honed conventions that more often than not set justice against economic efficiency. Richard D'Ath argues that greater flexibility would give courts the ability to vindicate both the rights of 'victims' and the wider societal interest in efficient law-making – and he proposes a means of achieving this.[1]

Nuisance is much like trespass in that it vindicates the right of a person to the quiet enjoyment of their land. However, while trespass deals with tangible and direct intrusions, nuisance deals with more indirect and intangible intrusions upon land: smells, smoke, sounds and other emanations. Also, while trespass has no exception for minor harms and attaches liability to the intruder regardless of whether any actual harm is suffered, nuisance requires a judicial determination of whether a substantial harm has been suffered and looks at factors such as the reasonableness of the intrusion.

In New Zealand, the question of fault and remedy are intimately interconnected and are determined at the discretion of the court. Liability for a nuisance case is assigned to the party at fault, based on balancing of the relevant principles, and, depending on the specific facts of the case, either an injunction or damages are awarded. This approach is, however, potentially inefficient.

Efficiency versus justice

As with any law, it is important to evaluate nuisance from an instrumentalist perspective: looking at whether its outcomes serve societal welfare. Generally, allocative economic efficiency produces socially desirable outcomes, ensuring that scarce resources are put to their most valued use. In the ideal world, economic production occurs only if the value of the output is such that, after paying for all inputs, the producer makes a profit. Consequently, economic efficiency relies upon producers bargaining freely with other parties for the value of the scarce resources they use and any harm they cause. Property rights allow individuals to bargain securely, trading off private benefits and costs with parties around them.

Nuisance deals with one aspect of property rights: the problem of externalities borne by neighbour. Pollution is the classic example of this: it is not an absolute evil, and society benefits if it is produced at its efficient level. However, profit-maximising firms will consider only the private costs of this production; they will not consider the public costs that it imposes on others. This means that, without some mechanism for internalising the external costs of production, overproduction could create a socially inefficient level of pollution. Nuisance offers such a mechanism.

The maximisation of society's welfare, however, cannot be the sole criterion for judicial decisionmaking. Sometimes its pursuit may lie in direct opposition to the principles of justice and fairness that underpin the legal system. There are two key reasons why this is so.

to page 2

from page 1

First, the legal system gains its mandate not just from society collectively, but from the individual. This is the theory of the social contract: the idea that individuals consent to be governed in exchange for recognition of certain basic rights and liberties. Hence net societal increases in welfare at the expense of individual welfare should be foregone if they are discriminatory or arbitrary, or if they reward malicious intent.

Second, the law cannot be completely divorced from the morality of the people it regulates. Definitions of morality are extremely challenging, but it appears inescapable that people have intuitive understandings of right and wrong. Consequentially, rules of nuisance that systematically attach liability to the vulnerable old lady (to the benefit of the large and wealthy corporation) seem to be unjust ones. A law that runs contrary to common intuitive morality is one that will struggle for legitimacy in the eyes of the people – and for consistency of application by all-too-human judges.

The fundamental enquiry in a nuisance action will often involve some balancing of justice and efficiency. This is seen by looking at the consequences of the Coase theorem, in both its idealised form and in reality.

The court's Coasian dilemma

Ronald Coase's theory holds that where transaction costs are zero, the court's allocation of rights is irrelevant to the efficiency of the economic outcome. In other words, regardless of whether a factory has a right to pollute or whether a landowner has a right to be free of pollution, private bargaining between the two parties will see the optimal level of production reached. All that the initial allocation of rights changes is the relative costs each party bears in the process of reaching optimality.

The court's decision to impose costs on one party or the other is clearly one that directly affects questions of fairness and justice, and so the initial distribution of rights is not a neutral decision. Indeed, in the Coase-ideal world this allocation does not affect efficiency and so can only be about justice. However, the Coase-ideal world is not our own; actual transactions always have costs. This fact can put justice and efficiency at odds, for the allocation of rights that is most just may now not be the most efficient.

Consider the least-cost-avoider rule, where economic efficiency is maximised in a context with substantial transaction costs. Under such a rule, the courts would assign liability to the party who could avoid the conflict at the least cost. But such a rule, while efficient, would also seem in many circumstances unjust and unfair. Consider an elderly couple who have been living in their residence for 40 years, who are suddenly harmed by a polluting factory that opens next door without warning or consultation. Even if the couple were the least-cost avoider, a legal rule forcing them to leave seems contrary to intuitive morality and justice and it is likely a court would refuse to find in such a way. However, the law would then be operating inefficiently.

Is there a way to have the best of both worlds? Yes, through conditional injunctions.

The best of both worlds

It may be possible to reconcile economic efficiency and justice by splitting the court's analysis into two discrete parts: an initial enquiry into where the justice should lie; and a question of what mechanism will enforce this justice in the most economically efficient manner.

In identifying where the justice lies, it is the court's role to determine (by looking at issues like vulnerability, power, capacity and fairness) which party should bear the costs of resolving the dispute. Once that question is answered, the second stage of analysis should focus purely on economic analysis of what remedy will produce the economically optimal outcome for a given distribution of blame. As a consequence of transaction costs, non-standard remedies will in many cases be necessary to produce the optimal economic outcome. Conditional injunctions (tied to some form of transfer payment between the parties) are one such remedy. They come in various forms: one type requires that action be taken, but only if the enjoining party (the party bringing the action) pays the enjoined party's costs; another type forbids an action, but can be dissolved if the enjoined party (the party who is the subject of the action) pays damages to the enjoining party. For example, in the instance of the elderly couple who are suddenly harmed by the polluting factory that opens next door, an injunction could be granted preventing the factory from polluting in the manner that harms the couple – on the condition that if the factory were to pay the couple's remediation costs, the injunction would be dissolved and the factory allowed to resume full operations.

Such injunctions allow courts to efficiently allocate resources regardless of which party has been found liable as a result of the justice enquiry. Say, for example, that the least-cost avoider (who would be found liable under a traditional efficiency-maximising approach) was clearly the 'innocent' party. Instead of enforcing an unjust result, the courts could enjoin the least-cost avoider to take the necessary action – but only on the condition that the other party compensate them for the cost of remediation. In such a case the least-cost avoider still takes the action even though (by assumption) their transaction costs are high; and the compensation condition ensures that justice is still served.

Conditional injunctions offer judges the ability to better vindicate both the rights of victims of injustice and the wider societal interest in efficient lawmaking. They are well worth judicial consideration.

1 This article uses the description of conditional injunctions contained in Edward Rabin (1977) 'Nuisance Law: Rethinking Fundamental Assumptions' *Virginia Law Review* 63 p1299.

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absolutely *positively* discriminatory

In modern parlance, 'discrimination' has negative connotations – and those engaging in its practice are considered to be acting at least unethically, if not in some instances illegally. However, discrimination in pricing is often essential if consumers are to have access to some key infrastructures and services – as Bronwyn Howell shows.

Price discrimination – the charging of different prices to different customers for the same good or service – is typically prohibited in regulated industries such as telecommunications and electricity. Yet in other network industries this pricing is standard practice: think of public transport (with its peak vs off-peak and concession vs standard fares), software (Microsoft's 'professional' vs 'home' editions) and air travel (advanced purchase vs last-minute ticketing). Price discrimination also predominates in the entertainment industry (pre-sale concert seats vs sharply-discounted 'rush' tickets); in book, fashion and recorded-music sales; and even in medicine (general practitioners waiving or reducing fees for low-income patients).

Industries where price discrimination prevails typically share some common characteristics: high fixed and sunk costs (for example in infrastructure, design and education) and low marginal costs. These lead to a classic downward-sloping average cost curve (S in Figure 1). If the firm is required to sell at a single price to all customers, the lowest average per-unit production cost is achieved when the number of units sold is as large as possible (Q_2 at average cost P_2, given demand curve D). Societal benefit is represented by the total shaded area in Figure 1. If the price is P_2, all of this benefit accrues to consumers (the difference between what they were prepared to pay and what they actually paid for the product). Firm profit is zero.

However, firms in network industries usually utilise any market power to maximise profits by selling a smaller quantity – for example Q_1 at price P_1. The new per-unit cost is C_1, and the firm's profit is represented by the rectangle B. Consumers' share is the smaller triangle A, and total benefit to society is the sum of areas A and B. Whilst regulation could theoretically result in the firm selling Q_2 units at P_2, this is both costly and imperfect because the regulator cannot know the cost and demand structures exactly. However, if the firm can separate customers into two types ('high-valuing' at P_1 or above; 'low-valuing' between P_1 and P_2)[1] and sell to them at two different prices – that is, if it can discriminate – then it faces costless market-based incentives to make the welfare-maximising Q_2 units at the low cost P_2. It will sell the first Q_1 units at P_1 to the higher-valuing customers and the remaining $Q_2 - Q_1$ units at P_2 to the lower-valuing ones. Consumer surplus now increases to the sum of areas A and F, whilst firm profits rise to the sum of areas B and E.

However, the true power of price discrimination is illustrated in the case where there is no single price at which a firm will produce (see Figure 2). This is because the cost to produce any quantity Q is above the price consumers are prepared to pay. So no production occurs and no societal benefit accrues. Regulation cannot resolve this problem, without also subsidising production. However, price discrimination can result in the good being produced at the maximum level Q_2, giving both a consumer surplus and (potentially) some profits to the firm without the need for any intervention. Just as before, the firm makes Q_2 units at cost P_2. The first Q_1 are sold to the highest-valuing consumers at P_1, giving a 'profit' A and a consumer surplus C. The remaining $Q_2 - Q_1$ units are sold at P_2 to the lower-valuing consumers, giving a loss of B to the firm but realising a consumer surplus of E. Total consumer benefit is B + E. As long as area A is bigger than B, the firm also makes a profit and so will voluntarily produce the good without either regulation or subsidy.

The latter form of price discrimination is quite likely what's occurring in the industries where price discrimination is not prevented. Thus, for example, airlines can offer flights on routes that would be unprofitable at a single price. Similarly, senior-citizen discounts for off-peak public transport can be viewed as an economic necessity that helps ensure the provision of many public-transport services: the discounts are not simply an artefact of a society that cares about its elders.

1 This assumes the firm can prevent low-valuing customers from re-selling to high-valuing ones.

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Figure 1: Classic price discrimination

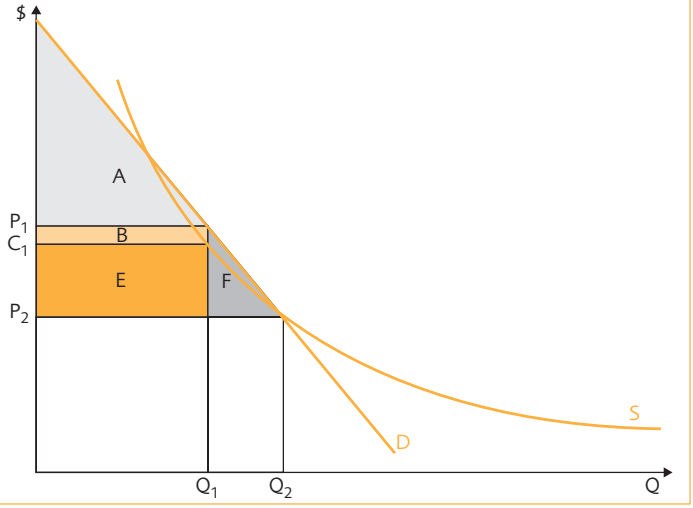
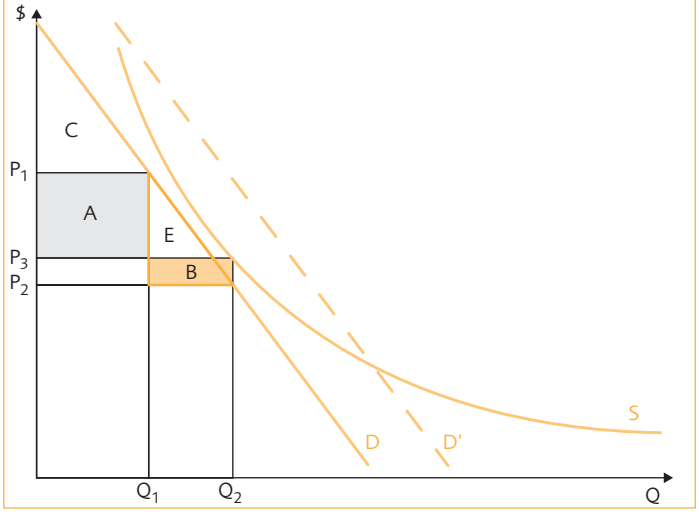


Figure 2: Price discrimination encourages early investment



PIN MONEY

Despite being served by banks that are mainly Australian-owned, New Zealanders use their EFTPOS cards as payment instruments much more frequently than Australians do. Moreover, New Zealand's EFTPOS system – along with Norway's BankAxept – is one of the most well used globally. What is it about this payment instrument that makes New Zealanders so keen on it? Mike Wilkinson investigates a trans-Tasman tale of payments innovation that explains why.

An important common feature of the highly used (see Figure 1) New Zealand and Norwegian systems is that although retailers generally need to buy or rent the required debit-card terminals, they pay no or very low fees for each transaction – and so most are quite happy to accept transactions of low value. In lower-use countries (including Australia), retailers are charged fees that make them less willing to accept small transactions;[1] instead many prefer their customers to pay with cash.

In New Zealand and Norway, however, it's the consumers who pay the transaction fees.[2] That these countries' consumers use debit cards despite such charges indicates many people really don't like using cash – most likely because the costs of using cash (finding an automatic teller machine or visiting the bank branch; and carrying a wallet or pocket full of paper and coins) are greater than the charges for EFTPOS transactions.

New Zealand PINs the tale on regulation

Why, when forming the payment networks for EFTPOS, did New Zealand's banks adopt consumer charging while their Australian parents elected to charge merchant (retailer) fees? In Norway, customer charging arose because it was encouraged by the government. It turns out that in Australia and New Zealand, too, the financial industry's institutional history – and particularly its regulation by each country's government – holds the key to answering the question.

In the four decades following World War II, New Zealand's banking system was characterised by intrusive and prescriptive regulation which saw banking organisations separated into three differently and intensively regulated groups – trading banks, thrift institutions (including trustee savings banks) and other financial institutions. These regulatory structures were still in effect in 1984, when members of the first two groups introduced their own experimental EFTPOS networks: Cashline, operated by the trustee savings banks; and Quicksmart, operated by Databank (the trading banks' joint venture originally created in the 1960s for processing cheques). However, the different regulatory structures contributed to an adversarial relationship between the two groups, severely limiting the prospect of smooth cooperation in a combined network.

Then came substantial regulatory change: from 1987 any organisation could become a 'registered bank', providing it met permissive criteria administered by the Reserve Bank of New Zealand. The climate for cooperation improved substantially and a merger of Cashline and Quicksmart was contemplated. However, the 1987 sharemarket crash made banks substantially more conscious of costs; and in 1988, two of the Quicksmart participants, BNZ and ANZ, decided to withdraw their support for it. The two remaining participants, National Bank and Westpac, purchased Quicksmart's assets from Databank, renaming the network 'Handy-point'. They also decided on a new pricing strategy: in order to attract more merchant business, they chose not to charge transaction fees for merchants. Handy-point proved successful and its approach to pricing was adopted when in 1989 it was merged with Cashline to form Electronic Transaction Services Ltd (ETSL).

Of the two banks that had withdrawn from Quicksmart in 1988, BNZ eventually joined ETSL (which was later renamed Paymark) and ANZ invested in its own EFTPOS services that interconnected with Paymark. These services were later brought into a company that ANZ had purchased – EFTPOS New Zealand Ltd.

The owners of these various networks cooperated with each other because they saw EFTPOS as a common platform rather than a proprietary asset – and because the new regulatory structure made cooperation possible.

But regulation PINs Australia ...

At the beginning of the 1980s, the institutional environment for the financial industry in Australia was much the same as in New Zealand: regulations distinguished between different classes of organisation such as banks, credit unions and building societies. Unlike in New Zealand, however, there was no sudden deregulation that facilitated cooperation.

Australia's financial industry had been conducting trials of EFTPOS networks since 1982; and from 1985 these networks started being linked together. However, under the 'different rules for different classes' there was a continuing lack of willingness by financial organisations in one class to cooperate with those in other classes. When the federal government considered forcing banks to cooperate with non-banks,[3] the banks responded by developing EFTPOS in a way that reduced the amount of cooperation possible: rather than having a centralised organisation to run EFTPOS, they inter-linked their individual trial networks, requiring non-banks to reach an agreement with each existing EFTPOS operator before they could offer their customers EFTPOS services.

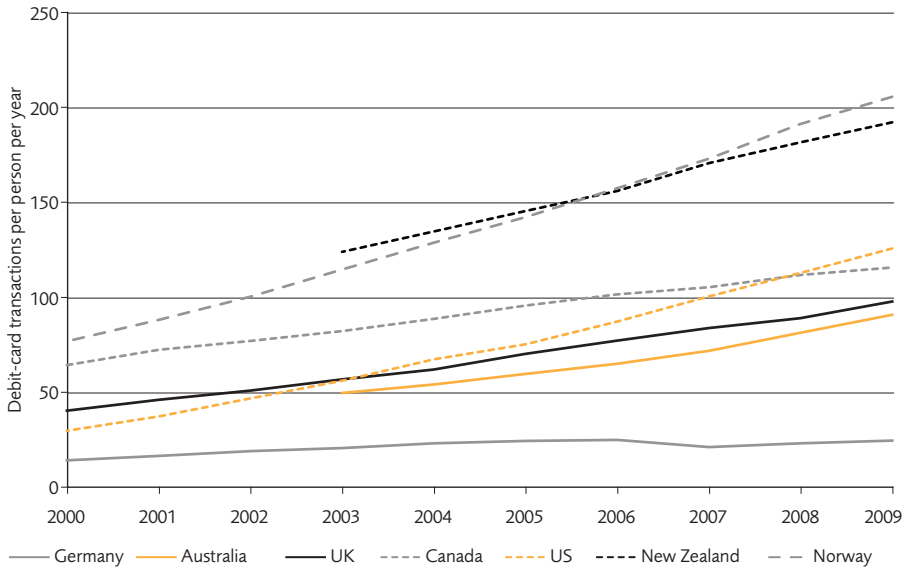
The bilateral nature of Australia's EFTPOS contributed to making the system expensive. Consumers, merchants and the financial organisations had less incentive to use or promote the system than their counterparts in New Zealand. This led to greater proportional use of credit cards in Australia, in spite of merchants being charged higher per-transaction fees for credit cards than for EFTPOS.

... and its tale gets longer

The relatively higher use of credit cards increased the cost of business for Australian merchants and contributed to pressure for regulatory intervention. In 2003, the Reserve Bank of Australia (RBA) regulated a particular credit-card fee (the 'interchange' fee), in order to lower the fees charged to merchants. It also allowed merchants to place a customer surcharge on credit-card transactions. In spite of arguments that it was favouring merchants at the expense of consumers, the RBA persevered with its interventions – eventually affecting other payment instruments such as debit cards (including EFTPOS) and the American Express card.

Although the RBA's reforms appear well intentioned, they may have reduced the extent of payments innovation in Australia: as early as 2007 a London-based trade magazine noted there was 'evidence that major offshore card issuers have bypassed the Australia market because of the protracted nature of the RBA reforms, preferring to enter markets where conditions appear more stable'.[4] Uncertainty about what would attract the RBA's attention had made it more difficult to judge the best steps for a network to take – even offering an instrument that was overly successful might have created problems. For example, in 2009 the RBA threatened to regulate the internet-based payment system Paypal if Australian merchants and consumers began to make greater use of it.

Figure 1: Adoption of debit cards (selected countries) 2000-2009



Sources for transaction data: BIS Redbooks, Norges Bank, Reserve Bank of Australia and Statistics New Zealand.

PIN lessons

The difference between the regulatory approaches of the two countries is highly marked. New Zealanders have benefited from their successfully developed EFTPOS system because the country's comparatively light regulation of banks fostered cooperation and inter-network competition. Furthermore, the government has refrained from becoming involved in regulating the system's features.

By contrast, the Australian government's regulation of its financial industry contributed to making cooperation between banks and non-banks more difficult and had the effect of reducing inter-network competition. Furthermore, the RBA intervened to regulate the features of payment systems and in doing so may have harmed the process of innovation.

Current possibilities for further payments innovation appear particularly strong. For example, there is much talk about mobile-based payment instruments (although there is little agreement yet on appropriate standards). In New Zealand, the success of EFTPOS has meant that the 'Snapper' stored-value card – originally introduced for bus fares – could be adapted for other quick purchases where using EFTPOS was too cumbersome. In Australia, the environment for innovation is improving, with the RBA appearing to show greater equanimity in its approach to payment systems and a new approach to pricing for merchants being adopted for the country's EFTPOS system. In both New Zealand and Australia, banks have made some effort trialling the contactless MasterCard PayPass; but this has yet to be adopted by significant numbers of consumers and merchants.

The comparison of Australia and New Zealand's historical development suggests that innovation in payments is better achieved with less onerous regulation of payment instruments and of the networks that offer them. To get the most from innovations for their citizens, the Australian and New Zealand governments should each keep in mind the potential negative effects of intervening in their country's payments industries.

1 In March this year, Australia's EFTPOS operator announced a change to its fee structure that is likely to make low-value transactions more acceptable to merchants. This change does not affect the historical analysis in this article.

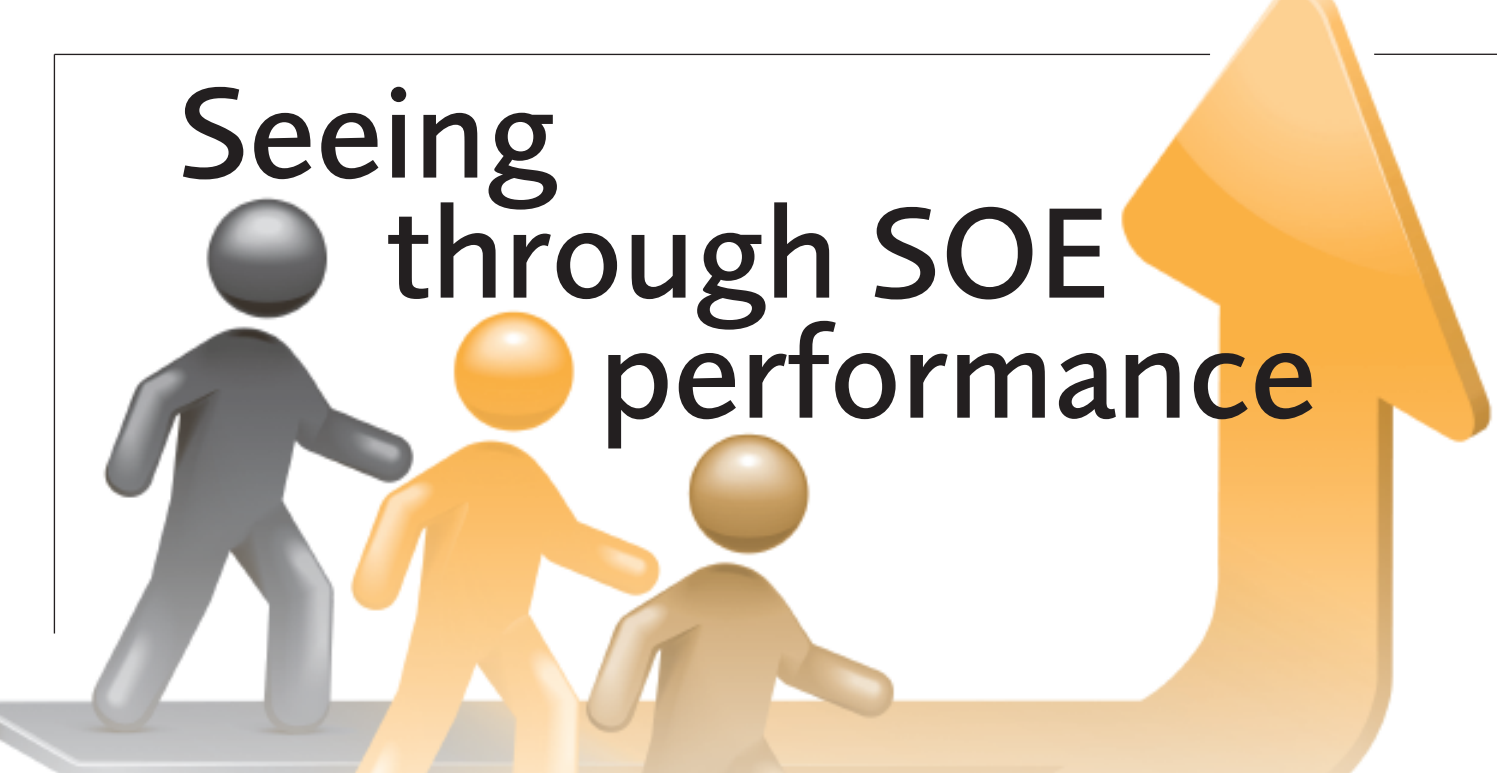
2 Many New Zealand consumers no longer pay EFTPOS transaction fees, although all did originally.

3 This involved a proposal made by the 1983 Martin Review Group (an Australian government review of the industry) that non-banks be encouraged to participate in CEMTEX, the Australian bank-owned joint venture for cheque processing.

4 G Halverson (2007) 'Regulation: Australian Interchange – three years on' *Cards International* (20 February).

Mike Wilkinson completed his MA in Economics at Victoria University of Wellington in 2011. This article is based on his thesis, which examines the development of retail payment systems.

Seeing through SOE performance



In the previous issue of Competition and Regulation Times, Dave Heatley and Talosaga Talosaga showed that state-owned enterprises (SOEs) are poor disclosers and queried the purpose of continuous disclosure for firms (such as SOEs) that have no tradable ownership interests. Here they contend that if continuous disclosure is to have any effect on SOEs' performance, then it must operate through mechanisms other than share ownership.[1]

Asymmetric information between shareholders and managers of a firm creates three important risks for investors in publicly listed companies: trading with an insider; trading on out-of-date information; and managerial opportunism. A continuous disclosure regime can reduce all of these risks by reducing the information asymmetry.

The first two investor risks do not apply to SOEs, as they have no tradable shares. The third risk (managerial opportunism) remains, irrespective of the lack of such shares. But, as our earlier article argued, if continuous disclosure is to be useful in terms of SOEs then the regime must be credible.

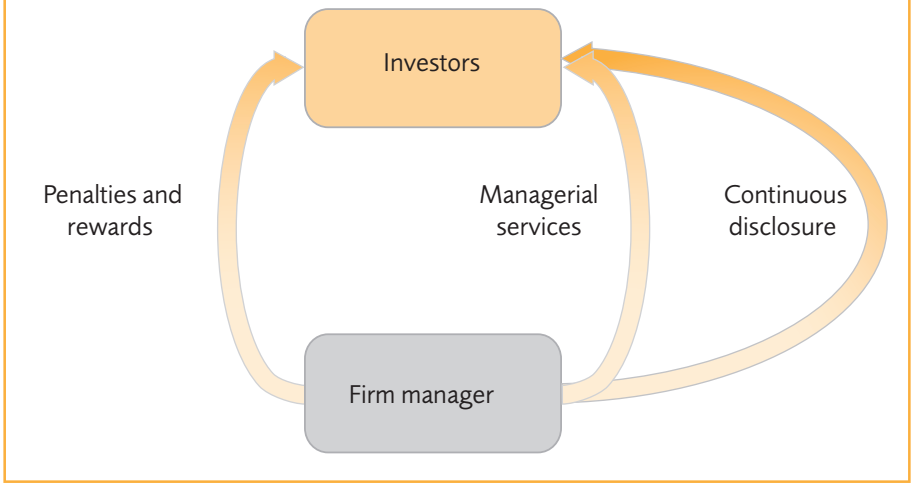
There are two reasons why the New Zealand SOE disclosure regime introduced in January 2010 is of limited use in constraining managerial opportunism: it has no formal penalties for nondisclosure; and instances of nondisclosure are hard to identify and measure in the absence of an SOE share price. However, information disclosure by an SOE's managers may still have some effect on performance if the increased transparency helps other stakeholding groups hold management to account. Higher standards of transparency are commonly cited as a mechanism for improving the likelihood of other non-shareholder organisations[2] acting in the interests of their beneficiaries. Is this likely to apply in the case of SOEs?

Principal and agent: the original odd couple

The principal-agent framework[3] provides a useful model to explore this question. A principal-agent relationship is where one person (the principal) engages another person (the agent) to perform a service on their behalf. Generally the principal and agent have differing interests, which means an unconstrained agent cannot be expected to always act in the interests of the principal. As the principal knows that she cannot perfectly observe the agent's activities (that is, she lacks information about what actually occurs), she will try to align the agent's interests with her own and will do this through the use of monitoring and incentives – rewarding good performance and penalising poor performance. Improved information about the agent's performance will allow the principal to design more effective monitoring and incentive instruments that will better direct the agent.

Figure 1 illustrates a classic principal-agent relationship between shareholder-principals who delegate the day-to-day running of the company to manager-agents who may exploit the separation by exerting less effort running the business than the shareholders would prefer. Well designed governance arrangements (including continuous disclosure) reduce this risk.

Figure 1: Principal-agent relationship in an investor-owned firm



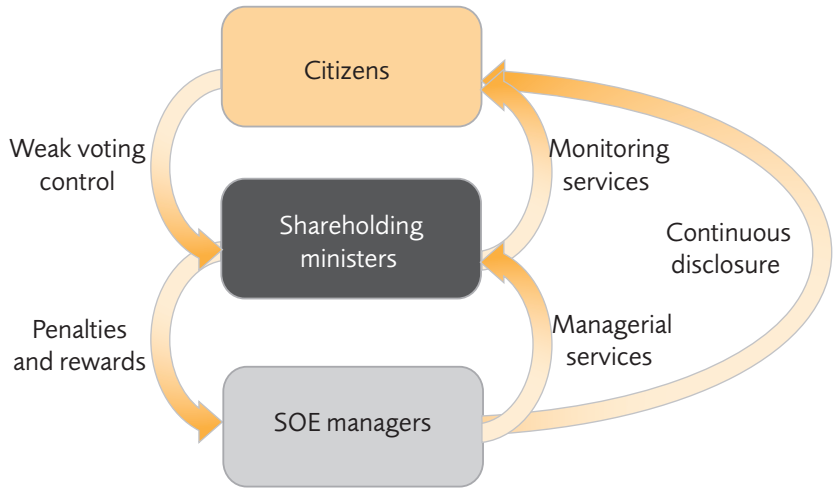
Two's company, three's a crowd

However, in the case of an SOE, the agency relationships are more complex. The ultimate beneficial owners of an SOE are the citizens of New Zealand and poor performance by SOEs will ultimately result in higher taxes or reduced government services. However, citizens do not interact directly with SOE management in the same way as shareholder-owners of publicly

listed firms interact with their management (though they may interact with SOEs in other roles, such as customers or suppliers). Important control rights and responsibilities exerted by shareholder-owners are effectively delegated to the two shareholding ministers of the government.[4]

As Figure 2 shows, this means there are two principal-agency relationships in an SOE: one between the citizens (principal) and shareholding ministers (agent); and another between the shareholding ministers (principal) and the SOE managers (agent).

Figure 2: Principal-agent relationships in an SOE



Knowledge is power ... if you can use it

The agency relationship between the shareholding ministers and the SOE managers is relatively strong: ministers are able to use contracts and legislation to align the managers' interests with their own; and ownership is concentrated in the two ministers, avoiding the free-rider problems of dispersed ownership. In addition, the shareholding ministers appoint all SOE directors; and the Crown Ownership Monitoring Unit analyses the performance of SOE managers on the ministers' behalf.

By contrast, the agency relationship between citizens and shareholding ministers is much weaker. Citizens cannot use contracts and share trading to direct and discipline the shareholding minister-agents. Nor can they use the voting mechanism to do this, for several reasons.

First, citizens cannot vote for individual policies – they can only choose from a limited number of 'policy bundles' offered by political parties and candidates. As they are not able to vote for all their preferred policies, citizens have to decide which are most important and which can be forgone. Thus their voting choices may be driven by higher-profile or more personally relevant issues than SOE policy and performance; and so poor SOE performance can persist because it has lower priority than other issues.

Second, voting is a noisy information channel. With each party having a plethora of policy positions and each voter having a unique set of preferences over all of these policies, political parties have only a rough idea of why people voted for them – which considerably weakens voters' control over the shareholding ministers.

Third, citizens do not directly vote for shareholding ministers: the party leadership selects ministers and may award ministerial positions on the basis of loyalty or political power rather than voter preference.

As citizens have weak control over shareholding ministers, they have little incentive to collect and use the information revealed by continuous disclosure. Collection and analysis is costly – and each New Zealander owns only (approximately) one four-millionth of each SOE. An individual who monitors SOE performance will bear the full cost of doing so; yet the benefits realised from that monitoring will be shared with every other citizen. It is therefore very unlikely that any individual will invest resources in monitoring SOEs.

So who has the incentives to collect and analyse the disclosed information?

Theoretically, organisations acting as intermediaries (for example financial analysts and the media) could undertake the monitoring role on behalf of citizens. They have an incentive to do so if they can sell their analysis directly or use it to sell other products such as newspapers. However, the returns for their efforts here are likely to be small compared with the returns from analysing publicly listed companies. Furthermore, almost half of NZX-listed companies have no analyst coverage[5] and so SOEs are likely to be low priority. Media monitoring of SOEs is also likely to be crowded out by more newsworthy events.

Another candidate is the opposition parties, which may use the information from continuous disclosure to hold the government to account. However, the outcome of such monitoring is not necessarily consistent with improved SOE performance. For example, it may be in the political interest of parties who favour continued state ownership of these enterprises to overlook poor SOE performance. Opposition parties also face strong incentives to embarrass rather than reward ministers for their performance – and this makes ministers (and their agents the SOE managers) highly risk-averse. Such use of the information may actually be contrary to improved performance, if risk aversion leads SOE managers to reject profitable projects on the basis of political risk rather than commercial criteria.

Greater than the sum of the parts

Increasing transparency is a laudable goal. Nevertheless our analysis suggests there is little likelihood that the SOE continuous disclosure regime will lead to improved managerial performance, because no recipient of the disclosed information has the incentive or ability to use the information for this purpose.

The policy lesson is that transferring a tool from one institutional environment to another gives no guarantee of success in the new environment. Each mechanism performs best when in combination with other control mechanisms. In isolation, each individual control mechanism is weaker than when all mechanisms are in combination. A control imposed in the absence of the other institutional mechanisms that render it useful will not have the desired effect.

1 Both this and the previous article ('How Can You Know What You Don't (or Can't) Know?' *Competition & Regulation Times* issue 35 pp1-2) are 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).

2 Such as charities and other not-for-profits.

3 See: MC Jensen & WH Meckling (1976) 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure' *Journal of Financial Economics* 3(4) pp305-360.

4 The Minister for State-Owned Enterprises and the Minister of Finance.

5 Capital Market Development Taskforce (2009) *Capital Markets Matter* (available at www.med.govt.nz/upload/71047/MDV6220_CMD_TombStone_04c.pdf).

Talosaga Talosaga is an undergraduate student in economics and a research assistant at ISCR. **Dave Heatley** is a senior advisor at the New Zealand Productivity Commission.

a Cavalier decision?

In June this year, the Commerce Commission gave the go-ahead to Cavalier Wool Holdings Ltd's offer for the assets of (and certain shares held by) New Zealand Wool Services International Ltd. The Commission's decision was noteworthy as the first successful authorisation under the Commerce Act 1986 since 2000. Trish Keeper provides an overview of the decision, outlines the nature of the legal tests required, and identifies some areas of uncertainty with those tests.

The Commission's decision[1] gave a green light for Cavalier to proceed with an offer which, if accepted, would create (at least in the short term) a monopoly in the wool-scouring services market in New Zealand. Cavalier's application included proposals to close New Zealand Wool Services' existing scours and relocate these at two Cavalier sites, leaving only one wool-scouring site operating in the North Island and one in the South Island – both operated by Cavalier.

The decision thus provides a timely opportunity to examine the process by which the Commission weighs up the economic gains from acquisition against the losses resulting from reduced competition.

47, 69, 66, 67 ... and go!

Section 47 of the Commerce Act prohibits any acquisition of assets or shares of a business if this would (or would be likely to) substantially lessen competition in a market. However, s69 of the Act provides that s47 has no effect on an acquisition that is in accordance with a *clearance* (under s66) or an *authorisation* (under s67).

A *clearance* requires the Commission to consider and determine that a proposed acquisition will not breach the statutory prohibition in s47. An *authorisation* empowers the Commission to approve a proposed acquisition, even if it will (or is likely to) reduce competition in a market, provided the Commission determines that the acquisition will result in 'such a benefit to the public' that it should be permitted.

Grappling with public benefit

There is no inclusive legal definition of the phrase 'benefit to the public' in the Act. However, s3A says that, in considering the phrase, the Commission 'shall have regard to any efficiencies that the Commission considers will result or will be likely to result', thereby making it clear that the Commission should include private benefits irrespective of whether such benefits flow to consumers.[2]

Further assistance is provided by the Commission's revised 1997 *Guidelines to the Analysis of Public Benefits and Detriments*, in which public benefits (and detriments) are principally assessed in terms of economic efficiency. Efficiencies and other gains that constitute public benefits include benefits arising from economies of scale, cost reductions, and better utilisation of existing capacity; detriments require consideration of loss of allocative efficiency, loss of incentives to avoid waste (production efficiency) and loss of incentives to innovate (dynamic efficiency).

Testing competition

The Commission's approach to an application under s67 is to first consider the likely impact on the relevant market or markets. The orthodox and judicially accepted approach is to use forward-looking factual and counterfactual scenarios and to attribute the difference between the scenarios to the acquisition. The factual is the likely position if the acquisition proceeds; the counterfactual is the situation if it does not. But the counterfactual is not automatically the status quo; rather it is *what is likely to occur* if the application is declined. In this case, as two of the majority shareholders of Wool Services International (WSI) were in receivership and the receiver was keen to sell these assets, the counterfactual was assessed as WSI's business being acquired by another party who would continue to run WSI's scouring service in competition with Cavalier.

This test is also found in Part 2 of the Act (Restrictive Trade Practices); its elements are well known and are not the focus of this

article. However, two points arising out of the Cavalier decision are worth noting. First, the Commission was not satisfied, by the evidence before it, that the acquisition would not substantially lessen competition; and therefore it was required to consider the public benefit test. Second, Godfrey Hirst NZ Ltd, a carpet maker and downstream competitor of Cavalier, was critical of the Commission's failure to consider the overall impact on the industry and specifically the downstream impact on the carpet market. (Following submissions on the Commission's draft determination, the carpet market was included as a relevant market in the Commission's June decision – although this inclusion did not assist Godfrey Hirst, as the Commission was not convinced that the proposed acquisition was likely to substantially lessen competition in that market.)

Netting the public benefit

The first question is: by what margin must the benefits exceed detriments for an authorisation to proceed? Intuitively, it would seem to be more than a mere net benefit: s67(3)(b) is stated in terms of an acquisition being 'such a benefit to the public' that it should go ahead. But does this require that benefits outweigh the detriments *to such an extent* that the Commission is almost compelled to approve it? It's not entirely clear, although the Act itself does provide some guidance: the wording of s 67(3)(b) is different from that contained in s61(6), which relates to authorisations of restrictive trade practices and which has the much simpler criterion of 'benefit to the public which would outweigh the lessening in competition'.

At the time this issue went to press, Cavalier's offer was still on hold pending the outcome of the appeal to the High Court by Godfrey Hirst NZ Ltd.

However, in its June decision the Commission referred to the High Court's statements[3] in 2004 that the tests were substantially the same, 'insofar as both require an assessment of likelihood of lessening of competition and of public benefit' and in practice 'there is no material difference between the tests mandated by the two sections'.[4] However, there are a number of arguments which support an interpretation of s67(3)(b) as requiring a higher standard than a mere net benefit – the strongest of which arguably is the permanent and irreversible nature of an authorisation under s67.

In terms of decision in this case, the Commission quantified net detriments over five years of at $18.1 million and benefits at $31.6 million. This process of quantifying the costs and benefits is in line with the Court of Appeal's observation in 1992[5] that the Commission should quantify costs and benefits insofar as feasible. However in 2007 the Ministry of Economic Development raised the issue of whether the Commission's decisionmaking relies too heavily on quantification, given the widely recognised difficulties in predicting (and thereby quantifying) the amount of certain losses, especially the loss of dynamic efficiency. While the Commission noted[6] that quantification is only one tool used in such cases and that the balancing of benefits and detriments is also informed by its qualitative judgements, the underlying rationale for the June decision is that 'the public benefits are likely to significantly outweigh the public detriment'.[7]

It is, however, difficult to comment on the Commission's figures as significant portions of the analysis have been omitted to preserve the confidentiality of certain aspects of the parties' business practices: the draft determination was criticised for the significant amount of material that had been omitted, and a high degree of deletion is also a feature of the public version of the June decision. The resulting lack of transparency makes it difficult, if not impossible, to form a view on the appropriateness of many of the Commission's assumptions and decisions. Hopefully the soon-to-be-released High Court judgment on Godfey Hirst's challenge to the decision will shed light on these issues.

1 Commerce Commission Decision No. 725, 9 June 2011: Cavalier Wool Holdings Ltd and New Zealand Wool Services International Ltd. At the time of writing, Cavalier's offer is on hold pending the outcome of an appeal to the High Court by Godfrey Hirst NZ Ltd.

2 For a discussion of this 'efficiencies defence' see: 'North America's Value-Laden Mergers Policy' and 'A New Zealand Perspective on the Efficiencies Defence' *Competition & Regulation Times* issue 2 pp6-7 & pp8-9 (available at www.iscr.org.nz/f64,1798/1798_newsletter_2.pdf).

3 In *Air New Zealand v Commerce Commission (No.6)* (2004) 11 TCLR 347.

4 Commerce Commission op. cit. paragraph 55.

5 *Telecom Corporation of New Zealand v Commerce Commission* (1992) 3 NZLR 429, 447.

6 Commerce Commission op. cit. paragraph 504.

7 Commerce Commission op. cit. paragraph 505.

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What a gas!

Natural gas provides a cheap and versatile fuel for use by households and businesses as well as by electricity generators. The industry, however, has faced some recent turbulence. Even before the recent rupture in the Maui transmission pipeline, capacity shortages had led to concerns about the adequacy of investment in maintaining and expanding the natural gas infrastructure. Stanford Levin and Alfred Duncan take a closer look at the industry.[1]

Most of the gas in New Zealand today comes from the Maui field off the Taranaki coast. It is transported around the North Island via the Maui and Vector pipelines and local distribution networks and sold by retail companies. Competition has been introduced into all segments of the industry with the exception of most transmission and distribution pipelines. Production, wholesaling, retailing and even meters are subject to competition. This is impressive internationally.

Nonetheless, there are two pressing concerns facing the industry. First, users are worried about the future supply of gas. This is discouraging investment in factory conversions and new electricity-generation facilities. Second, parts of the transmission pipeline network have reached capacity. Retailers are unable to acquire additional capacity on the network, which is inhibiting competition among retailers for the custom of large gas-users.

Concerns over monopoly power in gas transmission and distribution has led to regulatory intervention and to the development of a successful co-regulatory model unique to New Zealand. The industry co-regulator, the Gas Industry Company (GIC), works closely with industry participants and the government and aims to facilitate the resolution of disputes. When industry-led solutions cannot be found, the Commerce Commission can develop regulatory solutions. Currently the Commission is developing price-quality path regulation for gas pipeline businesses, and it is here that most of the policy issues arise.

Beneath the surface

From the late 1970s to the mid 2000s, the Maui field provided most of New Zealand's gas. Prior to 2003 all Maui gas was sold to the Crown at a price determined by a legacy contract, effectively capping the wholesale price significantly below market levels. This is evident in the near-constant wholesale gas price between 1996 and 2002 shown in Figure 1's upper panel.

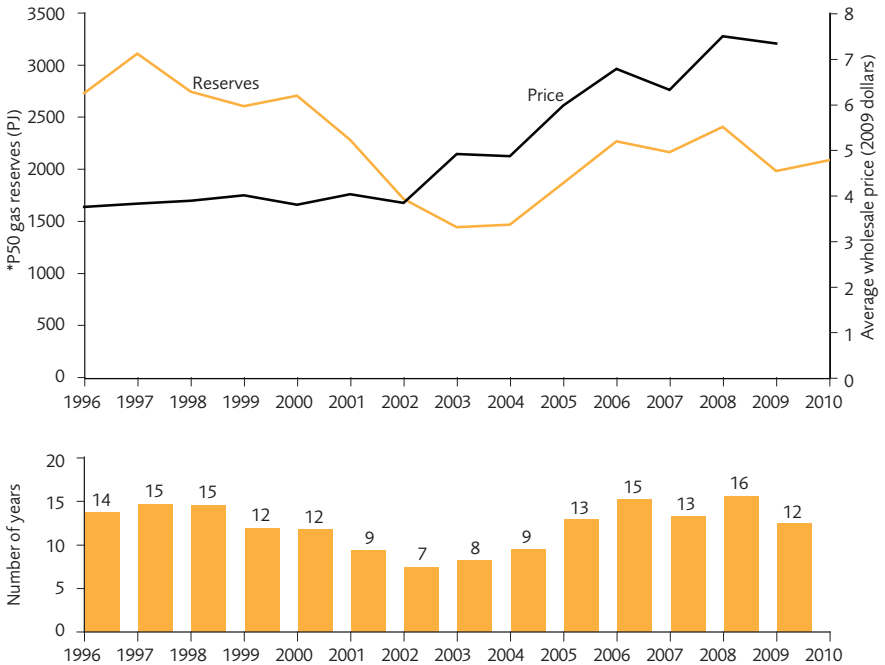
In 2003, with declining reserves, a portion of the Maui gas resource was removed from the legacy contract and allowed to be traded at market prices. This encouraged producers to undertake significantly more investment in exploration and development. Subsequently, new large discoveries including the Pohokura field have significantly increased proven reserves. Gas reserves (Figure 1's upper panel) as well as the implied years of gas supply (Figure 1's lower panel) have rebounded to historical levels.

In the pipeline

Growth in the demand for gas has caused some sections of the Vector transmission network to reach capacity. While retailers can accommodate more small residential and commercial users, they cannot compete for existing or new larger users because they cannot secure additional pipeline capacity to serve them. Transmission capacity contracts are grandfathered: at the end of the term of the contract, the retailer has the option to extend it. With the pipeline now at maximum capacity in some areas, retailers have an incentive to keep all of their current contracted capacity in these areas because it is a scarce (and hence valuable) resource. Although there is competition among retailers for large customers in other parts of the country, the inability of retailers in capacity-constrained areas to secure new transmission capacity creates a barrier to competition for large customers. A large customer may wish to switch retailers but is effectively locked in to his existing retailer. The new retailer cannot acquire sufficient pipeline capacity to serve the customer, and the existing retailer has an incentive to retain all of his existing capacity as a means of preventing customers from switching.

A short-term solution to this pipeline capacity problem is to let large customers take their transmission capacity with them when they switch retailers. While this does take some property rights away from retailers, it would permit all retailers to compete for large customers and it would allow large customers to benefit from competition among retailers in ways they cannot do now. The likely result of this would be to reduce any unusual profits accruing to retailers as a result of the capacity constraint, with a consequent benefit to large customers. The GIC has advocated a similar

Figure 1: Gas reserves and average wholesale price (upper panel); implied years of supply (lower panel) 1996-2010



Note: *P50 reserves are the median estimate of known resources that are economic to produce at current prices with current technology.
Source: Ministry of Economic Development and authors' calculations.

solution, which could deter moves toward more heavy-handed regulatory intervention.

In the long term, however, an increase in pipeline capacity is the only solution. In order to satisfy demand growth in the northern part of the country, and to promote competition, increases in pipeline capacity (through boosting pressure or building a new pipeline) are necessary.

Under pressure

The Commission is in the midst of setting a default price-quality regulatory framework that will take effect for gas-pipeline businesses in July 2012. The proposed framework, which is based on either a weighted average price or a revenue cap, seems to conform generally to international best practices.[2] It offers flexibility and efficiency incentives to pipeline operators. However, while the broad framework is sound, some of the details of the proposed default price-quality path and related regulation appear to increase risk for the necessary new investment without offering any offsetting benefit.

1. The proposed price-quality path is currently linked to forecasted consumer-price inflation. To reduce the risk to regulated pipeline companies, the Commission should consider using a measure of inflation that better reflects the costs confronted by the regulated companies and the change in the replacement cost of their assets. The Commission should also consider indexing the path to actual rather than forecasted inflation.
2. The proposed regulatory framework allows firms to apply for a customised price-quality path. This option is unlikely to be taken up by pipeline companies, however. The factors considered and the methodologies used for the calculation of the customised path are unknown, and firms are unable to revert to the default path after applying for a customised path. Clarifying the rules relating to customised price-quality paths and offering pipeline companies the option to revert back to the default price-quality path would reduce the risk associated with applications for customised paths.
3. The current regulatory framework distinguishes between regulated assets that have been sold and regulated assets that remain under their original owner. Usually this results in lower regulated prices in the case where regulated assets have been sold. This could prevent the sale of assets from inefficient to efficient operators.
4. The Commission should ensure that regulated firms are able to earn sufficient cash flows to maintain the credit ratings assumed in the weighted average cost of capital (WACC) determinations[3] and a return sufficient to attract capital.
5. The Commission has rejected the valuation of firms' assets that resulted from a detailed and lengthy study and instead opted for the previous lower values that were not based on such a rigorous study. The Commission should consider valuing pipeline assets using the more credible methodology that led to the later valuations. This would also bolster the industry's perception that the Commission will honour its side of the regulatory bargain before, during, and at the end of the term of the price regulation.

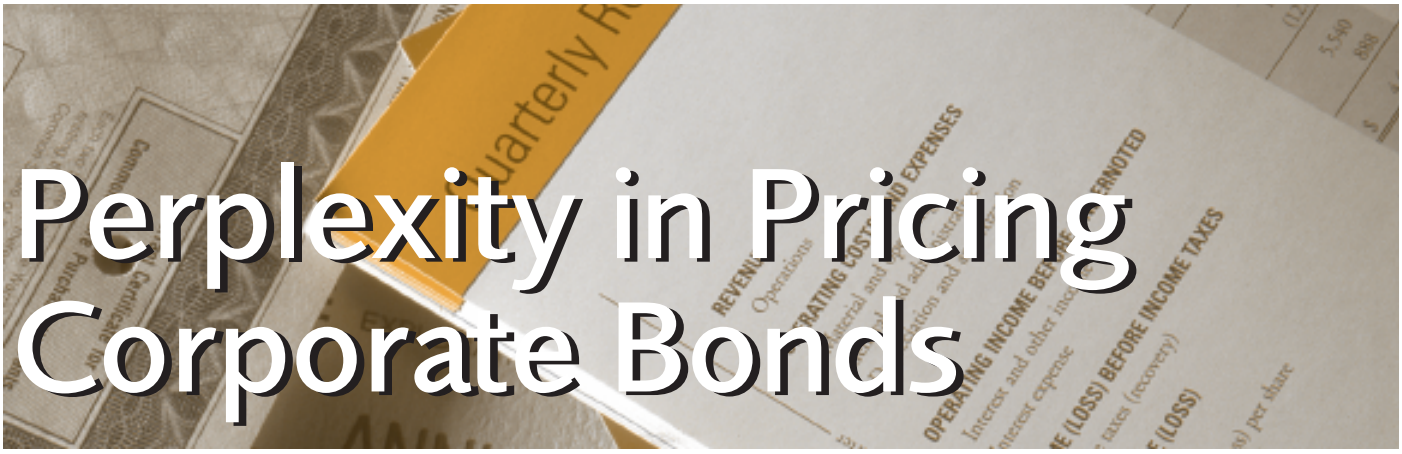
Capacity constraints are the biggest barrier to competition in retail markets. The investment required to overcome this problem is likely to be hindered rather than supported by both the current and proposed regulations.

1 This article is based on Stanford Levin and Alfred Duncan (2011) 'Policy Considerations for the New Zealand Natural Gas Industry' (available at www.iscr.org.nz/f664,18749/18749_Report-17.pdf).

2 This analysis relies on: Commerce Commission (2011) *Discussion Paper: Initial Default Price-Quality Path for Gas Pipeline Businesses*. The Commission's regulatory framework is still under development.

3 Commerce Commission (2011) 'Decision Number 718: Determination of the Cost of Capital for Services Regulated under Part 4 of the Commerce Act 1986'.

Stanford Levin is Emeritus Professor of Economics at Southern Illinois University Edwardsville in the US and was a visitor to ISCR in April and May 2011. **Alfred Duncan** was a research assistant at ISCR until September 2011; he is now at Glasgow University undertaking his PhD in macroeconomics.



Perplexity in Pricing Corporate Bonds

The corporate bond market is significant. According to the United States Federal Reserve, outstanding US corporate bonds totalled $4.6 trillion by the end of 2010 – an increase of more than 350% above 1990 levels. However, there has been very little empirical work done to test the vast theoretical literature of corporate bond pricing models. Nimesh Patel surveys their accuracy and reliability.

The default-claim models used for corporate bonds are important[1] for numerous reasons, including pricing new products accurately and aiding risk managers in determining credit-risk exposures. The recent global financial crisis underlines the need to further examine these types of models: default events soared during that time, with Moody's reporting that the default rate for all rated corporate issuers rose to 5.4% at the end of 2009 – an increase of 3% above the 2008 rate. Losses were further exacerbated by extensive levels of securitisation using credit products as underlying securities.

Corporate bond pricing models are split into two families: structural and reduced form. Structural models treat debt as a derivative on the assets of the underlying firm and model default as an event that occurs because of firm insolvency. This is achieved by assuming that the asset value of the firm follows some stochastic process and that the value of a security of the firm is a function of this asset value. Default occurs in these models when the firm's asset value is not high enough for the firm to meet its obligations. In contrast, reduced-form models do not endogenise default but rather treat default as a random event that occurs with some exogenous probability. This makes it much easier to estimate these models than their structural counterparts. The reduced-form class has been formulated largely as a consequence of the empirical failures of the structural models to accurately price bonds.

Historically, structural bond pricing models have struggled to capture the magnitude of credit spreads observed in the market for investment grade bonds. Applications of these models find that generated credit spreads, on average, are far too low in comparison with actual spreads. One 2004 study,[2] for example, finds that a basic structural model can only explain, on average, half the observed credit spreads. This could be due to non-default factors such as liquidity risk which are not considered in structural models. However, the failures of the structural models may be a direct result of a misspecified estimation approach rather than theoretical inadequacies. The problem with implementing structural models is that the asset value of the firm and its volatility are unobserved variables and thus need to be estimated. Inadequate estimation of these variables has led to structural models largely being dismissed, and replaced by wider use of reduced-form models. Nonetheless, more recent applications of structural models – using a maximum likelihood (ML) approach where firm values are calibrated from observable data – have yielded promising results. With this approach, we find that the most basic structural model has a mean spread prediction error of only 1.06%.

Although reduced-form models perform well enough and are relatively straightforward to apply, the use of a structural model is attractive because of the clear link it provides between firm value and default. That is, it prices from a 'balance sheet' point of view. In addition, pricing corporate bonds as contingent claims on firm assets allows us to infer the value of a bond by using price information from another security issued by the same firm. This is useful when considering hedge positions or the effects of capital structure changes, and is a clear advantage of structural models over reduced-form models.

However, even under a more efficient estimation method, the application of structural models is not without complications. The performance of a model is greatly dependent on the risk-free (that is, Treasury) interest-rate process assumed by a model. The closed-form[3] solutions provided by a model are limited by the interest-rate assumption applied. A numerical procedure such as Monte Carlo simulation can sidestep this issue. By using simulation, we can apply a model under any assumption of interest-rate process we deem appropriate. This is because we are not required to use closed-form solutions under a numerical method. However, determining the correct interest-rate process is a whole other issue on which no consensus has yet been reached.

The calibration of firm values using simulation also comes with many issues of its own. These include situations where the inputs provide no firm value – or too many. Coupled with the fact that the ML method is very expensive computationally, the implementation of a structural model under a Monte Carlo framework is a daunting task. Nevertheless, with computational costs likely to decrease over time, the ML approach provides a potential lifeline to structural bond pricing models.

1 M Uhrig-Homburg (2002) 'Valuation of Defaultable Claims – A Survey' *Schmalenbach Business Review* 54 pp24-57.

2 Y Eom, J Helwege & J-Z Huang (2004) 'Structural Models of Corporate Bond Pricing: An Empirical Analysis' *Review of Financial Studies* 17(2) pp499–544.

3 A security has a closed-form solution under a given model when its value can be expressed as a function of observable variables.

Nimesh Patel was a research assistant at ISCR and recently completed his Masters thesis on corporate bond pricing. He commenced PhD studies in corporate finance at the University of California, Los Angeles in September.