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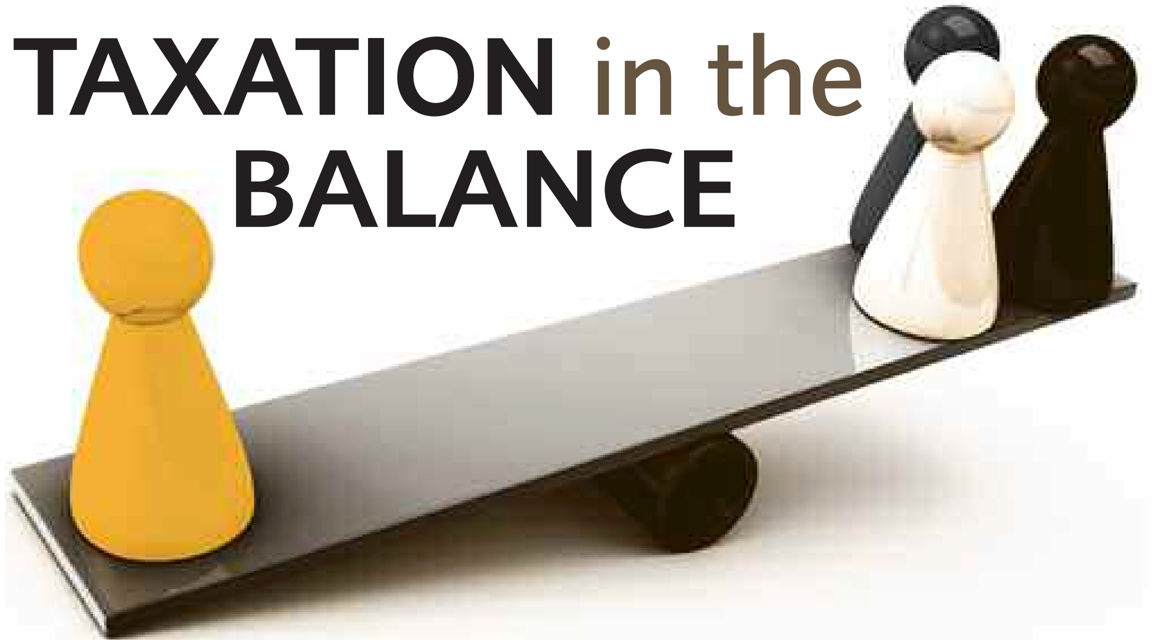
TAXATION in the BALANCE



The report of the Victoria University of Wellington Tax Working Group (TWG) *A Tax System for New Zealand's Future* represents a unique collaboration among individuals from the Treasury, the Inland Revenue Department, the Centre for Accounting, Governance and Taxation Research (CAGTR), and a range of other acknowledged tax experts. John Creedy looks at some of the fruits of this collaboration.[1]

The TWG report is essentially an exercise in 'rational policy analysis' – that is, it aims to examine the implications of a range of alternative policies. This approach involves a clear statement of the criteria used and encourages an understanding of why different people may not agree about the best way to proceed. It stimulates rational discussion rather than heated argument. As a result, the report is refreshingly free of the kind of rhetoric which is so often a part of taxation debates.

After a brief discussion of the role of taxes, the report explains why reforms are needed and why adjustments to existing rates and thresholds are unlikely to be sufficient. Motivated by the extent to which the tax rate applied to corporations, trusts and the top personal tax rate have become 'misaligned' and keeping in mind the increasing extent of international capital mobility, its authors next consider a range of alternative methods of taxing corporations. They then go on to examine reductions in personal income tax rates, along with methods to broaden the tax base that involve the introduction of a land tax and extensions to the capital gains tax as well as a range of smaller reforms (such as the one concerning depreciation allowances for property investment). In each case the advantages and disadvantages are carefully discussed.

The TWG restricted its attention to reforms which are revenue neutral. This is necessary because any change in revenue involves another (unspecified) policy; so alternatives cannot properly be compared. For example, advancing the argument that problems would disappear 'if only government expenditure were cut' would be irresponsible unless a detailed set of proposals for cutting expenditure were produced and their implications examined.

Revenue-neutral changes in the tax structure must involve some winners and some losers. Hence distributional value-judgements cannot be avoided, and this explains why there is usually so much disagreement in tax policy debates. A strong desire on the part of policymakers to avoid creating losers clearly generates a bias towards the status quo.

Touching base

A Tax System for New Zealand's Future sets out six 'principles of a good tax system'. These are: efficiency and growth; equity and fairness; revenue integrity; fiscal cost; compliance and administration cost; and coherence (as part of a multi-tax and benefit structure). However, some important principles in the report are implicit and need to be made explicit – for example, that

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taxes should reflect 'ability to pay' rather than 'benefits received' (from tax-financed expenditure).

A further important 'hidden principle' is that one's ability to pay should be measured by one's 'comprehensive income', which is the amount that can be consumed in a given period without reducing wealth. The adoption of this concept as a tax base is the reason for attempting to tax capital gains. Such taxes obviously face problems in dealing with those gains which accrue but are not realised, and the report recognises that a 'comprehensive capital gains tax' is an impossibility. Nevertheless, there may be scope for an extended capital gains tax similar to that used in other countries.

The TWG argues that 'the broad-base low-rate [BBLR] option is generally a sound principle to adopt'. However, BBLR is really a rule of thumb, arising from recognition that the efficiency cost (in terms of the excess burden) of a tax is approximately proportional to the square of the tax rate. Hence it is useful, other things being equal, to keep the rate low; and this is achieved by keeping the tax base as broad as possible. But in evaluating a tax structure there are other considerations, as indicated in the TWG's own list of criteria. For example, the BBLR 'rule' leads the TGW directly to the suggestion that the top marginal income tax rate should be reduced – but such a judgement may be modified, depending on policymakers' 'equity and fairness'.

Some ambivalence is also present in the TWG's discussion of the 'alignment' of the corporate, trust, and top personal tax rate. It sometimes appears that the report treats alignment as a basic principle, while recognising that it would involve a loss of freedom in policy choices. Yet it is more appropriate to consider it as a rule of thumb rather than a principle. However, as the report argues, there can be little doubt that the rates have now become seriously out of line and some movement towards alignment, if not necessarily to equality, is a high priority.

One major concept used in the report, but not defined, is that of progressivity. A tax structure is progressive if the average tax rate increases with income. However, progressivity does not require 'marginal rate progression', which refers to an increasing marginal tax rate. Indeed, a considerable degree of progressivity can be achieved with a proportional tax, combined with a basic transfer payment.

This is relevant when considering a change in the tax mix – a shift from personal (income) taxes towards indirect taxation in the form of the GST. This can be achieved in a variety of ways: through reductions in all marginal income tax rates, or as part of a rate-flattening exercise. The approach adopted clearly depends on the value judgements made about income distribution. Where concern is largely with low-income groups, a cut in higher-income tax rates can be combined with an increase in the GST rate, along with a suitable adjustment to benefit levels to maintain their real values. After all, this was done when GST was first introduced.

On page 10 of its report, the TWG suggests that 'taxing those bases that are least likely to be subject to significant behavioural change from the imposition of a tax ('inelastic' bases) is also a sound principle'. This rests on the argument that the loss of consumer's surplus (the difference between the amount the consumer pays for goods and the maximum amount he or she would be willing to pay) is minimised when the tax change reduces the consumption of all goods by the same proportion, implying a higher tax on inelastic goods. However, this result is severely limited because it refers to a single-person economy, and thus excludes any equity concerns.

Consumer's surplus is now known to be a poor measure of the welfare change. The most widely accepted concepts of excess burdens arising from taxation are based on measures which depend not on price elasticities but on 'compensated' elasticities (where the 'income effects' are excluded). This is not merely a pedantic point about definitions: in practice, many cases arise where welfare costs are very high, even where elasticities are low.

The land question

Here is the appropriate point to consider how the TWG's discussion of a land tax fits in with its list of tax principles. A proposal for a land tax is not motivated by a comprehensive income measure (which gives no support to a wealth tax). It is instead motivated by the desire to find an additional tax base, using the criterion relating to elasticity – it is concerned only with a definition of efficiency. Nevertheless its transition, tax-shifting and equity effects are clearly important considerations which need further analysis.

Some further steps

The TWG's report recognises that further analyses need to be carried out. Given the remarkable short time-scale in which the report was produced and the low level of resources made available to the TWG, this is of course inevitable.

One area the TWG has singled out for future analysis is the transfer system and its integration with the personal income tax structure. The Working for Families (WfF) initiative has brought about substantial marginal-tax rates for middle-income groups along with high levels of government expenditure. It also appears that WfW has had unintended consequences: some individuals who were not in the WfW designers' target group are in receipt of WfF transfers. It is suggested here that a comprehensive review of WfF needs to be given very high priority.

Additional areas for further work (not mentioned explicitly in the report but undoubtedly supported by the TWG) include behavioural responses to taxation. Despite the potential importance of foreign direct

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investment and corporations' profit-shifting (both real and that achieved by the exploitation of transfer pricing), very little solid empirical evidence is available on companies operating (or previously operating) in New Zealand. Similarly, there no longer exists a behavioural model in New Zealand that is capable of producing estimates of labour-supply responses to tax changes and their associated efficiency (welfare) costs.

One suggestion in the report is that there should be a review body to conduct regular independent evaluations of the tax structure in New Zealand. Presumably the TWG has in mind something like the role played in UK tax evaluations by the Institute for Fiscal Studies in London. Having such a review body could impose some constraints on politicians' propensities to tinker with taxation in ways that have insufficient regard for the integrity of the complete system. It could also help to make the system less vulnerable to the inevitable special pleading by interest groups. (The question of the funding and location of such a body was not discussed in the report.)

Common ground for the future

In any discussion of taxation, there are too many value judgements involved and too many areas where, in the absence of data, 'informed guesses' must be made. Yet the TWG clearly managed to agree on a broad framework for discussing reforms, and its influence on the tax debate is already evident. The suggestions that there are substantial revenue risks, and that the distorting effects of some forms of taxation have growth effects as well as the less visible (but nonetheless substantial) excess burdens, have clearly influenced the government in its thinking about tax-structure changes. That a disparate group of individuals from a range of backgrounds have established some common ground in a way of thinking about taxes is itself sufficient cause for praise. The TWG's report can be read with interest and profit.

1 This article is based on material presented by the author at two events: a Guest Lecture at the Treasury in Wellington on 23 February 2010 (jointly sponsored by the Treasury, CAGTR (Centre for Accounting, Governance and Taxation Research) and ISCR; and a presentation at the Auckland Business School on 25 February 2010.

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Asia-Pacific Regional Conference

Wellington, New Zealand
August 26-28, 2010

"Telecommunications: Ubiquity and Equity in a Broadband Environment"

Conference Co-Chairs:

Professor Stanford Levin
Bronwyn Howell, *General Manager, ISCR*

Keynote Speakers:

Prof. Stanford Levin, *Southern Illinois University Edwardsville*
Andrea Renda, *Senior Research Fellow at the Centre for European Policy Studies (CEPS)*
Bob Crandall, *Senior Fellow in the Economic Studies Program of the Brookings Institution*

The ability to achieve Universal Service and Network Neutrality policy objectives continues to be challenged by the development and deployment of increasingly faster, more capable telecommunications technologies – in particular, the expansion of broadband networks and the convergence of multiple content media on to a digital form capable of being transported via broadband networks. The conference will provide an opportunity for issues such as 'where will these new technologies be made available, and how will they be made accessible, useful and affordable' to be addressed by way of keynote speaker addresses, paper presentations, plenary sessions, and formal and informal networking.

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art-ful issues

The arts are a peculiar mix of private and public benefit, which can make funding the arts a taxing science – especially during an economic downturn. Lisa Marriott explores some of the issues involved.[1]

Nobel laureate Kenneth Arrow's seminal research on information goods highlighted the fundamental problem of funding the arts. Each arts 'product' (play, concert, exhibition, song, painting, and so on) exhibits the characteristics of non-rivalry and non-excludability. One person's enjoyment of the good does not diminish others' ability to enjoy the same good, and it is costly to exclude 'free-riders' from benefiting from the good without paying for the benefit they enjoy as a consequence of the artwork's existence.

This leads to the classic 'problem' of inefficient under-provision of such goods and the classic 'solution' whereby these goods will be produced in efficient quantities and varieties only if supported by voluntary donations[2] or involuntary tax-sourced subsidies (that is, from rates and general taxation). Consequently, countries throughout the OECD provide tax-based support for the arts. This support may take the form of tax credits, tax deductions for charitable donations, grants, or targeted support. Incentives are provided to a range of industries such as performing arts, film, publishing, music, digital media, literature and television.

While the principle of government funding is easy to justify, it is much harder in practice to make the important decisions about how to distribute taxpayer funds amongst the artists. As with any constrained resource, it is important that taxpayer subsidies are distributed in such a manner that the economic benefit gained is greatest.

A number of issues emerge here. Defining what qualifies as 'art' is problematic; measuring the potential economic contribution from the arts is extremely difficult; and measuring the level of assistance provided to the arts community, particularly in relation to indirect assistance from other sources, is fraught with difficulty. Nonetheless, in a time when the efficacy of government spending is increasingly coming under the microscope, the enormity of the task should not be an excuse for avoiding an assessment of the efficacy of existing subsidy practices: who receives state support; how much they get; who decides on the allocation; and the likelihood of economic benefits.

The primary reasons for government assistance to the arts include:

- the national prestige or identity that may result from the existence of the art
- externalities created when the benefits (or costs) of a good or service have a spillover effect (such as patrons' consumption of accommodation or meals when they attend an arts event, or their transport to an event)
- the potential contribution of the arts to economic growth (there is some indication that the arts industry is growing at a faster pace than average and providing a greater contribution to society than many other industries)
- the creation of a legacy for future generations
- the 'merit good' argument: that arts are socially desirable and, accordingly, their utilisation should be maximised
- the potential for market failure in the provision of certain arts.

Many of these arguments do not have a strong evidential base.

For example, in relation to the merit good argument, it is well established that the audiences of the 'traditional' arts (for example ballet and opera companies and symphony orchestras) are characterised by higher income, wealth and education than that of the population as a whole. Moreover, the high attendance costs of some arts means that they are not available for all to consume.

The national prestige argument is also open to debate. Traditionally, in New Zealand, it has been sporting achievements rather than accomplishments in the performing arts that have created a New Zealand identity and raised the country's national prestige – although the international successes of the *Lord of the Rings* trilogy over the last decade, as well as raising the profile of our film industry, has added substantially to national prestige.

And while the argument that a strong arts community can assist in job creation and other economic benefits is not without merit, it is not sufficiently compelling: the same argument can be made about almost every industry.

State of the arts funding

The real issue is in deciding which of the arts are more equal than others when funding decisions are made.

State support can take various forms: exemptions from certain taxes, such as capital gains, estate or gift taxes; deductions for individual and company donations to arts organisations; grants or subsidies; and a variety of additional tax exemptions for arts institutions. These types of support reduce the ability of the market to provide an optimal price and quantity from the traditional supply and demand mechanism.

Historically, direct grants have been one of the most common methods of providing financial assistance to the arts. Another common option is a tax deduction for contributions to the arts (often framed as a tax deduction to a not-for-profit organisation). This deduction effectively makes the government a co-contributor to the donor organisation, reducing the donor's tax obligation and increasing the state liability.

An alternative approach is that of a tax credit, which reduces the donor's tax obligation by a proportion of the amount of the donation. In New Zealand, recent changes to the tax treatment of donations to registered charities may result in increased donations to these charities. A number of arts organisations, including the Royal New Zealand Ballet, are listed as registered charities by the Charities Commission.

The New Zealand film industry has also benefited from government support in recent years, with the provision of a tax-exempt 'Large Budget Screen Production Grant' for New Zealand based production of films, digital, and visual effects as well as the Screen Production Incentive Fund for production expenditure that qualifies as New Zealand based. The objective of this funding is to increase economic growth by providing a financial incentive for attracting large-budget film and television productions to New Zealand. In addition, a further objective is to accelerate skill development and technology transfer within the local screen-production industry and to provide additional benefits for the economy via the promotion of New Zealand and subsequent increased tourism.

In addition, government funding is provided to a number of sectors that fall within the broad definition of the arts. Expenditure in the 2009/10 Budget (along with the previous year actual spend) is outlined in Table 1.

The piper calls the tune?

A criticism frequently attached to the provision of any tax incentive is the tendency to privilege one group above another. In a democratic environment, direct taxpayer-funded subsidies may be accused of lacking transparency. Furthermore, to the extent that the state supports certain art forms and not others, direct subsidies lead to the suggestion that the paternalistic state can decide for the population what is good for it. However, a tax deduction or matching co-contribution for a charitable donation does allow for individual preference to influence the organisations that receive state support.

As noted earlier, New Zealand has recently benefited from the national prestige associated with a successful film industry. The considerable positive economic benefits and externalities from the New Zealand filming of the *Lord of the Rings* trilogy include an increased international profile of the country's film industry; an increased skill base in our screen-production industry, which has broadened film infrastructure; the creation of spin-off industries, such as merchandising; and the enhancement of 'Brand New Zealand'.

When compared with expenditure on the arts in Australia, and in particular on the Australian film industry, New Zealand's tax incentives are meagre. There is an awareness of the importance of remaining internationally competitive in the film industry, as demonstrated in the Ministry of Economic Development's 2007 Cabinet Paper, which acknowledges that 'the proliferation of production subsidies around the globe has been one of the most significant factors affecting the choice of production venues for a significant volume of production ... in order to remain a preferred destination, New Zealand must ensure that our incentive is globally competitive'.[3] Despite this awareness, New Zealand does not provide incentives at a level comparable to that of many other OECD countries.

What may be seen from the perspectives outlined here is that a number of arguments exist for the state to provide support for the arts. However, the arguments are not helped by the complexity of demand and supply associated with the arts, nor by the fact that these private goods provide public externalities. Perhaps the issue is best captured in the sentiment that creative enterprises 'come with high risk, uncertainty, transaction costs, network externalities, spillovers and public good effects that imply that markets alone will not be sufficient to create an adequate resource base'.[4]

One's view on the provision of tax incentives is likely to be influenced as much by one's perspective of the place of the arts in society, as by economic analysis. However, where economic analysis may assist is the allocation of scarce resources. Thirty years ago, a view prevailed that 'to bring notions of efficiency to bear on arts policy may seem irrelevant or vulgar'.[5] Nevertheless, in a highly competitive and global marketplace, the need for all publicly funded organisations to be held accountable for the use of state funds – and to provide a demonstrated return on investment – appears not simply defensible but mandatory.

Table 1: New Zealand Expenditure on the Arts 2009/10

	Actual 2008/09 ($000)	Budget 2009/10 ($000)	As % of recipient's annual income
Museum services	24,644	24,644	50%
Performing arts services			
New Zealand Symphony Orchestra	13,446	13,446	78%
Royal New Zealand Ballet	3,534	4,384	42%
New Zealand Music Commission	1,378	1,378	88%
Te Matatini#	1,248	1,248	80%
Promotion and support of the arts and film			
Creative New Zealand	15,937	15,689	45%
New Zealand Film Commission	3,611	3,611	22%

Source: Vote Arts, Culture and Heritage. *The Estimates of Appropriations 2009/10 B.5.*
The national body for Māori performing arts.

1 This article is based on Lisa Marriott's prize-winning paper at the 2010 Australasian Tax Teachers' Association Conference 'The Science of Taxing the Arts' (available at www.iscr.org.nz/n548.html).

2 See, for example: J Randall (2007) 'I'll give ... if you do (maybe)' *Competition and Regulation Times* issue 23 p1.

3 Ministry for Economic Development (2007) *Large Budget Screen Production Grant Review of Bundling* Cabinet Paper, July (www.med.govt.nz/upload/48443/cabinet-paper.pdf).

4 D Barrowclough and Z Kozul-Wright (2008) *Voice, Choice and Diversity through Creative Industries: Towards a new development agenda*. Routledge. London. p3.

5 CD Throsby and GA Withers (1979) *The Economics of the Performing Arts* Edward Arnold (Australia) Pty Ltd. Melbourne. p204.

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Is Fibre good for Us?

Fast internet access is widely considered to be a factor in enhancing productivity. As faster broadband technologies become available, calls are made to upgrade existing telecommunications networks so that local firms and households won't be left on the 'wrong side' of the digital divide. In response, governments in countries as diverse as Australia, New Zealand, Greece and South Korea have pledged large sums for fibre-enabled broadband access. Arthur Grimes asks whether these calls are warranted.[1]

Prudent technology investments are ideally based on results from well-regarded studies that quantify the benefits flowing from the new technology. However, rigorous research into the productivity benefits of faster broadband is sparse. For instance, there is very little research that measures the productivity impacts for firms of a shift from one type of internet access to another. Most available research has been conducted at an aggregated (regional or national) level and simply compares various economic outcomes across spatial units (such as zip codes) where types and intensity of broadband penetration differ. Separation of cause and effect is problematic: does provision of excellent broadband access lead to better economic outcomes for regions; or do regions with better economic outcomes attract better broadband access? Other research bundles internet access with complementary information and communications technology (ICT) investments, making it impossible to draw reliable conclusions about the extent of productivity improvements that might arise if (say) an ADSL network is upgraded to fibre-optic cable but no other ICT upgrades are made.

Fibrous arguments

The lack of rigorous research occurs firstly because fibre-enabled broadband access is still a reasonably new technology – and so limited data are available. Furthermore, the applications that may fully utilise the network are still in their infancy, making it difficult to gauge just how much the new technology will boost productivity or to whom the greatest benefits will accrue. Will fibre to the home provide greatest benefit (for instance, through improved access to educational resources) or is fibre to the firm more important? Will different types of firms benefit in different ways? Will access to consumption-based activities possibly reduce productivity for some users?

Secondly, research addressing these questions requires micro-level (unit record) data measuring uses and outcomes associated with different broadband provision. The required micro data are seldom collected in a manner that allows estimates to be made of the effects of differing provision on economic outcomes of firms (or households). Luckily, however, New Zealand does have data that allows such analysis.

A firm approach

Statistics New Zealand collects survey information from firms for official statistical purposes. Data from these surveys can be linked to firms' financial outcomes through its prototype Longitudinal Business Database (LBD), enabling approved researchers[2] to analyse the links between firms' actions and subsequent outcomes for those firms (for instance between type of broadband access and internet use, and firm-based productivity growth). Using the LBD along with Statistics New Zealand's 2006 Business Operations Survey (BOS06),[3] Grimes, Ren and Stevens explored the link between firms' broadband access choices and productivity over time. The study looked at the characteristics that may determine a firm's broadband access choice, and also the causality between firm outcomes and broadband access. It examined the productivity impact when a firm:

- adopts broadband rather than dial-up
- adopts 'fast' broadband (defined as any type of cable connection)[4] rather than 'slow' broadband (all other broadband types: DSL, cellular, wireless, and satellite)
- adopts 'slow' broadband rather than dial-up.

In addition, the study produced descriptive statistics on the firms' types of broadband use according to their types of broadband access.

Each firm's data identified whether it had access to the internet and, if so, the access technology used: dial-up; 'slow' broadband; or 'fast' broadband. Similar firms with and without broadband were matched and their differences in productivity compared. The matching used observable characteristics such as size and industry type, a set of factors shown to increase the likelihood of broadband uptake, and a lagged measure of the firm's productivity.

After controlling for the likelihood of broadband uptake, the study found that firms with broadband were on average around 10

percent more productive than matched firms that didn't have broadband. This effect was slightly but not significantly greater for rural firms relative to urban firms.

However, no significant productivity differences were found for matched firms that differed by broadband speed (that is, 'fast' versus 'slow' broadband). This does not necessarily mean that 'fast' broadband is of no use – the result may also be due to any one of the following:

- a lack of clear delineation in speeds between the measures of 'fast' and 'slow' broadband
- lack of knowledge by survey respondents of their actual broadband type
- recent adoption of 'fast' broadband by firms (meaning that productivity benefits had yet to flow through)
- 'fast' broadband benefited only a small subset of firms in 2006.

The descriptive statistics provide context for the results. The 2006 survey indicated that 76.4% of New Zealand firms had some form of broadband access, with about one-tenth of these having cable access; thus 7.5% of firms had 'fast' broadband access (see Table 1). Firms undertaking some of the applications that are presumed to rely on good internet access are much more likely than typical firms to have not only broadband but 'fast' broadband. For instance, 91.8% of firms that recently entered a new export market had some form of broadband while 14.1% (almost double the economy average) had 'fast' broadband. Firms that sold goods over the internet were much more likely than firms with no internet sales to have broadband – and to have 'fast' broadband. A similar pattern was found where firms had a high proportion of their internet sales made internationally.

Intriguingly, however, tourism-related firms were no more likely than non-tourism-related firms to have broadband.[5] As New Zealand's tourism-related firms are more commonly located in rural areas, this result possibly echoes the study's findings that rural firms are much less likely to have broadband (and especially 'fast' broadband) than urban firms – which reflects the limited provision of broadband services in rural areas.

Table 1: Uses of broadband by New Zealand firms (2006)

Characteristics	% with broadband#	% with fast broadband#
Firm has a webpage	90.2	11.5
Firm makes purchases via the internet	91.3	10.4
Firm has entered new export market	91.8	14.1
% of sales made over the internet:*		
- 0	70.7	5.5
- (0, 25]	93.2	11.7
- (25, 100]	82.6	20.8
% of internet sales made internationally:*		
- 0	92.2	8.5
- (0, 25]	91.5	22.2
- (25, 100]	81.7	16.1
% of sales from tourism:*		
- 0	76.4	7.0
- (0, 25]	75.6	4.2
- (25, 100]	78.4	19.6
Total (all firms)	**76.4**	**7.5**

Source: Grimes, Ren and Stevens (2009).
All %s are weighted using sample weights to reflect the overall NZ firm distribution.
* (0, 25] = greater than zero & up to and including 25%; (25, 100] = greater than 25% & up to and including 100%.

Policy conundrum

In deciding whether to undertake a major and publicly backed roll-out of fibre, policymakers must balance likely benefits against project costs – and one source of information on this can be estimates of benefits derived from similar prior investments. Taken at face value, the study suggests that, while ADSL broadband has had positive productivity effects for firms, firms with 'fast' broadband have experienced no *additional* benefits. Completion of the ADSL network to rural (including tourism) firms may, in these circumstances, be a priority for policy.

However, the study data relate to 2006 and it is possible that new internet applications requiring 'fast' broadband are now creating greater opportunities for firms to increase their productivity and/or profitability. The descriptive statistics support the existence of a link (though not necessarily causal) between fast internet access and such new applications.

Policies, both public and private, are necessarily being formulated in an environment of considerable uncertainty. While past data do not show a major dividend from rolling out 'fast' broadband, future prosperity for some – or even many – firms may rely on rapid internet access. At the same time, technologies that are able to deliver fast access (including mobile) are evolving, so considerable uncertainties exist on both the demand and the supply side of the industry. The importance of firm versus household access is also uncertain, as research establishing whether there is a link between positive economic outcomes and households' access to 'fast' internet is sparse.

In this uncertain environment, a cautious approach to investment may typically be warranted. Modern literature on investment under uncertainty suggests that waiting to invest can be a beneficial strategy when that uncertainty will partially unravel over time. However, the risk is that fibre is indeed a major positive determinant of productivity and those countries that roll it out first will snap up the firms most able to benefit from it. In that circumstance, a strategy of waiting could be inimical to improving the country's overall productivity.

These considerations demonstrate the complexities facing policymakers. One possible (pragmatic) approach would be to ensure fibre-enabled broadband is available at key nodes while also completing the ADSL roll-out to rural areas. Nonetheless, given the manifold uncertainties, policies that support continued investigation into the New Zealand micro data to improve understanding of the benefits of extra provision are a necessary minimum.

1 This article is based on: A Grimes, C Ren and P Stevens (2009) 'The Need for Speed: Impacts of Internet Connectivity on Firm Productivity' Motu Working Paper 09-15 (www.motu.org.nz/wpapers/09_15.pdf). The research for this paper was funded by grant MOTU0601 from the Foundation for Research, Science and Technology.

2 Researchers must adhere to strictly defined confidentiality requirements.

3 A sample survey of approximately 6000 firms, with extensive questions on firms' business practices – including access to and use of the internet.

4 This delineation was restricted by the available data, which did not distinguish between different cable types.

5 The corresponding result for 'fast' broadband depended on the proportion of tourism-related sales: only a small proportion of firms with 'fast' broadband made substantial tourism-related sales.

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Looney TUNES

New Zealand is often seen as irrationally overregulated. But in terms of regulating for safety restraints in motor vehicles, it emerges as a paragon of commonsense: attempts at similar regulation in the US led to perverse outcomes. Scott Thompson explores this instructive contrast between the US and New Zealand.

All too often countries end up with 'popularly' driven regulations unsupported by evidence. For example, Steven Levitt and Stephen Dubner drew on child-seat crash-performance test results to show that a traditional three-point (lap-and-shoulder) seatbelt was as safety-effective as a standards-approved child seat for *children aged six and over* in high-speed crashes, and as cost-effective for the same age group in low-speed crashes.[1] Yet despite seatbelts costing a fraction of child seats, and despite their installation already being compulsory in new vehicles, the seatbelt didn't appear to satisfy the requirements of zealous regulators: under the guise of increasing safety, many have made the use of child seats compulsory. As a result, there has been inefficient over-investment in child seats, further stress on already-tight family budgets, and the 'criminalising' of parents who choose to use standards-meeting seatbelts rather than the certified seats to restrain their children.

Regulations requiring complex and expensive automotive-safety technologies where the humble lap-and-shoulder belt will actually do a better or more cost-effective job are not recent phenomena.[2]

In the early 1980s, extremely low rates of voluntary seatbelt use (around 14%) were a source of political angst in the US. Comparing the considerable reduction in expected loss that resulted from seatbelt use with the opportunity cost of time spent buckling and unbuckling, many authors concluded that voluntary seatbelt-use rates were inefficiently low. Although mandating the use of manual belts (which were already required to be fitted in all new vehicles sold in the United States) was an obvious option, some industry participants favoured the compulsory installation of 'passive restraints' when addressing the vexed issue of vehicle safety. Passive restraints require no driver action to be rendered effective – examples include airbags and automatic seatbelts that fasten as the vehicle door closes.

The freedom to die

Independent research undertaken by the National Highway Traffic Safety Administration (NHTSA), confirming earlier studies by GM and Volvo, found that if the usage rate of manual lap-and-shoulder belts could be increased to only 70% of drivers, the number of deaths and moderate to severe injuries prevented (around 6000 and 110,000 respectively) would be roughly equivalent to that achieved from the installation of 'passive restraints' in every motor vehicle in America.[3] Airbags were estimated to add between $300 and $1000 to the cost of producing a car, and automatic belts were estimated to add between $50 and $100. Already-installed seatbelts imposed no additional vehicle cost, and an increase in seatbelt-use rates could

take effect immediately. However, it would take around 10 years after the implementation of a standard requiring airbags or automatic belts in new cars before they would reach the level of penetration of the vehicle fleet already achieved by seatbelts. The NHTSA concluded that, despite potential enforcement costs, mandatory seatbelt-use laws would 'result in a more substantial reduction in deaths and injuries, more quickly and at a lower cost than any other practical alternative'.

Road Runner meets Goofy Gophers

Initially, the Secretary of Transport, Elizabeth Dole, supported mandatory seatbelt use. Yet subsequently she issued a federal standard requiring the phase-in of 'passive restraints' in an increasing percentage of new vehicles from 1987 onwards – although she included a 'trapdoor' provision in the standard that would rescind the passive-restraint requirement if a sufficient number of states passed mandatory belt-use laws by 1989. While around 30 states subsequently passed such laws, only 9 of them actually empowered police to fine drivers for failing to wear a seatbelt if they hadn't committed another traffic offence.[4] The 'trapdoor' in Dole's standard lapsed in 1989, un-triggered.

Why did many US state legislatures fail to enact enforceable seatbelt-use laws and so allow a significantly more costly, and arguably less effective, 'passive restraint' standard to be imposed? Some legislators argued that compliance with mandatory seatbelt-use laws could be lower than predicted, and enforcement costs could be higher. Others contended that the use of manual seatbelts (unlike automatic belts or airbags) would fail to protect inebriated drivers, who would be unlikely to comply with them.

US voters don't belt up

However, the main problem with seatbelt-use laws was more fundamental: manual seatbelts lacked the support of most voters and hence were not politically acceptable. The public appeared to consider seatbelts as intruding on their civil liberties. In opinion polls on preferred policy options for addressing traffic-fatality rates, they consistently ranked last. By 1984 it was estimated that only 30% would support a seatbelt-use law backed by a $50 fine, whereas 60% would support the installation of airbags in all new vehicles.[5] It appeared that voter perceptions had changed little since 1974, when a federal standard mandating the installation of interlocks (devices which would prevent vehicles from starting unless the seatbelt was buckled) had taken effect. The public outcry over these devices was spectacular: Congress received a volume of hate mail about the devices similar to that received when Richard Nixon removed Special Prosecutor Archibald Cox during Watergate. By the mid 1980s, legislators knew that most voters did not want to be told to wear a seatbelt (whether by their car or by law). And as all politicians know: you do not mess with voters.

The potential of mandatory seatbelt-use laws to increase seatbelt use at a low cost was under-exploited for many years. There was a happy ending, though. Public opinion evolved throughout the 1990s, and by 1995 all American states except for New Hampshire had successfully enacted mandatory seatbelt-use laws. Views on airbags and airbag technology itself also developed. Instead of being considered an alternative to seatbelts, modern airbags developed into 'supplementary restraint systems', which provide considerable additional protection when used with a lap-and-shoulder belt. The highly effective and low-cost manual lap-and-shoulder belt had finally been given a leading role in the battle against traffic fatalities and injuries.

> **By 1975, in New Zealand, seatbelt use was already mandatory for adults travelling in the front seat of a car where seatbelts had been fitted.**

Kiwi pragmatism

The New Zealand electorate apparently had a different view. By 1975 seatbelt use was already mandatory for adults travelling in the front seat of a car where seatbelts had been fitted. Our more efficient child-seat regulation also supports this claim. In New Zealand all children under the age of 5 must use an approved child restraint. Use of an approved child restraint is also mandatory for children aged 5 to 7 if such a restraint is present in the vehicle – but if one is not present then they must simply be 'restrained as securely as practicable in the circumstances using any child restraint or seat belt that is available (whether or not that child restraint or seat belt is approved)'.[6] So cash-strapped yet rational New Zealand parents who opt not to buy a child seat for their over-5s but instead belt them into the back seat are neither made into criminals, nor need feel guilty that their choice could unreasonably compromise their children's safety if an accident occurs.

1 SD Levitt and SJ Dubner (2009) *SuperFreakonomics*. Penguin Group. Australia. The authors found, however, that child seats do have additional safety benefits for the under-6s.

2 For a comprehensive review of the US history of occupant-restraint regulation see: M Albaum (2005) *Safety Sells: Market Forces and Regulation in the Development of Airbags*. Martin Albaum and the Insurance Institute for Highway Safety.

3 *Federal Register* 49 (1984) pp 28986-28998.

4 WN Evans and JD Graham (1991) 'Risk Reduction or Risk Compensation? The Case of Mandatory Safety-Belt Use Laws' *Journal of Risk and Uncertainty* 4 pp61-73.

5 Insurance Institute for Highway Safety (1984) 'Gallup Finds Americans Favour Air Bag Law By a Margin of 2 to 1' *Status Report* 19 (13).

6 *Land Transport (Road User) Rule 2004* clauses 7.6-7.8. (Clause 7.9 requires children under 15 to be seated in a rear seat whenever possible.)

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'ORPHAN' WORKS: the black hole of copyright?

Ever wondered what became of those home-made Pacman games developed on Commodore 64s and ZX81s by 1970s 'computer nerds'? Possibly they (and a whole lot of other) 'orphan' works sit unclaimed in enthusiasts' collections – unable to be transcribed on to modern media and preserved for posterity, or freed to become inputs into future creative works, for fear of breaching copyright law. Susan Corbett investigates how the economic value in these orphans can be liberated.[1]

An orphan work is a copyright work which cannot be used because the owner of the copyright ('rights owner') cannot be identified and/or located to give their permission for the work to be used for legitimate purposes. The scale of the problem created internationally by orphan works has been described as 'a black hole of 20th and 21st century content'.[2]

Three features of copyright law exacerbate this problem:

1. The long term of copyright protection. In New Zealand a literary work is protected for the life of the author and a further 50 years – during which time there is ample opportunity for rights owners to 'disappear', although the work itself remains protected.
2. The requirement under the Berne Convention for the Protection of Literary and Artistic Works 1886 that members may not make copyright protection conditional upon any formalities. Thus there is no official record of copyright owners in New Zealand or in other member states – as there is, for instance, of patent owners.
3. The transmissibility of copyright and its divisibility in many works, such as films and multimedia works. There will often be several rights owners to be traced in respect of each work.

The economics of orphanhood

Potential users of orphan works include not-for-profit organisations (such as heritage institutions seeking to digitally archive their analogue collections for preservation and accessibility) and commercial users. Digital archiving for cultural-heritage purposes requires that multiple copies of a work be made on an ongoing basis, which is a breach of copyright unless it has the consent of the rights owners. Other users wish to make use of orphan works to develop new commercial products requiring substantial financial investment (such as films). For any potential user, however, the transaction costs of locating and obtaining consent from the rights owner(s) to copy or adapt the work can be prohibitive and such searches are often fruitless. While it is possible the rights owner has forgotten about their ownership and, if traced, might agree to abandon their copyright, uncertainty about the legal status of the work – and the fear of litigation, monetary damages, and loss of investment should a litigious rights owner appear at a later stage – ensure that many potentially lucrative, innovative and culturally valuable projects which would make use of orphan works are abandoned at an early stage. Thus the orphan works problem results in losses to a nation, both to its cultural development and heritage and to its economy.

Conversely, one can question whether a rights owner who reappears at a conveniently later stage when her work has been 'economically revived', as it were, should necessarily be entitled to compensation. For example, the reason that formerly published works are out of publication is almost inevitably because publication is no longer commercially viable. Without any change in the status quo, the rights owner would make no further economic gain and seemingly has made the choice not to pursue economic gain further. Logically all that such a rights owner can claim to lose from the use of her work by a third party at a later stage is a windfall loss.

Research carried out in two of the largest copyright-exporting nations, the US and the UK, has confirmed the vast scale and potential economic impact of the failure to solve the orphan works problem in those countries. While the impact in New Zealand, a net importer of copyright works, may be less significant, the use of orphan works originating from overseas is also prevented under current law – so there may be an economic impact as yet unmeasured. Furthermore the effect on the not-for-profit

sector in New Zealand is likely to be no less than that in the net copyright-exporting economies.

Lost in the (virtual) bulrushes

In New Zealand, limited provisions are made for anonymous and pseudonymous orphan works in s67 of the Copyright Act 1994. Because of modifying transitional provisions, however, s67 will not come into force for works other than photographs until 2046. The Select Committee which reviewed the Copyright (New Technologies and Performers' Rights) Amendment Bill in 2007 acknowledged the urgent need for more appropriate orphan works legislation and recommended that the Ministry for Economic Development should review the possibilities. Currently, however, the issue of orphan works appears to have been dropped from the government's agenda. This decision has undoubted economic consequences for New Zealand.

Orphan works legislation, however, is contentious. Rights owners argue that any such legislation may endanger their rights under copyright laws. Others argue that digitised works can readily be manipulated and restructured by other users and made to appear as though there was no identifiable author – in other words, a fake orphan. These arguments have prevailed in many countries and have successfully stalled orphan works legislation. Amongst the net copyright-importing economies, to date only Canada, Denmark, and Hungary have made specific provision for their domestic orphan works; amongst the major copyright-exporting economies, only the United States Copyright Office has presented a draft legislative solution.

Nonetheless, in the absence of effective domestic or international regulation, it is likely that privately negotiated commercial 'solutions' (which incidentally also push against the boundaries of competition law) may prevail.[3] It is not at all clear that the outcomes of these private arrangements will be in accord with policymakers' intentions, had due time and attention been given to the orphan works problem.

Think local, act global

Any domestic orphan works legislation will, in effect, be providing an exception to copyright protection for orphan works and so must be acceptable under international copyright treaties. Therefore it must comply with Article 13 of the Trade Related Agreement on Intellectual Property Rights 1994: the exception must be *a special case*, with *no conflict with the normal exploitation of the work and with no unreasonable prejudice to the copyright owner's interests*.

Having 'no unreasonable prejudice to the copyright owner's interests' may be the most difficult of these to satisfy, since new technologies have and will facilitate different ways of exploiting works which could be said to cause a loss of income to the copyright owner. The crucial question is whether that loss of income is 'unreasonable' in circumstances where the copyright owner may have forgotten the existence of the orphan work, let alone considered any further exploitation of it.

There are obvious policy differences which indicate the need for differentiation between the current orphan works problem and potential problems caused by future orphan works. The current problem involves, mainly, copyright works that were created at a time when the potential problems of future orphanhood were not foreseen. For these works, the approach may have to be one which imposes responsibilities on the proposed users, while at the same time minimising the transactional costs of compliance. Some possibilities are:

1. Amendment to the Copyright Act 1994 by repealing the transitional provisions which modify the effect of s67. This would immediately provide a defence for the publication of anonymous and pseudonymous orphan works.
2. Affirmation of a 'public interest' defence to the publication of hitherto unpublished orphan works of public interest, akin to the equivalent defence in privacy law.
3. Statutory definition of 'a reasonable search for a rights owner' after which a use could be authorised by the Copyright Tribunal, subject to limited compensation (reducing proportionately with the time delay) to a rights owner who subsequently reappears.
4. Limitation on the kinds of uses that may be made of an orphan work (as proposed in the 2008 US Orphan Works Bill).
5. Creation of a freely available database of identified orphan works and details of searches carried out by other users (thereby reducing transactional costs for future users of an orphan work).

For potential (future) orphan works, the approach should be one that sets out to minimise the extent of the problem. It is likely that authors will play a prominent part in achieving this objective. An extensive programme of public education about copyright in general and the significance of the orphan works problem in particular will be crucial, especially given 'the limited resources and legal knowledge of many of the citizen publishers operating in cyberspace'.[4]

The compulsory use of free licences, perhaps based upon Creative Commons licences, is one possibility, while a voluntary registry combined with a small tax on those who wished to assert ongoing rights ownership, to be paid (say) 15 years after publication of their work, is another.[5] Those who do not pay the tax would be presumed to be agreeable to their works being used. On its own, however, neither the existence of such licences nor the 15-year tax may be sufficient to prevent future orphanhood.

One thing is certain: the numbers of orphans and the problems surrounding them will not vanish without regulatory intervention.

1 This article is based on S Corbett (2010) 'Regulation for Orphan Copyright Works – Time Matters' (www.iscr.org.nz/f556,15948/15948_Cultural_Heritage_Orphans_SC.pdf).

2 Naomi Korn (June 2009) 'In from the Cold: An assessment of the scope of "Orphan Works" and its impact on the delivery of services to the public' p24 (www.jisc.ac.uk/publications/reports/2009/infromthecold.aspx).

3 One such 'solution' is the proposed Google Book Search Settlement Agreement (GBS). The US Government has recently rejected the Amended GBS, stating that it fails to satisfy the requirements of the class-action procedure and is anti-competitive: see *The Authors Guild Inc. et al v. Google Inc.* 05 Civ.8136 (DC) Statement of Interest of the United States of America regarding proposed Amended Settlement Agreement, 4 February 2010 (http://thepublicindex.org/docs/amended_settlement/usa.pdf).

4 Center for the Study of the Public Domain at Duke Law School (March 2005) "Orphan Works Analysis and Proposal: Submission to the Copyright Office" (www.copyright.gov/orphan/comments/OW0597-CPD2.pdf) p8.

5 Lawrence Lessig has suggested 50 years (www.lessig.org/blog/2007/02/copyright_policy_orphan_works.html). See also Joshua O Mausner (2007) 'Copyright Orphan Works: A Multi-Pronged Solution' *Journal of Technology, Law and Policy* 12 p417.

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Liberating the economic power of local government

Local government's assets can be substantial: they include, for example, capital-intensive airports and electricity networks. So local government may well hold the key to unlocking the capital-market potential of public sector investments. Dave Heatley outlines the issues.

The recent report of the Capital Markets Development Taskforce[1] has highlighted the large share (both absolute and proportional) of central- and local-government-owned companies in the New Zealand economy and also the extent to which our national economic performance is contingent upon the returns these firms generate for taxpayers and ratepayers. In international terms, New Zealand has a comparatively low level of partial stockmarket listing of government-owned firms – and the Taskforce has recommended this as a strategy for improving these firms' financial performance, filling market gaps for retail investors and increasing the overall size of the New Zealand capital market.

Although Taskforce chair Rob Cameron issued a challenge to central government to create a dynamic capital-market environment suitable for both investors and business,[2] Commerce Minister Simon Power has ruled out partial listing of central government's state-owned enterprises during the current Parliament's term. Nevertheless the Minister confirmed that, as local government authorities make their own financial decisions,[3] partial stockmarket listings for local-government-owned companies may still occur.

Local government authorities typically use various forms of council-controlled trading organisations (CCTOs) to produce both public benefits and financial dividends. Councillors face difficult trade-offs between achieving the best financial returns from assets and delivering on legitimate (or otherwise) political demands for those assets to be used in producing non-commercial benefits such as socially-motivated redistributions (for example, lower prices for particular groups of constituents).

Nothing to lose but their chains

The best overall outcome for a community may be achieved when a trading company maximises its commercial value and then uses its profits to fund other council entities that are

focused on the efficient delivery of services. But the Local Government Act 2002 (LGA) militates against this, as it requires each CCTO to create and regularly revise a statement of intent specifying both its commercial and non-commercial outcomes. Council shareholders have the responsibility of considering the statement and the right to modify it. These responsibilities and rights extend to *all* CCTO subsidiaries: so councillors can impose any combination of commercial and non-commercial objectives on any subsidiary organisation.

Furthermore, the LGA requires CCTOs to be managed for multiple objectives. The directors of each CCTO are legally required to interpret and deliver on those objectives independently of the views of its owner specified through the statement of intent. When faced with multiple and conflicting objectives, and lack of clarity over which objectives should be prioritised, the CCTO's financial performance will very likely be compromised.[4]

If a *minority* of shares in a council-owned trading company is listed, then the LGA no longer requires the statement-of-intent process. Partial listing thus frees the directors from political processes, allowing them to concentrate on commercial outcomes. Moreover, in order to fulfil their fiduciary duty to minority shareholders, they are *obliged* to prioritise commercial outcomes.

As the listed company would be subject to the transparency requirements of the NZX, the council's governance costs are likely to be reduced. Share-based compensation for directors and senior managers also becomes possible, and can be used as an incentive mechanism to align the interests of shareholders and management. While to some extent the multiple-objectives problem remains and might dilute commercial performance, the commercial focus would be expected to improve overall firm performance.

If the *majority* of shares in a council-owned trading company is listed, then the company is no longer a CCTO – and both the political control and mixed-objectives problems can be overcome. The original shareholder could, however, retain its rights in relation to specific non-commercial outcomes or decision-making powers. For example, it may be desirable that the council retains veto powers over any proposal to extend the operations of the company beyond its territorial boundary – although such veto rights should be carefully chosen and strictly limited, so as not to erode the value of its minority shareholding.

As it stands, therefore, the current LGA supports pursuit of potential improvements in local-government trading companies' financial performance via partial listing. The only remaining question is whether the political will exists at a local level to liberate the economic potential of CCTOs for the benefit of both local and national economies.

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

2 www.scoop.co.nz/stories/BU0912/S00381.htm.

3 www.beehive.govt.nz/release/govt+responds+capital+market+recommendations.

4 B Holmstrom and P Milgrom (1991) 'Multi-task Principal-Agent Analyses: Incentive Contracts, Asset Ownership and Job Design' *Journal of Law, Economics and Organisation* 7 pp24-52.

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