

AGENDA

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FORUM:

Is Australia's Good Governance in Jeopardy?

When 'governance' became the buzzword of choice among the senior echelons of the Australian Public Service in the late 1990s, there was a rush to copy private-sector models. In particular, most government agencies established Executive Boards, an arrangement intended to mirror the Boards of private corporations, with departmental Secretaries elevated into CEOs. But while good governance in company Boards generally amounts to focusing on shareholder value, in the public service the concept of 'governance' has not strayed far from internal administrative arrangements; setting and reviewing performance goals, defining accountability structures, and improving resource management.

This resulting focus on essentially administrative aspects of procedure in the APS has been unfortunate, because it has resulted in a degree of relative neglect in developing complementary frameworks in the provision of sound policy advice to the government of the day.

In this Forum, Agenda publishes a series of reflections on the challenges government currently faces with respect to the procedure necessary for good policy decisions.

Leo Dobes and Jeff Bennett express serious reservations regarding a technique that appears to be increasingly used in developing government policy proposals — 'multi-criteria analysis'. On the basis of a careful scrutiny of the methodology involved in MCA, Dobes and Bennett question the technique's arbitrariness, and susceptibility to manipulation by vested interests. Henry Ergas extends their critique by championing traditional cost-benefit analysis.

Mark Harrison argues strongly that systemic disincentives have militated against the effectiveness of the Office of Best Practice Regulation, leaving the one area where successive Australian governments have decreed that rigorous economic analysis will be undertaken — the assessment of the impact of regulations — sadly deficient.

In a similar vein, Tony Harris questions the adequacy of audits based on 'performance indicators' set by government agencies, and proposes that agencies' key performance indicators should themselves be subject to review and audit. And Roxanne Missingham underlines that better public access to the large amounts of valuable data and investigative reports in the government domain would enhance the transparency of policy formulation that is so 'vital to an informed democracy'.

Finally, Andrew Murray extends the concept of governance into a higher dimension. He queries the lack of regulation of political parties compared to companies or trade unions, suggesting that bettering their organisational governance would improve the quality of the politicians destined to be our law and policy-makers.

Multi-Criteria Analysis: "Good Enough" for Government Work?

Leo Dobes and Jeff Bennett¹

Abstract

Multi-criteria analysis (including Triple Bottom Line approaches) is fundamentally flawed in principle, and is open to abuse by special-interest groups. Its increased use poses a significant risk to the quality of policy formulation by Australian governments.

Introduction

There has been considerable discussion in recent years, both within and outside government, about issues of 'governance'; the institutional and administrative structures and processes for taking decisions and implementing them. But comparatively little, if any, attention has been given to the type or quality of the underlying methods of analysis on which governments and parliaments base those decisions.

A key message of this article is that current practice of governance remains insufficient or, at best, superficial, unless government and parliamentary proposals for legislation (including both funding and regulatory measures) are based on rigorous analytical methods of assessment before decisions are taken. No matter how sophisticated the institutional and administrative superstructures, a lack of rigorous assessment of proposals can only result in decisions that reduce the well-being of all Australians, except perhaps for favoured special interests.

Reflecting our concern for rigour in assessment, this paper focuses on the increasing use of 'multi-criteria analysis' by Australian governments. The principal question addressed below is simple: is multi-criteria analysis a sufficiently rigorous tool to ensure an understanding of societal impacts and to avoid misallocation of resources due to rent-seeking behaviour by special interests?

In addition to answering this question in the negative, we advance cost-benefit analysis as the preferred alternative technique for providing advice to

¹ Crawford School of Economics and Government at The Australian National University. Contact for correspondence: Leo.Dobes@anu.edu.au. The authors wish to thank three anonymous referees and the editor for helpful comment and advice on an earlier draft. The title of the paper alludes to a tongue-in-cheek response of a consultant who when queried by one of the authors about the standard of some modelling being undertaken for a government department replied, 'It is good enough for government work'.

decision-makers regarding the relative performance of alternative public-sector policies.

The focus of the argument is on methodology and analytical rigour.

We readily acknowledge that studies involving both cost-benefit analysis and multi-criteria analysis, particularly in the hands of amateurish or ignorant practitioners, can generate results that might justifiably horrify more-expert proponents of either approach. And Ergas (elsewhere in this issue) provides a comprehensive comparative assessment of the key features of the two methodologies. Unfortunately, the apparent lack of any suitable comparative studies does not make it possible to comment on whether the application of cost-benefit analysis and multi-criteria analysis to the same project might, in practice, yield similar recommendations to decision-makers.

Our contention, however, is that cost-benefit analysis has the underpinnings of methodological rigour that enable any application to be critiqued and thereafter either accepted as sound or rejected. In contrast, the merits of specific multi-criteria analysis applications cannot be assessed because it is founded in conceptual quicksand.

The emergence of cost-benefit analysis

Individuals make decisions about the use of their limited resources with the aim of maximising personal happiness. The expectation is that governments do the same but with respect to the well-being² of the community as a whole. However, the task of governments is more complex, because they inevitably need to balance the conflicting wishes and wants of many different individuals in society. They also need to take account of spill-overs that one particular section of society may inflict on others.

In particular, governments invariably lack readily-available data that reflect adequately the values placed by the individuals on non-marketed goods and services. Estimation of the value of clean air, the preservation of a threatened species, or the social costs of traffic congestion can represent a challenge in this regard. To assist governments in the process of considering the trade-offs involved in resource-allocation decisions, the economics profession has developed 'cost-benefit analysis'.

The key underlying principle of cost-benefit analysis is the comparison of social benefits with corresponding costs. If benefits exceed costs, decision-makers have a case for proceeding with a project. If costs exceed benefits, and the

² The terms 'happiness' and 'well-being' are used here as non-technical synonyms with 'utility'. In his classic work on welfare economics, Little (1950: 7) discusses the interchangeability of these terms, as well as others such as 'social welfare', 'the happiness of society', etc, in the context of utilitarian principles.

decision-maker proceeds with the project, then she or he is at least informed of the net cost that society needs to bear.

Despite popular misconceptions, cost-benefit analysis is *not* founded on market prices. Benefits to society are measured as an aggregation of individuals' willingness to pay, and social costs reflect opportunities forgone. An individual's willingness to pay for water, for example, may be several thousands of dollars a year. But the price actually paid for that water by an individual may be far lower (perhaps just several dollars per year). The difference between the individual's willingness to pay and the price they pay is defined as the benefit generated from the consumption of the water. Thus price alone does not define the benefit. It is the willingness to pay net of the price. The net social benefit of making water available to all the individuals in a community is the present value of the difference between the sum of the residents' net willingness to pay (their 'consumers surplus') and the sum of the opportunity costs of the resources used in supplying the water. Simply because a good or service is not marketed, and hence is not priced, does not mean that it does not generate a benefit to society. So long as there is a willingness to pay for the non-marketed good or service, there will be a benefit enjoyed.³

Cost-benefit analysis thus provides a framework that allows governments to assess and compare the social costs and benefits of the full range of impacts of a proposed action, whether they involve marketed goods, environmental impacts, or regulatory controls. This framework brings with it a lineage extending back to writers such as Dupuit, Marshall, and Pigou, who founded the discipline in the nineteenth century (Mishan & Quah 2007: 243). These economists, and their numerous twentieth-century successors, have assiduously debated and refined the underlying concepts within the broader and coherent analytical construct of welfare economics.

North American textbooks on cost-benefit analysis invariably contain some reference to the 1936 US Flood Control Act. Under this legislation, Congress required flood-control projects undertaken by the US Army Corps of Engineers to be preceded by an analysis of costs and benefits.⁴ The landmark Flood Control Act contains the famous phrase that the Federal Government should improve streams for flood-control purposes 'if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected ...'. Subsequent presidential Executive

³ Markets provide information on consumers' willingness to pay where goods and services are bought and sold. Where no markets form, as is the case for public goods, economists have developed alternative 'non-market valuation' techniques to estimate willingness to pay (see Hanley & Spash 1993).

⁴ The antecedents of attempts in the United States to establish an assessment methodology for government projects are probably older. For example, Reuss (1922: 105) cites the 1808 Gallatin report as demonstrating that Congress generally 'supported public works whose benefits contributed an "annual additional income to the nation"'.

Orders (12291: Reagan 1980 and 12866: Clinton 1993) have stipulated government requirements for the analysis of costs and benefits of regulatory proposals prior to their adoption.

Australia too has some history of the application of rigorous assessment of government projects, although the extent of its use in the past is not clear. But the use of analytical tools to fashion input to the political decision-making process has never been institutionalised to the same degree that has been the case in America.

In giving evidence to a committee of the Victorian colonial parliament discussing a Railways Bill in 1871, for example, the Resident Engineer of the Railway Department provided the committee with an illustration of discounted cash-flow estimates of the costs for alternative projects (*Evidence taken at the Bar of the Legislative Council ... 1871*, appendices K and L). His example demonstrated that it would be cheaper to build a wooden viaduct that would last for only 10 years and would be rebuilt every decade thereafter, than to build a stone structure with steel girders that would last 100 years. He also claimed to have used the method in 1868 when a wooden bridge was in fact built.

But it was only in 2006 that the Council of Australian Governments agreed that the quality of regulatory impact statements should be improved through the use of cost-benefit analysis, and the Commonwealth Government established the Office of Best Practice Regulation to provide training, advice and technical assistance to government agencies (see Harrison in this issue). However, this requirement for economic analysis has not been extended to proposals that are not specifically regulatory in nature.

Throughout its history, cost-benefit analysis has been subjected to critical scrutiny and attack for being overly focused on economic efficiency. Wildavsky (1966: 310), for example, argued that economic perspectives should not 'swallow up political rationality', and Peter Self argued (Coleman & Hagger 2001: 120–6) that government-employed town planners, rather than 'econocrats', should determine the character and amenity of new towns. As part of this reaction, according to Lichfield (1993: 206), Italian and Dutch researchers in the 1970s began to work increasingly with multi-criteria analysis, and Quinet (1993: 193) reports the same shift away from cost-benefit analysis in France. In the UK, the then Department of Environment, Transport and the Regions (1998) set out a 'new approach to appraisal' of road projects that was based on five principal criteria: environmental impact, safety, economy, accessibility, and integration. Considerable effort has been made over the last decade within European Union countries to reconcile cost-benefit analysis with the multi-criteria analysis approach (for example, Sugden 2005; Diakoulaki & Karangelis 2007; and Prokofieva *et al.* 2008).

Multi-criteria analysis has also become increasingly popular in Australia (Proctor 2009: 74–5) over the last two decades or so. The Resource Assessment Commission (1992) published an overview of the approach, and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in particular has actively promoted its use in areas such as natural resources management, climate change and adaptation, and water management (<http://www.csiro.au/science/Social-Economic-Sciences.html>).

The Commonwealth Government itself has encouraged a simplistic version of multi-criteria analysis in the form of the so-called Triple Bottom Line⁵ approach (for example, Environment Australia 2003) that is popular in some quarters of the Public Service. State and local governments and their agencies have also made use of it. For example, the business case developed by Melbourne Water (2008: 4) to justify the diversion of rural water from the Goulburn river to Melbourne was based on the Triple Bottom Line approach, but the study itself is classified as Cabinet-in-Confidence by the Victorian Government and therefore not publicly available. In an amusingly acerbic review, Ergas (2009) notes that a 2008 report by Infrastructure Australia (the body established to advise Australian governments on the relative merits of potential infrastructure projects) employs the Triple Bottom Line approach, despite also advocating the fundamental importance of cost-benefit analysis to rigorous assessment.

A relatively recent development appears to be the injection of prior political considerations as a prelude to undertaking cost-benefit analysis. Guidelines issued by the National Transport Council (NTC 2006), for example, introduced the concept of a Strategic Merit Test that is to be undertaken as a preliminary step in consideration of transport projects. One objective of the test is to 'identify how well the initiative is expected to contribute to jurisdictional objectives, policies and strategies' (NTC 2006 volume 3, 'Appraisal of initiatives': 15), with one of the rationales being that it 'provides an efficient means to filter proposals before considerable resources are spent on development'. The concept appears to have now been adopted by Infrastructure Australia (2008, section 4.2: 66) in the form of the 'strategic fit' criterion.

⁵ Sometimes colloquially referred to as People, Planet, Profit (social, environmental and financial aspects), the Triple Bottom Line approach purportedly provides a comprehensive assessment of all aspects of interest to commercial or government decision-makers. The three aspects are variously given numerical scores, allocated 'traffic light' (green, yellow, red) categories for risk or importance, or just discussed qualitatively. There is no underlying principle or methodology involved, and the data used invariably depend on what happens to be readily available to the proponent. While this approach may have made some sense in a private-sector context (although not necessarily for shareholders) seeking to broaden the traditional focus on profits alone to a wider social perspective, it is superfluous in a cost-benefit analysis undertaken from a national social perspective by a government agency. In particular, the economic component of a cost-benefit assessment would already include social and environmental effects so that their separate presentation would constitute 'double-counting'. Common misperceptions that equate 'economic' with 'financial' aspects undoubtedly contribute to the confusion involved in the Triple Bottom Line approach.

Unfortunately, there has been a marked absence of debate or analysis within Australian government circles and academia as to the validity or relative merits of cost-benefit analysis and multi-criteria analysis. We therefore feel that a more open discussion is both timely and necessary. Because both cost-benefit analysis and multi-criteria analysis can be, and often are, subjected to misuse and erroneous application by practitioners, the focus below is on methodology rather than irrelevant straw men.

The first two sections below outline briefly the key features of both cost-benefit analysis and multi-criteria analysis. These are followed by a section that compares key features of the methodologies used, including various misconceptions about them. A penultimate section explores some of the implications for government. Finally, some policy conclusions are drawn in the hope of generating debate among Australian policy analysts and decision-makers about the appropriateness of using multi-criteria analysis.

The theory and practice of cost-benefit analysis

Cost-benefit analysis is a methodology that is used to compare the costs and benefits of a government policy or action from the perspective of society as a whole. In its broadest sense, it compares the value of the resource uses (goods and services) that the community must forgo to implement a government action or policy against the resulting benefits over time.

In essence, it seeks to determine whether society overall could be made better off or not, after taking into account all the impacts, including environmental and social effects, on the individuals in that society. It is for this reason that economists often use the term 'social cost-benefit analysis', although the abbreviated term 'cost-benefit analysis' is more commonly used nowadays. Non-economists are often unaware of the comprehensive nature of cost-benefit analysis (or confuse the term 'economic' with purely commercial or financial considerations) and seek to complement it with further environmental or social perspectives.⁶

Nevertheless, a fundamental issue regarding cost-benefit analysis is that it aggregates the utilities (as measured by willingness to pay) of individuals. This aggregation of benefits, adjusted to take into account corresponding costs, reflects the utilitarian concept of potential Pareto improvement: although there will be winners and losers as a result of most government projects, if winners gain more than losers lose, the project is considered to be of net benefit to society.

There are significant problems with the concept of potential Pareto improvement, and most textbooks address them explicitly (for example, Sugden

⁶ The attempt to compensate for environmental and social perspectives is found most clearly in the Triple Bottom Line approach, which seeks to add them to so-called 'economic' variables.

& Williams 1978: chs. 7, 13, 14). In particular, it is argued that a benefit or a loss to one person cannot simply be added to benefits or losses incurred by others. For example, a millionaire will gain far less utility from an additional dollar of income than will a poor person (referred to technically as differing marginal utilities of money). Although the debate remains unresolved, it can be argued that governments tend to reduce differences in marginal utilities of money among individuals through separate taxation policies designed to reduce income differences, and that individual utilities can therefore be aggregated in cost-benefit analysis without significant loss of rigour.⁷

A basic tenet of cost-benefit analysis is that it provides information to decision-makers about the effect on the whole of society. Analysts using the technique understand that decision-makers may well choose to ignore the results (as in the case of the Darwin–Alice Springs railway, for example) for purely political reasons. But its advantage even in these cases is that it permits a decision-maker to weigh up more clearly the opportunity costs to society, in terms of net benefits lost, of an action or policy that is implemented for purely political reasons.

Published examples of detailed cost-benefit analyses are readily available in numerous Bureau of Transport Economics (<http://www.btre.gov.au/>) reports and in studies covering topics that range from the costs and benefits of a single aviation market between Australia and New Zealand (Commonwealth of Australia and Government of New Zealand 1991), the V8 car races in Canberra (ACT Auditor-General 2002), health warnings on tobacco products (Applied Economics 2003), the funding of Rural Transaction Centres in country towns (Dobes 2007), the pharmaceutical industry investment program (Productivity Commission 2003), gambling (Productivity Commission 1999) and the management of river red gum forests along the Murray River (Bennett, Dumsday and Gillespie 2008). The underlying methodology has been developed over many years of debate and controversy among economists and is now reasonably well settled, although refinements continue to be made. Texts such as Gramlich (1981) and Boardman *et al.* (2006) provide a comprehensive overview of the key issues, and a practical beginner's introduction is presented in Dobes (2009).

Multi-criteria analysis: atheoretical and impractical

In its simplest form, multi-criteria analysis involves an analyst selecting a set of 'impacts' or 'goals' to be achieved by a project or policy proposal, and assigning a score to each predicted impact on the extent of the effect and measured in a range of different and typically incompatible units. The scores are adjusted by

⁷ Alternatively, cost benefit analysis can be 'supplemented' through the application of 'equity weights' to the benefits and costs experienced by different groups within society. The source of these weights remains problematic as they necessarily embody value judgements, unless they can be sourced from the preference of the community itself (Scarborough & Bennett 2008).

multiplying them by subjective weights that are chosen to represent the analyst's assessment of the relative importance of each impact. The scores are then "standardised" mathematically, and summed arithmetically to provide an indication of net benefit.

A Goals Achievement Matrix is the most common form of presenting multi-criteria analysis. As its name suggests, the principal purpose of a Goals Achievement Matrix is to identify a set of key objectives or 'impacts' to be achieved by a project, with an indication of the relative contribution of each impact to the achievement of the project as a whole.

Ideally, an actual example of a multi-criteria analysis would be used to illustrate the methodology. However, the authors have not been able to obtain a detailed, *publicly available*, case study used in a government decision. A decade ago, Dobes (1999: 203) bemoaned the fact that it had not been possible to obtain officially a 'live specimen' of a multi-criteria analysis, although such analyses were routinely used by a number of state road authorities. There appears to be a similar dearth today of publicly available analyses undertaken by the Federal or State governments. For this reason, the example of the Goals Achievement Matrix presented in the table below is necessarily a hypothetical one, and used purely for illustrative purposes.

The first column in the table lists the attributes or criteria determined by the hypothetical analyst or decision-maker to be relevant to deciding whether to subject an area of bushland to a conservation measure. A second column has been included here to illustrate clearly that the various criteria can differ significantly in the units of measurement used. The scores in the third column show the 'value' placed by the analyst on the attributes of the specific area being considered for conservation. Similar tables could have been developed for alternative areas of bushland being considered for conservation, but are not shown here, in order to keep the example simple.

Table 1: Hypothetical goals achievement matrix for evaluation of an environmental conservation option

attribute (criterion)	Units	Impact	score (-4 to +4)	weight (per cent)	weight-adjusted score
vegetation area	ha	1,500	+2	20	40
number of species recovered	#	3	+4	40	160
water savings	ML	15	+1	10	10
people employed	#	7	+1	10	10
cost	\$ (000)	14	-4	20	-80
Total				100	+140

In the example shown here, a weight-adjusted score of +140 has been recorded. This score could be compared to a similarly derived score of alternative projects, including a 'do nothing' scenario where current activities (for example, logging) continue unchanged. However, any such comparison would only be valid if different areas of bushland were subjected to identical activities and the impacts (criteria, attributes) used in the analysis were also the same.

Some comparisons: cost-benefit analysis versus multi-criteria analysis

In 1772, Benjamin Franklin, one of the Founding Fathers of the United States of America, offered some advice to his English acquaintance, Joseph Priestley, in the following terms:

In the Affair of so much Importance to you, wherein you ask my Advice, I cannot for want of sufficient Premises, advise you *what* to determine, but if you please I will tell you *how*. When these difficult Cases occur, they are difficult chiefly because while we have them under Consideration all the Reasons *pro* and *con* are not present to the Mind at the same time; but sometimes one Set present themselves, and at other times another, the first being out of Sight. Hence the various Purposes or Inclinations that alternately prevail, and the Uncertainty that perplexes us. To get over this, my Way is, to divide half a Sheet of Paper by a Line into two Columns, writing over the one *Pro*, and over the other *Con*. Then during three or four Days Consideration I put down under the different Heads short Hints of the different Motives that at different Times occur to me for or against the Measure. When I have thus got them all together in one View, I endeavour to estimate their respective Weights; and where I find two, one on each side, that seem equal, I strike them both out: If I find a Reason *pro* equal to some two Reasons *con*, I strike out the three. If I judge some two Reasons *con* equal to some three Reasons *pro*, I strike out the five; and thus proceeding I find at length where the Ballance lies; and if after a Day or two of farther Consideration nothing new that is of Importance occurs on either side, I come to a Determination accordingly. And tho' the Weight of Reasons cannot be taken with the Precision of Algebraic Quantities, yet when each is thus considered separately and comparatively, and the whole lies before me, I think I can judge better, and am less likely to make a rash Step; and in fact I have found great Advantage from this kind of Equation, in what may be called *Moral* or *Prudential Algebra*. Wishing sincerely that you may determine for the best, I am ever, my dear Friend, Yours most affectionately

<<http://www.historycarper.com/resources/twobf3/letter11.htm>>

This missive is cited frequently by proponents of *both* cost-benefit analysis (for example, Gramlich 1981: 1–2) and multi-criteria analysis (for example, Hajkowicz 2006) as an early forerunner of their respective analytical approaches. It therefore provides a convenient point of departure for comparing the two methods.

Clearly, Franklin was describing a qualitative approach to decision-making of the sort that many people use intuitively in their personal lives, but rarely undertake in such a systematic fashion. The question therefore arises as to how Franklin or some other intelligent observer might have advised a relative to proceed if they wished to adopt a quantitative analysis, not from their individual perspective, but from the perspective of society as a whole (or the perspective of a government on behalf of the society which it represents).

Whose perspective?

Cost-benefit analysis is always carried out from the perspective ('standing') of the whole of society within a specific jurisdiction. The perspective adopted is usually a national one, but can also be at the state or local level. The inclusion of all members of society is the key principle, because an analysis from a whole-of-society perspective is fundamentally different from one from a personal perspective (like Benjamin Franklin's advice) or for a sub-section of society. A holistic perspective requires that any spill-over effects, for example, be taken into account and gains by one section of society be offset against losses by another.

Multi-criteria analysis is less inclusive about 'standing'. Frequently, those who are consulted about the determination of weights or the attribution of scores to specific impacts are subject-matter experts, focus groups (which may self-select if general invitations to participate are issued) or members of specific interest groups. The probability of a result that is biased in favour of a proposal can thus be very high, and the analytical method is certainly open to the influence of interest groups and special pleading.

In the case of the Sugarloaf Pipeline Project (the diversion of Goulburn River water to Melbourne), for example, the analysis of options for the specific route of the pipeline — considered after the initial (publicly unavailable) business case had been accepted — was based on scores and weights 'based on advice' from the Agency Reference Group. This advisory group comprised state government departments such as Planning and Community Development, state government agencies such as VicRoads, local government such as the Shire of Yarra Ranges, and water and catchment authorities (Sugarloaf Project Alliance 2008: 13).

The very selectivity of the general approach of using so-called stakeholders in multi-criteria analysis belies its claim to better represent a wider set of social and environmental values and perspectives than cost-benefit analysis. While

the government authorities that contributed to the assessment of the Sugarloaf pipeline proposal may have had different professional, and possibly contradictory, views, they would all have been broadly attuned to the overall intention of the Victorian Government to divert water from country to urban areas. It is more likely than not that the nature of such analysis comes close to 'second-guessing the Minister'.

Even if great care is taken to avoid bias, and even if focus groups have been objectively constituted (for example, based on a random sample of the population) an analyst may simply select from focus-group discussions only those views about impacts, scores or weights that appeal most to him or her. Where this occurs, the results of the analysis will tend to confirm the analyst's preconceptions or favoured results because the choice of impacts, scores and weights is so instrumental to the final results in multi-criteria analysis.

Confirmation bias can also creep into the analysis where a focus group self-selects; for example, in response to an advertisement inviting participation. If time is an important consideration, the views of those with spare time to attend (for example, retirees) may predominate, or those with strong motivations or self-interest (for example, property developers who stand to gain from a project) may find themselves in a majority.

A good example of the problems associated with using focus groups on which to base decisions is that of a proposal by the Victorian Government to upgrade the road from Melbourne north through Shepparton. The Victorian Government at the time used community discussion groups to help determine priorities in its road-building program. Anecdotal material recounted by a well-placed source in the 1990s was that a community meeting in Shepparton had insisted strongly that the Government's priority should be to upgrade the road from Shepparton to Melbourne to improve access to urban facilities such as cinemas. Because of its reliance on such community groups in the decision-making process, the Victorian Government was faced with a dilemma because it recognised that upgrading the road beyond Shepparton to the New South Wales border was equally important to interstate trade, and hence the overall welfare of Victorians as a whole.

Consideration of the views of 'stakeholders' has become almost *de rigueur* in public service advice to Ministers over the last few decades. 'Stakeholder' is a fairly loose concept that can include those who have significant influence or are substantially affected (often termed 'key' stakeholders) or any number of categories of those who are affected or can influence policies. While seemingly sensible from a political perspective, this approach tends to exclude those with only minor political influence or who are considered to have some lesser degree of 'interest'. The interests of taxpayers, for example, are usually ignored by

spending agencies, ostensibly because they may individually only suffer a small additional increase in taxation to pay for a large project.

Unfortunately, the veneer of respectability or objectivity that is bestowed by terms such as 'stakeholder' may simply mask the influence on analysts of those with strong vested interests or loud voices. The issue is particularly relevant to multi-criteria analysis, because it tends to focus on key impacts and stakeholders, rather than analysing the effect of a policy or project on society as a whole.

Choice of impacts or effects of government policies and actions

Multi-criteria analysis has no single or overriding principle on which the impacts (or so-called criteria or attributes) of a policy proposal are determined. Proctor (2009: 83), for example, states that 'the decision-makers select the criteria, but criteria can be suggested by the analyst so that the decision-makers are not starting from scratch'.

Proctor (2009: 81–3) uses a hypothetical forestry-management problem to illustrate the selection of criteria/impacts to be considered. However, it is unlikely that any two analysts or decision-makers will choose exactly the same criteria on which to base their analyses. In the case of a forestry-management example, an analyst in a government agency that represents loggers is likely to choose different criteria from a colleague working on the same issue in an agency charged with environmental responsibilities.

One of Proctor's (2009: 83) criteria illustrates an additional, important problem. She includes the criterion of 'change in tourism revenue' as an impact of less logging in the forest, and therefore of greater access to bushwalking areas. (Note, too, that in the very similar example in our own table above, the impact on tourism revenues was not included, although there was no intention of deliberately setting up a difference with Proctor.) Because the impacts in multi-criteria analysis are chosen without first determining a rigorous approach to the issue of 'standing', or the analytical frame of reference, the tourism criterion is ambiguous.

Revenues from tourism may indeed increase at the local level where logging of a forest has been reduced. But the bushwalkers who visit that area are now no longer visiting alternative bushwalking sites, perhaps elsewhere in the same state, so that tourism revenues elsewhere are reduced commensurately. The logical flaw is obvious: if analysts in every forest area in Australia carried out a similar analysis simultaneously, then total revenue from tourism could be increased by many thousands of per cent, and all on the basis of the same group of bushwalkers!

In contrast, cost-benefit analysis requires the inclusion of all the material costs and benefits that are directly attributable to a policy or project. Benefits and costs are, in turn, defined with reference to impacts on individual well-being, as established under the analytical framework of welfare economics. Assuming that 'standing' had been specified as 'national' in this case, only *additional* demand generated for bushwalking would have been included as a benefit, to avoid including bushwalkers who merely switched location. The benefit itself would have been estimated as bushwalkers' willingness to pay to use the forest in question, probably using a non-market valuation technique such as the 'travel cost' method (see Boardman *et al.*: 354–61).

However, some adjustment would also have been made in a cost-benefit analysis to reflect the additional use of society's resources (a cost): for example, additional damage to walking tracks, the costs of additional labour and fuel in supplying local restaurants, and possibly increased traffic congestion and noxious emissions and noise around the local tourist resort, and so on. From the more comprehensive perspective of social cost-benefit analysis, the financial impacts arising from tourism are only part of the equation. By considering both benefits and costs in commensurable units, cost-benefit analysis provides a measure of the net benefit.

Note also that, in this example, cost-benefit analysis, rather than multi-criteria analysis, would have taken account of the complexities of a wider range of social and environmental impacts. Their inclusion would have been transparent to a decision-maker, and their selection 'standardised' through the reliance on the definitions of well-being provided by welfare economics.

Treating local job creation as a benefit of a project has become virtually standard practice in the 'Do It Yourself' brand of economic analysis increasingly practised by Australian governments, especially in departmental advice to Ministers about the expected effects of government programs. It is therefore unsurprising that Proctor (2009: 85, table 4.2) includes the criterion of 'change in jobs (number)', presumably meaning that jobs created represent a benefit.

In conditions of general unemployment, it is true that Australian society may gain if unemployed resources are used productively.⁸ If local residents are already employed, however, then the creation of more jobs locally will either require an influx of workers, or skills shortages will occur, as was the case in non-urban areas in recent years. If workers arrive from other towns to take up the new jobs, both positive and negative effects may be felt by locals: for

⁸ Generation of employment which has no value (because no-one is willing to pay for the work performed) would not in itself be socially beneficial. A job filling and then emptying sandbags, or digging and filling in holes, for example, would not be productive. However, there may be beneficial effects such as maintaining the esteem of the unemployed (which should be taken into account in cost-benefit analysis although some creativity would be required in terms of valuation), and macroeconomists may regard such activity to be essential 'pump-priming' to lift an economy out of recession.

example, landlords may receive higher rents if accommodation is scarce, but locals will also pay higher rents. And if there is a shortage of workers in other towns, those towns will find that their local skills shortages are exacerbated. One town's gain may simply be another town's loss; an effect that would be recognised within cost-benefit analysis, but not generally by multi-criteria analysis.

A persistent canard regarding employment creation is that it is socially beneficial because the payment of unemployment benefits is thereby reduced. While it is true that government budgetary outlays may be reduced, unemployment benefits are a so-called transfer payment that has no net effect on the well-being of society as a whole. Some members of society (taxpayers) lose, while others (the recipients of the payments) benefit to an equal extent. Society as a whole is neither richer nor poorer because transfer payments simply redistribute income between residents.

Alternative policies

An essential aspect to decision-making in government is the opportunity to consider the relative merits of alternative courses of action. Even if a Minister champions a particular proposal as potentially the best thing since sliced bread, his or her colleagues will often wish to know what alternatives are feasible and available, or whether the resources could be better used elsewhere.

Multi-criteria analysis is incapable of comparisons between unrelated programs, because their impacts or attributes are so different. For example, there is no sensible means of comparing the conservation initiative in our table above with some unrelated alternative such as improving the health of the population through the introduction of a vaccination program. Governments cannot therefore be certain that the pursuit of a conservation initiative is the best use of society's limited resources. Over time, the community will become worse off than it could have been with a more rational decision-making approach.

A distinct advantage of cost-benefit analysis, on the other hand, is that it permits comparisons between projects as diverse as hospital construction, new schools, roads, environmental conservation, and so on, because it evaluates all projects and policies on the basis of a common numeraire underpinned by a common theoretical construct. Cost-benefit analysis therefore complements the system of Cabinet deliberation used by Australian governments and other democracies to choose between competing priorities.

Valuation of effects or merits of proposals

Multi-criteria analysis grew in part from a distaste for benefit-cost analysis largely arising from the practical difficulties (and, for some, the philosophical

qualms) of using money as a metric for comparing net benefits from competing resource use options.

But this critique of economic analysis is misplaced, because willingness to pay — albeit expressed in monetary units — in fact represents a consumer's willingness to sacrifice one bundle of goods or resources for another: money simply represents a claim on resources. Money is just a common expression of value, a numeraire, just as a physicist may measure energy in joules (convertible to calories, electron-volts, and so on), even for different physical systems (food, sunlight, fossil fuels, kinetic energy of an electron, and so on). It would be just as valid to express the value of bundles of goods or services in terms of hamburgers, conch shells or Mars bars that would need to be given in exchange to obtain them.

The techniques used in modern cost-benefit analysis to estimate the willingness to pay for various non-monetary attributes such as environmental amenity are well developed. For example, Bateman *et al.* (2002) is a manual for the application of the so-called stated-preference techniques, notably Contingent Valuation and Choice Modelling, for the estimation of non-marketed benefits and costs in monetary terms. The manual was originally commissioned by the UK Department of Environment, Transport and the Regions to facilitate the use of such techniques within the cost-benefit framework.

Ironically, the use of weights in multi-criteria analysis can itself place an implicit monetary value on an attribute. In the table above, an equal weight of 20 per cent has been assigned to both cost (in \$ thousand) and to the area covered in vegetation (in hectares). The decision-maker can therefore be said to consider a thousand dollar increase in cost to be of equal importance to an increase of a hectare of vegetation. The implicit value of a hectare of vegetation is therefore a thousand dollars. Similar implicit values can be determined by comparing other weights such as species recovered against jobs.

Even more incongruous is the frequent use in multi-criteria analysis of market prices, presumably because they are readily observable. Examples include the cost of materials or wages. Where market prices are used, implicit values will also be based on market prices. But market prices do not always reflect the true opportunity cost to society of a good or service. Cost-benefit analysis on the other hand — and despite misconceptions by those not fully familiar with the technique — will normally use shadow prices to adjust for externalities, taxes and other non-market distortions in order to more accurately capture *social* values.

Again, the impacts specified by Proctor (2009: 83) for her forest-management example are ambiguous. She lists both the change in jobs (presumably increases in local employment) and the change in wage levels. An increase in the number of local jobs may be a benefit to those who are unemployed (but only to the

extent that a job is preferred to leisure time), but in a tight labour market it may also result in a shortage of workers in areas such as the local restaurant.

Similarly, increased wage levels may benefit some locals, but may also result in some of them losing their jobs if employers cannot pay higher wages, or reduced enjoyment by local residents of restaurant meals because tourist have driven up prices. And higher wages for local workers will be offset by correspondingly lower profits (income) for their employers, so that the local community as a whole will not gain. Again, this illustrates the systemically selective nature of multi-criteria analysis: there is no clear methodology that guides the analyst in choosing between criteria that represent workers or employers or between costs and benefits where two sets of stakeholders have diametrically opposed interests. Cost-benefit analysis, on the other hand, would include the effect on both, because both have equally valid interests as participants in a democratic society.

Efficiency versus equity

A key issue that has not been satisfactorily resolved in welfare economics (the branch of economics on which cost-benefit analysis is largely based) is Jeremy Bentham's utilitarianist principle that actions should be evaluated on the basis of whether they generate the greatest amount of overall happiness for society. Aggregation of individual 'happiness' or utility is problematic because of the lack of a common numeraire for the fairly nebulous concept of utility. Utility is not measurable or comparable.

In practice, standard cost-benefit analysis tends to assume that a given change in costs or benefits (for example, \$100) arising from a policy or project is valued equally by rich people and poor people and that individuals' benefits and costs can therefore be aggregated to give an overall measure of net benefit to society. (In technical language, the marginal utility of money is assumed to be constant.) This approach (see, for example, Sugden & Williams 1978: ch. 16) implicitly accepts that the analyst's role is principally that of an adviser on the efficiency aspects of a policy or project, and that value judgements about equity considerations should be the province of the political decision-maker.

Nevertheless, economists do sometimes advocate the use of income or other equity weights in cost-benefit analysis where it would be helpful to explore adjustments for poorer groups. But such calls are invariably tempered by a strict reminder that a non-weighted analysis should also be provided, to allow the decision-maker to easily determine the effect of including 'equity' weights.

Pearce & Nash (1981: 10–11), however, point out that even standard cost-benefit analyses make a value judgement by not using weights because they accept implicitly that the existing distribution of income is an equitable one. While this is true, the standard, unweighted approach is still generally

preferable because the current distribution of income in a democratic society reflects (albeit imperfectly) existing social preferences. To introduce any other set of weights risks the adoption of a paternalistic or authoritarian approach by the individual analyst or decision-maker. And where weights are used, transparency requires that the same analysis be presented to the decision-maker without weights so the effect of weighting is clearly discernible.

If the distribution of income across society is considered to be inequitable, the correct solution is to rectify it directly through progressive taxation or other policies, not by distorting the analysis of highly specific projects that may in any case affect only a small section of the community.

In more recent times, the issue of effect on different socio-economic groups has also been addressed more directly by disaggregating the results of cost-benefit analysis to show the potential incidence of the costs and benefits of a government program on various sections of society. This approach is more transparent and allows the decision-maker to weigh equity and political considerations against the overall social benefit achieved.

Why multi-criteria analysis is fundamentally flawed

Most schoolchildren have learned that it is illogical to try to add apples and oranges. And few biologists would propose adding the mass of a flea to the length of a rat in advancing a new theory, although there is no problem in adding the weight of a flea to the weight of a rat.

In other words, to add or subtract, or to use some other mathematical operator to aggregate quantities, the quantities in question must have the same dimension. It is possible to add 1 kg to 0.5 kg to get 1.5 kg, for example. It is also possible to add 1 kg to 1 pound but the answer cannot be expressed as 2; it must remain as 1 kg + 1 pound. Plausible aggregation would require a conversion factor that expresses kilograms and pounds in a ratio of like-dimensioned quantities such as 2.2046 pounds/kg.

Multi-criteria analysis breaches this principle of dimensionality. It is not possible, as in the tabular example above, to add hectares of vegetation saved to the number of species recovered. Multiplication by a score and a weight does nothing to correct the problem of incompatible dimensions, so that any aggregation of the results is logically flawed. Cost-benefit analysis solves the problem by converting all costs and benefits to a standard dimension — the quantity of resources that \$1 will command.⁹

⁹ One of our referees has questioned whether cost-benefit analysis similarly converts heterogeneous attributes (for example, access to a national park vs access to good health care) to a single 'willingness to pay' measure. With respect, we do not agree. The weighted scores used in multi-criteria analysis are unitless and have no meaning beyond the limited context of a specific set of arbitrary attributes. Use of monetary units, while often confused with simple cash or market prices, provides a common unit of

Added to this problem is the issue of multiplying cardinal numbers such as hectares by an ordinal number scale (–4 to +4) and then an interval scale (weights expressed as a number between 0 and 100) and treating the result as a cardinal number that can be added to other cardinal numbers. There is some room for debate about this particular aspect, because it could be argued that the scoring system is akin to a Likert scale, and therefore not clearly an ordinal or an interval scale. If the difference between, say, +2 and +3 is perceived by the person allocating the score to be equal to the difference between +3 and +4, then it could be argued that the scale is an interval one. Where such differences are not considered equal (for example, the step up from +3 is much bigger than the step from +2 to +3) then the scale is better regarded as an ordinal measuring system. And, clearly, different people will perceive the scales differently.

Whether the flaw of incompatible dimensionality is compounded by problems with the interaction of cardinal and ordinal number systems is not entirely clear. However, the flaw of incompatible dimensionality is sufficient to deny any legitimacy in the use of multi-criteria analysis. And no amount of sophisticated mathematical superstructure can remedy such a basic defect.

Analytical rigour

Despite the fundamentally flawed methodology that underpins multi-criteria analysis, its proponents have developed mathematically sophisticated superstructures which may give the appearance of increasing its validity and rigour. However, no amount of sophisticated mathematics can compensate for fundamental flaws in the methodology.

For example, the number of attributes used in a multi-criteria analysis may affect the overall and relative scoring of attributes. This could change the alternative deemed to be most desirable, but only because of a procedural issue. Likewise, different mathematical procedures for converting unit measurements to scores can impact on the ranking of alternatives. These procedures range from the very simple (assign a ranking score — 1st, 2nd, 3rd, and so on — to alternative attributes) to the more sophisticated (based on statistical distributions about the mean of the attributes). Again, these are matters of process that have no basis in any underlying analysis of society's well-being and should not be permitted to have a material impact on the policy recommendation so determined.

A disappointing development in recent years has been the use made by agencies such as CSIRO (for example, <http://www.csiro.au/science/Social-Economic-Sciences.html>) and the Bureau of Resource Sciences (for example, <http://adl.brs.gov.au/mcass/index.html>) of multi-criteria analysis. Multi-criteria analysis not only lacks any rigorous foundation, it is also fundamentally

measurement that represents the value of alternative goods and services that are forgone. It is therefore valid to aggregate costs and benefits to obtain a measure of net benefit.

unscientific because its arbitrary nature makes any analytical results non-replicable. Australian society would be likely to benefit more if CSIRO and Bureau of Resource Sciences resources were channelled into areas of more relevant core expertise, particularly into 'hard-edged science'.

Particular cost-benefit analyses sometimes lack rigour too. A particular analyst may misunderstand the economic implications of an effect, or may misuse econometric methodology to estimate the extent of the effect, or may succumb to political pressure.

However, while there may be disagreements about precise estimates used for specific variables in a cost-benefit analysis, the choice of variables and valuation methodologies is well established within a coherent analytical framework. The results of a cost-benefit analysis are therefore capable of rigorous review by peer analysts, and are reproducible.

Implications for government

Although cost-benefit analysis has a number of practical and methodological limitations, multi-criteria analysis is fundamentally flawed. The lack of a coherent analytical framework also makes it susceptible to misuse by analysts and special interest groups.

Attempts to reconcile the two methods have not proved successful (for example, Prokofieva 2008; Sugden 2005). There is no indication that an acceptable synthesis is any more likely to be achieved in the future either. Despite the greater degree of specialised effort, and hence cost, that cost-benefit analysis may entail, its ability to produce rigorous and coherent evaluations mean that it should be the preferred analytical approach of governments.

However, cost-benefit analysis is also open to misuse in the hands of insufficiently trained or knowledgeable users. For this reason, governments should consider implementing the following measures to increase the degree of consistency and transparency of analyses of policy proposals:

- Conduct rigorous analysis before a decision is made.
- Publish all analyses of policy proposals, once a decision has been taken. This may sound far-fetched, but the practice of publishing central bank deliberations in recent years has not resulted in the fall of any government.
- Standardise as far as possible the use of key variables and assumptions in analyses, in order to allow more meaningful comparisons between competing policy proposals. For example, projections of GDP or population growth that are used should, as far as possible, be those published by the Australian Bureau of Statistics. Where they are not, the analysis should explain specifically why different numbers were used.

- Establish a central database for 'plug-in values' such as values of environmental effects, in order to minimise duplication of effort.¹⁰
- Establish a system of peer review of technical aspects of analyses of policy proposals.
- Establish an awards scheme to encourage agencies to produce best-practice analyses.

Conclusions

There is no doubting the complexities of cost-benefit analysis, especially in estimating non-marketed benefits and costs in monetary terms. But policy analysis should not be expected to be straightforward. The task is tough.

However, using multi-criteria analysis because it provides an easy 'short cut' around the fundamental complexities of benefit-cost analysis is a weak strategy. Nor is the expense of a cost-benefit analysis commissioned from an expert practitioner a valid consideration, because government procurement of goods and services is based not on cost but, rather, on value for money. And the social cost of taking a misguided decision based on 'junk evaluation' techniques can also be high, albeit often unnoticed because of the general lack of rigorous *ex post* evaluation.

By avoiding the analytical complexities, and resorting to a technique devoid of a rigorous and replicable analytical framework, the decision-making process is placed in greater jeopardy — the jeopardy of exposure to the special pleadings of interest groups. And because of the apparent sophistication of multi-criteria analysis, these special-interest groups are offered the opportunity to disguise their pleadings as rigorous and comprehensive analysis.

Multi-criteria analysis is certainly *not* 'good enough', not even for government work. It's time to engage in a serious review of its use in the decision-making process.

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¹⁰ For example, the Canadian Government maintains EVRI, an international database of environmental value estimates: <http://www.evri.ca/>. Missingham (elsewhere in this issue) addresses the issue in an Australian context.

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In Defence of Cost-Benefit Analysis

Henry Ergas¹

In this paper I compare cost-benefit analysis (CBA) to multi-criteria analysis (MCA). I review the nature of the two approaches and consider the criticisms that have been made of CBA. I conclude that these criticisms largely lack merit, and that even to the extent to which they are meritorious, they provide no justification for relying on MCA. I conclude by expressing my concerns about the growing role of MCA in Australian project appraisal, which is symptomatic of a broader move away from sound policy evaluation.

CBA

Cost-benefit analysis (CBA) is a technique for evaluating collective decisions that hinges on the comparisons of the costs of a proposal to its benefits, where costs and benefits are valued in monetary terms. In essence (and abstracting from the relevant technicalities), cost-benefit analysis asks whether the sum of the amounts the individuals who comprise the community at issue would be willing to pay for the project to proceed exceeds the costs of that project. Generally, a project enhances wealth — in the sense of the aggregate monetary valuation of the community's resources — if it meets a properly specified cost-benefit test. Whether enhancing wealth in this sense is either necessary or sufficient for a project to be worthwhile is a complex issue. Without going into the details of that discussion, it seems reasonable to suggest that projects that fail properly specified cost-benefit tests should be looked at very carefully, and be found to have other, significant, redeeming features, before they are allowed to proceed. By the same token, if a project has benefits that (evaluated in monetary terms) clearly exceed its costs, it seems reasonable to presume that, in the absence of compelling reasons to the contrary, society would gain were it to proceed.

Multi-criteria analysis (MCA), rather than seeking an overall monetary valuation of project effects, identifies salient elements of those effects (be they costs or benefits), scales them and then places subjective weights upon them. In that sense, it is a technique for scoring project attributes. The project is expected to be approved if the weighted sum of the desirable effects (that is, the scaled value of the various dimensions of project benefits) exceeds the weighted sum of the project's undesirable effects (the scaled value of its costs and harmful outcomes). Elsewhere in this issue, Dobes and Bennett provide a

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worked, hypothetical, example of MCA as it is typically implemented in Australian policy evaluation.

The differences between CBA and MCA

There are, in my view, six critical differences between CBA and competitors to it such as MCA.

First, *evaluative standpoint*. There is a presumption in CBA that the value policy-makers place on a policy's effects ought to be derived from the valuations of the individuals who will bear those effects.² It is for this reason that where a policy affects traded goods and services, the valuations used will be those captured in market prices (taking account of the fact that those prices may differ as between the world with and without the policy at issue), as market prices will reflect individuals' willingness to pay for benefits and their willingness to accept costs.³ Equally, it is this presumption that guides the methods used to correct market prices where they are distorted by taxes, subsidies or price controls, or to impute valuations where the policy's effects involve goods or services (or dimensions of goods or services) that are not traded.

Underlying this presumption is the belief that where a project is being evaluated by a collective agent on behalf of a group of individuals, that project should be adopted if those individuals' preferences are advanced by that decision, such that were those individuals taking the decision themselves, they would adopt the project at issue.

In that sense, there is a close link between CBA and an approach that gives individual preferences primacy in collective decision-making. This, in turn, creates a natural consistency between the use of CBA and the legitimacy of public action, where legitimacy is a matter of the extent to which decisions are rational, confer benefits on those on whose behalf they are being taken, and are based on actual or reasonably assumed consent.

The evaluative standpoint is far less clear in alternative approaches. Specifically, in MCA, the evaluative standpoint may (as Dobes and Bennett suggest) be that of the evaluator, who determines the relevant scores;

² There are cases where those valuations are not accepted or are in some way over-ridden. For example, in assessing the costs and benefits of drug-control policies, the valuations of casual drug users and drug addicts are not given standing or, at least, are not weighted in the same way as other valuations. However, even here this 'over-riding' is explicit, and thus transparent to the analysis, which could be repeated allowing for the undiscounted preferences. In contrast, MCA approaches simply assert a set of values that can in no ready way be mapped back to individuals' desires. Different outcomes are obviously obtained with different values and value weightings, but the choice of these is ultimately arbitrary.

³ The basic notion underpinning use of willingness to pay as a measure is that if a person did pay that amount (or, when the willingness to pay is negative, receive that amount), he or she would be no better or worse off with the project than without. To the extent the overall willingness to pay for a project exceeds its costs, society is better off by the amount of the surplus; that is, all individuals could be made at least as well off as they would be without the project, with something left over to make some better off.

alternatively, there may be the claim that the scores are those of society as a whole, but it is not obvious whether or how they relate to, or are derived from, underlying individual valuations. Moreover, depending on how the scores are allocated, the results can be vulnerable to voting pathologies such as those associated with non-transitivity or with small differences in valuation leading to large differences in outcomes.⁴ The results cannot therefore be related back to underlying concepts of rational collective decision-making or of actual or implied legitimacy.

Second, *decision-relevance*. A project is wealth-increasing if its benefits exceed its costs (the 'total test'), including the opportunity cost of pursuing alternative projects or of pursuing that project on a different scale (the 'marginal test'). A properly constructed CBA captures this criterion because the weights it uses for the various dimensions of benefits and cost are commensurable and reflect incremental valuations, allowing it to aggregate benefits and costs, to treat as costs the net valuations forgone in pursuing that project relative to others, and to take account of the option (if there is one) of varying project scale. Moreover, commensurability extends to the time dimension, allowing the use of a discount rate to convert future consequences into present values and making it possible to evaluate alternative time profiles for a given project. Together, all of these features mean that CBA allows different projects (including the project of doing nothing or doing the proposed project on a different scale), and different options within any given project, to be evaluated and compared.

In contrast, the weights and scores used in MCA are not generally commensurable (and indeed are often manufactured by the stakeholders) and would only by accident measure rates of substitution in consumption or of transformation in production between the various dimensions of the project's impact. As well as undermining attempts to assess whether total and marginal tests are passed, this lack of commensurability means that it is difficult to see whether or how time-dated effects in a MCA evaluation can be consistently discounted.

Third, *comparability*. An advantage of the systematic use of CBA is that it allows consistent values to be used *across* projects for assessing particular project inputs or outcomes. For example, using a standard value for a statistical life can help ensure that social outlays aimed at saving lives are used efficiently; that is, through a project mix such that reallocating resources among projects would not increase lives saved for a given total outlay.⁵ Equally, using a common

⁴ There are multi-criteria decision-making procedures, such as ELECTRE, that seek to avoid these anomalies, albeit at the cost of seemingly arbitrary restrictions (for instance, on preference thresholds).

⁵ For example, there is evidence that decisions taken by different US government agencies imply very different valuations of the cost of saving lives — see Tengs and Graham (1996: 167, 177). This has naturally focused attention on the scope for improving outcomes by shifting outlays from less cost-effective to more cost-effective life-saving programs.

approach to setting the discount rate⁶ is clearly necessary if meaningful project rankings are to be derived.

Although such consistency is not always achieved in practice, the structure of CBA naturally invites it, for two reasons: because inputs and outcomes can be defined in standard terms across projects and the weights placed upon them compared; and because the weights are generally separable, so that changing, for example, the discount rate, does not change the value of a life.

In contrast, in MCA, the weights themselves are rarely transparent, and because they are derived by looking at the project as a whole, it is not clear that they can be treated as separable in the sense defined above. As a result, the scores used in MCA evaluations cannot be given an interpretation that is independent of the projects themselves, nor can they be compared across projects, undermining the extent to which they can be used to improve the efficiency or cost-effectiveness with which goals (such as saving lives) are achieved.

Fourth, *verifiability*. The assumptions used in a CBA are capable of being tested in terms of their consistency with market valuations, the way in which market valuations have been altered, and the methods used to measure and weight non-marketed inputs and outputs. It is because of this verifiability that CBA can improve on the principal-agent problems that bedevil collective decision-making, just as the capacity to audit companies' financial reports allows shareholders and other input suppliers to improve on the principal-agent problems inherent in the modern corporation. However, it is difficult to see how the essentially subjective weights used in MCA are capable of third-party audit, so that while they may formalise the discretion exercised by the relevant decision-maker, they merely express, rather than constrain, that discretion.

Fifth, *accountability*. As CBA estimates impacts and costs and benefits in quantitative terms and lays out all of its underlying assumptions, it can be found to be wrong after the fact. It might turn out, for instance, that people value a new national park by less than was assumed by a study recommending its creation. In contrast, unless a CBA had actually been undertaken (in which case why do the MCA?), it is difficult to see how one could determine that an MCA assessment was wrong after the fact. This may be a reason why MCA is gaining popularity — as a device for reducing accountability for decisions.

Sixth and last (and stressed to me by an anonymous referee), *scientific progression*. CBA gets better over time because it attempts to systematically measure impacts and the values placed upon them and does so in a way that is comparable from study to study. These repeated attempts generate:

⁶ Even with such a common approach, the discount rate used in different projects will of course differ depending on the risk characteristics of each project.

- A body of quantitative techniques for measuring impacts with some degree of rigour;
- Better tools for understanding how people actually behave in the face of changes such as construction or improvement of transport facilities;
- Lessons from the falsification of specific types of past analysis (facilitated by and closely related to the virtue of accountability discussed above); and
- A body of evidence accumulated over time and across countries that can be used to calibrate future models better.

In contrast, the lack of accountability noted above makes comparable progression in MCA difficult or impossible.

Criticisms of CBA

While CBA trumps MCA in each of these respects, CBA has been subjected to a wide range of criticisms. I review three of the leading criticisms and consider whether they justify replacing CBA by MCA.

Non-commensurability

A first criticism is that CBA cannot deal with the *non-commensurable dimensions* of a policy or project evaluation, particularly those dimensions that cannot (or, for ethical reasons, should not) be given a monetary valuation.

There are indeed circumstances in which CBA cannot be a complete answer to the problem of policy or project evaluation. A project may have benefits that exceed its costs but be rejected on non-consequentialist grounds, for example, because it offends accepted moral standards.⁷ Alternatively, even putting deontological concerns aside, some dimensions of a project's effects may be more readily expressed in monetary form than others.

Even in those cases, however, monetizing the costs and benefits associated with those effects that are capable of being so valued can still provide a better basis for public decision-making than could occur in the absence of that quantification. This is because the decision then provides a *de facto* valuation, from the perspective of the public decision-maker, of those elements that are not capable of monetary valuation or are not appropriately valued on a monetary basis. For example, if the monetary benefits of a policy exceed its costs by some amount, then a decision by the public decision-maker not to proceed with that

⁷ "Consequentialism" refers to decision-making on the basis of an assessment of the consequences of choice. It is generally contrasted with "deontological" approaches, in which decisions are made on the basis of inherent values, rather than of a balancing of consequences. For example, most people would regard a prohibition on torture as being a matter of ethics, independently of whether it is capable of being justified by any kind of utilitarian or, more generally, consequentialist assessment. Decisions that have a strong ethical component can only be cast in monetary terms by means of artifices (such as imputing a very high 'cost' to breaching an ethical precept), which effectively over-ride the cost-benefit assessment as such.

policy because of non-quantifiable costs implies that the harms associated with the non-quantifiable impacts at least outweigh the net benefits estimated for the quantifiable elements.

As a result, this criticism does little to undermine the relevance of properly conducted CBA. Rather, it may be one of CBA's strengths that it can focus attention on, and provide for explicit political resolution of, non-consequentialist aspects of policy-making. However, even if the criticism had more bite than it has, relying on it as a basis for replacing CBA by MCA would seem a case of throwing away the baby with the bathwater, as what is required is a process that, rather than ignoring the CBA, complements the information CBA yields with a social valuation of the non-monetized aspects of the project's effects.

Income distribution

A second criticism is that CBA treats a dollar as a dollar, regardless of who it is removed from, or accrues to. This gives a greater weight to higher-income consumers, who have a lower marginal utility of income and hence can 'pay more' to secure a benefit or avoid a loss. In that sense, aggregating willingness to pay involves an information loss, relative to a 'perfect' utility measure, due to differences in the marginal utility of income.

Where compensation is actually paid (in the sense that the 'winners' from a policy change compensate the 'losers' from that change), distributional consequences are of little relevance, as the compensation payment will ensure that those adversely affected are no worse off.⁸ In this case, relying on aggregate willingness to pay is obviously appropriate. However, compensation is often not provided for policy decisions, and hence the distribution of net benefits as between parties may be viewed as needing consideration in the policy evaluation process.⁹ However, the assumption that a dollar is a dollar implicitly sets these considerations aside or at least separates them from consideration of efficiency.

There are several cogent reasons for separating policy for income distribution from policy for wealth maximisation in the evaluation of policies that do not have explicitly redistributive goals. The first centres on efficiency. As a general matter, it is more efficient to redistribute income through explicit tax-transfer

⁸ There is the hypothetical case in which a policy only affects the rich, making them better off, while having no impact on the income of the poor. As a result, explicit compensation is irrelevant. Nonetheless, some might still object to the policy on the grounds that the poor would be relatively worse off, and hence should be compensated.

⁹ Where costless lump-sum transfers are possible, then to determine whether there is a net benefit from a project, it suffices to ask whether implementing the project increases the government's budget balance in the compensated equilibrium (that is, where utilities are held fixed relative to the world without the project through offsetting lump-sum transfers). In that case, it is clear that all projects that yield a net gain in the budget balance are potential Pareto improvements. However, where lump-sum transfers are impossible (and in any event utilities themselves cannot be observed), the fact that a project would, on this measure, increase wealth should obviously be relevant to the decision-maker but may not be determinative.

policies than through instruments such as infrastructure policies, environmental programs or health-and-safety regulations.¹⁰ The fact that the ultimate incidence and distributional consequences of these instruments are often extremely unclear makes this relative-efficiency argument all the stronger.¹¹ Kenneth Boulding's poetic injunction, apropos claims that income distribution issues should be considered in assessing the California Water Plan, comes to mind:

It would be well to be quite sure
Just who *are* the deserving poor,
Or else the state-supported ditch
May serve the undeserving rich
(Boulding 1966).

Second, although one could give greater or lesser value to benefits depending on who they accrue to (and symmetrically for costs), it is unclear how the evaluator would determine the weights to be used and attempts to do so are largely arbitrary. Ultimately, we cannot measure 'utilities', much less determine the correct social-welfare function, and it is foolish to pretend otherwise. Rather, there is, here, an element that is essentially political, and which is best left to the political system, while leaving to project evaluation the feasible, verifiable and still highly relevant task of assessing impacts on wealth.

Lastly, it can be argued that it is the overall impact of public projects — that is, the impact of the portfolio of projects taken as a whole — that we should be concerned with in considering issues of income distribution, for it is that overall impact that determines the pattern of gains and losses that explicit redistributive interventions might then want to correct. Seen in that light, it is reasonable to think that (putting aside programs specifically aimed at redistribution) those overall impacts are widely distributed in the community, so that the distributional consequences of individual programs roughly cancel out in the 'swings and roundabouts'.

A policy of adopting projects that have monetary benefits that exceed their costs will thus tend to make all individuals better off, as well as providing efficiency gains that can fund programs that address serious disadvantage. To that extent, with all individuals gaining from the project portfolio, differences in the marginal utility of income will only affect the aggregate extent of the net

¹⁰ The theory of optimal taxation shows that there are circumstances in which it is efficient to use instruments other than tax-transfer policies to redistribute income. Generally, these circumstances involve cases in which the instruments allow transfers to be made to low income consumers with very little leakage to high income consumers. For example, subsidising milk in schools may effect a significant benefit to low income consumers with little loss of incentive or effort by high income households. That said, it is not clear that such cases arise with respect to the types of issues involved in the evaluation of infrastructure projects or of other programs that do not have income redistribution as their primary objective.

¹¹ For example, gains in user surplus as captured in the traditional Dupuit measure of the benefits from a transport program may ultimately be capitalised in land values, and hence accrue to land-owners.

gain from the portfolio of programs but not its sign. Moreover, even were it not the case that all individuals gain from the overall project portfolio, if both the 'winners' and the 'losers' are large and diverse groups, such that the marginal utility of income does not vary systematically between them, then projects that increase net wealth will likely also be utility increasing.

These arguments notwithstanding, there is, as Dobes and Bennett note, no reason in principle why distributional weights cannot be used in valuing costs and benefits of decisions. But using such weights introduces (for reasons noted above) an element of arbitrariness into CBA that moves it closer to MCA. If distributional issues are to be considered, it is better to do so by separately identifying the distributional consequences of particular projects and allowing those consequences to be an element in the final decision alongside the standard estimate of project net benefits.

As a result, the criticism of CBA on grounds of income distribution is not particularly telling; and even to the extent to which it does have bite, it hardly seems to justify replacing CBA by MCA.

Accuracy

The third and final criticism of CBA considered here is that it is based on complex assumptions, and hence likely to be inaccurate. While this is correct, it merely reflects the difficulty inherent in assessing and valuing the effects of public projects. To that extent, it is not an argument against CBA; rather, it is an argument against public projects. Even less is it an argument for replacing CBA by MCA: there is no reason whatsoever to think that MCA is any more accurate than CBA. Indeed, as noted above, the valuation weights and assumptions used in CBA are capable of being compared across projects, and as between initial projections and out-turns; neither of these can be done in MCA. As a result, use of MCA is more likely to undermine accuracy in project appraisal than to advance it.

The current state of Australian project evaluation

Set against this background, there are grounds for being extremely concerned about the state of project evaluation in Australia. For example, a recent advocacy of MCA can be found in Infrastructure Australia's guide to project evaluation, which says that funding applications will be assessed based on a 'triple bottom line' approach that also takes account of projects' 'strategic fit', seeks the 'efficient use of existing infrastructure and resources' while 'optimising the role of both the public and private sector'. However, CBA has always considered relevant environmental and social impacts in assessing project net benefits; to consider them twice, as occurs in 'triple bottom line' evaluations where projects are ranked both on the results of a CBA and on environmental and social grounds, is simply double counting. Confusion in this respect merely highlights the extent to which

these increasingly popular ‘triple bottom line’ evaluations lack analytical rigour and seem aimed at maximising the discretion left to the decision-maker, creating room not merely for error, but also for rent-seeking (see Ergas 2009). This is, of course, the antithesis of proper cost-benefit appraisal.

That said, it is unfortunately impossible to know whether actual project evaluations are indeed as poor as the Infrastructure Australia report could lead one to fear. In effect, although it has allocated billions of taxpayer dollars to infrastructure decisions, the current Commonwealth government has decided not to release the evaluations on which those decisions are based, claiming that these are ‘commercial in confidence’. As well as limiting the contribution which evaluation can make to the accountability and legitimacy of public decision-making, this ensures that the public is in no position to assess whether the project-evaluation methods used meet reasonable professional standards.

In its 2008–09 Budget, the government promised ‘decision-making based on rigorous cost-benefit analysis to ensure the highest economic and social benefits to the nation over the long term’ (Commonwealth of Australia 2008: 14–5). However, the degree to which this promise has been respected is questionable, as demonstrated by the government’s commitment, on 7 April 2009, to fund a National Broadband Network whose deployment is estimated to cost \$43 billion.

Thus, according to a report in *Communications Day* of 13 May 2009, the Communications Minister, Senator Stephen Conroy, when asked by the Opposition whether a cost-benefit study had been carried out of the proposed expenditure, said there was ‘no need’ for such a study, as ‘Labor’s commitment to build a high-speed broadband network has been clear ... A range of studies have been carried out all over the world that have investigated the economic impact of broadband.’

The Finance Minister, Lindsay Tanner, who has responsibility for promoting cost-benefit evaluation in the Commonwealth government, then confirmed that no cost-benefit study had been carried out and that none was envisaged, because ‘We just formed the view that in effect we had to make the clear decision that said this is the outcome we are going to achieve come hell or high water because it is of fundamental importance to the future of the Australian economy’ (Bartholomeusz 2009).

These views bring to mind the French politician cited by David Henderson (1986) in his masterly analysis of ‘Do It Yourself Economics’, who believed that agriculture was too important to be subjected to appraisal of costs and benefits: the object of the cargo cult may have evolved with the times — broadband replacing dairy cows — but the logic, if it can be called that, is the same.

This suggests that the problems go well beyond the technical issues of how MCA compares with CBA, important though those are: rather, they go to the

basic issue of whether policy decisions are based on rational, transparent, criteria or on instincts, diktats and deals. Dobes and Bennett's defence of the use of CBA is therefore all the more timely and important.

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Assessing the Impact of Regulatory Impact Assessments

Mark Harrison¹

*Every political party believes in the idea of better regulation. And yet every political party, once in government, fails to achieve better regulation.*²

In 1981 President Ronald Reagan's Executive Order 12291 required US Federal agencies to produce a Regulatory Impact Assessment (RIA) for all proposed major regulations — the first attempt to use RIA systematically to improve regulatory outcomes.³

An RIA sets out the problem the regulation addresses, the regulation's objectives, different options to achieve them, an assessment of the impacts of each option, and the consultation undertaken, and recommends an option (usually the one with the greatest net benefit). Assessing the impact of each option could include estimating the costs and benefits, measuring business compliance costs, analysing risks and considering the effects on competition. Sometimes the document that details the RIA is called a Regulatory Impact Statement (RIS).

The idea of an RIA is to make regulation more efficient and effective by having its designers justify the reasons for implementing a new regulation, consider the costs and benefits of different options at an early stage and take a community-wide perspective of their effects, to ensure that the benefits to society (broadly conceived) of a regulation are greater than the costs (also broadly conceived) and to encourage the design and adoption of the regulation with the greatest net benefit. 'Ideally, it is used to raise the right questions at the right stages in the policy-making processes with the right people' (Radaelli and Meuwese 2009: 7).

RIAs have proved popular with governments trying (or trying to be seen) to improve the quality of their regulation. By 2005, 26 of 30 OECD countries, and many non-OECD countries, had adopted formal policies mandating the use of RIA in domestic policy-making.⁴ Australia was an early adopter: from 1985 Cabinet required that regulatory proposals with significant effects on business

¹ Principal, Consultecon, markharrison@ozemail.com.au.

² Boyfield 2007: 1.

³ See Hahn 2005: 66–7. A major regulation is one with an annual impact of \$100 million or more. Some formal and explicit assessment of the impact of some regulations was undertaken in the US, Finland and Canada in the 1970s, and Denmark had a form of RIA in 1966. See Jacobzone *et al.* 2007: 35.

⁴ See Jacobzone, Choi and Miguët 2007: 35, 77–80; Jacob and Associates 2006: 5. The OECD claims 'in 2005 all member countries routinely carried out some form of RIA on new regulations before finalising and implementing them' (OECD 2008: 6).

include an RIS (Industry Commission 1994: 228). In 1986, the Hawke Government established the Office of Regulation Review (ORR) to encourage good regulatory practice (Industry Commission 1995: 73). Since then, every inquiry in Australia into how to reduce the regulatory burden at the Federal level has recommended strengthening RIA requirements and increasing the ORR's resources and gatekeeper role.

International experience with RIAs

International studies, however, question whether an RIA process improves regulatory outcomes. Common themes include non-compliance with the regulatory process and poor-quality RIAs.

For example, a US study of the quality of RIAs found agencies failed to comply with RIA requirements. Most agencies failed to quantify costs and benefits, discuss alternatives, use consistent analytical assumptions, report their results clearly or make their results accessible (Hahn *et al.* 2000; Hahn 2000). A review of New Zealand's regulatory regime also found poor-quality RIAs (Wilkinson 2001: 96).

In a more recent survey, the quality of RIAs in the US was found to fall far short of guidelines and the authors concluded that: '...it does not appear to be getting any better over time. Thus, although there is some evidence economic analysis can improve the benefit-cost ratio of regulations, there is insufficient evidence that economic analysis of regulatory decisions has actually had any substantial impact' (Hahn and Tetlock 2007: 3).

A study of the British RIA process also found the standard of RIAs to be poor, a 'bureaucratic sham', treated as 'as a bolt-on extra designed to justify a regulation' rather than being used to shape and inform policy formulation (Boyfield 2007: 9, 11). There are few incentives for public servants to undertake rigorous RIAs and they often define objectives narrowly, fail to calculate all impacts or consider the effects of non-compliance with the regulation, and resist external scrutiny. Many RIAs actually demonstrate that costs manifestly exceed quantified benefits (Boyfield 2007: 6). The problems are worse if the regulation is politically sensitive.

In their fifth annual report examining UK Government RIAs, Ambling *et al.* concluded: 'More substantively we question whether RIAs have changed the political reality that ministers introduce regulations because they want them as distinct from being able to justify them. RIAs continue to be used to facilitate regulation rather than challenge the need for it or the quantum' (Ambling *et al.* 2007: 9).

A study of RIA procedures and practices in the European Union and all Member States found:

In almost all cases we have examined, there is a large gap between requirements set out in official documents and actual Impact Assessment practice. ...typically assessments are narrow, partial and done at a late stage. In many countries, a large share of proposals is not formally assessed or is assessed with a 'tick box mentality'.⁵

The unintended consequences of dealing with unintended consequences⁶

In Australia too, the results of RIA requirements have been disappointing. Twenty years after the RIA process was established, the 2006 Taskforce on Reducing Regulatory Burdens on Business pointed out that the 1990s and 2000s saw a dramatic growth in the volume of regulation (Regulation Taskforce 2006: 5). And no-one has detected any improvement in the quality of new regulation. Indeed, complaints about growing regulatory burdens led to the Taskforce inquiry.

It should be no surprise that efforts to improve the quality of regulation may fail. The whole case for regulatory reform is that bureaucrats and politicians have their own interests and objectives and the political process does not automatically lead to policies in the public interest. The pressures and incentives that lead to bad regulation are still present — such as the influence of special interests and populist pressures to 'do something' about the problem of the day. Politicians respond to these pressures. Further, bureaucrats may have their own objectives, such as empire building, which may encourage them to support excessive and inefficient regulations.

Both the regulatory agencies and the central regulatory monitor can lack the incentive to carry out policies to improve the regulatory process.

The focus of regulatory-review inquiries in Australia has been on improving the incentives of regulatory agencies, for good reason: evidence that the RIA requirements are widely ignored. For example, in 1996–97 out of 121 Bills that required the preparation of an RIS, departments only did so in 13 cases, and only 10 (8 per cent) were fully compliant (Industry Commission 1997: 44).

There were no effective sanctions and, thus, low levels of compliance. Even after the RIS requirements were strengthened in March 1997, following the new Howard Government's Bell Review (Bell 1996), the only penalty for non-compliance was to have it pointed out in the ORR's annual report a year later.

⁵ Jacob *et al.* 2008: 2.

⁶ Nick Gruen used this phrase in a Radio National interview to describe the problems with Australia's regulatory process.

Compliance has improved since then, averaging 74 per cent from 1997–2005, indicating that at least some RIAs were being done. But the problems with the RIA process identified in international studies apply in Australia. Compliance has been weaker for the more significant regulations and for the more politically sensitive, and ‘In many cases, the RIS is prepared too late in the policy development process to be of any real assistance to decision-makers. In those circumstances, it effectively becomes little more than an ex-post justification for a policy decision already taken, subverting its role’ (Banks 2005: 9–10).

In 2006, following the recommendations of the Taskforce on Reducing Regulatory Burdens on Business, the RIA process was again strengthened. A regulatory proposal with medium compliance costs, or significant impacts on business and individuals or the economy, should not proceed to Cabinet or other decision-maker unless it has complied with the regulatory impact-analysis requirements, and non-compliant regulations must have a post-implementation review within two years. These changes increase the incentive for agencies to comply with the RIA process, which was to include more rigorous cost-benefit analysis. The ORR received more resources and had its name changed to the Office of Best Practice Regulation (OBPR).

‘Sed quis custodiet ipsos custodes?’⁷

An issue that has been ignored by the various inquiries is the incentives for the OBPR to perform its role and enforce an RIA process that improves regulation. Yet the OBPR is subject to the same pressures and incentives that lead to bad regulation. As the penalties for non-compliance are raised, the role of the OBPR becomes more important and political pressures become more intense.

The lack of focus on the OBPR’s performance has meant the RIA process has often provided it with poor incentives. For example, its main indicator of best practice regulation is the rate at which regulatory bodies comply with the RIA process. Although a low compliance rate from a failure to conduct RIAs indicates the process is being evaded, a high compliance rate tells us little about the quality of the regulatory outcomes. The compliance rate is the number of RIAs judged adequate by the OBPR divided by the number of proposals it says require an RIA. High compliance rates can be produced through low standards of adequacy and requirements.

Many regulations (such as delegated legislation) do not go to Cabinet, and can be passed without OBPR approval. Whether a Department that does so is declared non-compliant depends on OBPR staff detecting regulations that should have been subject to an RIA process. There is not much incentive to declare

⁷ (Who watches the watchmen?) Juvenal, *Satires* No.6, 1:347.

regulations that have already been passed as non-compliant, as this could upset the Department and Minister, and potentially embarrass the government.

Not only is it easier (and less work) to declare a regulation compliant with (or exempt from) the RIA process, it is difficult for the conscientious to see any positive results from declaring a passed regulation non-compliant. The only sanction is an increased non-compliant proportion of the Department's regulations in the OBPR Annual Report (a fact which may even be seen to reflect badly on the OBPR and the RIA process if it is in fact noticed by anyone) and, now, a requirement to prepare a post-implementation review (Australian Government 2007: XVIII). But the post-implementation review is to be carried out by the Department that implemented the regulation and is to focus on the way regulation was implemented, rather than on its desirability (Australian Government 2007: 37).

Likewise, life is more difficult for an OBPR officer if an RIS is declared inadequate. Rejections are scrutinised closely; acceptances are not. Pressure on the junior staff can include irate telephone calls to their supervisor from a Departmental Secretary or Minister. The result is the so-called tick-and-flick mentality.

Finally, the greater the OBPR's diligence in tracking down non-compliant regulations, the lower the compliance rate. Yet a high compliance rate is often considered a sign of a successful regulatory process.

'If people don't know what you're doing, then they don't know what you're doing wrong'⁸

If regulatory proposals need to be accompanied by 'an adequate level of analysis' (Australian Government 2007: 6), what the OBPR considers adequate is crucial. Yet under current arrangements, these decisions lack transparency, making the OBPR less accountable.

For example, it is not clear why no RIA was required for the proposed alcopops tax, despite the explanatory memorandum stating that the tax measure forms 'one part of the Government's ongoing strategy to discourage binge-drinking, particularly among young people' (Parliament of Australia 2009: 6).⁹

Further, there is no provision for post-implementation reviews to be made public, only whether the OBPR judged it adequate.

⁸ Sir Arnold Robinson, Secretary to the Cabinet in *The Complete Yes Minister*, Jonathan Lynn and Antony Jay (eds), Harper & Row, 1988: 21.

⁹ The tax took effect on 26 April 2008 (although the Bill to impose the tax increase was later defeated). There is no RIA attached to the explanatory memorandum for the Bill and no mention of it in the 2007–08 OBPR Annual Report, which says an RIA was required for the Tax Law Amendment (Medicare Levy Surcharge Thresholds) Bill 2008 (see Office of Best Practice Regulation 2008: ix, 18).

Some recent evidence on OBPR decisions suggests that if improving the regulatory process is to be more than wishful thinking, the process must take account of, and improve, the incentives and constraints that face decision-makers, including those in the OBPR.

Some researchers recently examined all the risk-related RISs (about half of all RISs) received by the OBPR between December 2004 and September 2008. They found that before the RIA guidelines were strengthened in November 2006, only 16 per cent of RISs presented estimates of net benefits of the proposed regulations. For those produced after November 2006, the proportion increased to 24 per cent (Austin *et al.* 2008: 59–60).¹⁰

Even after the enhanced RIA process was introduced, around three-quarters of risk-related RISs do not provide an estimate of net benefits, despite the Best Practice guidelines of the Australian Government and the Council of Australian Governments (COAG) requiring it.¹¹ Yet only a small proportion of completed RISs are declared inadequate. For example, the OBPR reports that for decisions made since the requirements were strengthened and tabled in 2007–08, 51 RISs were required. Three received a Prime Ministerial exemption and 43 were declared compliant, a 90 per cent compliance rate (46/51). What is not made clear, but can be gleaned from the report, is that all the non-compliant cases were because a RIS was not prepared and the regulation went ahead in each case.¹² All of the completed RISs were declared adequate.¹³

The revelations surrounding the recent FuelWatch proposal exposed the weakness of the current RIA process. The leaked Cabinet documents revealed that four out of five of the Government's economic advisory departments opposed the introduction of the scheme. Even the OBPR's own department (Finance and Deregulation) did not consider 'that the proposed FuelWatch scheme is good practice regulation'.¹⁴ Yet the OBPR declared the RIS adequate, certifying the proposal as meeting best practice standards (Australian Government 2007: 37). For a regulation to be both 'not good practice' and 'best practice' requires a depressingly pessimistic view about achievable standards of regulation.

The FuelWatch RIS assessed the impacts of four options, but did not estimate the value of costs and benefits or attempt to determine which option had the highest net benefit to the community. Instead, it recommended option 1 (FuelWatch) 'based on its ability to satisfy fully the Government's objectives' (p.15). One and a half pages is spent setting out and estimating option 1's business

¹⁰ About 60 per cent of the regulatory proposals were received after November 2006 and a little under half were from Council of Australian Governments (COAG) bodies.

¹¹ See Australian Government 2007: 55.

¹² See Office of Best Practice Regulation 2008: 18 (Table 2.5), which shows they all require a post-implementation review.

¹³ See Office of Best Practice Regulation 2008: 28 (Table 3.2).

¹⁴ See, for example, Oakes 2008.

compliance costs as a 'conservative' \$2 million start-up cost (\$424 per business) and a \$18.7 million annual ongoing cost (\$3,974 per business).¹⁵

Although the RIA process requires RISs and compliance cost reports to be published with the explanatory memorandum for proposals tabled via Bills, the Treasury did not do so and, instead, replaced the 16-page RIS with a new five-page assessment of the regulation, including four additional objectives. It did not consider different options for achieving the objectives but, instead, asserted that FuelWatch would achieve all of the objectives, and that 'The estimated compliance cost for business is zero' (Parliament of Australia 2008: 2, 6, 8–9). A hard copy of the FuelWatch RIS was lodged with the Tabling Office of the Australian Parliament, apparently meeting the requirement to make it public. Nonetheless, the OBPR declared the Treasury compliant with best practice regulatory process (see Office of Best Practice Regulation 2008: 37).

Although the *Best Practice Regulation Handbook* (Australian Government 2007) sets out what is required for good regulatory process, it appears that the actual process is far less rigorous, with the OBPR acquiescing in the flouting of its own requirements. It is difficult to discern any benefits from a regulatory process with such low standards or from the OBPR approving an ex-post justification for a decision already made.

Regulating regulation's regulator

If the RIA process is to be kept, there are a number of practical reforms that could make it more transparent and increase the incentives of all participants to improve the analysis of proposed regulations.

The earlier the RIA process is exposed to public comment and scrutiny, the greater the incentive for decision-makers to genuinely consider regulatory impacts early in the formulation of regulations, and the more likely that the RIA process will improve regulatory decisions. For example, for COAG regulatory proposals, a consultation RIS is produced and sent to the OBPR for comment and then revised before being made public as part of the consultation process. Interested parties can comment on the RIS and it can provide a framework for consultation. The consultation RIS is then revised into an RIS for the decision-maker, which is again reviewed by the OBPR. The regulators and OBPR receive the benefit of comments from stakeholders. A consultation RIS would improve transparency and accountability. So, too, would earlier publication of the final RIS. Currently it is tabled with the regulation in Parliament — too late for many interested parties.

A central register, which the public could access freely on the internet, would also improve transparency. (See Missingham this issue for similar uses of the

¹⁵ See Department of the Treasury 2008.

internet). It should contain RISs for each existing and proposed regulation, as well as the OBPR's reasons for assessing it as compliant or non-compliant. That would increase external scrutiny of the performance of agencies and the OBPR, improving their incentives, and allow interested parties greater participation in the regulatory process. RISs would be easily accessible and different agencies and Departments could be compared. Academics could engage in independent regulatory analysis, including follow-up studies, such as ex-post evaluation of accuracy.

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Advancing Accountability in Government

Tony Harris¹

There are layers of accountability which governments should respect if they are to accord voters the full rights of democracy. At the basic level, governments, and their agencies, are required to publish accurate reports on their use of public financial resources. To assist the process of accountability, Australia's nine jurisdictions engage auditors-general who oversee the auditing of these financial reports. These auditors advise on whether these government reports are true and fair according to accounting requirements.

Because these reports are the foundation of financial accountability, we expect that no agency would wish to present information which fails the true-and-fair test. Alas, these expectations are not always fulfilled. For 2007–08, for example, the auditor-general for South Australia was unable to provide a clear opinion on the state's Consolidated Financial Report. A reading of that report on the government's website will show that the Treasurer, Kevin Foley, claimed that his report was true and fair. But the opinion from the state auditor-general attached to the report does not support those claims.

A more egregious example of failure to report financial matters accurately was the Commonwealth Government's view that the Goods and Services Tax, enacted by the Commonwealth Parliament in 1999, was not a Commonwealth tax. The Prime Minister, John Howard, and his treasurer and finance minister each claimed that the \$40 billion or so collected through the GST was a state (and territory) tax. This view was informed by politics. It enabled the Commonwealth to report lower taxation collections and lower spending for the period of the Howard government from 2000–01 when the GST was first collected. Happily, this position was not supported by any state or territory auditor-general,² or the Commonwealth Statistician³ or the Australian Tax Office.⁴ The Commonwealth auditor-general also found that the GST was a

¹ Former NSW Auditor General (1992–1999).

² No state or territory financial report claimed the GST as a state tax and these reports were not qualified by state or territory auditors-general: see state and territory consolidated financial statements and audit opinions for 2000–01 (and relevant subsequent years).

³ Australian Bureau of Statistics: 5517.0 — Information Paper: *Accruals-based Government Finance Statistics*, 2000.

⁴ Australian Taxation Office: *Annual Report 2000–01* — Note 19a of Audited Financial Statements (and relevant subsequent annual financial statements).

federal tax;⁵ accordingly, basic Commonwealth financial reports were qualified for each of the relevant years of the Howard government.

Governments manipulate financial statements from time to time, but even unadulterated financial statements are poor tools for effective accountability. They merely show that monies received can be accounted for in the prescribed fashion and, at the agency level, they tell us little more. When government hospitals, for example, publish their audited financial reports, we might be satisfied that public monies have been accounted for in the way required of profit businesses but we have no notion about the effectiveness, efficiency or economy of these entities.

Unfortunately, while financial reports by private-sector bodies contain much of the information required by investors, creditors and employees, they are of little use in the public sector. Seeing whether a publicly listed company is profitable and has sufficient funds to meet emerging liabilities would satisfy most users of financial reports. But almost by definition, the concept of profitability is irrelevant for most central government bodies. Public schools, public hospitals, police services, the defence force, National Parks and other government agencies do not operate in a market where goods and services are exchanged for fees or charges sufficient to meet costs.

In most government agencies, financial resources are merely the means by which these bodies strive to achieve their goals. To meet the accountability gap between financial reporting and goal reporting, the Australian governments introduced the concept of performance audits in 1979.⁶ This was followed in 1983 by the decision of the Commonwealth Government to introduce program management in accord with the election promises of the Australian Labor Party.⁷

One of the main difficulties with performance auditing, shown for example in its past practice in the NSW government, was the identification of the goals of government programs. Because auditors seek to use external, rather than their own, standards to guide the auditing process, it is important that governments ascribe to their programs their articulated and measurable goals. Where these goals exist, performance auditing can assess whether government programs are efficient in the broadest meaning of that term. But the large number of government programs — and the much smaller number of performance audits undertaken in any Australian jurisdiction — means that performance auditing cannot be used as an annual, comprehensive accountability tool.

⁵ Commonwealth Government of Australia: Consolidated Financial Statements for the Year Ended 30 June 2001 — Independent Audit Report, 18 December 2001 and subsequent consolidated financial statements and audit reports.

⁶ Hamburger, Peter 1989, 'Efficiency Auditing by the Australian Audit Office', *Journal of Accounting, Auditing & Accountability* 2(3).

⁷ Australian Labor Party 1982, 'Labor and the Quality of Government'.

The lack of comprehensiveness of performance audits suggests that the use of performance indicators for every government program might offer a better accountability tool. These indicators were introduced in the Commonwealth government concomitantly with the introduction of program management. We now see performance indicators in the annual reports of most government agencies and they are also used in documentation to support budgetary allocations.

Another example of their use is found in the New South Wales strategic plan.⁸ It takes performance indicators further by providing users with 60 performance indicators to assess whether the government's intentions in its state-wide plan are being realised. The annual publication by the Productivity Commission of the Report on Government Services goes further because it enables users to compare government achievements across similar programs in all Australian jurisdictions. Finally, the Intergovernmental Agreement on Federal Financial Relations⁹ shows how the Commonwealth is using performance indicators to measure the achievements of individual states and territories in agreed areas, as well as the federal payments to be made for such achievements.

Unfortunately, we are also seeing an abuse of performance indicators. The most recent published example of such abuse can be seen in the report by the Victorian Audit Office in April 2009, 'Access to Public Hospitals: Measuring Performance'. In this report, the Office noted that a public hospital manipulated the time spent by some patients in the emergency department before they were admitted to the hospital. We also see some agencies choosing not to adopt performance indicators and the choice of poor or inadequate performance indicators by governments. For example, the 2007–08 annual report of the New South Wales Fire Brigades offers no data on the time taken by fire brigade units to arrive at fire sites. The Commissioner of the New South Wales Corrective Services does not disclose in his comments on 'Key performance indicators' in the 2007–08 annual report the recidivism record for his agency.

Because performance indicators have assumed such a central role in the accountability process, and because they are open to manipulation in the same way as financial reports, there is merit in extending government audits to allow an annual audit of the relevance and accuracy of key performance indicators for each government reporting agency. A recent reading of all legislation for Australia's nine auditors-general shows that this mandate presently only exists in Western Australia. Its extension throughout the other eight jurisdictions would add to the health of the Australian democracy.

⁸ New South Wales Government: A New Direction – State Plan Summary: at http://www.nsw.gov.au/stateplan/pdf/Summary_complete.pdf; accessed on 8 May 2009.

⁹ Published on the website of the Council of Australian Governments at: www.coag.gov.au/intergov_agreements/index.cfm.

Switch on the Data: Changes Needed for Access to Public-Sector Information

Roxanne Missingham¹

Australians live in a digital world. In a typical Australian home in the twenty-first century the Internet is a daily tool for communication, information and recreation. In 2007–08, 67 per cent of Australian households had home Internet access — a quadrupling of connections from the home from 1998 to 2007–08 (Australian Bureau of Statistics 2008). Survey companies note that the Internet is a major information channel: ‘The Internet comes third, with an average of 10.7 hours per week [compared to television and radio]’ (Roy Morgan 2009) and ‘Australia, along with Sweden, Hong Kong and the Netherlands, appears to be the most mature Internet market’ (Nielsen 2003).

Australian government agencies have recognised the importance of using the new digital environment to communicate with the community and to offer services. The development of this communication channel has occurred with an international trend to provide access to what is now called ‘public-sector information’ (PSI). Agencies are, however, in the early stages of understanding policy covering such issues. The overall objective of providing greater access to information resources in the public sector is admirable, but thus far in Australia, initiatives have not delivered access successfully. New developments should learn from failures in the past, and could usefully learn from other countries.

The value and importance of PSI should not be underestimated. Management of intellectual property in the Australian Government sector (Australian National Audit Office 2007) concluded that the Commonwealth’s intangible assets, including intellectual property in information, had increased steadily to \$7.7 billion in 2005–06. Nearly half (\$3.8 billion) is software assets, but information is a component of the remaining \$3.9 billion.

The Government’s consultation paper released in January 2009 (Department of Broadband, Communications and the Digital Economy 2009) notes that ‘PSI includes Government produced data (such as Australian Bureau of Statistics (ABS) and geospatial data) and copyright protected materials (such as reports and other documentation). It can also include materials that result from publicly-funded cultural, educational and scientific activities.’

A new wave is emerging to enable citizens to harness both public-sector information and interaction with public-sector agencies. In June 2009 a Gov2.0

¹ Parliamentary Library, Parliament of Australia; Roxanne.Missingham@aph.gov.au.

Task Force was announced: 'Australian Government plans to harness the power of the World Wide Web to advance open, transparent government; and to work towards government that makes the best use of the skills and knowledge of its citizenry' (Tanner 2009).

PSI includes:

- data created by agencies, either through direct collection of information or through analysis of data collected by other government agencies; for example, the data held by the ABS and the Bureau of Meteorology;
- records created by agencies in the course of their work (while these currently are covered by Archives and Freedom of Information legislation, there is a question as to whether, in an environment where records primarily are developed digitally, a new approach be included within a PSI framework — noting that the proposed FOI legislation has recently been released);
- research including data commissioned by agencies; for example, by the Australian Research Council and National Health and Medical Research Council; and
- information resources held by agencies as a part of their collecting obligations; for example, in the collections at the National Library of Australia, Australian War Memorial and National Gallery of Australia.

Currently, access to these resources is highly variable. Agencies have quite different charging and management systems. There are some best practice models — the ABS, for example, makes its publications freely available. Other agencies charge for data, resulting in barriers for both the research and general communities.

Across the world there are different practices for access to PSI. In the United States, government publications are 'public domain' and available for use without the restrictions placed through Australia's copyright legislation. Australia's consultation paper has asked for comments on the need to move to an open-access regime, such as Creative Commons licensing (for more information see Creative Commons Australia 2009), a move supported by research and library communities.

More significantly, the US National Institutes of Health mandated free community access to publicly funded research in 2008. Its policy is clear: 'Enhancing public access to archived publications resulting from NIH funded research' requires the outputs of research (manuscripts) to be deposited in PubMed Central (United States, National Institutes of Health 2009). Making this research available produces significant public good: it enables quick and effective access to publicly funded research, while reducing duplication and creating a platform for collaboration. A Bill that would bar agencies from requiring any transfer of copyright in return for government funding was introduced to

Congress in January this year. Scientific societies and library groups are opposing the Bill as it would reverse the National Institutes of Health policy (American Library Association 2009).

In many other countries, agencies (such as the Canadian Institutes of Health Research) have similar policies to the National Institutes of Health. In Australia, the National Health and Medical Research Council guidelines are less demanding. They state that “to maximise the benefits from research, findings need to be disseminated as broadly as possible to allow access by other researchers and the wider community” (National Health and Medical Research Council 2008). However, there is no mandatory requirement to make the reports widely available:

NHMRC therefore encourages researchers to consider the benefits of depositing their data and any publications arising from a research project in an appropriate subject and/or institutional repository wherever such a repository is available to the researcher(s). If a researcher is not intending to deposit the data from a project in a repository within a six-month period, s/he should include the reasons in the project’s Final Report (National Health and Medical Research Council 2008).

Earlier this year the US Networking and Information Technology Research and Development published a report calling for government scientific digital data to be unleashed. The authoring Interagency Group of 24 agencies called for new structures and approaches, commenting that, ‘Data are not consumed by the ideas and innovations they spark, but are an endless fuel for creativity’ (United States National Coordination Office for Networking and Information Technology Research and Development 2009).

The European Union has regulated for an open approach to PSI (European Commission 2009). Its directive is intended to remove the barriers that limit cross-border re-use. With approximately 27 billion in PSI assets, increasing commercial benefit has been seen as vital. The directive sets out how public-sector bodies should make their information available for re-use and outlines a range of conditions. The European Union has been vigilant in monitoring its implementation, possibly because of the unevenness of open access in Europe. On 19 March 2009, it launched an infringement proceeding against Italy for ‘incomplete and incorrect transposition of the EU Directive on the re-use of public-sector information’ (European Commission 2009a).

One of the principles underlying access to public information is accountability. The Freedom of Information Act has brought access to government records. However, online publication of PSI offers much broader access. It would allow access to a record of government policy-making that is vital to an informed democracy. In Australia, the Parliamentary Papers series has provided a record

of Commonwealth policy and accountability documents. The Joint Committee on Publications has, in several reports (Joint Committee on Publications 1997 and 2006) emphasised the importance of citizens' access to the series. A study of papers ordered to be printed in 2008 has found that, while 90 per cent were accessible online, within 12 months several reports would not be accessible. The major reasons for a lack of access were that the agency did not have a website or that only selected material was published online.

Such decreased online availability of major accountability documents over time raises questions about the commitment to online access to PSI. The National Library of Australia has developed a national digital archive which contains a significant number of public-sector information resources. Without additional resources and/or a change to the current copyright/intellectual property management regime it will have difficulty overcoming the barriers to easy and effective re-use of PSI.

Current government search systems are major impediments to access to PSI. The Government plans to integrate its directories and publications discovery service (Australian Government Information Management Office (AGIMO) 2006). If it is not effective, combining the services will have limited effect. At present, less than half (based on a sample) of the Parliamentary Papers series can be found effectively.

Developments in the US, the UK and Europe have emphasised the benefit of access to PSI for science, research and business (see, for example, United Kingdom Department for Culture, Media and Sport and Department for Business, Enterprise and Regulatory Reform 2009). By using, for example, geospatial information with scientific data improved research can occur, supporting national resource discovery, building infrastructure and resulting in better environmental management. Businesses can identify potential user communities for product innovation. Robyn Archer, launching Music Australia, gave an insight into a commercial benefit of PSI through digital collections. She described being able to promote Australian musical talent to Europe and the US by linking to performers online in the National Library's digitised music collection.

Productivity Commission Chairman Gary Banks noted at a public lecture that data was an essential ingredient for public policy-making (Banks 2009). He suggested that transparency was also vital, and that data, assumptions and methodologies should be open to ensure that analysis can be replicated. Additionally, data needs to be available to prevent duplication and enable rapid and effective policy-making. A new approach to PSI could deliver all these goals.

The Department of Broadcasting, Communications and the Digital Economy and a Victorian parliamentary committee are examining ways to improve access to PSI. Perhaps even more significantly, the proposed Freedom of Information (FOI) Reform legislation (Department of Prime Minister and Cabinet 2009) requires

greater online publication of PSI. Unfortunately, the proposal cannot extend to organisations that cease, such as royal commissions or those affected by machinery of government changes, nor does it contain the sort of penalties contained in the European directive. Inquiries have yet to consider a solution to long-term access which will enable the Australian community to benefit and grow the digital economy.

There remain many significant issues to analyse, and opportunities to learn more from developments overseas than within Australia. Industry, academia and libraries are calling for developments to overcome barriers presented by the current, apparently haphazard, publication policies, a lack of consistent, open re-use conditions, and poor search services. While the work of the National Archives of Australia has led to guidelines for metadata and AGIMO's access initiatives have provided a starting point on the nation's journey to accessible, usable access to public-sector information, we are not there yet. The inquiries are timely and need to focus on community engagement with government as well as the release of information.

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Can Better Political Governance Give Australia an Improved Political Class?

Andrew Murray¹

The governance of political parties: the issue

Australians are demanding much more of their governments. The push for higher standards and better performance is strong. Expectations have been created. The consequent economic, social and environmental reform contemplated in Australia is very large. Plans have been devised that embrace nearly every sector in Australia, yet the political sector has been left largely untouched, as if only the political class at the apex do not need to be more able, of a higher calibre, more productive, more competitive, professionally more suited for the future.

The personal calibre, quality and character of political and public-service leaders matter greatly in delivering better performance. Can better political governance give Australia an improved political class?²

This question has even more relevance in the context of markedly smaller membership of political parties than was once the case. That shrunken membership will inevitably have reduced the numbers, quality, and variety of potential candidates for public office.

Poor governance has significant negative effects. Governance through law, regulation and process makes power subject to performance and accountability and leads to better outcomes and conduct; which is why so much effort was put into better governance in the bureaucratic,³ union and corporate sectors, with great improvements resulting. In contrast, not much effort has been put into reforming governance in the political sector, although it must be said that at least the reporting of parliamentarians' interests and entitlements has significantly improved in recent years.

¹ Senator for Western Australia 1996–2008. This article draws from a section of a lecture given by the author, *Essential Linkages — Situating Political Governance Transparency and Accountability in the Broader Reform Agenda*, 17 February 2009. This public lecture is available on-line via the ANZSOG Centre for Governance and Public Policy; and has also been reproduced in *Critical Reflections on Australian Public Policy* selected essays edited by John Wanna, ANU E Press, Canberra, 2009.

² Recent work by Andrew Murray on political governance includes two public submissions: a response to the Australian Government's December 2008 Electoral Reform Green Paper 'Donations Funding and Expenditure'; and to the Joint Standing Committee on Electoral Matter's inquiry into the conduct of the 2007 federal election (April 2008).

³ For instance see the definition in page 13 of ANAO and PM&C 2006 Implementation of *Program and Policy Initiatives: Making Implementation Matter, Better Practice Guide* Commonwealth of Australia, Canberra.

It is not as if the Commonwealth parliament has not been asked via debate, reports, recommendations and amendments to introduce better regulation along the lines discussed in this article — it has, but the resistance remains strong. As the independent referee for this article rightly remarked, the article ‘does not provide a solution to the problem that the proposed new statutory provisions would [need to] be enacted by the current crop of politicians who are the beneficiaries of the existing system ... [but] this hurdle is not insurmountable and does not affect the principle expounded in the article.’

Political parties must be accountable because of the public funding and resources they enjoy and because they materially affect the lives of all Australians. They decide the policies that determine our future, the programs our taxes fund, the Ministers that government agencies respond to and the representatives in parliaments they are accountable to.

The present framework

Conflicts of interest and the self-interest of politicians have meant minimal statutory regulation of political parties. It is limited and relatively perfunctory, in marked contrast to the much better and stronger regulation for corporations or unions.

The successful functioning and integrity of any organisation rests on solid and honest constitutional foundations. The laws for corporations and unions provide models for organisational regulation. But political parties do not operate on the same foundational constructs.

We have law and governance in the public interest for corporations and unions because it makes a real difference to their integrity and functioning. The laws for the regulation of companies and industrial relations, the *Corporations Act* and the *Fair Work Act*, currently number 2400 and 650 pages, respectively. In contrast to lengthy and detailed rules for the governance of corporations and unions in those Acts, there are almost no rules regulating the governance of political parties in the 440-page *Commonwealth Electoral Act*.⁴

At present there are two governance areas in politics that are, to a degree, regulated by statute — the registration of political parties, and funding and disclosure. The statutory registration of political parties is well managed by the Australian Electoral Commission (AEC), as a necessary part of election mechanics, but the regulation of funding and disclosure is weak.

⁴ As entities, political parties sit within the Third Sector — see Senate Economics Standing Committee report *Disclosure regimes for charities and not-for-profit organisations*, Canberra, December 2008; *One Regulator, One System, One Law: The Case for Introducing a New Regulatory System for the Not for Profit Sector*, Senator Andrew Murray, Canberra, July 2006, available from the Parliamentary Library Canberra; and the public submission by Andrew Murray, February 2009 in response to the Australian Government’s December 2008 Electoral Reform Green Paper *Donations Funding and Expenditure*.

Although they are private organisations in their legal form, political parties by their role, function, importance and access to public funding are of great public concern. The courts are catching up to that understanding.⁵ Nevertheless, the common law has been of little assistance in providing necessary safeguards. To date the Courts have been largely reluctant to apply common law principles (such as on membership or pre-selections) to political party constitutions, although they have determined that disputes within political parties are justiciable.

Political governance includes how a political party operates, how it is managed, its corporate and other structures, the provisions of its constitution, how it resolves disputes and conflicts of interest, its ethical culture and its level of transparency and accountability.

Increased regulation of political parties is not inconsistent with protecting the essential freedoms of expression and from unjustified state interference, influence or control.

Greater regulation offers political parties protection from internal malpractice and corruption, and the public better protection from its consequences. It will reduce the opportunity for public and private funds being used for improper purposes. The federal electoral committee has previously agreed with many of these points, but nothing has been done.⁶

Improved political governance will, over time, lift the overall calibre of the political class by requiring greater professionalism, better pre-selection recruitment and training, a sustainable career path for professional parliamentarians as well as those that aspire to an executive ministerial career, and by reducing the opportunity for patronage, sinecures and dynastic factionalism. Australia is fortunate in having many very able politicians, but the overall quality and ability of politicians and ministers — local, state, territory, and federal — needs to be lifted.

A trained, professional, experienced, political class that is subject to the rigours of regulation, due process, and organisational integrity will always perform better than one that is not.

Most work environments or the trades are focused on productivity and performance. In contrast, formal training is curiously neglected in politics, and training is best characterised as ‘on the job’. The training our elected representatives get before assuming full duties is perfunctory, haphazard and

⁵ For instance, *Baldwin v Everingham* (1993) 1 QLDR 10; *Thornley & Heffernan* CLS 1995 NSWSC EQ 150 and CLS 1995 NSWSC EQ 206; *Sullivan v Della Bosca* [1999] NSWSC 136; *Clarke v Australian Labor Party* (1999) 74 SASR 109 & *Clarke v Australian Labor Party (SA Branch)*, *Hurley & Ors and Brown* [1999] SASC 365 and 415; *Tucker v Herron and others* (2001), Supreme Court QLD 6735 of 2001.

⁶ See Chapter 4 Joint Standing Committee on Electoral Matters (JSCEM) report into the 2004 federal election: September 2005.

limited. It is true that some politicians are already trained in politics, policy and government as former advisers or former public servants, but most are not. Many have no experience in managing an office, a budget and staff. Like all workforces, elected representatives would benefit from better training on entering their new profession.⁷

Some Proposals for Reform

To bring political parties under the type of accountability regime that befits their role in our system of government, at the very least the following reforms are needed.

The *Commonwealth Electoral Act* should be amended to require standard items be set out in a political party's constitution to gain registration, similar to the requirements under Corporations Law for the constitution of companies.

Party constitutions should be required to specify the conditions and rules of party membership; how office bearers are pre-selected and selected; how pre-selection of candidates is conducted; the processes for the resolution of disputes and conflicts of interest; the processes for changing the constitution; and processes for administration and management.

Party constitutions should also provide for the rights of members in specified classes of membership to take part in the conduct of party affairs, either directly or through freely chosen representatives; to freely express choices about party matters, including the choice of candidates for elections; and to exercise a vote of equal value with the vote of any other members in the same class of membership.

Party constitutions should be open to public scrutiny and updated on the public register at least once every electoral cycle.

The AEC should be empowered to oversee all important ballots within political parties. At the very least, the law should permit them to do so at the request of a registered political party.

The AEC should also be empowered to investigate any allegations of a serious breach of a party constitution, and be able to apply an administrative penalty.

Changes to political governance such as these do not need COAG⁸ coordination, although its support would be welcome. Such reforms to

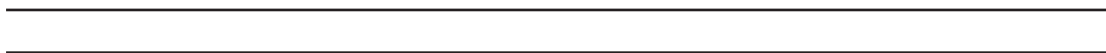
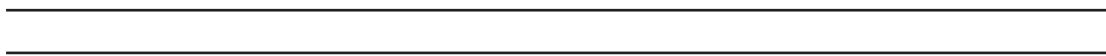
⁷ Intensive residential courses could be devised. As an example, formal courses might include essential legal principles and legislation design; Australian political parliamentary electoral and constitutional law and systems; government and the bureaucracy in all its complexity; foreign affairs, treaties and diplomacy; accountability, laws systems and practices; procurement and tendering; budget finance and revenue, including cost-benefit analysis; managing a parliamentary office and staff; and so on.

⁸ The Council of Australian Governments (COAG) is the peak intergovernmental forum in Australia, comprising the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association.

Commonwealth law would inevitably flow onto the conduct of state political participants, since nearly all registered state participants are also registered federal parties.

Political parties are at least as significant to society as are corporations and trade unions, if not more so. Governance changes such as those outlined above have been tried, tested and found effective in the governance of corporations, unions and other entities. They would undoubtedly improve the performance and governance of politics in Australia. These are necessary reforms, but whether they would be sufficient on their own to produce a markedly more able and higher-calibre political class overall is uncertain. Other reforms, including constitutional changes, will need to be kept in mind.

ANALYSIS



Error and Design: Economics in (and some Economics of) the Australian Competition Tribunal

Henry Ergas¹

Abstract

The Australian Competition Tribunal plays a central role in the Australian regulatory system. Three of the Tribunal's recent decisions are examined and found to have significant errors. It is argued on the basis of the economics of the institutional design that these errors are inevitable in a system where regulatory decisions are based on vague standards. It is concluded that the quality of regulation would be improved by a shift to a regulatory system that relied less on such vague standards and more on prescriptive, explicit rules.

Introduction

How should regulatory institutions be structured? Contemporary models of the regulatory process view this issue primarily through the prism of principal-agent models, and focus on the trade-off between, on the one hand, securing scale economies in the exercise of regulatory functions, including through specialisation in the human capital they require, and, on the other, the risk of regulatory capture. Simply put, delegating functions to specialised bodies improves the effectiveness with which regulatory tasks are undertaken, but gives rise to agency costs, most notably the risk that the specialised regulator will pursue its own interests at the expense of those of the community on whose behalf it is intended to regulate (see, for example, Dal Bó 2006).

Agency costs can be viewed as reflecting differences in preferences over outcomes between a principal and an agent in the presence of monitoring costs. However, delegation also vests in the agent control over the choice of instrument, and hence relies on the agent's ability to map strategies into outcomes — to analyse the situation and choose the policy that stands the best prospects of securing the desired outcome. There is, in other words, not only a risk of bias (that the regulator selects on the basis of its own preferences, rather than the community's), but also a risk of error: that even in the absence of any misalignment of preferences over outcomes, the regulator will make mistakes in

¹ Concept Economics, HenryErgas@concepteconomics.com.au. I am grateful to the Editor, William Coleman, two referees, and to my colleagues Eric Ralph and Garth Crawford for very helpful comments. Responsibility for any remaining errors is, of course, my own.

the choice of policy. (A careful discussion of the difference between preferences over outcomes and preferences over policies can be found in Ganghof 2006).

This risk of error tends to be ignored in the formal models of regulation. This is not because the literature assumes the regulator is fully informed: on the contrary, models of optimal regulation typically start from the premise that the regulator does not have perfect access to the information it ideally requires. But it is then assumed that the regulator displays 'hyper-rationality' in responding to this situation.

It is, for example, usually assumed that the regulator knows, or can readily acquire, the 'technology' of regulation, a central component of which is the theory of optimal regulation itself. The regulator's problem, say in setting regulated prices, then becomes that of implementing that theory, given its own incentives and the constraints it faces in gathering the information required to determine the optimal prices (or the other parameters of the regulated firm's behaviour it is seeking to influence). The 'technology' recognises that the regulatory situation will be characterised by asymmetric information, in which key parameters of the model for determining optimal prices depend on information that is available to the regulated firm but not to the regulator. But while it accepts that the regulator does not know the exact values of those parameters, the regulator is assumed to know the underlying model and the joint distribution of those parameters, and to be capable of deriving, given that knowledge, the optimal policy response (see, for example, Sharkey *et al.* 2002).

In that sense, the standard theory deals with a recognition of ignorance by assuming even greater knowledge and computational capacity than would be required were the regulator fully informed.²

That assumption is, of course, plainly unrealistic. In practice, regulatory systems recognise that fact, and usually provide 'error correction' mechanisms, notably through independent review of regulatory decisions. Those review mechanisms serve a dual purpose: they can monitor against pure agency costs, in which the regulator's preferences replace those of the community; and they can also check for error by assessing the regulator's choice of policy in the light of community preferences over outcomes.

But how effective are the review mechanisms? To what extent can they avoid or reduce the risk of error? And what does that imply for the design of regulatory institutions?

² There are obvious similarities here to the Wilson problem in mechanism design theory, which points to the myriad common-knowledge assumptions made in deriving an optimal solution to the planner's problem of maximising a utility function subject to incentive constraints and highlights the restrictive (and implausible) nature of those assumptions (Wilson 1987). The common-knowledge assumptions made are often as strong as would be the assumption of complete information.

To examine these issues, I analyse three decisions of the Australian Competition Tribunal (ACT). The ACT plays an important role in the Australian regulatory system, as it hears applications for review of a wide range of decisions under the *Trade Practices Act, 1974* (TPA). Given its responsibilities, many of the Tribunal's decisions involve complex economic reasoning. So as to provide the Tribunal with the expertise needed to take these decisions, the Tribunal, when it hears a matter, is composed of three members: a presidential member, who must be a judge of the Federal Court, and two other members, who must have knowledge of or experience in industry, commerce, economics, law or public administration. Typically, one of the two non-presidential members would be an economist. The Tribunal's decisions should therefore provide a good benchmark for analysing the quality of the decisions taken by review mechanisms.

The conclusion I come to is that each of the decisions I analyse is flawed — indeed, involves what I believe could be fairly portrayed as errors in the underlying economics. The question then is what the implications are for regulatory design.

The second part of the article, in which I sketch a theory of the design of regulatory institutions, turns to that question. I suggest that errors such as those I have analysed are to be expected when generalist bodies must review decisions that span many areas of expertise, including in economics. But such review is inevitable and desirable if regulators (such as the Australian Competition and Consumer Commission (ACCC)) are given wide discretions, as those discretions increase both the risk of error by the regulatory bodies themselves and of rent-seeking. It is therefore sensible, under those circumstances, for the decisions taken by regulators to be subject to review by institutions that are less vulnerable to capture and other agency costs. Entities such as the Tribunal will be shown to have several advantages in this respect, but those advantages are bought at the cost of a lack of specialist expertise and a consequent risk of error.

In the third part of the article I consequently suggest an alternative strategy for reducing the risk both of rent-seeking and of error. That strategy would focus on reducing the scope of the discretion granted regulatory bodies. In particular, up-front rules, rather than vague standards, would be used to constrain regulatory discretion. This, it will be shown, is the approach that is now being adopted in regulating our energy industries, but not in other regulated sectors. While this approach has costs of its own, I conclude by recommending its extension to the regulated industries as a whole.

Review in action: three Tribunal decisions

In this section, I will examine three Tribunal decisions. I have selected these decisions on two bases.

The first is that they cover conceptual issues that are crucial to the ‘technology’ of optimal regulation: respectively, the determination of the cost of capital (obviously a factor of enormous significance in industries that are very capital intensive), the valuation of sunk assets (also of obvious significance, given that at any one time the assets of regulated firms are largely sunk) and the assessment of whether particular price structures are efficient. The second criterion is that the economic reasoning that will be discussed played an important role in the decision. I will suggest that in each decision that reasoning was flawed in crucial respects.

The three decisions relate respectively to the setting of the allowed charges for Telstra’s supply of the unbundled local loop service, the determination of the valuation of easements used by ElectraNet Pty Limited, and the extension of mandatory third-party access to certain facilities at Sydney Airport. I should state at the outset that I played a role in two of those decisions, namely that relating to Telstra’s unbundled local loop service and that relating to Sydney Airport. However, my part in the first was very limited, and did not touch on the aspect of the decision considered here. As regards the second, I provided evidence on behalf of Qantas, which was supporting the application for third-party access to be granted. This is what the Tribunal recommended, but my criticism goes to the reasoning it used, reasoning quite unrelated to the topic and substance of my evidence.

Rates of return and investment

The first decision regards an appeal by Telstra to the Tribunal in respect of the ACCC’s rejection of an Undertaking Telstra had offered covering the pricing of the Unconditioned Local Loop Service (ULLS).³ Simply put, under Part XIC of the Trade Practices Act access providers, such as Telstra, can propose Undertakings that set out the terms and conditions on which they will provide access to the services they are required to supply to access seekers. If accepted by the ACCC, those terms and conditions become binding on the ACCC should it be required to arbitrate an access dispute. In December 2005, Telstra submitted such an Undertaking for the ULLS, which is the service of providing the copper pair to an access seeker, who can then use that copper pair to provide services such as telephony and ADSL.

Telstra’s proposed Undertaking was rejected by the ACCC on the grounds that it was not satisfied the charges that Telstra proposed were reasonable. One element in the ACCC’s concerns involved the Weighted Average Cost of Capital (WACC) Telstra had relied on in calculating the cost of the ULLS. Telstra noted that determining the appropriate WACC was complex, but argued that in setting

³ Australian Competition Tribunal, *Telstra Corporation Ltd (No 3)* [2007] ACompT 3.

the WACC, it was important to take account of the fact that setting the allowed rate of return too low would deter investment.

The ACCC considered these issues within the framework of the conventional Sharpe-Lintner Capital Asset Pricing Model (CAPM) (Sharpe 1964; Linter 1965), as had Telstra, and disagreed with Telstra's contention. It was on this basis that the issue (along with a range of other points of disagreement) was appealed to the Tribunal. The Tribunal, relying on the CAPM, examined Telstra's arguments relevant to the WACC but found against Telstra, stating that:

Telstra assumed that setting a WACC that was too low would deter investors. However, different investors will inevitably have different attitudes to risk. Setting the WACC below the true value may deter some investors and therefore result in less investment taking place in the short run, but it will not be likely to cause all investors to cease providing funds.⁴

The obvious problem with this argument is that it is inconsistent with the Sharpe-Lintner CAPM on which the Tribunal relies. The Sharpe-Lintner CAPM allows investors to have different attitudes to risk. However, contrary to the Tribunal's suggestion, the Sharpe-Lintner CAPM shows that in spite of any heterogeneity in attitudes to risk, all investors will require the same risk premium in equilibrium — if expected returns fall below that level, the investment at issue will not be funded.

Of course, it is also true that simple versions of the CAPM assume investors have homogenous *expectations*. However, this is not the assumption the Tribunal refers to, as its concern is that 'investors will inevitably have different *attitudes* to risk' (my italics), and the Tribunal shows no sign of being at all aware of these subtleties in respect of the CAPM. Moreover, even had the Tribunal instead referred to heterogeneity of expectations, this would not have helped it reach the conclusion it reached. For example, under plausible assumptions, allowing for heterogeneous expectations leads to outcomes in which investors require a higher equilibrium return, as they need to be 'insured' against the risk of being over-optimistic (as in the 'winner's curse') (Harrison & Kreps 1978). As a result, a WACC estimated using the simple CAPM, when a heterogeneous-expectations CAPM was more apposite, would likely underestimate the 'true' value investors require. It seems difficult to believe that setting the allowed WACC even further below that would not adversely affect investment and efficiency.⁵

⁴ Australian Competition Tribunal, *Telstra Corporation Ltd (No 3)* [2007] ACompT 3 at paragraph 450.

⁵ Even with an upward-sloping supply curve for finance, setting the allowed return below the WACC will obviously cause investment to fall below its efficient level, with the entire surplus from the forgone capacity being lost. The welfare loss is clearly even greater if the initial estimate of the WACC is itself too low, and a further shortfall is then added to that initial underestimate.

In other instances, the Tribunal has criticised in trenchant terms those who claim to rely on the conventional CAPM, and do so for the substance of their analysis, but then make modifications or adjustments ‘on a pragmatic basis’, thereby ‘working out of a Rate of Return [that] is neither true to the formula nor a conventional use of the CAPM.’⁶ Yet the discussion in its ULLS decision suggests the Tribunal did not understand the assumptions on which the conventional CAPM rests nor the conclusions it reaches.

Asset valuation

The Tribunal recently had to consider asset-valuation issues in a decision under the National Electricity Law.⁷ The case involves the valuation of easements owned by ElectraNet Pty Limited, and is the result of an application for review of a decision taken by the Australian Energy Regulator.

Of primary concern here is the Tribunal’s discussion of alternative asset-valuation methodologies. In that discussion, the Tribunal correctly notes that Depreciated Optimised Replacement Cost (DORC) — an asset-valuation approach in which assets are valued on the basis of the current cost of replacing their service potential, taking account of any scope for efficiencies (hence the term ‘optimised’ in the methodology’s description) — ‘has become generally accepted as the most appropriate value to attach to assets when they are first brought into an RAB’⁸ (where RAB refers to the regulated asset base). But the Tribunal then goes on to say that DORC ‘provides a valuation consistent with the long-run marginal cost of service provision, supports the maintenance of the capital required to deliver the service looking forwards, and prices and investor returns which would be expected to occur in a competitive market and hence promotes the efficient allocation of resources.’⁹

It is questionable whether any of these statements is correct. For example, DORC, which reflects a physical capital maintenance approach to income determination,¹⁰ essentially measures the replacement cost of service potential,

⁶ Australian Competition Tribunal, Application by GasNet Australia (Operations) Pty Ltd [2003] ACompT 6, paragraph 47.

⁷ Australian Competition Tribunal, Application by ElectraNet Pty Limited (No 3) [2008] ACompT 3. The National Electricity Law prescribes the approach to be adopted in respect of asset valuation. However, the valuation of the easements at issue in these proceedings was excluded from the scope of the relevant provisions, as it was the subject of ongoing dispute.

⁸ Ibid., at para. 192.

⁹ Ibid.

¹⁰ Accounting theory distinguishes two concepts of income maintenance. The first, generally referred to as financial capital maintenance, defines the activity cycle as ‘cash to cash’, and broadly accounts for changes in the value of the funds owners have made available to the entity. This corresponds to an investor view of capital maintenance, in which income is defined with respect to the command the investor’s financial resources provide over goods and services. The second, referred to as ‘physical’ or ‘operating’ capital maintenance, views the activity cycle as ‘physical unit to physical unit’, and accounts for changes in the cost of providing a specified level of service potential. This rests on an enterprise view of capital maintenance, in which income is broadly defined as the amount left over for distribution

so that unit charges set on that basis reflect *average* costs. In an industry with decreasing costs, average costs will not reflect marginal costs in the short run or the long.¹¹ Nor is it clear that in a competitive market prices would be set to average DORC, and even less so that an equilibrium outcome could occur in which (in the absence of public subsidies) efficient prices would recover marginal, but not total, cost.

But be that as it may, the Tribunal then goes on to say (at paragraph 194) that despite its conclusions in respect of DORC ‘there is merit in the ACCC and the AER’s approach’ of using ‘indexed historic cost’ as the basis for valuing the easements, seemingly for two reasons. The first is that ‘indexed historic cost ... maintains investors financial capital intact, it covers the opportunity cost of their financial capital’. Again, it is by no means obvious that this is correct. For example, if the WACC has been set on a nominal forward-looking basis (so that it reflects anticipated inflation), it is not clear why indexation is needed to secure *ex ante* financial capital maintenance;¹² moreover, even were the Tribunal’s claim correct, it seems difficult to reconcile that claim with its earlier conclusion that setting charges on the basis of physical (not financial) capital maintenance ‘promotes the efficient allocation of resources’.

But the Tribunal’s second reason for endorsing historic costs in this context is even more striking: it is that the replacement cost of the relevant assets is rising over time. Specifically, the Tribunal says (at paragraph 194) that using DORC where replacement costs are rising would have the consequence of ‘providing windfall gains to investors and price shocks for consumers. The Tribunal has been alert to avoid such an outcome.’ But how can it be the case that one approach to capital maintenance is generally correct and efficient, *except* where asset values were rising? This implies a ‘heads I win, tails you lose’ approach to asset valuation, in which an access provider’s assets are valued on

once the firm has put aside enough to replace its current service potential. The choice between these has important implications for the treatment of changes in asset prices. An increase in replacement cost, for example, is treated as a holding gain in most valuation systems based on financial capital maintenance, but would be treated as requiring an increase in provisions under physical capital maintenance. These differences in the approach to changes in asset prices are reflected in differences in whether those changes flow into the income statement or are treated as solely affecting the balance sheet. An extended discussion can be found in Sterling & Lemke 1982.

¹¹ Of course, an industry can be a natural monopoly even with a U-shaped cost curve, if demand is only large enough to sustain one firm operating at minimum efficient scale. In that event, average and marginal costs could be equal at the regulated output level (assuming that level is set to the minimum point on the envelope curve defined by long-run average cost). However, there is no reason to think this describes cost conditions in electricity transmission and reticulation, which are more likely to display everywhere decreasing costs, especially in a relatively small system such as ElectraNet’s.

¹² Even if the WACC has been set on a forward-looking nominal basis, issues of *ex ante* financial capital maintenance may still arise if depreciation is set on an accounting, rather than an economic, basis. However, the Tribunal does not seem to have considered this issue, and even were it the problem, using indexed historical cost as the valuation base would not resolve it, as it would require recalculating the depreciation provisions and correcting any shortfall or surplus. The corrections required are discussed in Whittington 1983 and Franks and Hodges 1996.

the basis of the *lower* of physical (DORC) or financial (indexed historical cost) maintenance, which is necessarily inconsistent with either concept of capital maintenance ever being achieved (except in the uninteresting and unrealistic case in which there are no changes over time in relative asset prices).

Put slightly differently, what the Tribunal is saying is that the regulated firm should be:

- Fully exposed to 'windfall' losses (to use the Tribunal's terms), as would occur under a DORC methodology when the efficient replacement cost of service potential has fallen over time; but
- Not allowed to retain any 'windfall' gains, as would occur under DORC when the efficient replacement cost of assets has risen.

It is obvious that the effect of such an approach, considered *ex ante*, would be an expectation of less than full cost recovery, so long as there was some probability of some asset prices falling. Put in terms of the standard theory of regulation, this breaches the participation constraint, which requires that the investor have an *ex ante* expectation of full cost recovery, subject to the investment being efficient, and hence will deter otherwise socially desirable investment.¹³

The Tribunal seeks to deal with this by saying that unlike other assets, easements 'do not wear out' (paragraph 194). Putting aside whether easements are truly perpetual (and they are not if technological changes or population movement reduces or eliminates the benefits they provide), this overlooks the obvious point that any difference in asset life as between this asset and other assets is already picked up in the depreciation charge (which in the case of a perpetual asset would be set to zero). Why then would the fact that an asset was perpetual require or justify a change in the asset valuation methodology? And if the change is made for perpetual assets, why not also for assets that are not perpetual but have extremely long lives, and if so, for those that have lives only marginally shorter than extremely long, and so on? What is the relevant basis of principle?

The Tribunal additionally cites as a relevant consideration that the easements do not have alternative uses (again, at paragraph 195). However, even were this correct, it is merely a way of saying that investments made in easements are entirely sunk. But again, why an asset that is entirely sunk should be treated differently from one that is sunk to 99.9, 90, 80 or 50 per cent of its original value is unclear. Additionally, if some assets, once committed, are entirely sunk,

¹³ Analytically, of course, the correct approach in the event of the asset being periodically redetermined is to shape the depreciation profile so as to match in expectation the path of future price changes. This requires credible commitment by the regulator to the implied repayment profile. See Mandy 2002, Mandy and Sharkey 2003 and Ergas 2009.

one would have thought that this only made it more important that investors credibly believe that efficient cost recovery will be allowed in expectation; that is, taking account of the risk of future changes in valuation. Asset valuation on a heads I win, tails you lose' basis surely erodes that confidence.

In reality, the Tribunal seems concerned to set a fair' charge, rather than a charge determined by the consistent application of an economic model of asset valuation. Yet in doing so, the Tribunal again seems inconsistent, as it has previously (in a decision subsequently upheld by the High Court¹⁴) criticised regulators for 'departing [in the setting of access charges] from a quest for value and entering upon a quest for some form of justice or equity'.¹⁵

Airport charging

The third and final decision I wish to consider regards access to aeronautical facilities at Sydney Airport.¹⁶ Specifically, the matter before the Tribunal was an application for review sought by Virgin Blue Airlines Pty Limited (Virgin) of the decision of the Parliamentary Secretary to the Commonwealth Treasurer not to declare (that is, regulate) a service, described as the 'Airside Service', provided by Sydney Airports Corporation Limited (SACL) at Sydney (Kingsford-Smith) International Airport. The 'Airside Service' comprises the use of runways and the service of taking off and landing at the airport, as well as the charges the airport levies for those uses of its facilities.

The Tribunal set aside the decision by the Parliamentary Secretary to the Commonwealth Treasurer and decided that the Airside Service should be declared; that is, brought within the scope of the mandatory third-party access regime. Many contentious elements are involved in that decision and, as noted above, I do not seek to review them all. However, there is an economic argument that the Tribunal advances that seems to lie at the heart of its reasoning. That argument can be summarised as follows:

- SACL, having previously charged airlines on the basis of the weight of the aircraft at take-off or landing, adopted a charging arrangement that charged domestic airlines for use of its aeronautical facilities (such as runways and tarmacs) on the basis of an amount per passenger;¹⁷
- It did so in a context where there was competition between a 'Full Service' Airline (FSA), Qantas, and a 'Low Cost' or 'Value Based' Airline (VBA), Virgin;¹⁸

¹⁴ East Australian Pipeline Pty Limited v Australian Competition and Consumer Commission [2007] HCA 44.

¹⁵ Application by East Australian Pipeline Limited (2004) ATPR 42-006 at 48,804 [19].

¹⁶ Virgin Blue Airlines Pty Limited [2005] ACompT 5.

¹⁷ Ibid at para. 167.

¹⁸ Ibid at paras. 46–60.

- Per-passenger charges were likely to bear more heavily on the VBA than on the FSA, because the VBA would have higher levels of occupancy (that is, capacity utilization);¹⁹
- This would distort competition between the FSA and the VBA relative to alternative charging arrangements, and notably one where charges were based on the weight of the aircraft at take-off or landing;²⁰
- Moreover, charges based on weight were likely to be less distorting, in an economic sense, overall, as they related better to cost causation. As a result, an airport that was simply seeking to operate efficiently would retain charges based on weight.²¹

Serious issues could be raised about whether the Tribunal's arguments with respect to impacts of the different charging bases on competition are correct. What is clear is that any such impact requires consideration of a model of oligopolistic competition, and the relevance of the standard models to the situation in question is open to considerable doubt.²² But to the extent to which such models are relevant, it seems peculiar to think of a change in input prices as reducing competition. True, an increase in the relative price of labour will presumably 'advantage' those competitors that have chosen capital-intensive technologies, and 'disadvantage' those that have chosen labour-intensive technologies. But it will leave unchanged the coefficient of conjectural variation (which measures each firm's perception of its rivals' response to any attempted price change), and it is that coefficient that captures the intensity of competition, at least in its conventional sense (see Ergas, Ralph and Robson 2009). Otherwise, every material change in input prices — of which there must be many, in any period — could potentially 'lessen' competition (if it affected competing suppliers differently), and on the reasoning set out in the decision, expose input suppliers to regulation.

Perhaps so as to deal with this concern, the Tribunal suggests that the input price change at issue (that is, the shift from charging on the basis of weight to a per-passenger charge) was inefficient, and hence would not have been adopted

¹⁹ Ibid at paras. 204–6.

²⁰ Ibid at paras. 222, 524, 526, and 534.

²¹ Ibid at paras. 236, 240–1, 245, 253–4.

²² For example, the Tribunal appears to have relied on a Cournot model of competition between Qantas and Virgin. In effect, there is no reason to believe that competition between a VBA and an FSA can be properly reduced to a Cournot model: rather, it is more sensible to think that such a model will understate the intensity of competition between these airlines. This supposition — that a Cournot model will understate the intensity of rivalry between a VBA and an FSA — is consistent with empirical analyses of airline competition. In effect, the general result of the relevant literature is that while it may be the case that competition between FSAs can resemble the Cournot model of competition, competition between an FSA and a VBA is fiercer than the Cournot model would suggest. See (Weisman 1990; Oum, Zhang & Zhang 1993; Oum 1995; Reiss & Spiller 1989; Brander & Zhang 1990; Armantier & Richard 2003). Of course, as a referee has pointed out to me, even with this stronger form of competition, the Tribunal's finding that an increase in Virgin's marginal costs will increase output prices may still be correct.

in the absence of some intention to harm competition. Specifically, the Tribunal claims that the weight-based measure is cost-reflective, while the per-passenger basis is not. As a general matter, it is correct that mass at landing and take-off has some effect on the extent of the damage as aircraft movements cause to runways. However, these marginal costs account for a very small share of the average costs of providing aeronautical services (Oum & Zhang 1990; Turvey 2000). As a result, any charge that recovers average costs will have to be very significantly marked up relative to the marginal damage cost if total costs are to be recovered. There is no particular reason to believe that imposing this marked-up charge (in which marginal damage costs will account for a small share) on a per-passenger basis will lead to outcomes that are materially worse, in an efficiency sense, than would arise from a charge based on weight. The Tribunal itself provides no such reason and seems to believe — wrongly — that charges based on weight would be cost-based.

In fact, and this is perhaps the central issue in respect of the Tribunal's consideration of efficiency, the efficiency impact of which basis was used for airport charging (per-plane, or per-passenger) would depend on where output was relative to the capacity margin (that is, whether planes are typically close to full or not). A per-passenger charge would be distorting when planes were relatively empty (so that capacity utilisation was the relevant margin), and a per-plane charge when they were relatively full (so that the relevant decision was whether to increase the number of planes). When this is uncertain, the least distortion is likely to result from some average of the two; that is, from a charge that combined a per-plane and a per-passenger element. This was not considered by the Tribunal, which simply concluded that per-passenger charges were undesirable.

Moreover, a per-passenger charge would seem closer to a tax on final demand than a weight-based charge (which might give rise to substitution between different types of aircraft). The modern theory of public finance suggests that the distortionary taxes required to fund any shortfall between average and marginal costs should fall on final consumers rather than on intermediate inputs. This follows from the Diamond-Mirrlees theorem, which states that so long as production efficiency is feasible, and private profits are negligible or can be taxed away, then public policies should be designed to achieve production efficiency, which entails shifting the burden of distortionary taxation away from intermediate inputs. To that extent, a per-passenger charge (or a weighted charge that placed greater weight on the per-passenger element) would be more efficient.

The more general point is that securing cost recovery in industries operating under declining costs requires consideration of how joint and common costs should be recovered. That consideration should reflect the impact that alternative approaches will have on decisions at the margin of use and of investment. It is

here that the Tribunal's decision appears least satisfactory, as it draws conclusions about efficient pricing without consideration of what the relevant margins of investment and use are, how they will be affected by alternative charging bases and what that implies for the design of an efficient charge.

Why do errors occur?

It would be unwise to infer, simply on the basis of the three decisions reviewed, that all, most or even many Tribunal decisions involve errors of this kind. Doing so would require a more comprehensive assessment than the one I have undertaken. Yet the errors I have pointed to are not minor, and should give rise to some consideration of the mechanisms that might be at work. My contention is that it is not surprising that such errors should occur; indeed, strong grounds can be found for thinking that an added risk of error is inherent in any mechanism that can effectively correct for the kinds of agency costs that arise in the regulatory regimes at issue. In this section, I sketch a theory of regulatory design that explains why that is the case.

Thus, agency costs arise because regulators, in these regimes, are given wide delegations. This is done so as to allow regulators to achieve economies of scale and scope in the regulatory task, including in the use of specialised expertise, and so as to allow them to structure and conduct regulatory operations in an efficient manner. This, in turn, involves granting regulators substantial institutional capabilities, in the form of access to expertise and to financial resources.

There is, however, an unavoidable tension between institutional capability on the one hand and effective accountability on the other (see Komesar 1997). Thus, granting an institution greater capabilities — in terms of its capacity to initiate and determine action, its access to resources (including of expertise), and its control over how it interacts with outside actors — increases both the information asymmetry between it and its principal (making it more difficult for its behaviour to be monitored and controlled), and its permeability to external influence.

One way of offsetting these risks is to subject that institution's decisions to review by a body that is less permeable to those influences, and generally less vulnerable to capture by its own interests or those of favoured constituents. Courts and tribunals are a natural choice for this role. First, these institutions are broadly outside the bureaucratic process of jockeying for budgets and resources, and individual adjudicators typically have little interest in bureaucratic 'empire building', reducing the risk of goal displacement. Second, legal proceedings impose relatively tight constraints on the way in which the parties and the Court interact (see Aubert 1967), and there is no equivalent in the Court setting to the close and informal interaction between the parties and

the decision-maker that characterises the regulatory process. This makes influence-seeking more difficult. Third, legal proceedings, though they may involve several stages of determination (first instance, appeal, and so on) are, at each stage, a one-shot game. There is consequently less scope for an interested party to invest in developing and maintaining expertise and influence specific to a particular decision-maker in legal proceedings, as well as less scope for collusion between the decision-maker and an interested party. Fourth, the rules pertaining to the disclosure and use of information in legal proceedings are generally highly formalised. The repeated 'give and take' game around access to information which prevails in most regulatory processes therefore does not arise, or arises only to a confined extent, in legal proceedings. This too makes influence-seeking by the party with an informational advantage more difficult.

However, the negative counterpart of these positive factors is substantially more limited access by the review body than by the primary or first-instance regulator to specialised expertise and less scope to seek and test information autonomously. After all, a central reason courts and tribunals are less permeable to influence activities than other institutions is precisely the fact that despite their expansion in recent years, they are not Weberian bureaus, in which bureau chiefs seek to secure, maintain and expand a pool of resources which give specialist expertise and the ability to implement complex decisions (Rosenberg, 2008). This inevitably constrains their scope for dealing with complex problems, with the resulting limitations likely to be particularly acute in areas that rely heavily on specialised expertise. As a result, while reliance on review by formal adjudicative structures reduces the risk of rent-seeking and may help correct errors made by the regulatory body, it can introduce errors, and consequent error costs,²³ of its own.

Implications for regulatory design: Rules and standards

Are there alternative approaches that could allow both agency costs and error costs to be reduced? The most obvious alternative would be to limit regulatory discretion. In particular, there could be scope to alter the balance between reliance on rules and reliance on standards.

Rules can, for this purpose, be defined as 'if-X-then-Y' statements crafted with sufficient specificity to determine the outcome once the qualifying condition (the 'X') is met.²⁴ A simple example of such a rule is the setting of a speed limit.

²³ Error costs are the efficiency costs to society of incorrect decisions. On the analysis of error costs and their relation to imprecise, vague or contentious tests see Kaplow 1994.

²⁴ The qualifying condition for a rule is usually referred to as its protasis, while the state to which meeting the protasis gives rise is the apodosis. In a rule which says 'If a process meets condition X, then that process is exempt from consequent Y', the criterion of meeting condition X is protasis, while the prescriptive consequence (being exempt from Y) is the apodosis. There is nothing that says that the test involved in applying the protasis needs to be same as that involved in implementing the apodosis.

In contrast, a standard, rather than determining the outcome consequent on the qualifying condition being met, defines the criteria that a decision-maker will use in determining, through an individualised assessment of each case, what that outcome should be. For example, subjecting the assessment of a driver's behaviour to a consideration of whether it was safe under the circumstances would be a standard rather than a rule.²⁵

Broadly speaking, rules provide greater up-front certainty and specificity in the decision situation, and economise on the costs of individualised assessment of particular cases. However, these advantages are bought at the cost of both likely greater required outlays in the up-front formulation of the rule, and of potential under- or over-inclusiveness in particular instances. For example, formulating the rule 'Driving at more than 80 kph is prohibited' involves an investment in determining *ex ante* what the appropriate speed limit should be; and then imposes costs because there are circumstances in which it would be perfectly safe to drive at 100 kph (so that the rule is over-inclusive), and others in which driving at 20 kph is reckless (the corresponding under-inclusiveness). In contrast, standards may require less investment in their initial formulation, but significant costs — in *ex ante* uncertainty and *ex post* enforcement — can arise from a standard's more open-ended formulation (see Shapiro 1965; Diver 1983; Kaplow 1992).

Put slightly differently, a central difficulty in governing through rules lies in their potential lack of flexibility; this makes it important to invest, possibly heavily, in getting the rules right. In contrast, standards avoid that initial investment and allow greater adaptation of decisions to individual cases, but involve higher costs in taking individual decisions, greater uncertainty as to regulatory outcomes and greater agency costs. The result is a greater need for substantive review of decisions based on standards, which increases the costs of relying on a standards-based approach.

Given those trade-offs, reliance on up-front formulation of a rule would seem most clearly justified where three conditions are met: first, the rule covers an issue of wide applicability, so that the initial investment can be spread over many individual instances; second, the costs of relying on such a rule, in terms of lost opportunities for particularisation, are low because there are few gains from adapting the treatment to the circumstances of specific cases; and third, individualised assessment of consequences will involve inherently contentious judgements that ultimately may need to be taken by decision-makers with limited expertise, will induce (essentially unproductive) expenditure in seeking to

²⁵ In thus characterising 'rules' and 'standards' I am following Hart & Sacks 1958–1994, and Kennedy 1976. Others, notably in the English legal tradition, view these as merely different points on a continuum, defined by dimensions of specificity: see Atiyah & Summers 1987; Twining & Miers 1991.

establish a case one way or another, and can result in high error costs and unnecessary uncertainty.

Issues such as the methodology to be used in determining allowed rates of return, asset valuation and efficient prices all seem like strong candidates for such a rule-based approach. After all, determining these on a different basis in different industries would merely distort investment flows and resource allocation, while creating opportunities both for error and for rent-seeking.

Relation to Australian regulatory regimes

How then does the prescription to place greater reliance on up-front rules relate to current Australian regulatory regimes?

Overall, one can distinguish two broad approaches within the Australian regulatory context.

The first of these approaches relies almost entirely on loosely specified standards. Its origins lie in the reforms enacted subsequent to an Inquiry chaired by Professor Fred Hilmer (Independent Committee of Inquiry into Competition Policy in Australia 1993). Among its many recommendations, that Inquiry recommended that there be a comprehensive, unified approach to the regulation of infrastructure industries, with that regulation to be based on principles set out in a new Part of the TPA. That new Part was enacted in 1995 as Part IIIA of the Trade Practices Act, which provides for mandated access to the facilities of a firm, when that access would meet a number of conditions and, in particular, would promote competition in a relevant market. That is, in broad terms, where competition in a market is dependent upon access to a 'bottleneck' or 'essential facility', the Part allows for imposing on the facility owner a right of third-party access to that facility by means of 'declaration' of the service provided by that facility. Two features of the Part are particularly relevant here.

First, a National Competition Council (NCC) is established, which reviews applications for facilities to be declared and makes a recommendation to a Minister, typically the Commonwealth Treasurer. Decisions by the Minister about whether a facility is to be declared are subject to review by the Australian Competition Tribunal (the Virgin case, discussed above, being such an instance). While the Part sets down a number of criteria that must be met for a facility to be declared, in practice those criteria now involve a very wide discretion (see Ergas 2009).

Second, once a facility is 'declared', there is a process whereby, in the event of dispute, the terms and conditions of access by third parties to that facility are set by a regulator, generally the Australian Competition and Consumer Commission (ACCC). Some general principles are set out in the legislation to guide the ACCC in the exercise of its powers, as are a number of factors it must take into account, but it would be fair to say that even with recent amendments,

they leave a wide discretion. There is provision for review of the ACCC's decisions, again by the Australian Competition Tribunal.

As a result, the Part IIIA process can be seen as defining a broad canvas which it is broadly up to the regulator to fill, subject to some general standards — such as the requirement that pricing decisions take account of the legitimate interests of the facility owner — and to review of those decisions by the Australian Competition Tribunal.

Although the Hilmer recommendation was for a single, comprehensive approach to infrastructure regulation, the Part IIIA structure has come to co-exist with industry-specific regulatory arrangements covering a range of other sectors. Two of those regimes are especially relevant here.

The first, governing telecommunications, is primarily set out in Part XIC of the TPA, which came into effect on 1 July 1997. While I have described the details of those provisions elsewhere (Ergas 2008a; Ergas 2008b), suffice it to say they vest in the ACCC even greater discretion — both as to what is regulated, and as to the terms and conditions of regulated supply — than it enjoys under Part IIIA, again subject in some areas to review by the Australian Competition Tribunal. (The ULLS proceedings, discussed above, are such a case). Here, too, the regulators (the ACCC at first instance, and the Australian Competition Tribunal on review) make decisions subject only to very general standards.

The second regulatory regime, which contrasts with the pattern of wide-ranging delegation described above, now covers the regulated energy sector. Here a structure has been put in place that separates the functions of setting regulatory policy, translating that policy into detailed rules and then implementing those rules as regulatory decisions.

Specifically, a reform of the energy regulatory arrangements began in 2004 under the auspices of the Ministerial Council on Energy (MCE). The MCE comprises Ministers with responsibility for energy from the Federal Government and all States and Territories, and is the national policy and governance body for the Australian energy market, including for electricity and gas. It holds, in other words, primary responsibility for setting policy for energy markets, and hence clearly removes that policy responsibility from the remit of regulators.

Having thus secured and clarified the location of the policy role, the MCE has moved to separate from the regulators the responsibility for setting the rules under which they regulate. Specifically, the Council of Australian Governments (COAG), operating through the MCE, established the Australian Energy Market Commission (AEMC) in July 2005 to be the Rule-maker for national energy markets under the Australian Energy Market Commission Establishment Act 2004 (South Australia).

The MCE also established the Australian Energy Regulator (AER). The AER, though a constituent part of the ACCC, operates as a separate legal entity and has separate membership from the ACCC. The AER implements and enforces the rules that are made by the AEMC, and its powers are intended to be limited to that 'rule implementation' and enforcement role.

At the same time, given these more prescriptive up-front rules, the scope for substantive review of regulatory decisions in the energy industries has been somewhat reduced. There has, in other words, been a trade-off, in which greater specificity at the outset is offset by less scope for reconsideration of issues of principle once initial decisions are taken.²⁶

In short, Australian infrastructure regulation has two broad kinds of regimes: one that delegates to a decision-maker a broad discretion, subject to substantive review of its decisions by a review body; and another that places the primary weight on clearly specifying the rules up-front and doing so separately from the taking of particular decisions, while confining both the scope of the regulatory task and the potential for review of that task.

However, it is difficult to identify any compelling reasons why issues such as the setting of the weighted average cost of capital, the determination of the value of the asset base, or the determination of depreciation charges, should differ as between the industries covered by these regimes.²⁷ Mirroring in other regulated industries the rules-based approach that has been adopted in energy would help avoid the distortions that could be caused by dealing with these issues differently in different industries, improve certainty and reduce error and agency costs.²⁸

Conclusions

In summary, I have argued that:

1. Important areas of infrastructure in Australia are regulated on the basis of relatively vague standards, with the task of interpreting and applying those

²⁶ While the prescriptive nature of the rules narrows the scope of reviews of regulatory decisions, it does not necessarily leave the regulated businesses without redress. They can lodge rule-change applications with the AEMC, and have done so over a wide variety of rule requirements (with some successes and some failures).

²⁷ It is sometimes argued that the rapid pace of technological change in telecommunications justifies a more discretionary approach. I examine this argument in detail in Ergas 2008a and conclude that is poorly thought through. In fact, the rapid pace of technological advance in telecommunications provides compelling grounds for limiting regulatory discretion, both because market forces are more likely to be self-correcting and because regulatory interventions that distort the pace of technological advance have especially high social costs.

²⁸ There is some evidence of some of these benefits already being achieved by informal means, through State and Territory regulators covering other infrastructure sectors giving significant weight to the outcomes of the comprehensive review of cost of capital which the National Electricity Rules prescribes.

- standards being delegated to a regulator (generally the ACCC). That delegation creates a substantial risk of agency costs.
2. Controlling those agency costs requires vesting review rights in a body less permeable to outside influences and less vulnerable to goal displacement. Courts and tribunals — including the Australian Competition Tribunal — have natural advantages in this respect. However, a major element in making these structures less vulnerable to agency costs is precisely that they are not Weberian bureaus, in which bureau chiefs seek to secure, maintain and expand a pool of resources which give specialist expertise and the ability to implement complex decisions. This inevitably constrains their scope for dealing with complex problems, with the resulting limitations likely to be particularly acute in areas that rely heavily on specialised expertise.
 3. The result is that relying on review of regulatory decisions by these bodies can reduce agency costs, but does so at the risk of introducing error costs, as evidenced in my three case studies.
 4. An alternative would be to place greater reliance on regulation through relatively prescriptive up-front rules. This would require greater investment in the initial formulation of these rules, but would constrain regulatory discretion, and hence reduce agency costs. Additionally, devising these rules through a considered and focused deliberative process could allow errors to be detected and corrected in advance, more effectively avoiding error costs.
 5. Such an approach has now been adopted in the regulated parts of the Australian energy sector, and its extension to other regulated industries could improve the quality of regulation and help avoid distortions to resource allocation from differential treatment of issues such as the setting of the WACC.

Three further points are worth making by way of conclusion.

First, to the extent that such a rules-based approach were to be adopted to those areas which are currently regulated on the basis of broad standards, it would be desirable to also adopt the separation-of-functions model that is used in the energy industries.

Thus, a system that claimed to rely on rules would have little credibility if the rules were, or could be, merely a sham that allowed the regulator to achieve whatever outcome it believed desirable. Relative to those risks, vertical separation between rule-making and rule-implementation can play the same role that structural separation is often claimed to play in the design of the structure of regulated industries. More specifically, it can reduce the ability and incentive of the rule-maker to favour the rule-implementer, or more generally to facilitate rent-seeking behaviour by the rule-implementer. At the same time, separation means that the output of each stage in the vertically separated process — policy

formulation, rule definition, rule implementation — needs to be sufficiently transparent to allow the other stages to operate, with the added transparency facilitating accountability. Finally, the temporal sequencing of the tasks, the inevitable lags between them, and the resulting stickiness of the rules, reduces the risk of rules being ‘cooked’ so as to secure desired outcomes in individual cases; that is, the risk of collusion between the rule-maker and the rule-implementer. This adds to the credibility of the mechanism, and hence can make it more effective in securing increased investor confidence.

Second, given a move in this direction, it would be important to ensure consistent treatment across all regulated industries of generic issues, such as the setting of the cost of capital. This could be achieved either through a single rule-maker, or by statutory requirements on the separate bodies to ensure consistency of treatment.

Third, it is not my intention to suggest that implementing the approach I recommend would be a panacea for the myriad weaknesses of our regulatory arrangements. Rather, my contention is that to the extent to which activities have to be regulated, it is better if that regulation is predictable, transparent and free of bias. A rules-based approach has numerous advantages in that regard. But all forms of regulation are seriously imperfect, and the ‘first best’ solution is to be extremely cautious — far more cautious than our current regimes are — in what is brought within the regulatory net.

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ARGUMENT

The Global Credit Crisis: Why Have Australian Banks Been So Remarkably Resilient?

Kim Hawtrey¹

Abstract

This paper identifies a number of key factors that explain the remarkable resilience of the Australian banking sector in the face of the Global Financial Crisis, with a view to glean lessons for other countries' banking systems. It is argued that in Australia a culture of prudent lending prevails: banks are soundly capitalised, with a well-diversified and stable funding base, and with a track record of healthy profitability. The industry is independently recognised for its sound corporate governance, and official oversight of banks is diligent. Importantly, the separation of commercial banking from social-assistance policy has been maintained, unlike in the US.

Introduction

Almost unnoticed in the northern hemisphere, Australian banks have weathered the storm of the Global Financial Crisis remarkably well. While not immune to many of the commercial consequences flowing from the crisis, the stability of the banking sector in Australia contrasts sharply with the US and UK, which have seen bank collapses and bailouts supported by taxpayers' funds. Despite the rises in funding costs resulting from the turbulence, Australian banks' lending portfolios are exhibiting sound quality and low defaults.

This paper documents the remarkable strength and stability of the Australian banking industry in the current climate, in comparison with international peers, and provides explanations for why this is so. Australia's banking system versus overseas peers represents an interesting study in contrasts, a study that may provide clues for policymakers and bankers as to how to avoid a repeat of the crisis in the future.

Performance of Australian banks during the current crisis

No bailouts of Australian banks

Table 1 provides an overview of government support packages during the 2008 financial crisis, by country. Bank 'bailouts' proper are summarised in the first column. Almost all of the countries listed enacted a package to rescue individual

¹ Hope College, Holland MI, USA; hawtrey@hope.edu

banks, defined as injecting capital directly into those firms. The few notable exceptions include Australia. In some of the bailout countries, the bank bailouts are extensive (US, UK, Germany, Netherlands) and in one case the banks have been nationalised (Iceland). By contrast, no individual Australian bank had to be explicitly rescued during the crisis, no banks in Australia have closed, and the Government has not had to nationalise banks, as has occurred elsewhere. Accordingly, the first column in Australia's case is nil.

Table 1: Summary of 2008 official support measures of banks

Country	Capital injection	Purchase of assets	TOTAL	TOTAL (US\$)	TOTAL (% GDP)
Australia	-	A\$8	A\$8	5.5	0.5
Austria	€15	-	€15	21.9	5.1
Belgium	€4.4	€2.5	€6.9	9.7	1.8
Canada	-	CAD\$25	CAD\$25	20.5	1.3
France	€41	-	€41	57.6	1.9
Germany	€130	-	€130	182.8	4.8
Greece	€5	-	€5	7.0	1.9
Iceland	Nationalised	Nationalised	100%	n.a.	n.a.
Italy	As needed	-	As needed	n.a.	n.a.
Netherlands	€46.8	-	€46.8	65.8	7.1
Spain	-	€50	€50	70.3	4.1
South Korea	-	KRW1,000	KRW1,000	0.79	0.1
Switzerland	CHF6	US\$60	US\$60 +	65.6	13.3
USA	US\$250	US\$450	US\$700	700	4.9
UK	£50	-	£50	73.5	2.6

Source: Bank of England, *Financial Stability Report* 24, 27 October 2008.

Figures are in billions of currency shown, except final column.

Note: Japan did not announce a bank bailout package in 2008. On 27 January 2009, it allocated funds purportedly worth almost 27 trillion (US\$301 billion) to dealing with the fallout from the financial crisis, but this encompassed a wide range of industrial firms' assets such as corporate debt, stocks, commercial paper and derivatives. Japan had earlier conducted a bailout of its banking sector in the 1990s and early 2000s.

To put the favourable Australian situation of no bank bailouts in perspective, consider the lengths to which the major rescue packages needed to go:

- beginning 8 September 2008 the US announced the US\$700 billion Troubled Asset Relief Program (TARP), of which around US\$250 billion was earmarked for direct bank bailouts; to date, 52 banks have been funded by the program, including the likes of Citibank (\$45 billion), Bank of America (\$45 billion), JP Morgan Chase (\$25 billion), Wells Fargo (\$25 billion), Goldman Sachs (\$10 billion), Morgan Stanley (\$10 billion), Merrill Lynch (\$10 billion), Bank of New York Mellon (\$3 billion), State Street (\$2 billion), as well as US Bancorp, Suntrust, Washington Mutual, National City, Countrywide, First Horizon, Indy Mac, Wachovia, PNC, Regions Financial, Fifth Third, and Keycorp.
- on 8 October 2008 the UK authorities announced a comprehensive and system-wide support package that addressed directly weaknesses in UK

banks' balance sheets and involved a government-supported recapitalisation scheme for UK banks, involving big name institutions Abbey, Barclays, HBOS, HSBC Bank plc, Lloyds TSB, Nationwide Building Society, Royal Bank of Scotland, and Standard Chartered; for example, a capital injection into RBS, HBOS and Lloyds amounted to £37 billion.

Regarding the US response, it is significant to observe that this is the second major US taxpayer bailout in 20 years, the other resulting from the US Savings and Loans crisis in the 1980s. Assessing the October UK bailout package, the Bank of England said that this represents 'the largest UK government intervention in financial markets since the outbreak of the First World War'.²

The second column in Table 1 relates to government purchases of financial instruments, not financial institutions, and is therefore a different notion from a 'bailout', strictly defined. While forming part of the wider notion of government crisis support, the second column therefore does not equate to a bank 'bailout'. According to the Organisation for Economic Cooperation and Development (OECD), which recently published a terminology of bank crisis-resolution methods, the notion of bailouts is institution-based, referring always to the purchase of firms, not financial instruments, where such firms' viability is dependent on some form of public assistance, through which 'their failure is forestalled'.³ On this definition, Australia has not seen a true taxpayer bailout of a private commercial bank in the wake of the Global Financial Crisis. Whilst a modest amount is shown in the second column for Australia, it relates to the purchase of non-conforming housing loans (so-called low-doc loans, approved without the full substantiation of the borrowers' capacity to service the repayments) with virtually all of these loans made by non-bank lenders.⁴

The table does not show government guarantees of bank deposits, and some might argue that such measures amount to a bailout. In particular, in November 2008 the Australian Government introduced legislation supporting the Commonwealth's guarantee scheme for large deposits and wholesale funding, having previously announced the plan in October. The Australian Prudential Regulation Authority (APRA) supported the move. It is significant to note that the Government was careful to make clear that it had arrived at its decision on depositor guarantees not to head off potential bank losses but, rather, to 'promote financial system stability in Australia, by supporting confidence and assisting ADIs (authorised deposit-taking institutions) to continue to access funding at a time of considerable turbulence' (<http://www.guaranteescheme.gov.au/>). Bank

² Bank of England 2008: 32.

³ On 26 September 2008, the Australian Government announced its intention to purchase \$4 billion of residential mortgage-backed securities (RMBS) to support competition in the market for housing finance following the dislocation of the Australian RMBS market. In October, the Government announced it would invest a further \$4 billion in RMBS, bringing the total investment to \$8 billion.

⁴ Lewis 2008.

deposits were *already* safe — legislatively speaking — with or without the Government's new guarantee, as there was already in place a depositor priority scheme under the *Banking Act* which gives depositors first claim on the assets of a bank. Notwithstanding this, practical advantages of the new guarantee scheme include the removal of potential uncertainty around the timeliness of payment in the event of a claim, and removal of the competitive distortion created by foreign wholesale-funding guarantees previously enacted by governments overseas. Indeed, the Government noted this second point in its announcement, saying that the measures 'are also designed to ensure that Australian institutions are not placed at a disadvantage compared to their international competitors that can access similar government guarantees on bank debt'. The move was long overdue in Australia, because 19 other countries had previously issued guarantees in support of their banking systems and, in the words of APRA, 'we are not talking about "banana republics" here: most of these are developed countries with established banking systems'.⁵ Those countries include the US, UK, Canada, France, Spain, Belgium, Italy, New Zealand and Germany. The action by the Australian Government, although no doubt affected in its timing by the crisis, can therefore be understood structurally in terms of international competitive neutrality.

No US and UK-style liquidity emergency

One way to gauge the stability of a nation's banks is to look at the orderliness of the financial markets they serve and with which they are inextricably linked, especially during a crisis. This is because conditions in banking are intimately connected with those in broader money and capital markets. As defaults on US sub-prime mortgages escalated in 2007 and 2008, losses spilled over into wholesale financial markets because valuation uncertainty rose sharply and spread like a contagion, not only for mortgages but also across a broad range of financial instruments. Bid-ask spreads in secondary money markets widened and prices came to embody significant discounts for illiquidity and uncertainty, as investors with cash became reluctant to lend while prices may yet fall further. In some countries, this created a severe liquidity shortage, and a challenge for the local central bank.

Table 2 shows a comparison across countries of the extent to which each nation's central bank was forced to take extraordinary steps as the 2007–08 liquidity crisis developed.

⁵ Lumpkin 2008.

Table 2: Special measures taken during the financial turmoil by central banks

	AUS	CAN	EUR	UK	US
Exceptional fine-tuning	√	√	√	√	√
Exceptional long-term open-market operations	√	√	√	√	√
Front-loading of reserves in maintenance period			√		
Change in reserve requirements/targets				√	
Change in the standing lending facility					√
Broadening of eligible collateral	√	√		√	√
Broadening of counterparties				√	√
Introducing or increasing securities lending				√	√

Source: Committee on the Global Financial System, 'Central bank operations in response to the financial turmoil', CGFS Papers No 31, Bank for International Settlements (BIS), July 2008.

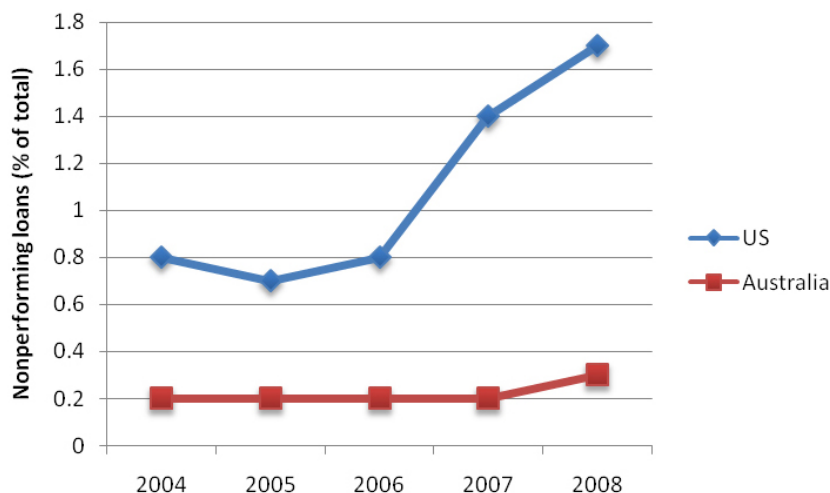
Key: AUS = Australia, CAN = Canada, EUR = Euro area (European Central Bank), UK = United Kingdom, US = United States. 'Exceptional fine-tuning' refers to central bank actions in the money markets being markedly more frequent than usual. 'Front-loading of reserves' means pre-emptive injections of liquidity by the central bank to anticipate shortages before they occur.

As Table 2 shows, Australia's central bank, like its overseas counterparts, was moved to enact special measures to protect market liquidity. Equally, however, the extent of these measures was notably more limited in Australia's case than was required in the US and the UK. Consistent with the BIS interpretation of the data, the money-market instability seen in the Australian case was relatively modest, and this is because the market volatility in the US and UK had its roots in failed bank lending in those markets, an experience not shared in Australia.

Australian banks have avoided abnormal loan write-downs

There has been a marked deterioration in credit quality and credit standards by mortgage lenders in the United States over a number of years. This is affecting the performance of both sub-prime loans and prime mortgage loans in the US. Figure 1 compares the trends in loan quality, in Australia and the US. Impaired loans rose sharply in the US in 2007 and again in 2008. By comparison, Australian impaired loans are holding much steadier, around their pre-crisis level.

Figure 1: Trends in non-performing loans



Source: International Monetary Fund, *Global Financial Stability Report*, October 2008

Data show loans in 60+ days' arrears, as a percentage of total loans outstanding. US figures cover all FDIC-insured institutions. Figures are the ratio of impaired assets to total assets, excluding loans covered by collateral.

Table 3 provides a breakdown of Australian arrears by loan category, and Table 4 shows US loan write-offs by category, including official projections of the ultimate impact of the credit crisis.

Table 3: Arrears (90 + days) by loan category – Australia

	Housing	Personal	Business
% arrears Sept 2008	0.41	1.10	1.43

Source: Reserve Bank of Australia

Table 4: US write-downs by loan category – US\$B (% of amount outstanding)

	Amount outstanding	Losses at Oct 2008	Projected ultimate write-downs
Housing	4,700	170 (3.6)	265 (5.6)
Personal	1,400	45 (3.2)	80 (5.7)
Business	3,700	110 (3.0)	195 (5.2)

Source: International Monetary Fund, *Global Financial Stability Report*, October 2008

The Australian banking system continues to experience a low level of problem loans.

Contrast this with the United States banking system. As reported in Table 4, by October 2008 US financial institutions had incurred losses on their portfolio estimated at more than 3 per cent, and International Monetary Fund (IMF) projections suggest that, by the time the dust settles from the current crisis, US write-downs will amount to as much as 5–6 per cent of the banking system. European banks are also looking at huge loan write-downs. Europe has incurred an estimated US\$220 billion in loan losses, according to the latest IMF estimates. This equals around two-thirds of the US losses to date of US\$325 billion. Australian banks, by contrast, have avoided having to make major loan write-downs.

Table 5: Arrears (30+ days) — by country

	% arrears
Australian mortgages	1.13
UK Prime RMBS	2.90
US mortgages	6.40

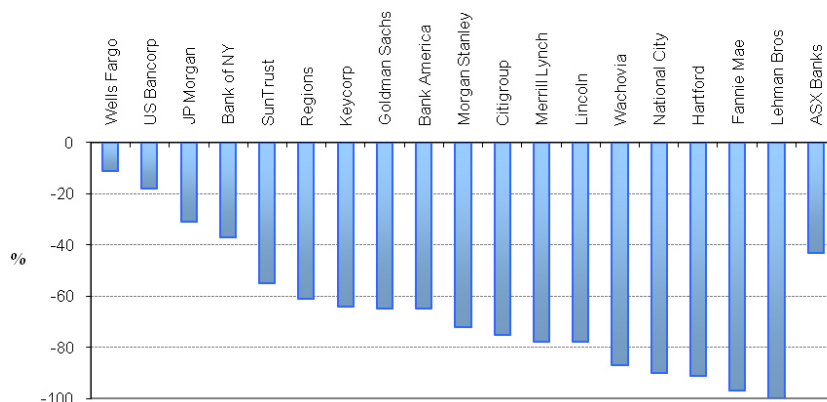
Source: Reserve Bank of Australia.
Data are for September 2008.

Focusing on housing loan arrears, shown by country in Table 5, we see that they are running much higher in the US, with the 30+ days arrears rate on all mortgages up from 4.3 per cent in 2005 to 6.4 per cent in 2008. In the UK, the share of rated (prime) securitised mortgages that are 30+ days in arrears edged from 2.3 per cent in 2005 up to 2.9 per cent in 2008.

Share prices of Australian banks comparatively resilient

On the back of the financial troubles, banks' share prices slumped across the globe, and Australian banks were no exception. Yet the share prices of Australian banks have proven significantly more resilient, given the circumstances, than most overseas peers. Figure 2 shows the drop in stock prices of US versus Australian banks in 2008, the year of the crisis. In Australia, the ASX Banks Index fell 43 per cent. When this statistic is placed against the American context, the Australian banks' share-price fall sits at the low end of the spectrum. Most US banks and mortgage lenders recorded far steeper declines, in the range 60–90 per cent.

Figure 2: Fall in share prices during the crisis — US versus Australian banks



Sources: *Federal Reserve Bank of St. Louis Review* 91(1), January 2009; Australian Stock Exchange
Figures are for the 12-month period to November 2008.

Furthermore, over the longer horizon, Australian banks' share prices have consistently outperformed many of their international peers.

Australian banks have not been downgraded

Despite the financial turbulence, Australian banks continue to be rated strongly by international credit-rating agencies. Unlike many major financial institutions abroad, only one Australian-owned bank (SuncorpMetway, downgraded from Aa3 to A1 in March 2009 by Moody's) has had its credit rating downgraded since the crisis set in. Each of the largest Australian banks is rated AA by Standard & Poor's, with these ratings having recently been re-affirmed. Australia has four out of the 19 highest-rated banks in the world. Of the world's largest 100 banks, only a handful have stronger ratings. Each of the larger Australian banks is rated Aa1 by Moody's. Indeed, Moody's has *upgraded* several Australian banks since the crisis began (ANZ, Bank of WA, National, St George: see Table 6) although in March 2009 the outlook for 'big four' banks was revised from stable to 'negative', in view of the weakening economy. The Reserve Bank of Australia recently observed that 'even in the current credit crisis ... where Australia is, in one sense, more exposed than many other countries due to our heavy reliance on international funds, the strong credit ratings of our banks have ensured banks have maintained credit availability'.⁶

⁶ Reserve Bank of Australia 2008.

Table 6: Long-term credit ratings of Australian banks

	January 2008	May 2009
Adelaide Bank	A2	A2
ANZ Bank	A2	Aa1
Bendigo Bank	not rated	A2
Bank of QLD	A2	A2
Bank of WA	Aa3	Aa1
Commonwealth	Aa1	Aa1
Macquarie Bank	A1	A1
National Bank	Aa2	Aa1
St George Bank	Aa2	Aa1
SuncorpMetway	Aa3	A1
Westpac	Aa1	Aa1

Source: Moody's Investor Service

Table 7: Recent rating downgrades of major overseas banks

	January 2008	May 2009
Bank America*	AA-	A+
Barclays PLC*	AA	AA-
Citigroup*	AA-	A
Credit Suisse*	AA-	A+
Deutsche Bank*	AA-	A+
GoldmanSachs*	AA-	A
HSBC	AA-	AA-
JP Morgan*	AA-	A+
MorganStanley*	A+	A
Royal Scotland*	AA-	A+
UBS*	AA-	A+
Wells Fargo*	AA+	AA

Source: Standard and Poor's

S&P's scale is AAA, AA+, AA, AA-, A+, A, A- (L to R: high to lower ratings).

Asterisks indicate downgrades.

In contrast, on 17 December 2008 Standard and Poor's downgraded 11 major overseas banks (Table 7). Around 90 per cent of the overseas banks were downgraded, compared with 9 per cent in Australia's case.

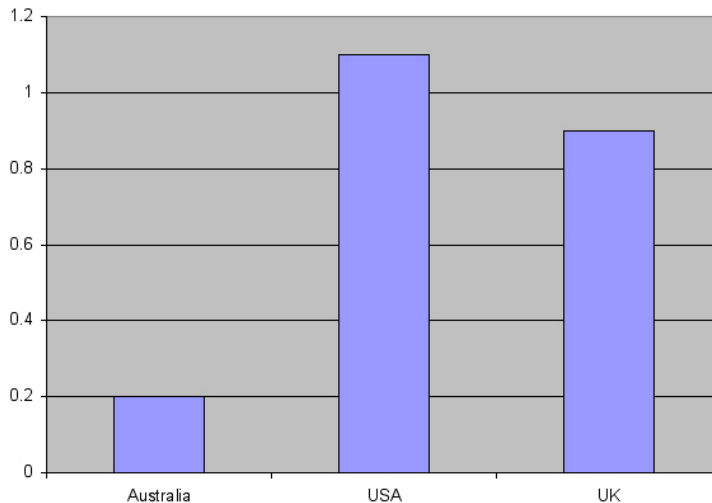
Explaining the contrasting experience

The message that emerges from the above is that Australian banks stand out, compared with their northern counterparts: no bailouts needed, no liquidity emergency of US/UK proportions, no abnormal loan write-downs, no rating-agency downgrades, and unusually resilient share prices. There are a number of reasons for this.

A culture of intermediation, not securitisation

Australian banks' lending practices are responsible, as demonstrated by portfolios that are now exhibiting sound quality and low defaults. Figure 3 compares loan quality across countries, in the year *prior* to the crisis.

Figure 3: Non-performing loans 2007 (percentage of total bank loans)



Source: International Monetary Fund, *Global Financial Stability Report*, April 2008

Australia's impaired loan ratio in the lead up to the crisis was the lowest in the world, at just 0.2 per cent of total loans outstanding. By comparison, major peers were significantly higher, notably the UK (0.9), US (1.1), France (2.8), Germany (3.4) and Italy (5.3). The explanation for Australian banks' high asset quality has to do with these structural differences and business culture:

- *Intermediation norm*: while securitisation has not been entirely absent from the Australian lending environment, intermediation is still by far the dominant model, particularly in mortgage lending. This has meant that incentives and risk-taking have not been de-coupled at the 'coalface' and Australia has not gone down the path of expanding loan volumes without paying adequate regard to risk.
- *prime lending focus*: the 'non-conforming housing loan' segment in Australia (the closest equivalent to the sub-prime market in the US) has remained very small, less than 1 per cent of outstanding mortgages — compared to about 12 per cent in the US.

An additional indicator of a nation's approach to lending is provisioning for bad and doubtful debts. Table 8 presents data by country on bank provisioning for the loan book, measured by the ratio of provisions to non-performing loans. A higher figure indicates safer provisioning against loan defaults.

Table 8: Bank provisions against loan losses — by country (ratio of provisions to non-performing loans)

	2004	2005	2006	2007	2008
Australia	182.9	203.0	202.5	183.7	128.6
Canada	47.7	49.3	55.3	42.1	36.7
France	61.3	63.8	62.9	61.4	...
Japan	29.9	31.2	28.1	28.8	26.4
UK	61.5	54.0	54.6
US	168.1	155.0	135.0	93.1	88.9

Source: International Monetary Fund, *Global Financial Stability Report*, October 2008
Figures for 2008 are latest available quarter.

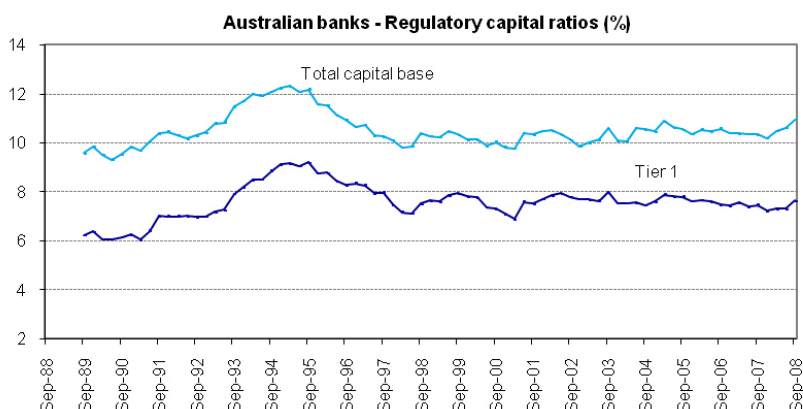
Since before the credit crisis, the provisioning of Australian banks has consistently been generous, exceeding the amount of impaired loans. Indeed, Australia is one of the few countries in the world running a provisioning ratio greater than 100 per cent, including in 2008, the crisis year. Australian banks' provisioning comfortably exceeds that of US banks and has typically run at four times that of UK banks.

Australian banks are highly capitalised

Under the Basel II Framework, which came into effect in Australia from 1 January 2008, banks are subject to a prudential capital ratio (PCR) of 8 per cent of total risk-weighted assets. At least half of this capital must be held in the form of Tier 1 capital (the highest-quality capital components). That is, the minimum Tier 1 capital ratio is 4 per cent. These are global minimum requirements, and the Basel Committee on Banking Supervision has recently stated that it does not propose to raise these ratios during the global financial crisis.

As shown in Figure 4, Australian banks exceed the minimum capital requirements comfortably. Unlike many overseas counterparts, banks in Australia have not been forced to raise new capital to offset loan write-downs. Strong profitability has meant that retained earnings remain a key source of Tier 1 capital, with equity issues by larger banks adding to this over the past year.

Figure 4: Bank capitalisation — Australia



Source: Australian Prudential Regulation Authority

In November 2008, at the peak of the international credit crisis, APRA summed up the position this way: 'ADIs in Australia are meeting their capital-adequacy requirements and the ADI sector is sound and well-capitalised'.⁷

A diversified and stable funding base

Australian banks traditionally raise their funds from two main sources: customer deposits (around 50 per cent) and wholesale funding, both short-term (25 per cent) and long-term (25 per cent), and in both the domestic and global markets. For most of this decade, banks' funding sources in most countries — and the cost of funding — were relatively predictable. In particular, total bank funding costs moved generally in tandem with movements in the cash rate of central bank. Since the global capital markets turmoil, however, funding for many financial institutions — particularly in the US, UK and Euro area — has become a matter of considerable uncertainty. Short-term funding costs have been unusually volatile, and long-term capital markets have become more expensive and investors more selective in choosing which institutions to lend to, resulting in elevated long-term funding costs with little sign of relief. Capital markets have been more difficult to access, issuance by banks around the globe has been abnormally low, and spreads are at high levels. For banks with a strong credit rating (that is, AA or A) seeking short-term funding, there is generally good liquidity in debt markets but prices remain elevated when compared with levels prior to the financial crisis. Banks rated BB or B are finding it more difficult to access longer-term funding and are concentrating more on short-term funds.

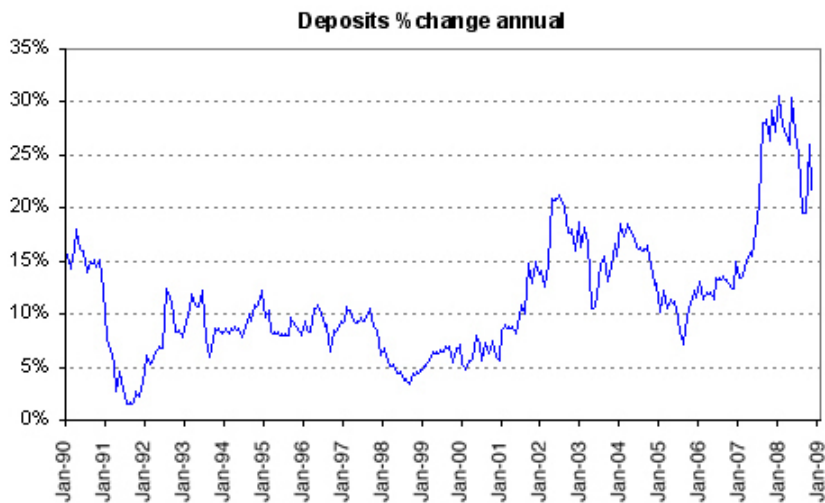
In this difficult environment, Australian banks have nevertheless fared better than many banks overseas. Along with most other financial institutions around

⁷ Australian Prudential Regulation Authority 2008.

the globe, Australian banks have not been immune from the recent pressures. Nevertheless, in retail funding, Australian bank deposits have been growing rapidly since the turbulence began, increasing at an annual rate of about 20 per cent, the fastest growth for many years. Figure 5 confirms this positive scenario.

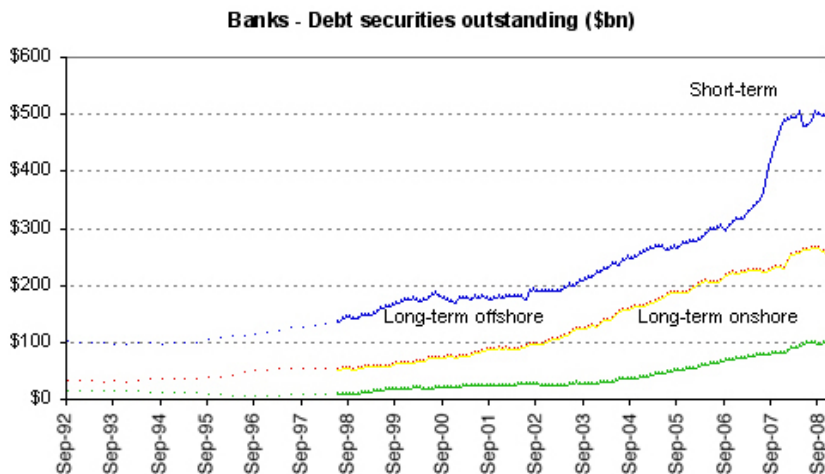
Equally importantly, Australian banks have continued to tap the wholesale funding markets, both domestic and international, as shown in Figure 6.

Figure 5: Australian banks' retail funding



Source: Australian Prudential Regulation Authority

Figure 6: Australian banks' wholesale funding



Source: Reserve Bank of Australia

While Australian banks may have had to pay more for funds, they have generally been able to obtain the funds they need to expand their balance sheets. The ability of Australian banks to continue to raise significant volumes of funds is a positive reflection of their underlying strength. Since November 2008, it can be argued that the Australian Government's 100 per cent guarantee of bank deposits and of wholesale term funding has contributed to supporting continued funding for banks. Equally, as the charts show, for the majority of 2007 and 2008 (as the crisis in credit markets was building and then climaxing), Australian banks held their own in funding circles without official assistance.

Healthy profitability

Alongside low levels of problem loans with limited exposure to sub-prime assets, sound capitalisation, and a stable funding base, the Australian banking system exhibits sturdy profitability. Table 9 compares Australia with other countries using return on equity (ROE), a common measure of profitability. It confirms that the condition of Australian banks before the credit crisis was one of healthy profitability. In comparison, both the UK and the US recorded weaker trend returns than Australia.

Table 9: Bank profitability by country (return on equity %)

	2003	2004	2005	2006	2007	2008
Australia	24.2	16.0	14.7	16.8	18.1	...
Belgium	13.6	25.8	18.5	22.4	13.2	...
Canada	14.7	26.7	14.9	20.9	16.1	6.3
Denmark	15.4	13.7	16.3	17.1
Finland	11.3	12.4	10.1	11.1	15.6	...
Germany	-1.5	1.9	9.2	7.5
France	8.5	10.6	11.8	15.5	9.8	...
Italy	9.3	9.3	9.7	11.4	9.7	...
Japan	-2.7	4.1	11.3	8.5	3.2	6.1
Netherlands	14.8	16.8	15.4	15.4	18.7	...
Norway	9.6	14.6	18.0	15.7	15.9	8.3
Spain	13.2	14.1	16.9	19.9	19.9	...
Sweden	12.3	14.6	17.4	18.0	17.0	15.9
Switzerland	11.7	14.3	18.0	17.7
UK	10.9	10.9	11.8	8.9	6.2	...
US	15.0	13.2	12.7	12.3	7.8	5.7
Group average	11.3	12.4	14.2	14.9	13.2	8.5

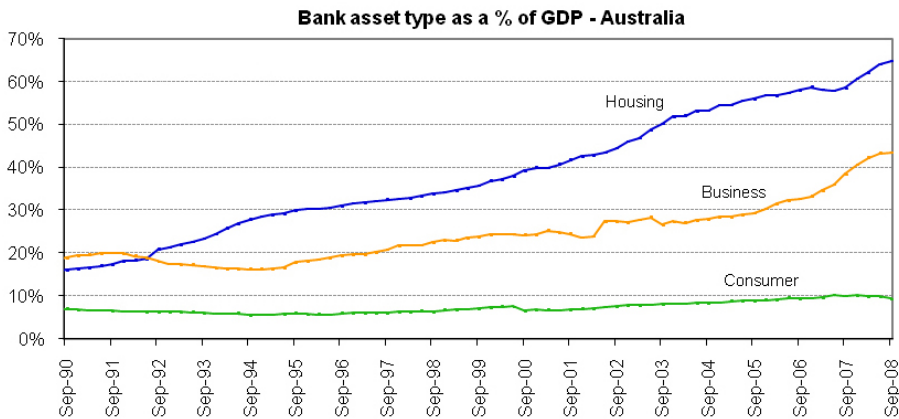
Source: International Monetary Fund, *Global Financial Stability Report*, October 2008

Figures for 2008 are as at March.

In part, the explanation for the strong profitability of Australian banks in recent years involves strong growth in credit. Figure 7 shows the growth of bank loans, as a ratio to GDP and by loan type: housing loans have shown the strongest trend over time, yet consumer and business loans have also seen steady growth, faster than GDP. Yet by the same token, most peer countries also saw accelerated credit growth over the period. Some might instead argue that the

impressive profit performance reflects a high degree of concentration in the local industry, yet increasingly Australian banks must compete on a global stage in a borderless world. Even taking these considerations — credit growth and market structure — into account, it is difficult to completely escape the conclusion that the performance of Australian banks reflects in-house management style, at least in part.

Figure 7: Growth of lending by Australian banks



Sources: Australian Prudential Regulation Authority; Australian Bureau of Statistics (ABS)

Sound corporate governance

A recent analysis by the OECD pinpoints corporate transparency and governance as being critical to the strength and safety of financial institutions:

In many instances of systemic instability, multiple factors have been involved and in most of them problems at financial institutions themselves have been at the core of difficulties, often related to weak management of core risks ... poor governance and internal management, inadequate control of operational risks, and inadequate disclosure and lack of transparency.⁸

This has become even more important as the banking industry has grown in complexity, a fact highlighted by the current crisis. According to another official commentary, 'Traditional distinctions between different financial activities, including banking, securities dealing, and asset management, have become more blurred. As well, closer and more complex inter-linkages in the financial system have facilitated spill-over effects and implied that the systemic risk factors that (commercial) banks are exposed to are more universal.'⁹

⁸ Lumpkin 2008.

⁹ Schich 2008.

Against this backdrop, Australian bank boards and executives made prudent lending decisions and have minimised their exposure to toxic debt instruments. This assessment accords with the opinion of independent observers who have compared the governance of Australia's financial sector with that of other countries.

Table 10 shows Australia's rankings on two different international tests of financial-sector integrity. On both measures, Australia ranks ahead of both the US and the UK, and sits among the very best.

Table 10: Lowest operational risk in financial sector (world rankings)

	Australia	US	UK
Financial institutions' transparency	7	27	36
Regulation of securities exchanges	2	31	18

Sources: Transparency rankings from *World Competitiveness Yearbook 2008*, Institute for Management Development (IMD), Switzerland (55 countries rated); regulation rankings from *Global Competitiveness Report 2007–2008*, Switzerland and Harvard University (131 countries rated).

A lower ranking is more favourable.

Governance in the US banking sector appears to have played a key part in the crisis. In the years immediately prior to the crisis, the OECD argues that the US business model for banks moved too far towards an 'equity culture' with a focus on faster share price growth and earnings expansion: 'The corporate governance and risk control functions in many firms will adjust to accommodate strategy when an equity culture is mixed in with a banking credit culture.'¹⁰

The previous 'credit model' of banking, based on balance sheets and old-fashioned spreads on loans, was not conducive to banks becoming growth stocks. So, the strategy in US banks switched more toward fees via securitisation, which enabled banks to grow earnings while at the same time economising on capital under the Basel system.

Effective financial system regulation

An invaluable contributor to the strength and stability of Australian banks is the quality of the prevailing regulatory framework, known as the 'twin peaks' approach. Australia adopted a functional approach to regulation recommended in the 1997 Wallis Commission report, consolidating prudential regulation from 11 predecessor agencies into the Australian Prudential Regulation Authority (APRA), and market-conduct regulation into the Australian Securities and Investments Commission (ASIC). The Reserve Bank (RBA) has oversight of financial system stability. The Council of Financial Regulators (CFR) provides a useful forum to address emerging trends and policy issues. The CFR consists of high-level representatives of the RBA, Treasury, APRA, and ASIC, and meets

¹⁰ Blundell-Wignall *et al.* 2008.

regularly. In the event of a crisis, the CFR serves as the key coordinating body for developing an official response.

It is often observed that APRA imposes a more conservative stance on bank capital adequacy than many of its overseas regulatory counterparts. In response, APRA recently said: 'we make no apologies for this. We think that healthy capital buffers are an important source of confidence for our financial institutions.'¹¹ In its role, APRA conducts exhaustive surveillance. Last year, APRA carried out 624 prudential reviews of regulated financial institutions, 192 on-site risk assessments, and 3220 analyses of financial data which it requires to be submitted by regulated financial institutions. APRA's stated approach seeks to balance 'financial safety and efficiency, competition, contestability and competitive neutrality'.¹² In a recent independent evaluation the IMF said: 'Australia's approach to prudential and market conduct regulation is sound overall. There is a generally high level of compliance with international standards and in a number of areas, including transparency, Australia is at the forefront of best practices.'¹³

In addition, the IMF review remarked favourably on the question of financial-sector standards and codes of supervision: 'Australia has a high overall level of compliance with the Core Principles. The Probability Assessment and Impact Rating System (PAIRS) and Supervisory Oversight and Response Systems (SOARS) provide a foundation for banking supervision that is at the leading edge of current approaches to risk-focused supervision.'

Separation of commercial banking from social assistance measures

In the US, a succession of government policy steps that effectively enlisted bank balance sheets for broader social objectives most likely acted as a key exacerbating factor in the years leading up to the credit crisis:

- The 1986 Tax Reform Act included the Real Estate Mortgage Investment Conduit (REMIC) rules, which can issue multiple-class pass-through securities without an entity-level tax, and greatly enhanced the attractiveness of mortgage securitisation.
- The purpose of the 1995 Community Reinvestment Act (CRA) was considered and sincerely motivated. It sought to assist low-income earners and minorities toward the goal of home ownership, and called for banks to offer more credit to at-risk small businesses. Significantly, however, this was not simply through voluntary persuasion but, rather, the CRA compelled private

¹¹ Lewis 2008.

¹² Ibid.

¹³ International Monetary Fund 2006.

commercial banks to devote a certain proportion of their excess reserves to such loans.

- In 2004, the Securities and Exchange Commission (SEC) allowed securities firms to raise their leverage sharply, from the traditionally accepted ratio of 12:1 to a new standard as high as 33:1, a level that encourages too-rapid balance-sheet growth and at which a mere 3 per cent decline in asset values can wipe out a firm.
- The Bush Administration's 2004 'American Dream' package of housing measures that sought to assist low-income groups through zero equity lending fuelled the flow of sub-prime mortgages.

These initiatives, well intentioned at the time, arguably had the unforeseen combined effect of forming part of a set of drivers that altered incentives and behaviour of US banking firms. They stimulated the over-production of sub-prime mortgages in the US banking system, ultimately with disastrous consequences. Coupled with other forces, such as the Federal Reserve's low-interest-rate regime, these policies caused American banks to accelerate their off-balance-sheet mortgage securitisation in order to enhance revenue streams and share price appreciation. The result was a marked acceleration in sub-prime leverage over time, beyond the normal limits of prudent balance-sheet management. According to the OECD, the 2004 'American Dream' initiative was a key factor, and a key reason why the toxic activities that led to the meltdown were so much stronger in the US than elsewhere.¹⁴

By contrast, Australia has generally maintained a separation between housing or social-assistance measures on the one hand, and commercial bank balance sheets on the other. This prudent approach is making a considerable contribution to the stronger and safer performance of Australian banks that we are now witnessing.

Conclusions

The Australian banking system has withstood the worst international banking crisis in memory far more robustly than many overseas counterparts. No Australian bank has been bailed out, local banks did not create a northern hemisphere-style liquidity crunch, and Australian banks have avoided abnormal loan write-downs. No Australian bank has seen its credit rating downgraded, and share prices of our banks have been relatively strong in the circumstances.

This paper has identified a number of key factors that explain the remarkable resilience of the Australian banking sector, its strength and safety. A culture of prudent lending prevails. Australian banks are soundly capitalised, with a well-diversified and stable funding base, and a track record of healthy

¹⁴ Blundell-Wignall *et al.* 2008.

profitability. The industry is marked by vigorous competition, as well as sound corporate governance, and robust consumer protection. Official oversight of banks is effective, involving the renowned prudential regulation system, and the separation of commercial banking from social-assistance policy.

Consequently, Australian banks have performed exceptionally well during the recent turmoil and have insulated Australia against the full impact of the credit crisis, which originated in the United States. The latest IMF commentary on Australian banking affirms this assessment:

‘The securitisation of mortgages in Australia was not widespread before the crisis, with only about 18 per cent of housing loans securitised. These mitigating factors implied that Australian banks suffered only limited direct losses, compared to their counterparts in North America and Europe, and their credit ratings remained high throughout the period.’¹⁵

Return on equity (ROE) for the Australian banks has hovered around 15–20 per cent since the mid-1990s, with the system experiencing very strong balance-sheet growth driven by high demand for residential (prime) housing loans. At the same time, because of the prudent philosophy of favouring loan origination over securitisation, the quality of Australian bank assets is high, with non-performing assets equivalent to less than 1 per cent of on-balance-sheet assets. Just the same, Australian banks have maintained a comfortable level of provisioning. Recent events have shown the regulatory framework in Australia is successful. Unlike in the UK, Europe and the US, no taxpayer’s money has been allocated to support a private Australian bank.

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Fiddling With the Digital TV Tuner: Recent Adjustments to a Poor Policy

Franco Papandrea¹

Abstract

Digital conversion of television in Australia was to have been completed by the end of 2008. Much slower adoption of digital television forced policy changes and the rescheduling of analog television switch-off to conclude by the end of 2013. This paper attributes the slow uptake of digital television to insufficient consumer incentives, excessive regulation of the digital spectrum, and measures to shield incumbent broadcasters from new entrants. Although recent modifications to the policy are a modest improvement, they are unlikely to produce sufficient acceleration of consumer uptake of digital television to enable the completion of the analog switch-off by 2013.

Introduction

Digital terrestrial television broadcasting (DTTB) arrived in Australia on 1 January 2001, when digital transmissions began in major metropolitan centres. The original plan envisaged an eight-year simulcast period during which free-to-air television operators were to broadcast their programs in both digital and analog formats, after which analog transmissions were to be switched off starting in metropolitan areas in January 2009. Uptake of DTTB, however, did not live up to the original optimistic expectations, forcing the government to rethink the changeover arrangements, including deferral of analog switch-off (now scheduled to conclude in metropolitan areas at the end of 2013).

The most recent available data on consumer adoption of digital television published by the Australian Communications and Media Authority (ACMA 2008) indicate a national average DTTB take-up rate of 41.8 per cent of households. Although growth in the take-up rate has been robust in recent times, the data underline the need for substantial further growth if switch-off is to be achieved by the new target dates. More worrying in relation to switch-off are indications that until recently retail sales of analog television sets exceeded those of digital sets (Tanner 2006). They are worrying because they suggest many consumers are either not aware of the digital switchover plan, or have little incentive to equip themselves with digital reception technology.

¹ University of Canberra, Franco.Papandrea@canberra.edu.au. The author is most grateful for the comments on an earlier draft provided by William Coleman and two anonymous referees.

This paper critically reviews the digital television conversion policy, tracing slow progress and current difficulties to flaws in the Government's original plan and subsequent reviews that have produced little to remedy the situation. The paper begins with a brief review of the digital conversion policy and its implementation. This is followed by a review of the sluggish progress to date and a discussion of recent policy changes aimed at improving DTTB uptake. Based on an examination of available data, the paper casts doubt that current measures are capable of delivering full analog switch-off by the end of 2013.

Digital television policy

Broadcasting policy in Australia has a long and sad history of highly prescriptive regulation and costly mistakes which have sought to protect the vested interests of politically powerful incumbents (Albon and Papandrea 1998). Typically, policy considerations of matters involving a conflict of interests between incumbents and consumers have been resolved in favour of incumbents. For example, excessive constraints on the expansion of radio and television services and on the introduction of new technologies, such as FM radio and pay television, have been a recurring feature of a policy framework that has failed to provide sufficient attention to consumer interests. The digital television conversion policy, more than any of the preceding major changes, bears all the hallmarks of private-interest politics in action.

The initial digital television conversion decision of March 1998 squandered the opportunities of a competitive transformation of the industry that were provided by the new technology. The conversion policy:

- banned new entry into the commercial TV industry until the end of 2006
- mandated high definition (HDTV) as the format for digital transmissions²
- prescribed a minimum quota for the broadcast of high-definition programs (a subsequent review would determine the amount)
- gave virtually all of the available spectrum to incumbents but banned commercial operators from using that spectrum for multi-channelling (delivery of multiple distinct channels over a single digital transmitter) or subscription TV pending a review in 2005³
- imposed very limiting conditions on the use of spectrum assigned to an artificially and arbitrarily defined new type of service (datacasting⁴)

² In December 1999, concurrently with a downgrading of the HDTV requirement to a somewhat lower grade of high definition, the Government mandated the broadcasts were also to be made in standard digital format (that is, broadcasters were to triplecast their programs in analog, standard digital and HDTV formats for the duration of the simulcast period).

³ The national broadcasters (ABC and SBS) were exempted from the multi-channelling restrictions, but received little financial support to develop and sustain new services.

⁴ The term 'datacasting' was coined in Australia (and is not used elsewhere) to refer to broadcast services distributed in the same manner as television programs but strictly regulated to exclude transmission

- and set a minimum eight-year period for the simulcast of television programs in both analog and digital formats.

The Australian digital plan was partially modelled on that adopted in the United States but with significant differences, such as *mandating* rather than *allowing* high-definition transmissions and the extensive constraints on the supply of new services. In contrast, major European countries that embarked on digital conversion about the same time (for example, the United Kingdom and Italy) provided a single standard digital channel to each of the incumbent broadcasters to enable simulcast of their analog programs during the conversion period and allocated the remaining digital spectrum to new entrants. This latter approach has proved to be much more successful in encouraging consumers to convert to digital television. (See Colapinto and Papandrea 2007 for a discussion and comparison of the digital plans adopted in Australia, the US, the UK and Italy.)

The Australian decision largely delivered what FTA commercial television operators were seeking and was welcomed by them. But it was strongly and widely criticised by others (see, for example, Given 2003; Jones 1998; Papandrea 2001; and Productivity Commission 2000). The popular press, in particular, was highly critical. In a stinging commentary, *The Australian Financial Review* (1998a) labelled the decision ‘information age mockery’ and argued that it ‘shackled the new information economy in the familiar old world of heavy government regulation and media-mogul politics’. Its assessment was that the ‘decision was not made on the basis of an open and transparent public policy review, but was designed to grant a political favour — from which it expects a political reward — to the incumbent broadcasting oligopoly’.

Drawing on a subsequent article (Lewis 1998) detailing comments of advisers from key government departments contained in an allegedly ‘leaked’ Cabinet Submission, an editorial in *The Australian Financial Review* (1998b) again strongly attacked the decision by re-echoing some of the advice allegedly provided to the Government by key Public Service advisers, including the Department of Finance, the Department of Prime Minister and Cabinet, and the Office of Regulation Review.

Overall, the decision represented an extraordinary level of overt protection of the interests of existing commercial television operators. Yet the responsible Minister sought to justify the decision, arguing that while the Government ‘would normally welcome additional competition, in any industry, as healthy and likely to lead to benefits for the consumer’, the free-to-air and pay-television industries deserved ‘a degree of special treatment’ because:

of virtually all genres of traditional television programs. The sole or dominant purpose of datacasting services was to be the provision of information on products, services and activities (Alston 1999).

Australia has a world-class TV system, with a strong local content component and a highly skilled production sector. This could be threatened if the existing networks had to battle a new competitor at the same time as paying huge sums to transfer to digital broadcasting, or if the Pay TV networks found themselves faced with significantly stronger free-to-air opponents while still trying to find their feet. (Alston 1998)

The Productivity Commission (2000) reviewed the decision as part of its Broadcasting Inquiry. The Commission's assessment was that the policy 'had serious ramifications for the public interest in efficiency and competition' (p.233). It was critical of all the major aspects of the decision, including the ban on entry of new commercial broadcasters, the prohibitions of the use of digital TV for multi-channelling and subscription TV, the HDTV requirements, the datacasting restrictions, the open-endedness of the simulcast period, and the likely high adoption costs to consumers. It was of the view that a shift of emphasis was required to achieve 'an equitable and efficient migration to digital transmission' and proposed changes designed to provide greater 'certainty and credibility ... a role for market forces; (and) enabling, rather than restrictive regulation'. (p.242). Its recommendations included the setting of a firm final date (1 January 2009) for the end of simulcasting; the sale of available spectrum for new broadcasting services within two years of the start of digital broadcasting in a licence area; the removal of regulatory restrictions on datacasting and multi-channelling; and making HDTV optional, rather than mandatory. The recommendations were ignored by the Government.

Digital transmissions began as planned in metropolitan areas on 1 January 2001. On the supply side, implementation of the decision progressed smoothly. The rollout of digital transmission infrastructure by television operators commenced on schedule, enabling transmissions of digital signals to start on the planned dates in both metropolitan and non-metropolitan areas. By 30 June 2005 some 526 digital transmitters, covering all metropolitan areas, major regional centres and some remote areas, were in operation (ACMA 2005a: 24). The rollout is being progressively extended to other remote and difficult-to-reach locations.

The initial consumer response to the introduction of digital television was disappointing. Faced with very low and uncertain demand for the unique converters needed for the Australian digital system, manufacturers were reluctant to invest in their production.⁵ Under veiled pressure from the government and seeking to avoid the embarrassment of having virtually no audience for their digital transmissions, commercial broadcasters were eventually forced to underwrite the manufacture of a few thousand converters for sale to interested

⁵ The unique version of the European digital transmission standards adopted in Australia was not compatible with converters in use overseas.

consumers. As the new technology offered virtually no additional viewing benefits, consumers rightly saw little need to part with more than \$500⁶ to buy a converter or thousands of dollars to buy a digital TV set simply to receive exactly the same programming stream they were already getting satisfactorily via the old technology. Estimated cumulative sales of digital TV sets and converters in the first two years of digital transmissions were less than 50,000 (House of Representatives Standing Committee on Communications, Information, Technology and the Arts 2006).

Little was offered by way of new programming that may have enticed consumers to adopt DTTB. The Australian Broadcasting Corporation had launched two new potentially appealing digital-only multi-channels, one for children and the other for youth, but was forced to discontinue them because of insufficient funding. Its digital efforts were then confined to a single multi-channel, *ABC2*, dedicated to new and time-shifted programs from its main channel, including children's programs. The efforts of the second national broadcaster, SBS, were also of limited appeal and consisted of a digital *World News* channel presenting time-shifted repeats of foreign-language news services (including updates) on its main channel, and a second channel (subsequently discontinued), *SBS Essential*, which was basically an electronic information guide for SBS programs.

Datacasting services never eventuated. Although the Government proposed to auction licences for datacasting services, commercial interests were generally of the view that compliance with the related extensive programming restrictions was not conducive to the establishment of commercially viable services. Consequently the planned auction had to be abandoned because of a lack of interest in the proposed licences.

Overall then, there was little other than the attraction of a new technology and the related improved picture quality to motivate consumers to adopt DTTB. For the majority, who were quite content with their existing services, particularly early in the transition period, there were insufficient incentives to convert (Papandrea 2000). The situation improved somewhat in later years, benefiting from a boost in consumer appeal for large-screen TVs and home-theatre technology.

Adjusting the original plan

The digital conversion plan included provision for the review of some of its elements to be undertaken by 2005. Included among the matters to be reviewed were the multi-channel and subscription TV restrictions; the datacasting provisions; the high-definition digital TV requirements; the duration of the simulcast period; and the moratorium on the issue of new commercial television

⁶ The first set-top box for use in Australia sold for \$699 and the cheapest available in late 2002 sold for \$499 (Given 2003: 169).

broadcasting licences. The reviews were conducted by the Department of Communications, Information Technology and the Arts (DCITA). For each review, a discussion paper outlining options under consideration was published and interested parties were invited to provide comment by way of a public submission. A report was subsequently issued (DCITA 2006a).

The reviews offered an opportunity to assess progress with digital television conversion and to rethink the policy in light of outcomes that were clearly falling far short of the original expectations. The opportunity to seriously reshape the policy, however, was not taken up. For most of the reviews, the departmental considerations appear to have been largely confined to an assessment of the comments received in submissions and there is little evidence of additional independent analysis. The only exception seems to have been the review of multi-channelling arrangements, for which a consultant was engaged to examine the impact on existing operators and on the uptake of digital terrestrial television broadcasting (DTTB) of allowing the introduction of new services (multi-channelling, subscription and digital radio services).

In general, the reviews appear to have been little more than perfunctory. In a serious review of policy whose outcomes had fallen considerably short of what had been anticipated, a cost-benefit analysis of available options would have been natural. Yet no such analysis was undertaken and the reports are essentially a summary of views submitted by vested-interest parties who had dominated the process and had had most to lose from significant diversions from the initial plan. The reviews made no specific recommendations.

The reviews were followed by the announcement of some significant changes to the digital TV conversion plan in November 2006. The target date to begin analog switch-off was postponed to 'sometime' in the period 2010–2012 and the ban on the allocation of new commercial television licences was extended until the end of the simulcast period. At the same time, the restrictions on multi-channelled services of national broadcasters were lifted, commercial broadcasters were to be allowed to use their high-definition channel to provide a digital-only multi-channel service from 2007 and a further standard digital multi-channel service in 2009, and two additional television channels were to be allocated for new digital services in 2007 — one for up to eight free-to-air datacasting and narrowcasting channels, and the other for television services to mobile devices such as cellular phones (DCITA 2006b).

Not all of the new measures announced in 2006 have progressed as anticipated. The simulcast provisions for the high-definition channel were removed as planned, as were the genre restrictions on the multi-channel services of national broadcasters. The change, however, resulted only in a minor expansion in the range of programming offered to digital television viewers. Similarly, although the main commercial networks have all expressed intentions to introduce an

additional multi-channel service, implementation has been slow.⁷ On the negative side, the allocation of two additional television channels for free-to-air datacasting and narrowcasting services, and for television services to mobile devices that was to have occurred in 2007 has not eventuated and appears to have been postponed indefinitely.

Additional developments have emerged following a change in government at the end of 2007. The new Minister announced the setting of a 'firm date' for completion of the switch-off of analog signals at the end of 2013 (Conroy 2007). He also announced the establishment of a Digital Switchover Taskforce to coordinate the switchover program and committed \$38 million to fund a package of initiatives to facilitate digital conversion which were detailed in a subsequent statement (Conroy 2008a). The additional initiatives included the commissioning of research to track uptake of digital TV, a publicity campaign to increase public awareness of the digital switchover program, and the development of a logo and labelling scheme to help consumers identify digitally ready products.

In October 2008 the Minister published a schedule of proposed region-by-region analog switch-off dates, commencing in Mildura in the first half of 2010 and concluding in the major metropolitan areas of Sydney and Melbourne in the second half of 2013. Although the schedule is 'technically' consistent with the previously announced 2013 'firm switch-off date', in effect it introduced a significant departure from all earlier switch-off plans. Until the schedule was announced, all previous plans envisaged that the same standard fixed simulcast period would apply in all areas, with switch-off *commencing* in *metropolitan* areas and *concluding* (up to three years later) in *regional* areas (consistent with the start of digital transmissions). The reversal of the switch-off sequencing extends considerably the simulcast period in the major metropolitan areas to around 13 years (previously, initially eight years and then nine years), but less so in regional areas. As spectrum scarcity is almost entirely a metropolitan area problem, the schedule is a *de facto* acknowledgment that the anticipated economic benefits of more efficient use of spectrum and a wider range of services to consumers have once again been considerably delayed. The significance of this departure from the original plan is underscored by a Productivity Commission (2000: 234) observation that equates extensions of the simulcast period with 'failure of the conversion process to meet (one) of its objectives, which is to "achieve spectrum gains to enable new services to be introduced"'.

⁷ At time of writing, the TEN Network has established a digital sports channel transmitted in both standard and high-definition formats. The other two commercial networks had not yet started transmissions on their proposed standard multi-channel.

How many homes have digital TV?

The switch-off of analog TV transmissions is a critical event in the transition to a digital television world. The many efficiencies of digitisation, particularly in the utilisation of the radiofrequency spectrum, do not accrue until analog transmissions are switched off and the related spectrum is released for alternative uses. Any delays in the switch-off consequently translate into a considerable loss of benefits to society that would otherwise accrue from alternative uses.

Without widespread adoption of digital TV, the government will be hard-pressed to implement the analog switch-off. Political pressures are likely to lead to considerable delays, as evidenced on previous occasions involving the switch-off of an existing service (for example, political pressure induced extensive delay in switching off CDMA mobile telephone services). The difficulty of proceeding with a switch-off of analog TV even when only a small minority of non-adopters of DTTB remains was highlighted by the recent four-month deferral of the 17 February 2009 switch-off in the United States. There, less than 6 per cent of households remained unconnected just before the scheduled analog switch-off (Nielsen 2009). According to the Acting Chairman of the Federal Communications Commission, the deferral was necessary because many consumers were not ready, and had not been adequately informed about necessary preparations, likely causes of related reception difficulties and sources of help. Also, consumers had experienced difficulties in obtaining the government-funded subsidy coupons for the purchase of digital set-top boxes (Copp 2009). The US experience underlines the political difficulty of proceeding with a switch-off which excludes even a small minority from a pre-existing service.

The Australian digital conversion policy presupposed rapid adoption by consumers keen to acquire the new technology. The main stimulus for consumer adoption was expected to come from high-definition programming and improved transmission quality. After all, Australian consumers had repeatedly demonstrated their enthusiasm for rapid adoption of new technology. Colour television, for example, had very quickly reached saturation (some say in record time), and Australians were among the fastest adopters of mobile telephony and the internet. This enthusiasm for new technology alone, it was thought, would be sufficient to garner a rapid transition to digital television.

But Australians have proved to be much more rational in their consumer choices. Not all potentially popular new technologies experience rapid adoption. Video cassette recorders took some 20 years to reach saturation, but were subsequently very quickly displaced by DVD players. Digital books (eBooks), although hailed by some as the start of a revolution in book distribution, have yet to have a noticeable impact. Other recent innovations such as iPods and similar devices for accessing digital music have proved more popular among some sections of consumers.

Generally, consumers can and do differentiate between products or services on the basis of the benefits they confer. In the case of digital television, while undoubtedly a small minority were sufficiently motivated by the technological benefits to adopt DTTB, the vast majority saw little additional benefit to justify the associated costs of adoption. The simulcasting provision of digital TV conversion meant that by acquiring digital TV-reception equipment, including high-definition equipment, viewers gained little by way of additional program choices. Apart from the marginal 'new' programming provided on the ABC and SBS digital-only channels, viewers were able to access exactly the same program choices on their existing analog TV sets.⁸ Tanner (2006) noted the stark contrast between a 10 per cent DTTB household penetration after five years of digital transmissions and the more than 80 per cent uptake in four years for colour television which clearly improved the viewing experience. The low level of additional benefits was the main cause for slow consumer uptake of DTTB identified in many submissions and other evidence presented to the House of Representatives Standing Committee on Communications, Information, Technology and the Arts (2006).

Available data on DTTB uptake clearly show that the introduction of digital TV failed to excite consumers into adopting the new technology. Digital Broadcasting Australia (DBA), a not-for-profit industry organisation of TV broadcasters and TV manufacturers, suppliers and retailers, published regular bulletins charting the growth of DTTB penetration from estimates of retail sales of digital reception equipment. After a very slow beginning, the estimates show a significant acceleration of penetration from around 2005 onwards, aided by declining prices for widescreen TV sets which were becoming increasingly attractive to consumers. The accelerating growth in penetration was also evident in data from surveys commissioned by the broadcasting regulator, the Australian Communications and Media Authority (ACMA) in 2005, 2006 and 2007. In the first of these surveys (ACMA 2005b), conducted in July 2005, 13 per cent of respondent households indicated that they received digital FTA TV. The penetration rate increased to 22 per cent when those receiving the signal via subscription TV were added. The subsequent surveys (ACMA 2007 and 2008) reported penetration rates of 29.6 per cent (41 per cent including reception via subscription TV) in October 2006 and 41.8 per cent (54.2 per cent including reception via subscription TV) in December 2007.⁹ Both the DBA and ACMA estimates of DTTB household penetration are summarised in Table 1.

⁸ Under the provisions of the original DTTB plan broadcasters had to transmit simultaneously the same version of their analog programming in standard digital format as well as in high-definition digital format (when transmitting in high definition).

⁹ The quoted figures do not include homes receiving DTTB signals via a subscription TV digital reception device.

Table 1: Estimated Uptake of DTTB

	Estimated DTTB Penetration (per cent of households)	
	DBA	ACMA
2003	1.1 (June)	
2004	4.5 (June)	
2005	10.8 (June)	13.0 (July)
2006	20.0 (June)	29.6 (October)
2007	28.0 (March)	41.8 (December)

Source: Digital Broadcasting Australia Information Bulletin (Various); ACMA (2007 and previous years)

Although reflecting a similar trend, the penetration rates reported in the ACMA surveys were noticeably higher than those estimated by DBA from retail-sales data. The ACMA consultants partially, and somewhat unconvincingly, addressed the differences in their reports on the first two surveys, attributing them to the use of different methodologies, likely sampling errors and assumptions underpinning the estimates (ACMA 2005b and 2007), and suggested that the DBA estimates 'probably represented a conservative or base level of DTTB household penetration' (ACMA 2007: 1, footnote 6).

A cursory examination of the results suggests that in addition to the potential causes noted by the ACMA consultants, the samples selected for the surveys may be inherently skewed towards households likely to have been early adopters of new technology. The survey reports noted that households that had adopted DTTB had been considerably more likely to also have home internet access (overall and more particularly broadband internet access) than households that had not adopted DTTB. This strong correlation between home internet access and DTTB adoption can be used to test for likely bias towards overestimation of DTTB penetration.

Annual estimates of households with home internet access, published by the Australian Bureau of Statistics (ABS), provide a reliable basis to test for likely bias in the ACMA survey sample. Overrepresentation of households with internet access in the survey sample, for example, would be a clear indication of likely overestimation of DTTB adoption. Comparisons of the proportions of households with overall and broadband internet access reported in the ACMA surveys with the corresponding proportions reported by the ABS (2007) clearly indicate a substantial overrepresentation of such households in the samples of all three ACMA surveys (see Table 2 for details). The extent to which the overrepresentation has influenced the reported DTTB adoption rates is not known, but it is likely to have been significant.

Table 2: Comparison of ACMA Survey and ABS Internet Access Estimates

Internet Access	ACMA July 2005	ABS 2004-05	ACMA Oct 2006	ABS 2005-06	ACMA Dec 2007	ABS 2006-07
Overall access	66.6	56	69.3	60	75.2	64
Broadband	38.8	15.7	51.7	28.2	61.7	43

Source: ACMA 2007 and previous years; ABS 2007

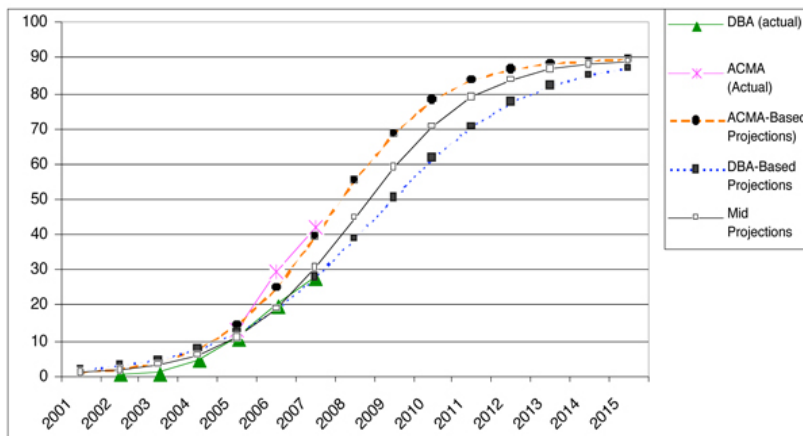
The inherent bias in the ACMA survey samples would lead to two important distortions in the results. First, of course, it produces the already noted significant overestimation of DTTB penetration (and consequential underestimation of non-adopters). Secondly, because the survey sample under-represents non-internet households it is likely to underestimate 'committed' non-adopters more so than of 'slow' adopters because non-internet households tend to be concentrated among low-income households that are least likely to be able to afford the purchase of digital TVs. In other words, they underestimate the size of the core group of households that are most likely to be opposed to analog switch-off. Both of these distortions are important because they significantly understate the magnitude of the task of getting the community ready for analog switch-off.

Prospects for a 2013 switchover

The available data on consumer uptake of DTTB provides a somewhat useful basis for the estimation of likely future experience, assuming no major unanticipated external influences on consumer behaviour. One way to estimate future household DTTB penetration is to fit a classical 'S-shaped' cumulative diffusion curve (a logistic growth model of the form $Y_t = \frac{L}{1 + ae^{-bt}}$) to the available data, where Y_t is the cumulative penetration at a given time t , L is the anticipated final cumulative penetration level, a and b are constants that shape the diffusion curve. Assuming a final penetration level L and with sufficient historical diffusion data, the constants a and b may be estimated with regression analysis.

As indicated in Table 1, there are very few observations available on DTTB uptake, and these are insufficient for the production of reliable estimates using econometric analysis. Also as noted, the separate DBA and ACMA estimates are not easily reconciled. Nonetheless, notwithstanding the significant limitations, it was felt that even a rough fitting of the data to an S-shaped cumulative diffusion curve might provide a useful indication of the likely outcomes. The results of such 'back-of-an-envelope' exercise with the available data are presented in Figure 1.

Figure 1: Projections of DTTB Household Penetration



It is stressed that the results should be treated only as rough indicators of likely future projections. For the analysis, the cumulative ultimate penetration level that would enable analog switch-off to occur was arbitrarily assumed as 90 per cent of households.¹⁰ Switch-off at a lower household-penetration level was assumed to be politically unsustainable. The three curves produced were estimated using, respectively, DTTB penetration data published by Digital Broadcasting Australia; data from the three ACMA surveys augmented with DBA data for earlier periods; and a mid-projection curve using an average DBA-ACMA penetration for the three years when both DBA and ACMA estimates are available.¹¹

What is interesting from these projections is the 'slope' of their mid-section at the point of inflexion of the curves, as it is this that determines how quickly the curves move towards the ultimate penetration level. Even with the most optimistic historic penetration trend data (augmented ACMA data) the projections suggest that it will take 13–15 years from the start of digitisation to reach a level close enough to avoid unsustainable political backlash for switch-off. This would put the switch-off somewhat beyond the current government 2010–2013 target.

The above projections are consistent with available information on expected growth in DTTB penetration. The latest ACMA (2008) survey reported that among the non-adopter households 39.9 per cent had indicated 'an interest in obtaining digital free-to-air television' at some future date. An additional 18.5

¹⁰ According to the latest ACMA (2008: 47) survey, 24.2 per cent of households, were classed as being explicitly 'not interested in adopting' DTTB. Thus, the chosen penetration limit allows for an eventual substantial (approximately 60 per cent) 'conversion' of professed non-adopters in the estimation of likely penetration rates.

¹¹ If, as proposed by the ACMA consultants, the DBA estimates represent minimum penetration levels, the average used to construct this curve might be a reasonable correction for the noted overestimation in the ACMA survey.

per cent were undecided. Together, these two groups represent the likely pool of potential DTTB adopters in the foreseeable future. The ACMA survey data on purchase intentions within two years of the survey provides a check for the reasonableness of the projections. If only those that indicated a purchase timeframe of up to two years actually make a purchase (an optimistic assumption), the anticipated penetration rates by the end of 2008 and 2009 would be 47.9 per cent and 51.6 per cent, respectively. Such penetration levels approximate those projected by the 'Mid projections' and by the 'DBA-based projections' curve.

DTTB penetration is generally measured on the basis of at least one digitally capable receiver device in a household. But most homes in Australia have multiple TV sets and other TV reception equipment. Analog switch-off will render obsolete non-converted TV sets and raises another challenge for authorities as consumers are unlikely to respond kindly to the loss (or alternatively to the additional conversion costs to retain use) of their existing TV sets. The most recent ACMA (2008) survey reports that in 2007, DTTB devices in homes amounted to 25.7 per cent of all television sets. The proportion in 2005 was only 7.1 per cent. According to the ACMA surveys, during the same period the average number of television display devices in households remained relatively constant.

The proportionately low number of digital viewing devices in the overall stock has received little attention as a potential problem for analog switch-off. The ACMA appears to be considering the issue with the collection of relevant data in its surveys but little has been said about it publicly. Tanner (2006) raised the issue, observing that in 2005, while digital receiver sales (TV sets and set-top boxes) had been some 600,000, total sales of new analog receivers exceeded two million. He observed that overcoming the challenge of converting all the analog devices then in people's homes by 2012 'would require monthly sales of digital receivers several times higher than those achieved in 2005'. The ACMA (2008) data on DTTB devices in homes, cited above, do not suggest that replacement of analog devices is occurring at anywhere near the required rate suggested by Tanner.

As for any product, consumer uptake of digital television hinges on the balancing of related costs and benefits. Uptake is likely to occur only if the consumer values the additional benefits offered by digital services at least commensurately with the cost of acquiring the necessary reception equipment (digital set-top box converter or other viewing device with an inbuilt digital receiver). Overseas developments suggest a strong correlation between DTTB uptake and the provision of new programming accessible only in digital format. In the UK, for example, digital conversion became an almost-instant success after the introduction of some 30 new free-to-air digital channels (Freeview) with an extensive range of new programming supplied by existing operators and new entrants to the industry. Driven largely by the popularity of Freeview, DTTB

penetration grew rapidly from around 5 per cent at the end of 2002 to 87.1 per cent by the end of the first quarter of 2008¹² (Ofcom 2008). Some evidence on the attractiveness of new programming is also provided by ACMA survey data on consumer purchase decisions. In Tasmania and Mildura, where penetration rates are considerably higher than the national average (70.3 per cent and 64.0 per cent, respectively; compared to the national average of 41.8 per cent), more than half of respondent households cited extra channels as a reason for adopting DTTB (ACMA 2008). In both areas, only two of the three commercial networks were available in analog and the introduction of digital transmissions provided for the broadcast of the third in digital format only. Elsewhere, other reasons such as improved picture quality, improved reception, replacement/upgrading of TV figured more prominently than extra channels as reasons for getting digital television, suggesting that the programming that was being provided on high-definition and multi-channelled digital services had been a key driver of DTTB uptake.

The ACMA survey findings further underscored the importance of new programming in comparisons of Mildura and Broken Hill as 'potential trial switch-off areas' (Mildura was subsequently selected as the first area for analog switch-off in 2010). The survey concluded that

... while the transmission characteristics appeared to make both ... ideal candidates for early switch-off, the research has indicated major differences in their uptake of digital television ... The research indicates that differences in available service offerings between Broken Hill and Mildura account for the differences in uptake. In Mildura, Channel Ten is only available on digital. (ACMA 2008: 2)

The survey report also noted that in Mildura only 12.4 per cent of households were not interested in adopting DTTB. In contrast, Broken Hill had a penetration rate of 38.6 per cent (as compared to 70.3 per cent in Mildura) and 29.3 per cent of households there indicated no interest in adopting DTTB (ACMA 2008: 48).

Are recent policy changes sufficient?

Adoption of DTTB in Australia has so far been much slower than forecast by optimistic projections of policy-makers and commercial broadcasters. As a result, the analog switch-off date has had to be postponed. While the government has now published a 'firm' schedule for completion of the conversion process, it is not a foregone conclusion that analog switch-off will actually proceed as scheduled. Almost universal adoption of DTTB still remains the key to analog switch-off. Undoubtedly, the recent policy changes will provide some additional

¹² Total penetration includes households receiving free-to-air television via their digital subscription television service (24 per cent of all households).

stimulus to digital conversion, but will the likely improvements be sufficient for completion of the process as now scheduled in 2013?

The recent policy changes are a small improvement to the digital television plan. Both the previous Coalition Government and the current Labor Government have been reluctant to adopt more radical revisions to enhance digital uptake by removing restrictions on new programming, including restrictions on new entrants along the lines recommended by the Productivity Commission (2000) just before the start of the implementation of the digital plan. The Productivity Commission recommended allowing broadcasters full use of their multi-channelling capacity, the removal of all restrictions on datacasting (thus allowing new entry into broadcasting), and the realising of any available spectrum to new entrants. In contrast, the recent policy changes enable partial use of the multi-channelling capacity¹³ and somewhat relax the datacasting restrictions. The ban on new entry remains unchanged and will continue to apply at least until the end of the simulcast period. This not only quashes an important source of new programs but also removes the necessity of incumbents to supply appealing programs on their multi-channel services to avert the competitive threats of new entry.

While all the incumbents have introduced, or propose to introduce, high-definition and standard multi-channels, to date the programming offered on those channels does not significantly expand what is available on the related analog channels. The programming on the high-definition multi-channels established by the incumbents other than the Ten Network is largely made up of simulcast and time-shifted programs on the respective analog services. The Ten Network has established a 'sports channel' and simulcasts its programming on both its high-definition and standard multi-channel. All FTA broadcasters (national and commercial) have combined together in a consortium, '*freeview*', for the joint promotion of their digital services. While *freeview* is being promoted as comprising 15 'new' channel digital services, in essence it is a promotional re-packaging of existing digital channels plus the three additional multi-channel services proposed by the commercial operators, two of which still remain to be launched at the time of writing.

In the absence of new entry, there is little incentive for commercial broadcasters to provide popular programs on their multi-channels. Popular programs would significantly fragment the audiences of their main channels, with consequential effects on advertising revenue. Although niche audiences may be able to attract premium per-person advertising rates, the demand for niche advertising does not appear to be robust enough to outweigh the loss of revenue associated with reduced mass audiences on the main channel.

¹³ Each broadcaster has enough spectrum capacity for up to three additional standard digital multi-channels.

Less-popular programs are also less costly to broadcasters. Consequently, their use on multi-channelled services would be favoured to minimise both the loss of advertising revenue on their main channel, as well as minimise the cost of operating the multi-channelled services. In addition, despite the extra costs of simulcasting analog and digital formats of the same content and of operating multi-channel services, the commercial networks in particular have an incentive in delaying analog switch-off as long as possible. The switch-off will free-up the large amount of spectrum tied up in the delivery of analog broadcast signals and would add considerable pressure for the licensing of new competitive services using that spectrum. Thus, keeping the analog spectrum tied up as long as possible precludes competition from new entry, while low audiences for the less-appealing programs supplied on multi-channelled services can be used to argue that there is insufficient demand for the licensing of additional services.

The relaxation of the constraints on datacasting services is also unlikely to have more than a marginal impact. Datacasting services will still be arbitrarily constrained to preclude them from eroding audiences of broadcasting services. Thus, if and when datacasting licences are released, even if the relaxation of the constraints is sufficient to attract some commercial interest, the services likely to be offered will be of interest only to 'specialised' audiences. Consequently, their impact on households' DTTB uptake will be likely to be minimal. Similarly, the proposed allocation of licences for mobile television devices, by definition, will have little to no impact on households' DTTB uptake.

The setting of a definite analog switch-off date can be an important motivator for DTTB uptake by TV viewers who wish to continue viewing but have so far shown little interest in digital TV technology. However, for most people (those living in the large mainland capital cities) the switch-off is still a long way off and there is little, if any, pressure for them to purchase digital equipment until they actually need to.

The proposed awareness-building publicity campaign and the related labelling of TV sets should assist in promoting increased interests in DTTB among those who are either unaware of the switch-off date or of the need to obtain digital equipment to continue viewing TV once the switch-off has occurred. The need for such a campaign was underscored by the finding of the ACMA (2008) survey that almost one-third of households were unaware of the planned analog switch-off. Perhaps, the campaign's greatest impact might be on those planning to purchase new TV sets, or replace existing ones, in the period before switch-off. But it may not be enough to motivate a sufficient level of adoption among the 24.2 per cent of households which indicated no interest in adopting DTTB and the 10.8 per cent which indicated they were unsure if they were interested. The recent politically induced delays to Telstra's plans to switch-off the CDMA mobile phone network in regional areas following its replacement by its Next G

network (Conroy 2008c) is just one example of what can happen when a significant minority has not adopted the new technology. The recent delay of analog television switch-off in the US is another.

As noted above, a large proportion of TV set sales relates to the replacement (or upgrading) of existing sets. Anecdotal industry suggestions are that up to 15 per cent of the stock of household TV sets is being replaced each year. At present, many of the TV sets on the market do not incorporate digital tuners. The proposed labelling campaign to indicate digitally ready products, therefore, will help encourage some of those who are aware of digital conversion to select digital receivers when replacing or upgrading their TV sets. But price considerations and any lack of confidence among consumers that the announced analog switch-off dates up to five years into the future will remain unchanged, might influence others to continue purchasing analog sets. Although more interventionist, a mandatory scheme along US lines requiring new TV sets offered for retail sale to incorporate a digital tuner would be more effective in reducing the number of analog sets in use. With a replacement rate of around 15 per cent a year, such a scheme would make a sizeable inroad in converting the existing stock of analog TV sets in Australian households by the end of 2013.

Delays in the analog switch-off date have substantial welfare cost implications. Consumer welfare is considerably reduced by the loss of benefits to consumers that would otherwise accrue from access to additional television services that are either banned under the current policy or are not possible because the necessary spectrum is unavailable until the digital switchover is completed. Delays also retard the release of analog spectrum for more efficient alternative uses. To minimise such welfare losses, it is imperative that policies promote the earliest possible switch-off. In this regard, removal of all restrictions on the use of multi-channelling and of datacasting services, together with licensing of new entrants on currently available digital spectrum as recommended by the Productivity Commission (2000), would act to accelerate uptake of DTTB. To avoid delay in the switch-off of analog services, it may also be necessary in the final stages of the conversion process to provide some form of incentive for the adoption of DTTB by the residual analog users preventing the realisation of the anticipated large welfare gains. Recent press speculation (Jackson 2008) suggests that the government is considering provision of some financial incentives to adopt DTTB to those in need of assistance.

Mildura, the first area scheduled for analog-switch-off, will provide some valuable insights into the effectiveness of the recent policy changes. As noted earlier, DTTB adoption there was aided considerable by the provision in digital format of a previously unavailable third commercial channel. With 70 per cent of households already converted to digital, the analog switch-off task is less daunting than in other areas. Among non-adopters in Mildura the ACMA (2008)

survey found that some 40 per cent were planning to purchase digital equipment and an additional 34 per cent expressed some interest in DTTB. If they all convert to digital before the schedule date in 2010, the residual analog-only households would be less than 8 per cent of the total. The proportion is within what might be considered the politically acceptable range and it will be interesting to see whether analog switch-off will be implemented as planned or without additional incentives to convert.¹⁴

Conclusion

Both the current Labor Government and its Liberal-National Coalition predecessor have wasted another opportunity to set the digital television policy on a more appropriate course for rapid completion of the conversion from analog to digital. What's missing from the policy is a strong incentive for consumers to adopt digital television. Such an incentive would be provided by new competitive entry into the industry ready and willing to supply consumers with innovative and appealing programs. While policy-makers are clearly aware of this, they have proved reluctant to do anything that significantly weakens the high level of protection enjoyed by incumbent commercial broadcasters. Consequently, by not making more radical changes, the recent policy amendments will provide only modest improvements to what has always been a poor policy. Under the revised plan, the conversion process is now scheduled to be completed at the end of 2013. However, as the preceding analysis suggests, it is not entirely certain that consumer uptake will be sufficient to enable the switch-off to be completed on schedule. Having been one of the first developed countries to embark on the digital conversion process, Australia's progress towards achieving that objective has not only been sluggish but seems destined to become very long by international standards.

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¹⁴ As noted above, a residual of less than 6 per cent was recently used to justify a delay in analog switch-off in the US.

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