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Capital Access of Nonprofit Organisations

Mark Lyons, Andrea North-Samardzic and Angus Young

The recent sales by the Salvation Army's Southern Territory and the St Vincent de Paul Society in NSW of their nursing homes point to a wider problem faced by many parts of Australia's nonprofit sector. Faced with the need for considerable new capital investment to ensure their accommodation met new aged care standards to be introduced in 2008, and recognising the challenges that such capital raising would entail, these two leading nonprofit organisations chose to pass the problem to others that could handle it — in the case of the Salvation Army a consortium containing Macquarie Bank and a large for-profit aged care provider (Macquarie Bank, 2005; Horin, 2006). Many other nonprofit organisations that over the past fifty years have built facilities such as hospitals, aged accommodation, child care and schools face similar needs to refurbish or reposition these assets and similar challenges in accessing the capital needed for the task. Capital is either difficult to raise or is inaccessible. Of greater importance perhaps, many successful nonprofits are constrained from expansion by difficulties in raising capital and many potentially important social innovations are strangled by their inability to raise start-up capital.

Many anecdotes suggest a bias against nonprofit organisations in Australia's capital markets. However, there is another thread of discourse that argues the problems lie mainly with the managers and boards of nonprofits. Nonetheless, in comparable countries such as the United States and the United Kingdom governments have put in place policies specifically designed to ensure nonprofit organisations are able to access the capital they need. This paper draws on a recently completed report for the National Roundtable of Nonprofit Organisations (Lyons, North-Samardzic and Young, 2007) to determine the extent and dimensions of the problem in Australia and to canvass options, including government policy adjustments, which would address it.

Nonprofit Organisations

The size and scope of Australia's nonprofit sector is often not appreciated. Nonprofit organisations are private organisations formed to provide a service (for members or others), to advance a cause, or for religious worship. What distinguishes them from the more common private for-profit organisations is their self-imposed prohibition on the distribution of profit to members or supporters —

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surpluses are reinvested in the organisation. In Australia, nonprofit organisations are particularly important in the provision of education, social assistance and health care, including hospital care and health research. Registered clubs are nonprofit organisations as are most sporting and arts organisations. So too are business and professional associations, unions and political parties. Religious worship is organised through nonprofit organisations (Lyons, 2001). In 2000, the Australian Bureau of Statistics (ABS) estimated that Australia's nonprofit organisations employed over 600,000 people, turned over more than \$30 billion and contributed 3.3 per cent to GDP, a contribution equivalent to that of the agriculture industry (ABS, 2002).

Although the picture varies industry to industry and organisation to organisation, around 55 per cent of nonprofit operating revenue comes from the sale of goods and services. Government grants and contracts contribute around 30 per cent and donations, foundation grants and return on investments the rest. When it comes to raising capital, whether for renewal of facilities or equipment, or for expansion or for nonprofit start-ups, the picture becomes more fractured.

Traditionally, nonprofit organisations have found the capital they need from among a variety of sources, often using several of them. These include:

- Setting aside annual surpluses over many years to build an endowment or capital fund;
- Seeking bequests and then putting them into a capital fund;
- Conducting a capital campaign;
- Obtaining a capital grant from a foundation or a business;
- Obtaining a capital grant from a government department;
- Borrowing from a bank or other approved financial institution and servicing the loan from recurrent revenue.

A few nonprofits have available further specialised sources of capital:

- In residential aged care they can obtain a long term, no interest loan from people who will use the facility (a resident's contribution);
- Nonprofits sponsored by large Christian denominations mostly do their banking with specialist, financial institutions maintained by the denomination, such as a diocesan development fund, and are able to borrow from these institutions.

Some of these methods are more suited to some nonprofits than to others, depending both on their size, their location and more importantly on the sort of activities they perform, that is, the industry to which they belong. Many of these methods of capital raising are closed to most nonprofits. Of course, because they are not permitted to distribute profits, equity, the source of capital frequently used by for-profit enterprises, including those that compete with nonprofits, is not available to nonprofit organisations.

Barriers to Access

Different groups of nonprofits find it difficult, even impossible to access many of the traditional sources of capital listed above.

Nonprofits that mainly rely on government grants or contracts to fund their activities will generally find it difficult to generate a sufficient surplus to build a capital fund. Very few government programs acknowledge the need to service capital costs in their recurrent funding programs. A few, however, allow for rental payments, suggesting that they assume that the nonprofit will lease rather than acquire property. Nonprofits that rely on public donations will often refuse to build a capital fund on the grounds that donors expect them to put all donations into providing assistance.

Bequests are generally made to long-established organisations with a high public profile, though also to organisations that may have favourably touched the person making the bequest in some way, such as a school or university or organisations offering care and support to people with an illness. Building a capital fund from such a source is a long term task, and one that requires discipline. Many organisations are distracted from it and apply bequests to meet annual deficits.

While the number of nonprofits that can sensibly anticipate success from a capital campaign is larger than those that will eventually benefit from bequests, nonetheless capital campaigns are more likely to be successfully pursued by larger, longer established organisations with a strong donor base. Long established, elite schools, with a base of wealthy parents and ex-pupils are the most successful at conducting capital campaigns.

None of the above sources of capital are available to start-up ventures. Capital for start-ups, as well as for expansion and redevelopment can be obtained from foundations and from businesses in the form of grants, but even here there are difficulties for many nonprofits. Most foundations are restricted in their grant making to support only nonprofits that have secured from the Australian Taxation Office Deductible Gift Recipient (DGR) status. This makes it impossible to support many new ventures, either because such status has yet to be granted, or because the new nonprofit is ineligible and lacking the influential supporters needed to persuade the Prime Minister or Treasurer to add it to the list of 'other' DGRs that is appended to the Tax Act.

Whereas from the 1950s to the 1980s government capital grants were readily available to assist the erection of specialised accommodation for older people and people with a disability, governments are now very reluctant to provide capital grants, other than as an act of grace and favour to a specific organisation. In a few programs, as noted, they allow an amount for the cost of capital in their recurrent funding. In school education, the Commonwealth government has a capital grants program favouring schools in low SES areas, but the funds go only a small way to satisfy the demand for capital. Several state governments assist nonprofit schools to borrow capital by subsidising their interest payments.

Finally, many nonprofits are unable to access loan finance from banks or other financial institutions because they do not own fixed assets that could be used as security for a loan. As well, loan assessors in most financial institutions find nonprofit balance sheets hard to understand and their business plans challenging because they are not framed along conventional lines. In many cases, for example, nonprofits rely on government grants or contracts as their main source of income from which they must service a loan. They might also

identify regular income from fundraising and make use of volunteers to reduce their costs. All of these transactions unfamiliar to the average loans assessor. Loans assessors will wish to see evidence that the nonprofit can service a loan, most usually in the form of a capital fund built from surpluses. The difficulty many nonprofits face in building such a fund has been outlined. Further, when nonprofits have received some government assistance to acquire land or to build a facility, the government sometimes retains a mortgage on the land. Even if it is for only a nominal sum, few financial institutions will wish to secure a loan with a second mortgage. Even without these difficulties, unless the nonprofit is very large or has the backing of a church, lenders will usually seek personal guarantees for a loan from directors. This is inevitable in the case of a start-up, but will often apply even if the nonprofit has unencumbered property to mortgage. Not surprisingly, directors are reluctant to enter into such agreements

The previous discussion summarised the problems that different groups of nonprofits face in accessing various sources of capital. These are a consequence of a nonprofit's inability to meet the requirements needed to access the source of capital. There is a further set of problems that prevents many nonprofit organisations from accessing the capital needed to develop or redevelop. These arise from lack of knowledge and lack of confidence among staff and directors of many nonprofits. They might have assets to secure a loan and an income stream to service it, but do not know how to approach lenders, or they are reluctant to take the risk. The nonprofit may have a capacity to build a capital fund but directors and managers are unaware of the long term importance of doing so. They may be able to raise some capital or reduce costs by merging with a similar nonprofit, but are reluctant to take such a step. Some evidence of the extent of these demand side problems is provided in a survey of Victorian nonprofits mainly from the community services, health and community development fields, conducted in 2005 by KPMG for the Victorian Department of Communities (KPMG, 2005).

It is clear that most nonprofit organisations face many problems in accessing capital. But how extensive are these problems? Are they significant enough to warrant a policy response? And if so, what options are there?

Do Australia's Nonprofits Face a Capital Crisis?

The short answer to the question is no. Most of Australia's nonprofit organisations are not in a position where they have an immediate need for capital which they cannot satisfy and without which they jeopardise their future. However, as evidenced below, some nonprofits in certain fields, and especially in regional and rural areas, do face an immediate crisis. As well, over the longer term, the difficulties faced by many nonprofits in accessing capital slow the development of the sector. They distort the ability of many nonprofits to compete with for-profit organisations and inhibit the potential of the sector to be a major source of social innovation. This section deals with each type of need for capital (for refurbishing, for expansion and for new ventures) in turn.

The most important groups of nonprofits that face problems in obtaining capital to refurbish ageing facilities, either to meet changing public expectations or

revised government standards are those providing aged accommodation, hospital care, school education and community radio and television.

Nonprofits providing aged accommodation have been long assisted by their capacity to collect an interest-free accommodation bond. The bond is eventually repaid, but the nonprofit can apply interest to maintenance of the facility. A bond cannot be required from those requiring intensive (nursing home) care, but unlike that provided by the for-profit sector, most nursing home accommodation provided by nonprofits is part of a larger aged care complex and has benefited from access to the accommodation bond. Most people moving into early stage aged accommodation have recently sold a house and pay the bond from the proceeds of the sale. The size of the bond has increased to reflect rising house prices in the catchment areas of the facilities. Provided they have competent boards and managers such nonprofits are able to access needed capital. However, smaller nonprofits in country areas which have not seen increasing property values and which have not been able to attract directors and managers with appropriate business skills face problems in meeting new standards (Hogan, 2004). Similarly, nonprofits that have accepted mainly disadvantaged people with little or no ability to pay a bond also face difficulties. Some estimates claim that around 20 per cent of nonprofits in the field will have difficulty accessing needed capital.

Constant developments in medical technology create for hospitals a never-ending need for new capital. Some, especially those with a high profile have been able to find capital for expansion or relocation from a mixture of asset sales, donations (capital campaigns), bequests, surpluses and loans. Some, however, especially in regional centres are not coping so well. Over the past thirty years many private hospitals, especially those operated by various Protestant denominations have been sold to for-profit hospital chains. Most remaining nonprofit hospitals are operated by organisations associated with the Catholic Church. Those funded as public hospitals receive capital funding in state government health budgets. Of those operated as private hospitals, some have faced difficulties finding the capital needed to refurbish and re-equip. Some have been sold to for-profits, but more recently, in NSW at least, the Church has formed an overarching entity to manage many of the remainder (and many aged care facilities as well). This has enabled them to obtain the best financial advice, to pool resources and access other church sources of finance.

The most prominent role played by nonprofits in Australia's education industry is in schooling where they hold one third of the market. This share has grown by several percentage points over the past decade. Almost all nonprofit schools are associated with a Christian denomination or a non Christian religion. On average, more than half their operating revenue comes from government support for their pupils. The support is graduated to reflect parents' capacity to pay, but on the basis of the average income of the statistical district wherein the parents reside. The rest of the current income of nonprofit schools comes from fees. New schools need capital to start up; others need it to expand or to renew ageing facilities and to introduce new equipment, such as IT. All established schools have to meet new standards, particularly health and safety standards to

retain their registration. For many this means replacing ageing demountables with more substantial accommodation.

The long-established elite schools are able to rely on capital campaigns and regular tax deductible donations to their school building funds. Bank loans are easily serviced from their high fees. Their facilities have improved remarkably over the past decade, or more generally since the first government capital assistance began flowing in the 1960s. Schools belonging to the major denominations such as Catholics and Anglicans can rely on the support of higher levels of the church, such as a diocese or synod, especially diocesan or state level church 'banks' or development funds. As an example, the Catholic Education Office of one diocesan school system that turns over slightly more than \$100 million annually spent \$90 million dollars over the past 5 years on major capital works, including \$40 million on a new K-12 school in a rapidly developing area. While government capital grants covered around 8 per cent, the great bulk of the capital was borrowed from the diocesan development fund at near commercial rates. The Office estimates that it should spend another \$70 million in improvements and expansion over the next 5 years, but is unable to service any more loans for several years. By contrast, many of the nonprofit schools that have started over the past 30 years, often associated with newer Pentecostal churches, do not have a larger church structure from which to draw support. The average income of their parent body requires that they charge low fees. They too face regulatory pressures to upgrade their schools, but have few savings and despite guaranteed cash flows, find banks uninterested in their case. Possibly 15 per cent of private schools will be forced to close if capital cannot be found.

In sport, recreation and the arts, specialist facilities (grounds, theatres and halls) are provided for a fee by other entities, most often governments. One exception is the many community radio and television stations that have begun the past three decades. They all face the need to re-equip their studios and broadcasting facilities as a result of a foreshadowed shift to digital transmissions. Larger hospitality clubs are generally able to borrow to refurbish facilities or to expand. Many smaller clubs have been unable to do so and have closed, leading to a growing concentration of club membership in fewer large clubs.

Many nonprofits that are unable to obtain capital to upgrade facilities are in that position because of failures in their management and governance. There are other nonprofits that are well managed but unable to expand because they cannot access the capital they need. The most important area is housing.

Compared with the United Kingdom or the United States, in Australia the nonprofit sector has a relatively small role in the provision of housing for low income or disadvantaged people. While nonprofit organisations pioneered the provision of housing loans to working people, the provision and management of low income rental housing was developed by state government authorities after 1954 with Commonwealth government assistance. Beginning in the 1980s however, nonprofit housing associations emerged to manage housing stock mainly owned by government authorities. Many of these associations are small, but a few large housing associations have developed, with financial and risk management skills beyond those needed simply to manage housing stock. Many of these large associations also own some of their housing stock and are keen to

expand their role, raising capital from private sources to do so. However, the high cost of land in the capital cities and some regional centres makes it difficult to provide (affordable) housing to low income Australians without some form of government support. Generally this support, when it is provided, is in the form of government capital grants which can be leveraged to raise private capital. This capital is limited in quantity and scope (it is not available in some states) and, as a result, there is a significant constraint on the capacity of housing associations to meet the undeniable need for affordable housing.

Housing associations are indirectly supported by the Commonwealth government through rent assistance paid to people receiving government pensions and benefits (but so too are private landlords renting to low income tenants), and through favourable rules for tax treatment under the GST and for some other state and local government charges. Many housing association leaders argue that as well as direct financial support, governments need to provide greater certainty that particular concessional treatments will remain in place if they are to convince banks or other financial institutions to lend to them over the long term. The question of how to dramatically expand the provision of affordable housing has generated Australia's most innovative and sophisticated policy work around how to mobilise private capital for public purposes. Leaders of nonprofit housing providers and peak organisations have been contributed to this work, along with housing industry peak organisations, some state housing authorities and the government funded, university based Australian Housing and Urban Research Institute¹.

While this sophisticated research and modelling has been going on for many years, it has produced almost no actual policy initiatives. Government treasury departments remain indifferent. It is a sobering reminder of the challenges faced by the nonprofit sector in having its capital problems recognised and addressed by governments.

Two other sets of nonprofits that face significant constraints to growth because of difficulties accessing capital are those providing housing for people with disabilities and those providing employment and training services. In the former case specialist accommodation is required, ruling out the possibility of renting, but nonprofits providing this care are generally of only medium size and possess few assets. Consequently, banks are reluctant to consider loan applications. In the latter case successful nonprofits are large and compete with for-profit firms, but believe they could grow, or grow faster, with easier access to capital. They rarely own the buildings they operate from and have few assets. In this field there is a slow conversion to for-profit to enable access to equity capital.

The third group of nonprofits to face particularly challenging problems accessing capital are new nonprofits: those formed by one or more enthusiastic, entrepreneurial individuals who believe they have new ways to address old, or new, social problems. These often follow a social enterprise model and can be found particularly in health and social assistance, in the arts, in the environment movement and in community development, especially in attempts to revive run-

¹ Some of the analysis and modelling designed to find the best ways to use government incentives to mobilise private capital for affordable housing can be found at www.ahuri.org.au and www.nchf.org.au.

down rural communities and provide work for their young people. They are an important source of social innovation, but many such initiatives are still-born because they are unable to access capital. In some cases initial capital can be found from foundation grants, but these are restricted to organisations that have met the Tax Office's often confusing tests to qualify as a deductible gift recipient. But even those that are able to receive initial support from grants and have evidence that their business model is profitable face further barriers when those grant funds expire. Without a longer track record and assets, conventional financial institutions will not consider them.

International Practice

Nonprofit organisations in countries comparable to Australia, such as the United States and the United Kingdom also face similar problems to those confronted by Australian nonprofits. The difference is that the problems are recognised by governments and policies are in place to address them and to encourage nonprofit growth and competition with for-profits. These policies are designed to encourage private investment in nonprofit enterprise by removing or compensating for the additional risk investors or lenders believe they face. They are framed in a policy environment conscious of economic theory and research that demonstrates that nonprofit organisations are best suited for the provision of certain services, providing higher quality and requiring lower government expenditure on monitoring (Weisbrod and Schlesinger, 1986, Krashinsky, 1998, Schlesinger and Gray, 2006). Policies also recognise that many valuable new ways of responding to social problems are the product of nonprofit entrepreneurs and seek to encourage these (Badelt, 2003, Department of Trade and Industry, 2002). The major mechanisms and the forms of government support that enable them are outlined below.

In the United States the method of capital fundraising commonly used by large charitable nonprofits is the tax-free bond. A nonprofit, or group of nonprofits with a need for capital approaches a local, city or state government which, after appropriate planning and approval by the Internal Revenue Service will issue 5 or 10 year bonds that generally will be taken up by institutional investors. The return on these bonds will be tax-free and are secured by the government issuing them on behalf of the nonprofit. This method is extensively used to build or purchase and renovate low income housing, to build, extend or refurbish health and welfare facilities and large cultural nonprofits such as museums.

Another method, originally proposed by a large nonprofit low income housing provider is the use of tax credits, specifically to raise capital for low income housing. Created by the Tax Reform Act of 1986, the Low Income Housing Tax Credit (LIHTC) has in the past twenty years created almost 2 million housing units for low income families, and as a consequence, helped revitalise rundown neighbourhoods. The organisational structures that utilise the LIHTC are complex but generally involve a partnership between an organisation that will develop and manage the housing and a passive investor who will provide almost all the funds and will receive the bulk of the tax credit. Usually around 75 per cent of development costs are eligible for the tax credit (Enterprise Social Investment

Corporation, 2005). Investors use the tax credit (usually spread over 10 years) to reduce their federal tax liabilities by the amount invested in the housing project. The developer might be a nonprofit, but is more likely to be a for-profit entity, or a partnership between a for-profit developer and a nonprofit manager. Effectively, it is a method of attracting private funds and management expertise to provide low income housing with a minimum direct government involvement — there is of course a loss to the revenue via the operation of the tax credit. The federal government retains control over the overall liability by determining in a budgetary context the level of tax credits to be issued in a particular year. State housing agencies bid for blocks of these tax credits and allocate them to development proposals on a competitive basis.

Another piece of institutional innovation that addresses nonprofits' need for capital and their need for business expertise is the community development financial institution or CDFI. There are hundreds of CDFIs in the United States. The essential feature of a CDFI is that it draws funds from several different sources, including grants and loans from governments and foundations and long term loans from conventional financial institutions, sometimes raised by issuing debentures or bonds, including tax free bonds. CDFIs support nonprofit housing developments and social enterprises (and sometimes small and micro-business enterprises) with an appropriate mix of finance ranging from grants to low interest and market rate loans. In addition, and to reduce the risk associated with the investment, it carefully assesses each proposal and works with nonprofit or social entrepreneurs to ensure they have a viable business plan and appropriate business and management expertise. In this respect CDFIs behave rather like a venture capital firm. This mixture of finance plus expertise is a defining characteristic of the CDFI (Parker and Lyons, 2003).

Parts of the nonprofit sector in the United Kingdom also face problems accessing capital, and the Blair Labour government has taken steps to address this. One initiative has been to follow the United States example and to encourage the growth of CDFIs. Following a major review of finance for social development, the United Kingdom government in 2000 introduced tax breaks for investors in approved CDFIs (Social Investment Taskforce, 2000). A further initiative to facilitate the access of nonprofits to capital was the announcement in March 2007 that the government had accepted the proposal of the Commission on Unclaimed Assets and would legislate to establish a social investment bank. With initial capital of at least 250 million pounds, provided from unclaimed assets in dormant bank and building society accounts, the bank would act as a bridge between the social and financial communities leveraging further resources from private sources and the capital markets. It would also expand the provision of advice and support for new ventures (Commission on Unclaimed Assets, 2007).

Another UK government initiative has been to create a new organisational form, the Community Interest Company (CIC). This new form of company has been designed to facilitate the growth of social enterprise. It is designed as a vehicle to mobilise private initiatives, expertise and capital to address public need. It is permitted to raise capital by issuing a form of equity, though investors will have only limited voting rights and the company's assets will remain locked into its public purpose. For its champions, the CIC is a vehicle that will eventually replace

the old charity model of mobilising private resources for public purpose. In other words it envisages an equity model of raising capital for private organisations formed to pursue a public purpose.

What of Australia?

There has been little government interest in Australia in strengthening the nonprofit organisations (Lyons and Passey, 2006). Within the nonprofit sector there have been a few initiatives designed to address at least one of the dimensions of the problems that nonprofits face accessing capital. Only one of these has a major impact. This has been the development over the past forty years of church 'banks' (for example, diocesan development funds) to provide capital for nonprofits associated with the particular church. Collectively, these funds hold several billion dollars and appear to work remarkably well, but they rely on a large number of organisations sharing a dual bond: that of geography and faith.

One other development worthy of note is Social Ventures Australia (SVA), an initiative of several large social assistance nonprofits that has been funded by several corporate foundations. SVA seeks people wanting to start a new nonprofit or radically expand or re-orientate an older one. Through a process of review and advice SVA whittles the list down to two or three a year to which it provides more intensive mentoring using people with business skills. SVA covers immediate start-up capital needs with short term grants and although it does not make loans itself, it facilitates access to loan finance from banks.

A few years ago a group of nonprofits joined with Bendigo Bank to establish a Community Sector Bank. This operates as a franchise of Bendigo Bank along the lines of the community banks pioneered by Bendigo Bank in the mid-1990s. The Community Sector Bank has grown slowly, finding it easier to get nonprofits to deposit with it than to apply for loans.

Policy Options for Australia

There can be no doubt that nonprofit organisations are disadvantaged in existing capital markets. In part this is because actors in those markets do not understand nonprofit organisations, but in part it is because of the timidity and lack of financial and other business skills of nonprofit managers and boards. The CDFI model, which creates a specialist financial intermediary between nonprofits and capital markets and provides business advice to nonprofits when needed addresses both issues. As noted, in both the UK and USA, governments offer modest tax assistance to help these intermediaries (and in the case of the USA, operating nonprofits as well) raise funds from conventional investors, thereby reducing interest rate to be paid, and thus the cost of capital.

Social Ventures Australia appears to have created a successful vehicle for assisting nonprofit start-ups. It raises some grant money of its own, and provides initial business training and mentoring. For initiatives that appear to have a chance of success (and it is developing an expertise in nonprofit risk assessment) it mobilises business mentoring and loan capital from banks. It is the closest Australian example of a CDFI. Those responsible for its development could advise

on how to expand or replicate it. But while it is a suitable model to assist nonprofit start-ups, another vehicle would be needed for established nonprofits wishing to expand, or to undertake a major refurbishing of existing facilities.

One such model is the charitable tax-free bond. To create such a bond market in Australia would require amendments to the Corporations Act and the Tax Act. But there remains the question of the asset backing of the bond. In the United States, local or state governments guarantee these bonds. This ensures that should a bond issuer fail to meet payments the facilities that they are operating (and thus the lives of vulnerable people) are not placed in jeopardy. This method has been successfully used in Australia's past, most noticeably to revive the housing market after the Great Depression, when state governments backed the loans made by banks and insurance mutuals to terminating building societies. The guarantee was hardly ever called on (Lyons, 1988). Governments may be prepared to look at such a proposal given that for little or no cost to the revenue it could unlock and apply to a public purpose millions of dollars that would not otherwise be applied to such a purpose.

If there was reluctance to acquire such liabilities, the Australian government could take a leaf from the UK government and establish a social investment bank. The initial capitalisation of the bank could come from a one-off grant of say \$250 million, an easy task for a government with budget surpluses of the size that are currently achieved. Independent of government and staffed by people with banking and finance backgrounds (trained to understand the nonprofit sector) and with a board of bankers, financiers and nonprofit leaders, a social investment bank could raise further capital and support well-managed nonprofits wishing to expand, and CDFI type organisations such as SVA. It could also work with existing nonprofits needing capital to renew, but only after an agreed business plan was put in place to ensure the organisation could meet repayments. As with the UK proposal, the bank could support other intermediaries in their efforts to raise capital and gradually deepen a nonprofit capital market. The growing quantum of ethical or socially responsible investment funds looking for investment opportunities would assist this process. The experience acquired by such an institution would be invaluable in underpinning the further development of the nonprofit sector, especially its capacity for social innovation.

References

Australian Bureau of Statistics (2002), *Non-profit Institutions Satellite Account, Australian National Accounts, 1999-2000*, Cat No 5265.0, Australian Bureau of Statistics, Canberra.

Badelt, C. (2003), 'Entrepreneurship in Nonprofit Organizations: Its Role in Theory and in the Real World Nonprofit Sector', pp 139-159 in H. Anheier and A. Ben Ner (eds), *The Study of the Nonprofit Enterprise: Theories and Approaches*, Kluwer Academic/Plenum Publishers, New York.

Commission on Unclaimed Assets (2007), *The Social Investment Bank: Its Organisation and Role in Driving Development of the Third Sector*, Commission on Unclaimed Assets, London.

Department for Trade and Industry (2002), *Social Enterprise: A Strategy for Success*, DTI, London.

Enterprise Social Investment Corporation (2005), 'Tax Credit Syndication', www.enterprisefoundation.org/esic/taxcredits/.

Hogan, W. (2004), *Review of Pricing Arrangements in Residential Aged Care — Full Report*, Department of Health and Ageing, Canberra, <http://www.health.gov.au/internet/wcms/publishing.nsf/content/health-investinginagedcare-report-index.htm>.

Horin, A. (2006), 'St Vincent's Sale Raises Fears for Aged Care', *Sydney Morning Herald* 10 November.

KPMG (2005), *Financing Issues for Social Enterprises and the Not-for-Profit Sector*, Department for Victorian Communities, Melbourne.

Krashinsky, M. (1998), 'Does Auspice Matter? The Case of Day Care for Children in Canada', pp 114-123 in W. Powell and E. Clemens (eds), *Private Action and the Public Good*, Yale University Press, New Haven.

Lyons, M. (1988) 'Ted Tytherleigh', pp 388-400 in B. Schedvin and R. Appleyard (eds), *Australian Financiers*, Reserve Bank of Australia, Sydney

Lyons, M. (2001) *Third Sector: The Contribution of Nonprofit and Cooperative Enterprises in Australia*, Allen and Unwin, Crows Nest.

Lyons, M., A. North-Samardzic and A. Young (2007), *Do Australia's Nonprofits Face a Capital Crisis? Report for the National Roundtable of Nonprofit Organisations*, National Roundtable of Nonprofit Organisations, Melbourne. www.nonprofitroundtable.org.au.

Lyons, M. and A. Passey (2006), 'Need Public Policy Ignore the Third Sector? Government Policy in Australia and the United Kingdom', *Australian Journal of Public Administration* 65(3):90-102.

Macquarie Bank (2005), 'MCAG — Acquisition of 95% Interest in Retirement Care Australia' Press Release, 9 May, www.macquarie.com.au/au/mcag/news/20050406.htm.

Parker K. and M. Lyons (2003) *Community Development Finance Institutions: Evidence from Overseas and Australia*, ACCORD, University of Technology, Sydney, Lindfield.

Schlesinger, M. and Gray, B. (2006) 'Nonprofit Organizations and Health Care: Some Paradoxes of Persistent Scrutiny', pp 378-414 in W. Powell and R. Steinberg (eds), *The Nonprofit Sector: A Research Handbook*, Second Edition, Yale University Press, New Haven.

Social Investment Taskforce (2000), *Enterprising Communities: Wealth Beyond Welfare. A Report to the Chancellor of the Exchequer*, Social Investment Taskforce, London.

Weisbrod, B. and M. Schlesinger (1986), 'Public, Private, Nonprofit Ownership and the Response to Asymmetric Information: The Case of Nursing Homes', pp. 133-151 in S. Rose-Ackerman (ed.), *The Economics of Nonprofit Institutions: Studies in Structure and Policy*, Oxford University Press, New York.

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Break Fee Restrictions: Where's the Harm?

Jessica Curtis and Sean Pinder

The Takeovers Panel, the primary authority charged with resolving disputes arising within the Australian market for corporate control, defines a break fee as being (*Guidance Note 7: Lock-up Devices*, s. 7.15):

... an arrangement entered into between a bidder or potential bidder and the target of a proposed takeover bid or merger. Some form of consideration will be payable by the target if certain specified events occur which have the effect of preventing the bid from proceeding or causing it to fail (triggers). These events will typically be outside the control of the bidder (but not necessarily of the target or its shareholders).

Break fee agreements evolve from merger negotiations which are inherently 'friendly' and thus do not appear in hostile takeover bids. The process is initiated when the target and potential acquirer enter into discussions, commencing with a negotiation of the terms of the merger agreement. As a matter of course the bidding party will undertake extensive due diligence and through continued negotiation the deal premium and break fee are agreed to. The agreement is then made public along with the details of the break fee agreement when the offer closes. This is followed by the release of the target and bidders statements. Disclosure of the break fee agreement in these documents will identify the particular circumstances (the 'triggers') that render the break fee payable (for example, target directors not recommending the bid, or shareholders of the target accepting another offer thereby causing the initial bid to fail). So long as none of the triggers occur before the offer closes the merger will be successful and no break fee paid.

Break fee agreements have been a common feature of the US market for corporate control for at least 15 years. Up to 42 per cent of all completed and withdrawn mergers in that market included some sort of break fee agreement (See, for example, Bates and Lemmon, 2003; Officer, 2003; and Rosenkranz and Weitzel, 2005). In Australia, the incidence of break fee agreements has increased significantly in recent years, increasing from only three deals in the year 2000 (representing 3.5 per cent of bids made) to 49 deals in 2006 representing 43.4 per cent of the offers made (Connect4 database). Table 1 provides details of the incidence, and size, of break fees over the last six years in Australia.

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Table 1: The Changing Importance of Break Fee Agreements in Australia

<i>Year</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>Total</i>
Number of deals with break fee agreements	3	5	10	15	20	19	49	121
Percentage of deals with break fee agreements	(3.53%)	(6.10%)	(17.24%)	(19.74%)	(27.03%)	(31.15%)	(43.36%)	(22.04%)
Median size of break fees	\$6.40M	\$5.00M	\$1.00M	\$1.00M	\$2.73M	\$1.00M	\$1.59M	\$1.80M
As a percentage of deal value	1.17%	1.18%	0.96%	1.00%	1.00%	0.88%	0.98%	1.00%
Average size of break fees	\$14.9M	\$49.65M	\$1.14M	\$6.47M	\$4.01M	\$29.10M	\$5.21M	\$10.62M
As a percentage of deal value	1.08%	1.63%	1.28%	0.98%	1.09%	0.92%	1.99%	1.06%

Note: This table shows the number (and percentage) of bids that included break fee agreements between the years 2000 and 2006 inclusive. It also reports the median and average size of the agreed break fees expressed in both dollar terms and as a percentage of the initial deal value.

Source: Connect4 database.

The importance of break-fee agreements is evident not only in their incidence, but also with respect to the significance of the deals in which they are utilised. For example, consider the recent high profile merger between WMC Resources and BHP Billiton. In late 2004 WMC became the target of a hostile takeover bid from Xstrata. The directors of WMC declined to endorse the offer and released statements saying they would pursue all other options. The board subsequently entered negotiations with BHP Billiton who, having been induced by the break fee, announced a cash offer to acquire the entire share capital of WMC. This valued WMC at \$9.2billion, and a premium of \$800m to Xstrata's offer (\$0.65 per share). The terms of the break fee agreement were contained in the deed of undertaking and included such triggers as a successful competing takeover proposal, or the directors of WMC withdrawing their approval of the deal. Andrew Michelmore, chief executive of WMC said at the time that '... (the break fee) was a requirement to get what we believe is a very good offer on the table' (Phaceas, 2005). Further it is made clear in the deed of undertaking that the break fee was entered into 'in order to secure the offer'. Mid-way through 2005 BHP Billiton became entitled to 90.6 per cent of voting power and proceeded with compulsory acquisition of WMC.

The use of break fees in Australia is regulated through the application of *Guidance Note 7: Lock-up Devices* (GN7) which was first issued by the Takeovers Panel in December 2001 (later revised on 15 February 2005). This article argues that these regulations are misguided in that they place excessive emphasis on protecting shareholders from potential agency costs while ignoring the benefits that may flow to target company shareholders when target management is able to employ a break fee as simply another tool when negotiating with potential acquirers. We describe a number of alternative theories which predict different wealth effects on target company shareholders. We then go on to describe empirical evidence that suggests a positive relationship between break fees and outcomes for target company shareholders from the US market where break fees are not subject to the same restrictive guidance as operates in Australia. We then explain how the adoption of the current approach by regulators is mistakenly based upon the position taken by the equivalent regulator in the UK where the risks faced by acquirers, and hence the compensation needed to be paid to them for undertaking bids, is markedly different to that facing Australian acquirers. Finally, we propose amendments to GN7 to bring the Australian regulatory view of break fees into line with that adopted in other countries, such as the US, and point out that alternative sources of regulation already offer target company shareholders sufficient protection against a wealth transfer to entrenched managerial teams and friendly acquirers.

Alternative Theories of the Impact of Break Fee Agreements

The literature is divided with regards to the possible impact of break fee agreements upon the efficiency of the market for corporate control as well as the wealth of shareholders in the target firm. There are at least four alternative approaches to explaining why target managers may voluntarily agree to their firm being bound by a break fee agreement. It has been suggested that break fees are an example of an agency cost imposed upon target company shareholders by

entrenched management teams seeking to maximise their own personal utility by diverting control of the firm to a specific favoured acquirer. The cost to shareholders arrives in the form of a reduction in the premium that they may have received were alternative bidders not dissuaded from bidding by the presence of the break fee agreement, which if triggered, reduces the value of the target to other potential acquirers (see Bates and Lemmon, 2003; Officer, 2003; and Rosenkranz and Weitzel, 2005).

An alternative rationale for the existence of break fees involves the recognition that potential bidders are required to expend significant effort and resources in assessing the target's suitability for acquisition. Moreover, these costs are deal-specific and the potential acquirer runs the risk that having expended the effort, an alternative bidder (perhaps solicited by the target firm) enters the fray and free-rides upon the information already uncovered. In this setting, the break fee agreement is viewed as a cost-compensation device that grants the initial bidders the confidence to undertake their enquiries without fear being out of pocket if their bid is ultimately unsuccessful. Consequently, and in contrast to the agency cost-based analysis of break fees, the cost compensation approach suggests that participation in a break fee agreement enables target management to encourage more intense bidding by alternative acquirers, ultimately resulting in an increased takeover premium being received by target company shareholders.

Agreeing to a break fee may also serve to enable target management to send a credible signal to the bidder, and the market more generally, of its commitment to the merger process. A reasonable concern for any initial bidder is that following the discovery and disclosure of the synergies that would be available if the merger was to proceed, the target then reneges upon the bid and implements other, more fruitful, non-merger alternatives. Essentially, agreement to a break fee helps overcome the asymmetry in information held by the bidding and target firms about the planned course of action once the merger synergies are revealed, and, as has been demonstrated by Klemperer (1998), this can result in higher premiums being enjoyed by the target company shareholders.

Rosenkranz and Weitzel (2005) argue that it is more helpful to analyse break fees within the context of a simple bargaining process between the bidding and target firms. Their theoretical formulation suggests that by offering a break fee to the initial bidder, the target is able to secure a bid that they can then shop around to other alternative bidders. These alternative bids, or 'outside options', are then used in turn to increase the premium from the initial bidder. Rosenkranz and Weitzel demonstrate, under a certain set of conditions, that the presence of a break fee agreement will increase the premium received by target company shareholders. In equilibrium, the break fee agreement may be used in this way when the value of the target firm's outside options are neither too low or too high relative to the value of the initial bid. If the value of the outside options is too low then they will not represent a viable alternative with which to negotiate a better deal from the initial bidder. If the value of the outside options is too high relative to the initial bid, then the attractiveness of the outside option will dominate and the target will be unable to secure a more attractive bid from the initial bidder, even after agreeing to a break fee. Importantly, the authors report strong

empirical evidence in support of their theory in that their analysis of 1,232 mergers in the US between 1986 and 2003 demonstrates that the size of the break fee negotiated between the two parties is positively (negatively) related to the bargaining power of the bidder (target) firm and positively related to the takeover premium offered by the bidding firm.

To summarise:

- Agency cost arguments suggest that break fee agreements have the potential to reduce the wealth of target company shareholders as competition for the firm is adversely affected,
- A cost compensation approach claims that break fees may actually represent fair compensation for the initial bidder's efforts and the risks that they face,
- Information-based models argue that break fee agreements provide a mechanism by which management may help to overcome the asymmetry in information held by themselves versus the market generally and potential acquirers specifically, and
- A bargaining-model approach to break fees demonstrates that target company shareholders may actually be better off if they are able to utilise break fees in their negotiations in order to extract a higher takeover premium from the initial bidder.

Although the alternative interpretations of break fees discussed above are not strictly mutually exclusive, the question of the actual impact of break fee restrictions upon target company shareholder wealth is one that we will now consider.

Restrictions on Break Fees and an Illustration Using Option Payoffs

The Takeovers Panel provides some direction with respect to the circumstances under which a break fee agreement would be acceptable. The Panel's position, as stated in *Guidance Note 7: Lock-up Devices*, involves a 'bright-line' approach to regulation in that it suggests, in section 7.5, that:

To avoid putting pressure on shareholders to accept a bid or lock out a potential competitor, the Panel considers that a break fee should not in general exceed one per cent of the equity value of the target company.

Where the one per cent limit is breached, section 7.20 of GN7 very clearly places the onus on the parties to the break fee agreement to demonstrate that the arrangement is neither anti-competitive nor coercive. While it is feasible for target management to do this, there are very strong reasons why they would be reluctant to attract the attention of the regulators and the market generally by agreeing to a break fee in excess of the one per cent level. The current regulatory approach to break fees has cast a negative pall over these agreements generally as can be readily illustrated by the case of WMC Resources-BHP Billiton where the agreement was labelled by the financial press as a 'disgrace' (Kohler, 2005) and the one per cent fee 'exorbitant' (Freed, 2005). Thus despite the ability of target management to justify the use of larger break fees to the Panel, the

evidence in Table 1 shows significant clustering break fees around the one per cent level.

The Panel's view of break fees is clearly enunciated in section 7.16 of GN7 which states that 'the break fee might in many cases be viewed as an option fee paid to secure the opportunity for the target or its shareholders to consider'. This characterisation of the break fee as constituting the fee paid by target management (on their shareholder's behalf) to the bidding firm in return for the granting of an option to sell the firm for a specified price (a put option) requires some analysis.

Consider initially a takeover offer absent a break fee, the payoff to the target company shareholders constitutes a portfolio consisting of a bought (long) position in the underlying share as well as a long position in a put option with an exercise price equal to the bid price, B , offered by the potential acquirer. The total payoff to target company shareholders on the date that the offer closes (the option's expiry date) is simply the greater of the bid received or the amount, S , that could be obtained from alternative courses of action such as an offer from an alternative bidder or some type of internal reorganisation such as a divestiture or a spin-off. As with any put option, it is optimal to exercise this one, and accept the bid, whenever the value of the underlying asset, S , being the amount that could be obtained through non-merger alternatives, is less than the exercise price, B , offered by the bidding firm. The payoff from the put option implied by a standard takeover bid is simply expressed as:

$$\text{Payoff}_{\text{No Breakfee agreement}} = \text{Max}(0, B-S) \quad (1)$$

When a break fee is introduced, it is incorrect to simply assume that it can be treated as a sunk cost as one would with a standard option premium. Indeed, the break fee, F , is an option premium that is only payable if the option to accept the bid is allowed to lapse (that is, the bid is rejected). This style of option is known as a *contingent premium option* and has been described in detail by Gastineau (1994), and Kat (1994). The main effect of this feature is that when target company shareholders are faced with their decision as to whether or not to accept a bid, they need to account for the price payable for the option if the bid is rejected. Specifically, target company shareholders will accept a bid whenever the bid price exceeds the value created from alternative courses of action, less the break fee payable when the bid is rejected. The net payoff from the option implied by the takeover bid following the introduction of the break fee agreement (and *assuming* that the bid price is unaffected by the presence of the break fee agreement), is now:

$$\text{Payoff}_{\text{Breakfee agreement}} = \text{Max}(-F, B-S) \quad (2)$$

Two specific effects are readily observable from comparing (1) with (2). First, the payoff to a contingent premium put option may actually be negative as it may be optimal to accept the bid even where it is lower than the amount offered

via other non-merger alternatives, provided you are able to avoid paying the break fee. Second, comparison of (1) with (2) indicates that the introduction of a break-fee has been detrimental to target company shareholders as there is now a cost associated with accepting other non-merger alternatives. This result is consistent with the agency cost idea that suggests that break fee agreements may result in a transfer of wealth from target company shareholders to bidding company shareholders or to entrenched management teams who are able to dissuade regime change by instituting such an agreement. Given this interpretation, it is not surprising that the Takeovers Panel has decided to impose some restriction upon the size of the break fee payable.

There are two things that this interpretation of the break fee fails to account for. First, it is quite possible that in the absence of the break fee, there would not have been a bid in the first place, and hence the comparison of (1) with (2) is fundamentally flawed. Second, and perhaps more importantly, in cases where there is a viable non-merger alternative, the break fee agreement may be able to be used as a negotiating tool by target company shareholders in order to secure a greater slice of the potential synergies on offer from the initial bidder. In option pricing parlance, this would result in the exercise price of the put option, B , increasing, which in turn increases the value of the target company shareholder's position. The question of whether the target company shareholder is better off with or without a break fee requires comparison of the upside associated with the increased exercise-bid price against the downside associated with the premium that will be payable if the bid is rejected.

This analysis is consistent with the arguments of Rozenkranz and Weitzel (2005) who effectively argue that the result of the cost-benefit analysis is driven by the degree to which the put option is in (or out of) 'the money'. The put option's 'moneyness' simply reflects the value of the bid relative to the value of the target company shareholder's non-merger alternatives. If the value of these alternatives is relatively low, then the put option is deep in-the-money and the positive exercise price effect, via the increased bid, will dominate. If the value of the alternatives is high, relative to the bid price, then the increase in the probability that the premium will be paid will begin to dominate and target company shareholders may be worse off if a break fee were agreed to.

The preceding analysis has argued that there are cases in which payoffs to target company shareholders may be enhanced when a break fee agreement is entered into. It is now appropriate to consider the empirical evidence demonstrating the *actual* impact of break fees upon target company shareholder wealth.

Empirical Evidence on the Impact of Break Fees

It is important to consider the international evidence of the impact of break fees on target company shareholder wealth for two reasons. Firstly, break fees are a relatively recent innovation in the Australian market for corporate control and, as a consequence of the small sample size, there is no published empirical work to date. Secondly, break fees in the US, where most of the empirical work has been performed, are not regulated using a bright-line approach. Restrictions on break fees have instead been imposed retrospectively in that it has largely been left to

the courts to interpret whether a particular break fee provision constitutes shareholder coercion or a betrayal of target management's fiduciary duties. Consequently, researchers in the US have been able to observe a spread of break fees that are largely unbounded by regulatory constraints, such as the Tkeovers Panel's one per cent guideline, and hence can answer more fully the question of whether shareholders are better or worse off when negotiated break fee agreements are in place.

What is the relationship between break fees and the premium received by target company shareholders? If break fees represent sweetheart deals with friendly white knights and operate to protect entrenched managerial teams and deter competing bids, we would then expect to see a negative relationship between the presence or size of the break fee and the premium received by target company shareholders. However, the overwhelming evidence has been to the contrary. Officer (2003) examines 2,511 mergers in the US over the period 1988 to 2000 and reports that target company shareholders receive a premium that is an average of seven per cent higher when a break fee agreement is in place. This is supported by Bates and Lemmon (2003) who report that premiums are between 3.7 per cent and 6.3 per cent higher when a deal contains a break fee. Rozenkranz and Weitzel's (2005) examination of 1,232 successful takeovers also finds a positive relationship between bid premiums and the presence of break fee provisions. Furthermore, an examination of the share price returns that accrue to target and acquirer company shareholders around the time of the takeover (and break fee) announcement indicates that these fees are not used as an anti-competitive device to dissuade the entry of competing bidders. Bates and Lemmon (2003) report that while the presence of a break fee increases the probability that the deal will be completed, their evidence rejects the notion this is to the detriment of target company shareholders. Indeed, when they examined the share price reaction to the announcement of a takeover, the presence of a break fee was positively associated with target company shareholder returns. Further, there was no evidence that share returns to bidders were related to the presence of break fees which is contrary to the notion that these fees involve a systematic transfer of wealth from target to bidding company shareholders.

The evidence indicates that in circumstances where break fees are not constrained, their use has a positive influence on target company shareholder wealth. In contrast with the US where break fees average between three and four per cent (see Bates and Lemmon, 2003; Officer, 2003; Boone and Mulerin, 2005), the regulatory environment in Australia has produced break fees that noticeably cluster around one per cent. In the face of such overwhelming evidence of the positive impact of break fees on the outcomes for target company shareholders, it is appropriate to consider the background to the adoption of the current approach in Australia.

Background to the Current Regulatory Approach

Guidance Note 7 emanates from the *City Code on Takeovers and Mergers* ('Code') which regulates takeover activity in the United Kingdom (particularly Rule 21.2 of the *Code* that limits break fees to one per cent of deal value). However,

considering the use of break fees in the Australian context, the adoption of similar standards to the UK is arguably inappropriate.

The bright line approach is founded upon the characterisation of a break fee as a contractual provision for liquidated damages. That is, a break fee is characterised as a pre-estimate by the parties of the likely loss that will occur if the agreement to merge does not transpire. It is therefore appropriate to cap the break fee such that it covers only legitimate out-of-pocket expenses. However, in section 7.22 of GN7 the Takeovers Panel acknowledges that cost recovery is no longer of primary importance in the justification of a break fee. This recognises that break fees can have a broader application than simply as a method of compensation, in the event of a failed bid, which necessitates greater flexibility in their evaluation. (When GN7 was released in December 2001, the primary justification of break fee use was cost reimbursement, whereas when the guidelines were re-released in February 2005 the panel had shifted focus and removed sub-sections that identified the role of break fees in cost recovery.)

Australian companies face significantly more risk when engaging in takeovers than their British counterparts. United Kingdom regulation of takeovers (The Panel on Takeovers and Mergers, 2006:Rule 9) incorporates a mandatory bid rule (MBR) that allows a bidder to acquire more than the 30 per cent threshold in a single pre-bid acquisition provided the company follows up with an unconditional cash offer or cash alternative for the remainder. The Australian model however, does not contain a MBR and has a lower takeover threshold of 20 per cent. Australian companies are therefore prevented from holding as significant a controlling stake in a target before initiating a formal takeover offer (given the absence of the MBR) and restricted to holding a smaller aggregate percentage (due to a lower threshold). Thus they face comparatively more uncertainty in bids for control. To the extent that break fees reduce the risks associated with takeover bids, their use in Australia may act as a partial substitute for the relatively smaller proportion of shares that potential acquirers are permitted to accumulate, relative to bidders in the UK. Consequently, it is entirely reasonable to argue that they should not be subject to the same restrictions as is the case in the UK. (Mannolini and Rich, 2001 argue that a mandatory bid rule, similar to that found in the UK, enables a bidder to reduce the probability that significant losses are incurred in making an unsuccessful bid.)

Finally it should be acknowledged that Australian regulation of takeover activity contains sufficient provisions to ensure the valid objectives of the one per cent guideline are still achieved. The two key hurdles for merger agreements involving break fee provisions remain. That is, the fee must neither be anti-competitive nor coercive. Further, section 7.53 of GN7 draws attention to the existence of additional regulation which may render a break fee provision 'void or unenforceable'. Break fees that realistically deter other bidders would possibly breach the target directors' duties of 'reasonable care and diligence' (*Corporation Act 2001* s180) and acting in 'good faith for a proper purpose' (*Corporation Act 2001* s181). While the size of the fee may provide an indication of improper motives it is relevant to consider the context in which the bid or merger is negotiated. A further limitation on break fees is that any unjustifiably large break

fee may constitute an unenforceable penalty¹. Additionally, it has been suggested that a break fee may be invalidated on the grounds that it breaches s 260A(1) *Corporations Act 2001* (Cth) by constituting financial assistance, or may be contrary to the common law doctrine of capital maintenance if considered an unauthorised reduction of capital (Ford, Austin and Ramsay, 2005:1242-1244, para 24.360-70).

A Proposal for Reform

Removing the one per cent limit in GN7 should be accompanied by the inclusion of a new guideline emphasising a criterion of shareholder wealth maximisation in sale of control circumstances. This reform is reflective of the 'Revlon duties' applied by US Delaware Courts when it is recognised that a company is for sale.

Under these circumstances the duty of directors changes 'from the preservation of [the] corporate entity to the maximisation of the company's value at sale for the stockholders benefit'.² In 2005 the board of *Toys 'R' Us Inc* successfully used a break fee of 3.75 per cent to attract an offer from KKR Group which represented a 123 per cent premium for shareholders over the pre-auction trading price and a 15 per cent premium to a rival bid from Cerberus Capital Management. Legal analysis of this agreement resolutely endorsed the board's actions emphasizing that the appropriate focus for 'Revlon duties' is the negotiation process and the subsequent result achieved for shareholders.³

The proposed guideline of shareholder wealth maximisation in sale of control circumstances is consistent with the current duty of directors to act in the 'best interests' of the company as a whole. The benefits of this proposed guideline are twofold. First, the empirical evidence from the US strongly suggests there is a positive relationship between break fees and bid premiums and the suggested change in regulation would enable shareholders in Australian target companies to enjoy these benefits as well. Furthermore, the adoption of shareholder welfare enhancement as the criterion for the regulation and evaluation of break fee agreements will restrict directors from employing agreements in any circumstance that may detract from target shareholder wealth, irrespective of whether or not the one per cent guideline has been breached.

Mayanja (2002) supports the adoption of shareholder welfare enhancement as a criterion to regulate break fee agreements, and argues that in light of this, the law should be reformed to provide clear guidance to directors using such agreements. He argues that directors should only be able to agree to a break fee provision when it is for the benefit of shareholders, and equates the benefit of shareholders with shareholder wealth maximisation.

¹ See *O'Dea v Allstates Learning System (WA) Pty Limited* (1983) 152 CLR 359 [399-400] applying *Dunlop Pneumatic Tyre Company Limited v New Garage and Motor Company Ltd* [1915] AC 79.

² *Revlon Inc v MacAndrews & Forbes Holding Inc* 506 A 2d 173 (1985) at 182.

³ *Toys "R" Us, Inc. Shareholder Lit.*, Cons. C.A. No. 1212-N (Del. Ch. June 24, 2005, Strine, V.C.).

Conclusion

The one per cent guideline is unnecessarily stringent. First, such provisions reduce the flexibility of companies to use break fees to generate higher premiums for target shareholders, an outcome which has been well documented in voluminous research from the US. Second, valid objectives of the guideline such as constraining errant management may otherwise be achieved by existing regulatory mechanisms. Furthermore, it has been shown that the UK regulatory environment, from where the current approach emanates, is not aligned with the circumstances that prospective bidders face in Australia. Consequently reform of the current guidelines would be in the interests of target company shareholders and would improve the efficiency of the market for corporate control in Australia.

References

- Bates, T. and, M. Lemmon (2003), 'Breaking Up is Hard to Do? An Analysis of Termination Fee Provisions and Merger Outcomes', *Journal of Financial Economics* 69:469-504.
- Boone, A. and J. Mulherin (2007), 'Do Termination Provisions Truncate the Takeover Bidding Process?', *Review of Financial Studies* 20(2):461-89.
- Ford, H., R. Austin and I. Ramsay (2005), *Fords Principles of Corporations Law*, 12th ed. Butterworths, Australia.
- Freed, J. (2005), 'WMC Coy About Alternative Bid', *The Sydney Morning Herald* 30 March.
- Gastineau, G. (1994), 'An Introduction to Special-Purpose Derivatives: Roll Up Puts, Roll Down Calls, and Contingent Premium Options', *Journal of Derivatives* 2(4):40-43.
- Kat, H. (1994), 'Contingent Premium Options', *Journal of Derivatives* 2(4):44-54.
- Klemperer, P. (1998), 'Auctions with Almost Common Values: The 'Wallet Game' and its Applications', *European Economic Review* 42:757-769.
- Kohler, A. (2005), 'Chip Throws Out the Rule Book', *The Sydney Morning Herald* 9 March.
- Mannolini, J. and A. Rich (2001), 'Break fee Agreements in Takeovers', *Company and Securities Law Journal* 19:222-249.
- Mayanja, J. (2002), No-shop, No-talk and Break-up Fee Agreements in Merger and Takeover Transactions: The Case for a Fresh Regulatory Approach, *Australian Journal of Corporate Law* 14:1-25.
- Officer, M. (2003), 'Termination Fees in Mergers and Acquisitions', *Journal of Financial Economics* 69:431-467.
- Phaceas, J. (2005), 'Michelmores Defends Break Fee as Full-Value Insurance', *West Australian* 11 March.
- Rosenkranz, S. and U. Weitzel (2005), 'Bargaining in Mergers: The Role of Outside Options and Termination Provisions', Working Paper 05-32, Utrecht School of Economics.
- Takeovers Panel (Australia) (2005), *Guidance Note 7: Lock-up Devices*, Reissued 15 February, <http://www.takeovers.gov.au/content/917/download/gn07.pdf>.

The Panel on Takeovers and Mergers (United Kingdom) (2006), *City Code of Takeovers and Mergers*, 8th ed., 20 May.

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Child Care Affordability and Availability

**Rebecca Cassells, Justine McNamara, Rachel Lloyd
and Ann Harding**

The changing shape of the family and of women's role in society, together with an increased economic necessity to participate in paid work has meant that child care has become one of the biggest issues for Australian families and social policy makers today. An increasing proportion of mothers entering the workforce has been associated with a parallel increase in the need for non-parental child care. Child care in the shape of informal and formal care aims to fill this gap. Today, the labour force participation rate of women has reached 57 per cent; twenty years ago it was 44 per cent (ABS, 2005b). On the other hand, women remain the primary caregivers of dependent children. As a result, child care demand and use has grown rapidly over the past two decades. In 2004, the Australian Government supported 561,876 child care places (Productivity Commission, 2005). Child care has been shown to benefit both society and the child. It does this, for example, by providing parents (particularly women) with an opportunity to participate in the work force, increasing workforce attachment and human capital, and decreasing reliance on welfare payments (Anderson, Foster and Frisvold, 1999; Blau, 2000; Hofferth and Collins, 2000). While causal relationships between the availability and affordability of child care and female labour force participation remain the subject of debate in Australia and elsewhere, there is substantial work that suggests a connection between the two (Baxter, 2004). Evidence suggests that difficulties experienced in accessing affordable and good quality child care interfere with the ability of mothers of young children to participate in the workforce (Hofferth and Collins; Kisker and Ross, 1997).

Quality child care in the 'early years' is also considered to be beneficial to a child through providing a stimulating, educational and caring environment that aids a child's social, educational and physical development (see, for example, Anderson, Foster and Frisvold, 2004; Burchinal *et al*, 1996). Studies have shown that quality early childhood programs serve as an early intervention device, aiding in reducing future social problems such as crime, unemployment and teenage pregnancies (Weikart, 1998). Child care has also been considered to be an important instrument to encourage higher reproduction and fertility rates in nations experiencing falling fertility levels (OECD, 2004). Castles (2002) found high use of child care to be strongly correlated with high fertility rates.

It is important that high quality child care is accessible to all Australian families. Affordability, together with availability, determines a family's ability to access child care services (Press and Hayes, 2000). Through analysis of the Household Income and Labour Dynamics of Australia (HILDA) survey, we attempt

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to inform Australian researchers and policy makers about the problems associated with accessing child care. We also provide some key statistics about child care use in Australia using data from the HILDA survey and changes in the child care consumer price index.

The next section of the paper details the HILDA survey — its purpose, coverage and limitations, followed by a description of the methodology and the variables used. The fourth section provides the background of child care in Australia, current use patterns and government child care policy. The fifth section details the analyses of self-reported problems with affordability and availability of child care and an analysis of patterns in the child care CPI, while conclusions drawn from the research are provided in the final section.

The HILDA Survey

The HILDA survey is a longitudinal survey funded by the Commonwealth Government through the Department of Family and Community Services (FaCS). The Melbourne Institute of Applied Economic and Social Research, together with the Australian Council for Educational Research and the Australian Institute of Family Studies, have responsibility for the survey's design and management.

The information presented in this paper relates to the household file of the Wave 2 HILDA survey (comprising 7,245 households and 13,041 responding persons), and Wave 2 household weights are used throughout (HILDA, 2003). Wave 3 of the survey was released subsequent to this research. The survey includes private households only, and excludes those persons residing in remote and sparsely populated areas of Australia.

While the HILDA survey provides a rich source of data about child care in Australia, there are limitations to the data, which need to be kept in mind when interpreting the results presented here. For example, data about child care problems were only collected where the parents had used or thought about using child care for paid work, leaving problems that households were experiencing with child care not related to unpaid activities, such as study and exercise, unreported.

Methodology

Descriptive statistics have been calculated for households experiencing difficulties with child care availability and affordability by particular household characteristics and other variables. The statistical significance of the relationships examined has been calculated using bivariate logistic regression. A description of the variables used is given below, and results presented in the following section.

Variable descriptions

We have defined child care as non-parental care for children, either in or away from their place of residence. We have further divided child care into formal and informal care. Formal care is defined as regulated care away from the child's home. The main types of formal care include before and after school care, long day care, family day care, occasional care and preschool. Informal care is defined as non-regulated care, arranged by a child's parent/guardian, either in the child's

home or elsewhere. It comprises care by siblings (including step siblings), by grandparents, by other relatives (including a parent living elsewhere), and by other people such as friends, neighbours, nannies or babysitters (ABS, 2003).

In order to identify the presence of problems with child care affordability and availability, we examined a set of variables available in the HILDA survey, which were based on questions asked of all households with children aged 14 and under that had used or thought about using child care to undertake paid work. These questions covered parental perceptions of various problems and difficulties with child care in the previous 12 months. The problems and difficulties included:

- finding good quality child care;
- finding the right person to take care of a child;
- getting care for the hours you need;
- finding care for a sick child;
- finding care during the holidays;
- the cost of child care;
- juggling multiple child care arrangements;
- finding care for a difficult or special needs child;
- finding a place at the child care centre of your choice;
- finding a child care centre in the right location; and
- finding care my child/ren are happy with.

Respondents were asked to identify the level of difficulty they had with each of these issues on a scale of 0 to 10. A score of 0 indicates 'Not a problem at all', and a score of 10 'Very much a problem'. We defined households experiencing difficulties with child care as those households that reported difficulties of 7 or greater, on a scale of 0 to 10 for any of these variables. The cut-off of 7 was used after careful consideration, but another cut-off may also be appropriate. In earlier analyses the Department of Family and Community Services (FaCS, 2005) has used a score of 8 and above. Obviously, the higher (or lower) the cut-off score used the fewer (or greater) number of households will appear to be experiencing problems.

Costs of child care are calculated by summing weekly household expenditure across all forms of child care and all children in each of three categories: school-age children during term; school-age children during school holidays; pre-school age children. These components cannot be directly summed to achieve a total, as the school-age variables refer to different types of weeks in the year (that is, school term and holiday), and costs and care for school age and non-school age children differ so substantially that keeping these two age groups separate makes our results easier to interpret.

Much of our analysis focuses on differences between couple and lone-parent families in terms of parental perceptions of child care availability and affordability. Both couple and lone-parent households are defined as households including only the parent or parents and their children, without any other resident adults. Our households are defined in this way because the presence of other adults within households can substantially affect the need for child care. All other households make up a third category of 'other/mixed households', which includes group

households, multi-family households, and other household types with children and others.

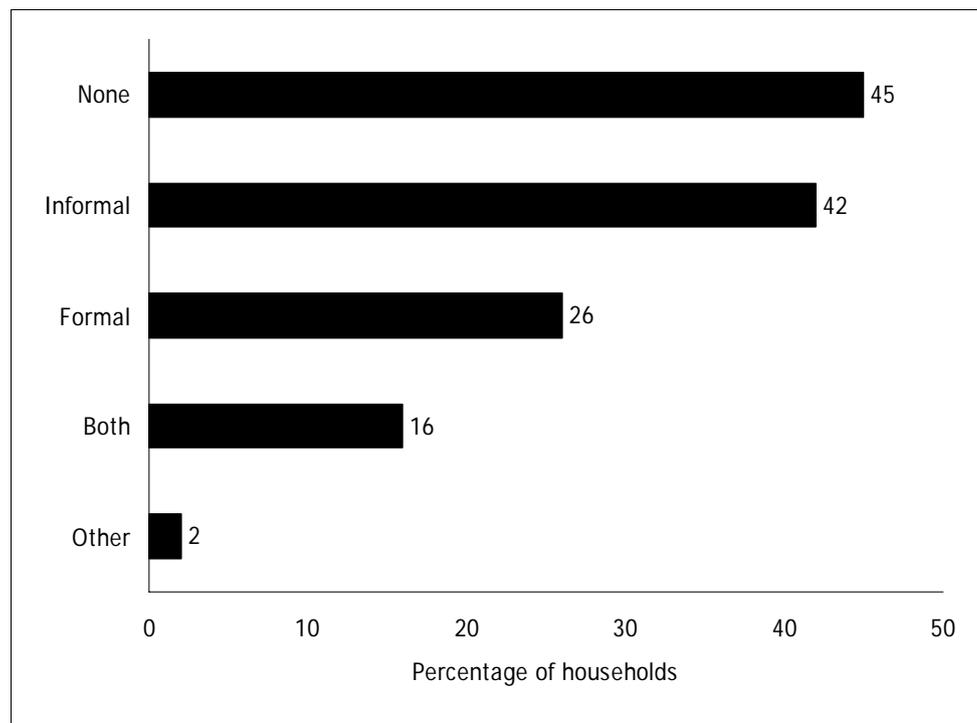
Household income is measured as gross household income per annum. Remoteness is defined using the Accessibility/Remoteness Index of Australia (ARIA). ARIA measures remoteness in terms of access along a road network to service centres (ABS, 2001).

Child Care in Australia

Child Care Use

Figures 1 and 2 refer to families' use of child care for both work-related and non-work related purposes. Figure 1 shows that in 2002, 55 per cent of households with children aged 14 or less used some type of child care. Informal care was the most frequently used type of child care in 2002, with 42 per cent of Australian families using in some type of informal care. Twenty six per cent of all Australian families used formal care, and 16 per cent used both informal and formal care arrangements.

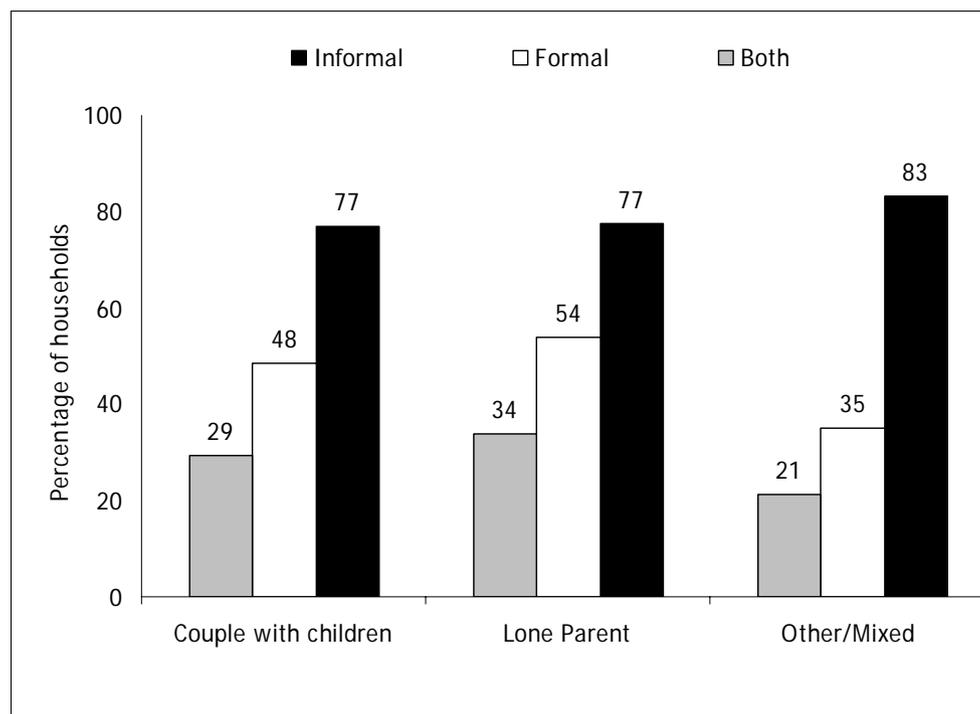
Figure 1: Child Care Use in Australia, 2002



Note: Numbers will not add to 100 due to those families using "both" care being included in the informal and formal types of care use.

Figure 2 illustrates the types of care that different household types are using. Lone parents are more likely than other family types to use formal care, with 54 per cent of these households using formal care. This may be the result of lone parents finding formal care more affordable, as they are likely to be receiving greater amounts of Child Care Benefit. It may also reflect the absence of a pool of informal care, particularly resident spouses but also other family members such as grandparents, to help with child care responsibilities. Higher use of formal care by lone parents may also indicate the need for longer hours of child care, which is often easier to obtain in a formal rather than informal setting. Lone parents are also more likely than other family types to be using both types of care, with 34 per cent of these households using both formal and informal care. The higher propensity of lone parents to use a combination of formal and informal care may be the result of these households trying to minimise their child care costs. Other/mixed households use informal care (83 per cent) more frequently than other household types. This may be due to the presence of other persons in the household who are able to help with child care responsibilities.

Figure 2: Child Care Use by Household Type and Care Type, 2002



Note: Numbers will not add to 100 due to those families using 'both' care being included in the informal and formal types of care use.

Child Care Subsidies

Child-care expenditure was first subsidised by the Australian government in 1984 through the payment of Childcare Assistance. Childcare Assistance was a means-tested payment that allowed a family's child care expenditure to be reduced if it had children under the age of 13 years in particular types of care.

On 1 July 1994, the Childcare Cash Rebate was introduced in recognition of child-care expenses being seen as a legitimate cost associated with earning an income (Schofield, Polette and Harding, 1996). The payment had no income test attached to it, but did require the beneficiaries to be working, seeking work or studying. The Childcare Cash Rebate was also broader in its scope, incorporating a wider number of child care options such as care by relatives and friends, but with the stipulation that care providers be registered with the government.

From 1 July 2000 Child Care Benefit (CCB) was introduced to replace the two existing forms of child care subsidy. CCB is a means-tested payment available to families that have children in approved or registered care. The amount of Child Care Benefit available to families is dependent on a number of variables, including the number of children in care, type of care, and family income.

More recently, the government has announced additional assistance with child care costs through a 30 per cent child care tax offset for out-of-pocket child care expenses up to a maximum of \$4,000 per child (FaCS, 2005). The offset will be available to families who receive CCB and meet work/training/study tests.

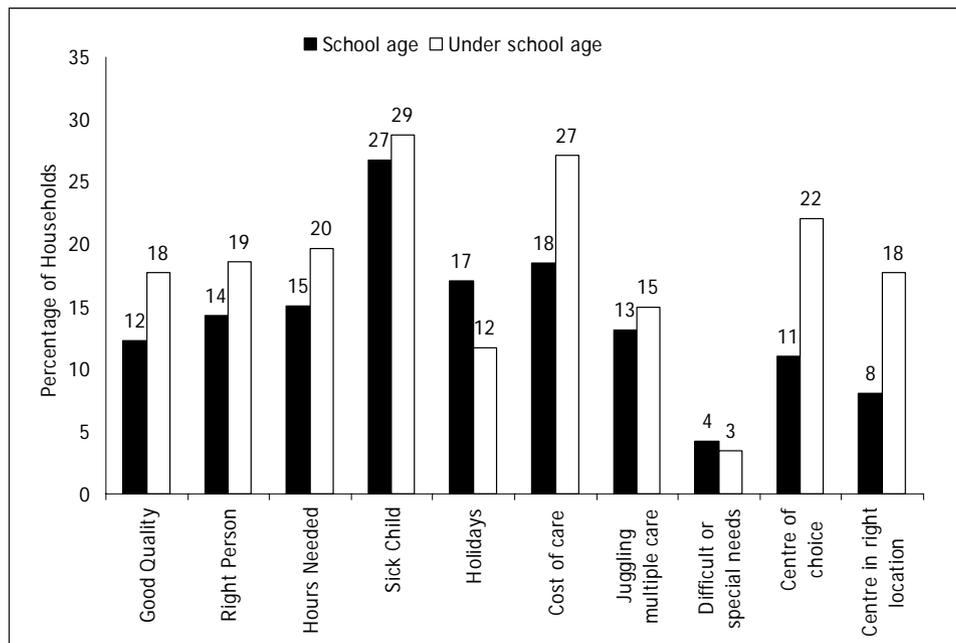
Results

Child care availability

As noted earlier, we have based our definition of child care availability on information provided in HILDA about the severity of problems experienced by parents in regard to a range of issues associated with child care use. Parents who reported a degree of difficulty of seven or more on a scale of 10 were defined for the purposes of this study as having a problem. In 2002, 520,000 Australian families with children aged 14 years or under reported at least one of the problems with child care.

Figure 3 shows clearly that households with under school-age children generally experience more problems with child care than households with school-aged children. Figure 3 shows that the greatest difficulty with child care reported by households was finding care for a sick child — with 27 per cent of households with school-aged children and 29 per cent of households with under-school aged children reporting experiencing this difficulty. This result is not unexpected, as registered and approved child-care centres must abide by strict illness rules, and the care that a parent gives a sick child is often difficult to substitute. Consequently parents are often left with no other choice but to stay home and care for the child themselves, particularly if there is no extended family or network available to help with caring for sick children. The problem is exacerbated in lone-parent households, as seen in Figure 4, and where the child is sick for long periods at a time.

Figure 3: Proportion of Households Experiencing Difficulties with Child Care by Age of Children and Nature of Difficulty, 2002



Note: Difficulties with child care were calculated as households reporting difficulties of 7 or greater, on a scale of 0 to 10, with 10 being the greatest difficulty.

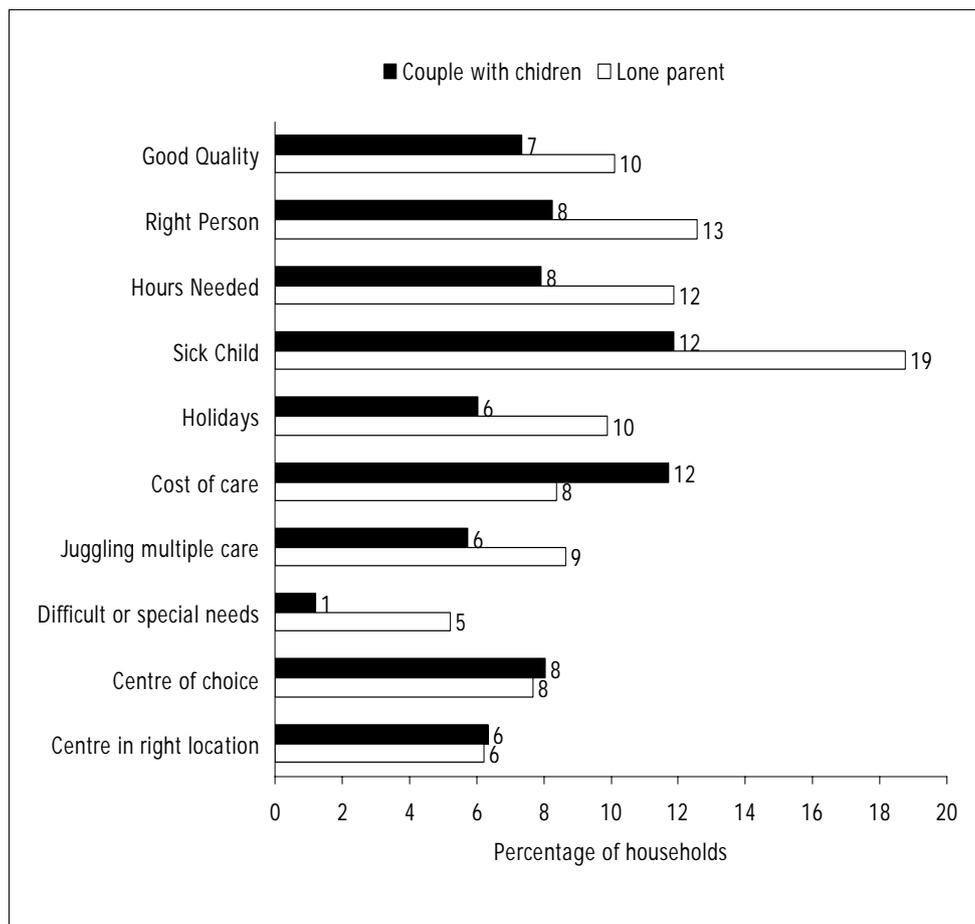
The second most common difficulty reported by households relates to the cost of child care. This difficulty is more pronounced in households with under-school age children, with 27 per cent of these households reporting difficulties with the cost of child care. Difficulties with the costs of child care are analysed further below.

Other common difficulties with child care for households with both under-school age and school-age children include finding a place at the child care centre of choice, finding a place at a child care centre in the right location, getting care for the hours needed, finding the right person to take care of children, juggling multiple child care arrangements and finding good quality child care.

Problems with child care can be further analysed by examining differences in patterns of difficulty for couple and lone-parent households. These results are presented in Figure 4, which shows that, on average, lone parents have more difficulties with child care arrangements than couple households. The figures show that problems with finding care for a sick child, finding care during the school holidays, finding care for the hours needed, juggling multiple care, finding good quality care and finding the right person were all greater problems in lone-parent households than in couple households. However, difficulties with the cost of care were reported as more of a problem in couple households than in lone-

parent households. Bivariate logistic regression analysis was used to test for statistical significance of family type for each of the difficulties reported (results not shown). We found that couple families were significantly less likely to report problems with finding care during the school holidays, finding care for the hours needed, finding care for a sick child, juggling multiple care needs, and finding the right person to care for child, than lone parents ($p < 0.05$). The likelihood of reporting problems with the cost of child care, finding good quality child, finding care for a difficult or special needs child, finding care in the centre of choice and finding care in the right location were not significantly different for couple families and lone-parent families ($p < 0.05$).

Figure 4: Proportion of Households Reporting Difficulties with Child Care by Household Type and Nature of Difficulty, 2002



Note: Other/mixed households have not been included in this analysis due to small sample sizes.

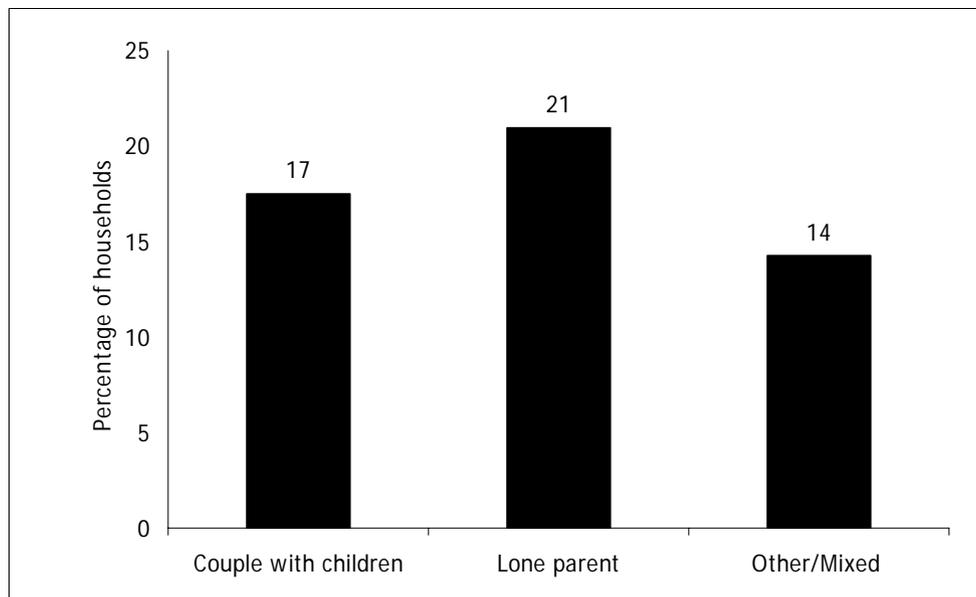
Multiple child care difficulties

Of the households that had used or thought about using child care, 24 per cent experienced at least one difficulty with child care and 75 per cent expressed multiple child care difficulties — that is, more than one problem.

Our analysis (presented in Figure 5) shows that 21 per cent of lone parents experienced multiple child care problems, as opposed to 17 per cent of couple households and 14 per cent of other/mixed households. These results are not surprising, as lone parents rely more heavily on non-parental care than households that include more adults. Other/mixed households have fewer problems with child care. These households are those that include people other than the parent/parents and dependent children, and it may be that these other household members (older children, grandparents and so on) help with child care.

When we analysed the proportion of households experiencing multiple problems with child care by child care type (results not shown), we found that households using both formal and informal care are more likely to suffer from multiple child care problems than all other households. Thirty-two per cent of households experiencing multiple child care difficulties were users of formal only care and 21 per cent users of informal only care. It is interesting to note that of those households that reported multiple child care difficulties (households that had used or thought about using child care), 5 per cent of households were not using any form of child care. This may mean that households are *not* using any form of child care because the problems they are facing are too severe.

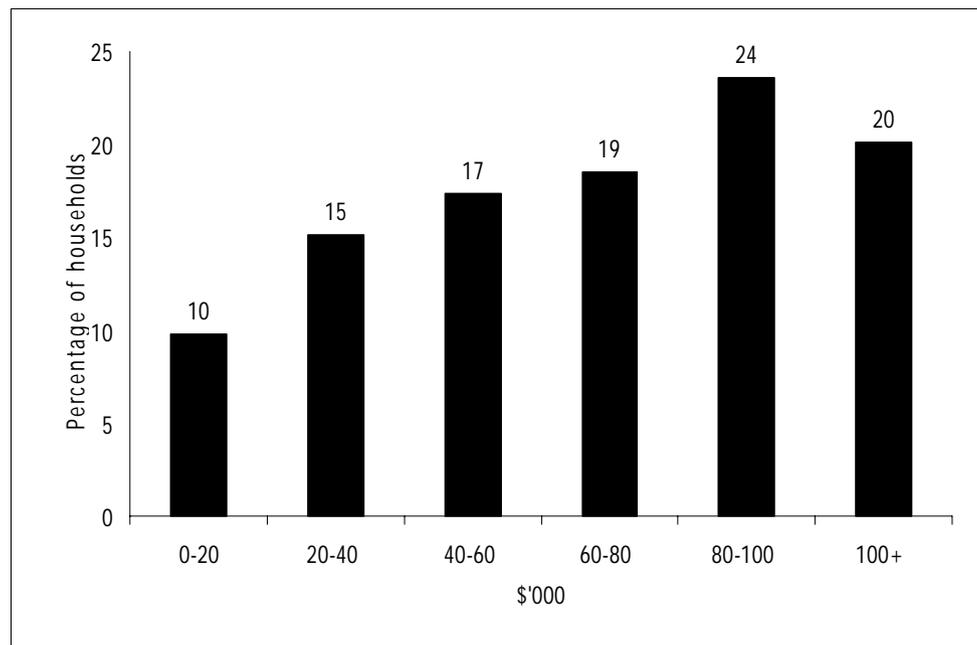
Figure 5: Proportion of Households Experiencing Multiple Child Care Problems by Household Type, 2002



As noted earlier, HILDA includes a remoteness index that is derived from the ARIA scores from the 2001 Census. Our analyses of multiple child care problems by ARIA score (not shown) revealed that residents of major cities are more likely to suffer from multiple child care difficulties than other Australians, and that the more remote a household is, the less likely it is to experience multiple child care problems. This trend may be due to the higher labour force participation of women in major cities, therefore requiring more child care, and consequently encountering more problems. It may also be that families living in country areas are more likely to have extended family and closer community networks available for child care purposes, decreasing the problems associated with child care.

Figure 6 shows that the greater the household income, the higher the proportion of households reporting multiple child care difficulties. These results are interesting, as households with higher incomes would be expected to have greater access to child care than lower income households, because their higher incomes would be likely to provide better opportunities to afford high quality child care. It may be, however, that higher income households are also those in which parents work more hours, and therefore have more complex and extensive child care needs. Further analysis of these data, particularly in regard to the links between the amount of work done by parents, income and child care use, is needed before conclusions can be drawn about the apparent relationships presented in Figure 6.

Figure 6: Proportion of Households Experiencing Multiple Child Care Problems by Household Income, 2002



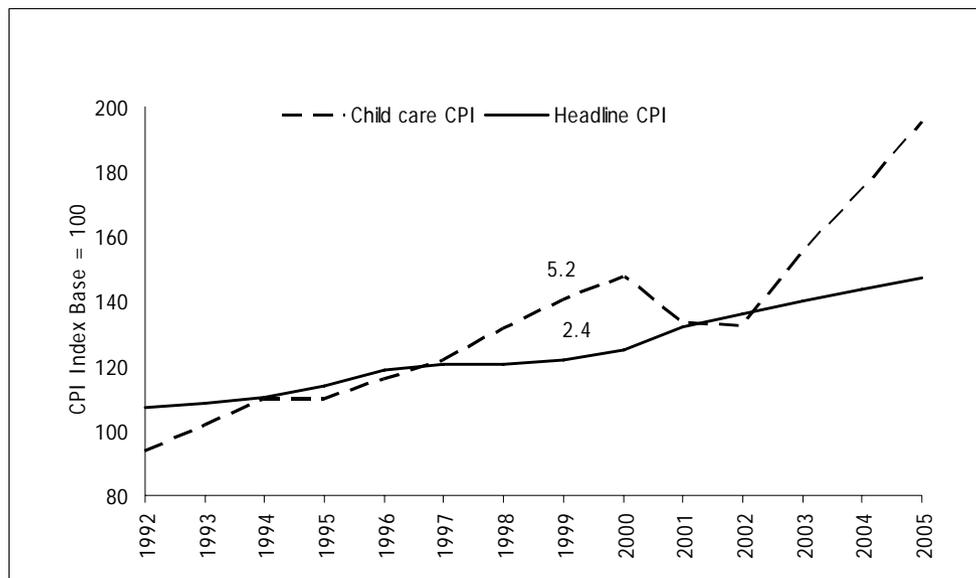
Multiple problems with child care are further exacerbated in households with 'under school age' children. Forty-two per cent of households that had an under school age child, reported multiple difficulties with child care, whereas only 32 per cent of households with a school age child reported such difficulties (results not shown). These results are not surprising as households with under school age children typically require more hours of care than those households with school age children.

Child care affordability

The cost of child care in Australia has increased significantly over the past 15 years. Figure 7 shows an average annual increase of the child care Consumer Price Index (CPI) of 5.2 per cent over the period March 1992 to September 2005. In the 12 months from September 2004 to September 2005, the cost of child care for Australian families increased by 9.1 per cent (ABS, 2005c). This is the second highest price increase for all goods and services over this period, second only to automotive fuel, which increased by 19.3 per cent (ABS, 2005c).

Figure 7 also illustrates the effect of the introduction of the new Child Care Benefit in July 2000. The price of child care fell by over 21 per cent from July 2000 to September 2001, however since then, prices have climbed very steeply. Prices remained stable for the following year, but then climbed steeply from June 2002, rising by over 62 per cent between June 2002 and June 2005.

Figure 7: Annual Changes in the Child Care Consumer Price Index, 1992-2005

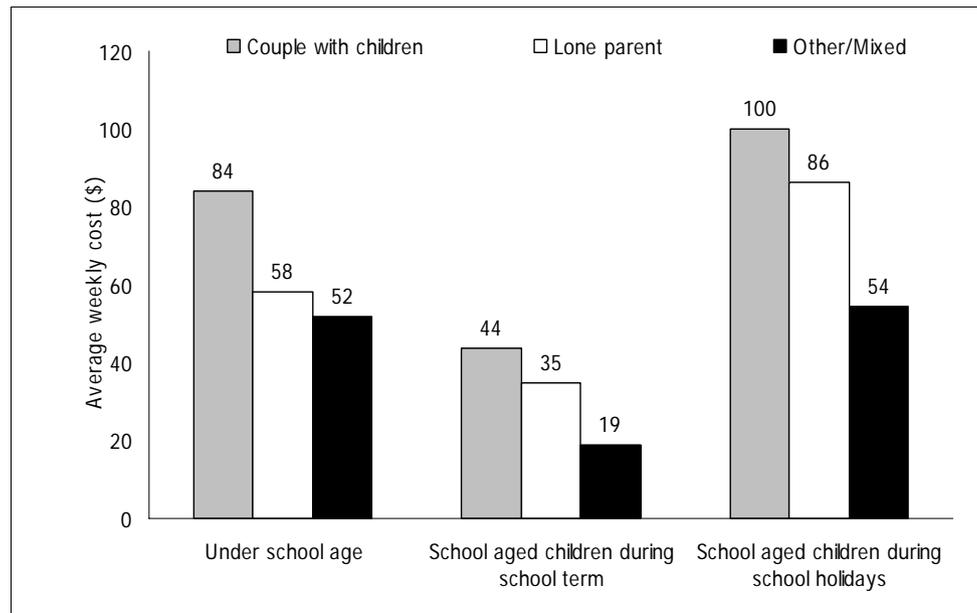


Note: The CPI used is the weighted average of eight capital cities. The average of the four quarters to June was calculated to obtain percentage changes.

Data source: Consumer Price Index, Australia, ABS Catalogue No. 6401.0.

In comparison, the headline CPI maintains a fairly gradual increase over the same period, with an annual increase of the prices of all goods and services averaging around 2.4 per cent from March 1992 to September 2005. Over the period shown in Figure 7, prices of child care rose by almost double the amount of the headline CPI.

Figure 8: Average Weekly Cost of Child Care by Household Type and Child Age Group, 2002



Note: Includes only those households with children aged 14 and under, that had a weekly cost of greater than \$0. Collection for this variable was limited to those households where BOTH primary caregivers were employed. Amounts refer to costs after Child Care Benefit deducted.

Figure 8 shows the average weekly costs of child care for various family types as shown by the HILDA survey. The most expensive care arrangement for all households was care for school-aged children during the school holidays. This is not surprising, as vacation care involves more hours than care during the school term, and not all vacation care programs attract Child Care Benefit. Couple households were paying the highest weekly fees for all care types, perhaps reflecting larger numbers of children on average in these households, higher use of care or lower rates of Child Care Benefit. The lower costs of child care to lone-parent families may in part reflect their heavier reliance on formal care, which is more likely to attract Child Care Benefit than informal care arrangements. Further analysis of use patterns and hours of child care is needed to draw any firm conclusions.

Difficulties with the cost of child care

This section presents results related to those households that reported a difficulty of 7 or more on the 10-point scale described above with the cost of child care. The population is limited to those households with children aged 14 years or less that had used or thought about using child care in the last 12 months to participate in paid work.

Figure 9: Proportion of Households Reporting Difficulties with the Cost of Child Care by Household Type, 2002

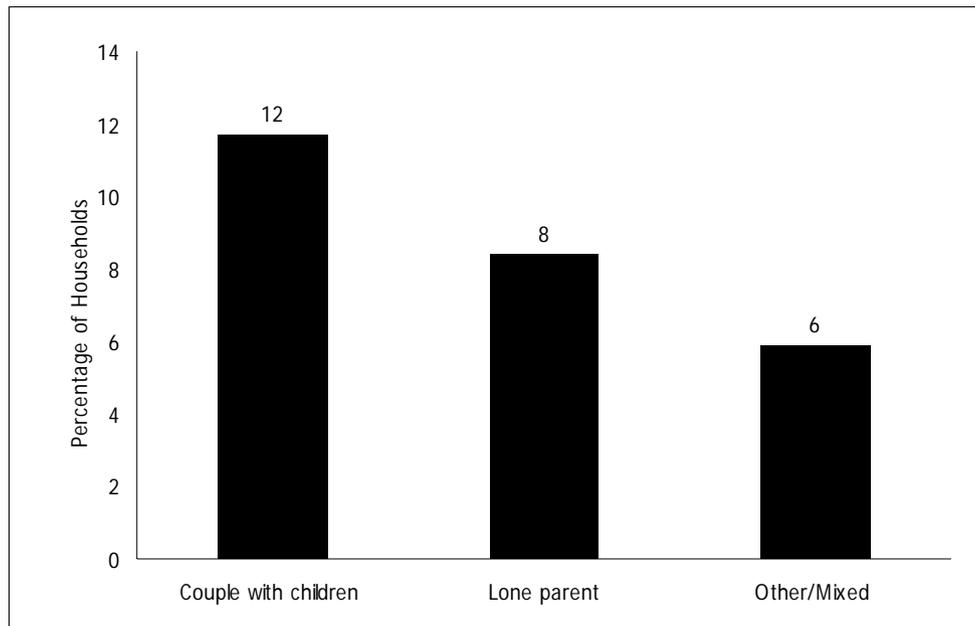


Figure 9 shows that couples with children reported more difficulties with the cost of child care than lone parents and other/mixed households (which may in part reflect the higher actual child care costs for these family types shown above). As already noted, couple families may attract lower rates of Child Care Benefit and may be using more hours of care than lone-parent households. This may be contributing to a greater level of perceived difficulty with child care costs among couple families than among lone-parent families. The results may also be due to couple families being likely to have more children than lone-parent families. The 2002 HILDA data reveal that 44 per cent of couple families had 2 children in the household where as only 32 per cent of lone-parent families had 2 children.

Further analysis revealed that the majority of households reporting difficulties with child care costs were those households using both informal and formal care and those using formal care only (results not shown). Of the households reporting difficulties with child care costs, 19 per cent were using informal care only, suggesting that formal child care may be too costly for them to access, or that these households are paying for types of informal care that do not qualify for

the Child Care Benefit. Five per cent of households reporting difficulties with cost were using no care at all, which may imply that child care is too expensive for them.

Figure 10: Proportion of Households Reporting Difficulties with the Cost of Child Care by Household Income, 2002

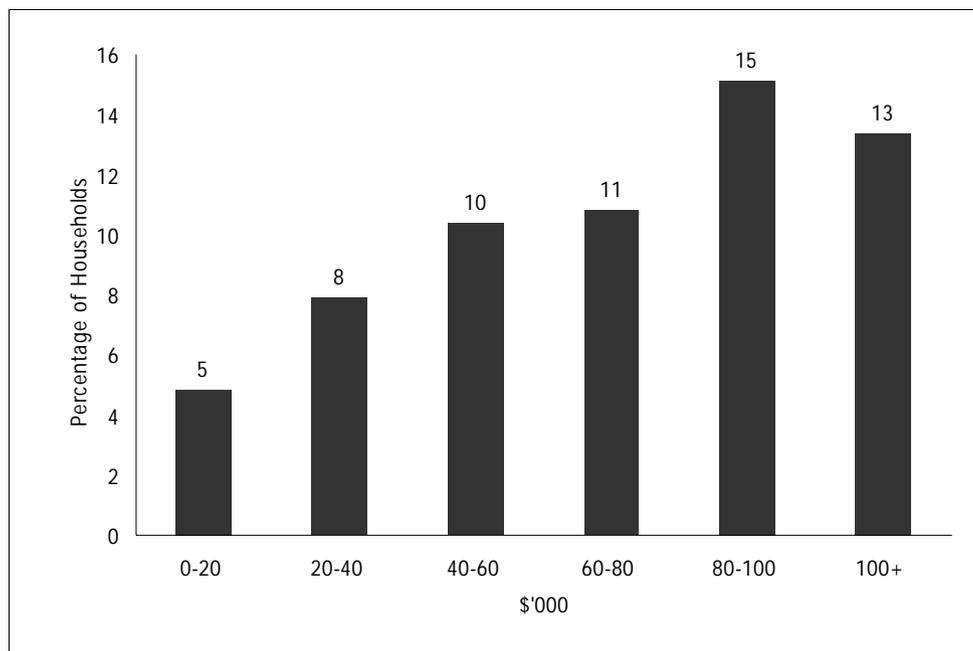


Figure 10 tells a similar story to Figure 6, where the greater the income of a household, the more difficulties that are reported. Again, it is interesting that the higher-income households recorded greater difficulties with the cost of child care than lower-income households. This may be the result of the Child Care Benefit income tests and thresholds making child care more costly for these households. In addition, as noted above, these results may also reflect relationships between income, hours worked and the amount of child care required.

Conclusion

We have used data collected by the HILDA survey to analyse self-reported problems with child care affordability and availability within Australia. We have also looked at movements in the child care consumer price index since 1990 to enhance our analysis of child care costs.

Our study showed that about one in every five households using or thinking about using child care experienced at least one of the 11 difficulties identified in the HILDA survey. This figure is based on a relatively restrictive definition of difficulties (a score of at least seven on a scale of 10 in terms of the severity of

the problem), and a more relaxed definition would have shown substantially higher proportions of households having problems with child care.

We found that for many categories of problems, a higher proportion of lone parents than couples with children households were experiencing difficulties with child care availability. Among the most notable of these difficulties were caring for a sick child, getting the hours needed and finding care during the holidays. Our results also showed that lone parents were significantly more likely to report difficulties.

Lone parents were also more likely than any other household group to be experiencing multiple child care difficulties. These results are particularly important given the current drive to move lone parents into the work force through 'welfare to work' reforms. The welfare to work program involves (amongst other things) new compulsory work obligations for single parents receiving Parenting Payment Single, when their youngest child turns 7 (Employment and Workplace Relations Legislation). These new work obligations include either working part-time for a minimum of 15 hours per week, seeking part-time work or participating in Job Network or other services. Our results have shown that already lone parent families are facing a higher incidence of difficulty with child care availability than any other household type, including juggling multiple child care arrangements. The new employment requirements are likely to amplify these difficulties, requiring more lone parents to seek work-related child care and the proportion of lone-parent families in Australia is also projected to rise by up to five per cent by 2026 — in 2001, 11.6 per cent of families were lone-parent families (ABS, 2005a). If patterns identified in this research continue, difficulties with child care will be experienced by more and more Australian families.

The price of child care has been shown to have increased at a dramatic rate since 2002, and rate of increase is currently over three times the headline CPI. Whilst the new 30 per cent child care tax offset may bring these costs down slightly, it is doubtful that it will be enough to completely negate this growth, and the rebate itself may push child care centre fees up. Our analysis of the HILDA survey showed that couple households with children were more likely to report difficulties with the cost of child care than other household types. This is interesting as it would be expected that couple households would on average have higher incomes than lone-parent households, and therefore a greater capacity to pay for child care. As mentioned above, this finding may be due to the likelihood that these households attract lower CCB payments than lone-parent households, and this may add to the perceived burden that these households bear in relation to child care costs, and also to the fact that couple households have on average more children than lone-parent households. Further analysis is required to draw any firm conclusions about this association.

Our results have shown that thousands of Australian households are experiencing difficulties related to child care affordability and availability. The study represents a first step in determining the extent of difficulties with child care affordability and availability in Australia and the possible relationships that exist between household characteristics and perceived difficulties.

References

- Anderson, K., J. Foster and D. Frisvold (2004), *Investing in Health: The Long Term Impact of Head Start*, Vanderbilt University.
- Anderson, P. and P. Levine (1999), 'Child Care and Mothers' Employment Decisions', *NBER Working Paper No. W7058*, National Bureau of Economic Research, Cambridge, MA.
- Australian Bureau of Statistics (2001), 'Information Paper: ABS Views on Remoteness', Catalogue No. 1244.0.
- Australian Bureau of Statistics (2003), 'Child Care, Australia', Catalogue No. 4402.0.
- Australian Bureau of Statistics (2005a), 'Australian Social Trends', Catalogue No. 3236.0.
- Australian Bureau of Statistics (2005b), 'Labour Force, Australia, Spreadsheets', Catalogue No. 6202.0.55.001.
- Australian Bureau of Statistics (2005c), 'Consumer Price Index, Australia', Catalogue No. 6401.0.
- Baxter, J. (2004), 'Increasing Employment of Partnered Mothers: Changes in Child Care Use', Paper presented at 12th Biennial Conference of the Australian Population Association, Canberra, 15-17 September.
- Blau, D. (2000), 'Child Care Subsidy Programs', NEBR Working Paper No. W7806, National Bureau of Economic Research, Cambridge, MA.
- Burchinal, M., N. Roberts, L. Nabors and D. Bryant (1996), 'Quality of Center Child Care and Infant Cognitive and Language Development', *Child Development* 67(2):606-20
- Castles, F. (2002), 'The World Turned Upside Down: Below Replacement Rate Fertility, Changing Preferences and Family-friendly Public Policy in 21 OECD Countries', Paper for seminar presentation in Demography and Sociology Program, Australian National University, 23 July.
- Employment and Workplace Relations Legislation Amendment (Welfare to Work and Other Measures) Act 2005*, No. 154, 2005.
- Department of Family and Community Services (2005), *Child Care News* July 17.
- Harding, A., Q. Vu and R. Percival (2005), 'The Distributional Impact of the Proposed Welfare-to-Work Reforms upon Sole Parents and People with Disabilities', NATSEM Online Discussion Paper, CP0514.
- Hofferth, S. and N. Collins (2000), 'Child care and employment turnover', *Population Research and Policy Review* 19 (4), 357-395.
- Household Income and Labour Dynamics in Australia Survey (2003), *Annual Report 2003*, Melbourne.
- Kisker, E. and C. Ross (1997), 'Arranging Child Care', *Future Child* 7(1):99-109.
- OECD (2004), *Babies and Bosses: Reconciling Work and Family Life*, Volume 2, Austria, Ireland and Japan, OECD, Paris.

Press, F. and A. Hayes (2000), 'OECD Thematic Review of Early Childhood Education and Care Policy: Australian Background Report', Commonwealth of Australia, Canberra.

Productivity Commission (2005), 'Report on Government Services', Steering Committee for the Review of Government Service Provision, Melbourne.

Schofield, D., J. Polette and A. Harding (1996), 'Modelling Child Care Services and Subsidies', National Centre for Social and Economic Modelling, Technical Paper No.10.

Weikart, D. (1998), 'Changing Early Childhood Development through Educational Intervention', *Preventative Medicine* 27:233-237.

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Distribution Effects of Labour Deregulation

Fred Argy

Well-designed liberal reforms can deliver substantial improvements in employment and average living standards. And many prove good for the poor as well as the economy. However labour market deregulation, while positive for the economy, has tended to disadvantage poorer workers (at least relative to alternative methods of enhancing workforce participation). It presents a classic efficiency/equity trade-off — 'efficiency' being about improving aggregate utility while equity is about the distribution of utility gains. This trade-off is the main focus of the paper.

The 'equity' problem for labour market policy-makers is compounded by the fact that unskilled workers have for some time been the main losers from technological change, which has tended to be skill-intensive, and from globalisation, with the increased integration of China, India and other developing economies into the world trading system and the growing practice of off-shoring business services. Adjustment costs tend to be higher for trade-displaced workers than for other job losers (Martin, 2006).

In such an economic environment, governments contemplating further labour market deregulation will be looking for advice from economists on how they can tap the potential economic gains while minimising the pain for poorer workers.

The paper starts by outlining how reforms relating to labour markets can impact unevenly on distribution and in particular on the job security and relative earnings (or both) of many unskilled workers. The paper then discusses four ways economists can respond to the distribution dimension and the main attributes and drawbacks of each. It ends up eliminating two of the options on various grounds.

The next major section of the paper focuses on the fourth response ('efficiency and equity') and argues that it is potentially superior to the first ('efficiency only') because it can perform as well on the criteria of employment and productivity (output relative to inputs) — and yet produce less social inequality. The fourth substantive section of the paper introduces other elements of 'equity' (besides income distribution) into the evaluation. When this is done, the bottom-line verdict becomes more open to value judgment.

The final section of the paper sums up the findings and discusses the appropriate role of economists in tackling equity-efficiency policy conflicts.

Distribution Effects of Neo-liberal Labour Market Policies

Efficiency enhancing reforms — those where winners outweigh losers and can be presumed to increase aggregate utility — are often socially progressive. This is

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true for example of reductions in tariff protection on goods widely consumed by low income households and the removal of many of the old forms of financial regulation such as on housing, which had largely perverse effects on distribution. But reforms which involve labour market deregulation and which are associated with reduced welfare-access often have regressive redistribution effects and cause transitional adjustment pain as well as economic gain. We will call such neo-liberal labour market policies NLM for short.

NLM is about promoting more structural wage flexibility, encouraging a shift from collective bargaining to individual contracts and giving managers greater discretion in the deployment and remuneration of staff, including greater ability to outsource and export jobs and to secure foreign labour such as guest workers. It has the effect of weakening the policy umbrella of workers' protection (through awards, unfair dismissals legislation, trade unions and immigration controls) previously available to many low-skilled workers.

Labour market deregulation is usually associated with tough welfare regimes. Measures which make welfare access more difficult for able-bodied people, such as no-payment penalties for participation failure (recently applied to sole parents and people with disabilities for the first time in Australia), make it more difficult for job seekers to refuse an unappealing job or refuse to sign an individual agreement. Their effect is to further increase the bargaining power of employers relative to vulnerable employees (those without bargaining power).

In short, in this paper, NLM refer to labour and welfare policies which seek to minimise:

- government involvement in wage determination (for example, setting a very low statutory minimum wage relative to median earnings),
- levels of worker-protection regulation (for example, on unfair dismissals, severance payments and hiring practices),
- welfare benefits for persons of working age relative to median earnings; and
- the role of trade unions in the market place.

The Howard Government's recent reform package known as 'WorkChoices' and 'welfare to work' represents an attempt to more fully embrace NLM policies (although it does not go as far as the US model in some respects, such as minimum wage regulation and welfare access).

The evidence is strong that NLM tends to increase earnings inequality. Countries with the highest levels of market income inequality (pre taxes and transfers) are those with relatively deregulated labour markets (Luciforo, 1999; Borland, 2000; Saunders, 2002:197 and 252; Forster and d'Ercole, 2005; Argy, 2006:62-67; Jencks, 2006). One study (Luciforo, 1999) found that over 60 per cent of cross-country differences in earnings differentials can be attributed to institutional arrangements on wage regulation, the role of trade unions and the structure of collective bargaining.

Deregulation also exposes many workers to greater income uncertainty and reduces their capacity to achieve their desired working hours and work-family balance — a quality of life dimension not captured by earnings statistics.

The welfare distribution effects of deregulation become magnified when a country falls into a recession but even without an economic slow-down, the

effects could be sustained for some time. A recent longitudinal study in Australia, using the Four Waves of HILDA to follow the labour market circumstances of low-paid workers (earning less than 2/3 of median hourly wage), found evidence of a 'low-pay no-pay cycle', with those in low-paid employment in one year 7 times more likely to be in low-paid employment, and two to three times more likely to be unemployed, a year later than those who were in higher paid work (Scutella, 2006).

If NLM were the only effective means of reducing the jobless rate among disadvantaged persons of working age (active or inactive), one would need to take account of these positive social effects on the jobless in the overall evaluation. However, as we shall see, there are other, equally effective means available to governments of achieving the desired employment targets.

Four Possible Responses by Economists

Against this background, we now consider four alternative stances an economist can take if asked for advice on how to address the distribution effects of NLM.

One response could be to focus only on the economic efficiency implications (what the reform will do to aggregate employment, output and consumer welfare) and assume that the gains will be 'fairly' distributed across the population in the long term. Thus a new NLM initiative would get a tick if it had significantly positive economic effects, irrespective of its short term distribution effects. We call it the *efficiency only approach*.

A second approach might be to seek to integrate distribution effects into the economic evaluation process by requiring a higher economic return (a 'loading') where the distribution effects are regressive. Under this approach, NLM would only be recommended if it met the higher hurdle rate. We call this approach the *integrated approach*.

A third response might be to recommend that the NLM reform proceed (because of its positive economic implications) but only on the condition that the tax/transfer system is used to directly compensate losers. This would mean accepting the risk that the 'passive' redistribution process might have adverse incentive effects and claw back some of the potential efficiency gains. This approach can be called the *equity first approach*.

A fourth approach would be to propose an alternative to NLM — one which would cushion or offset NLM's regressive effects without requiring any significant sacrifice of efficiency or employment. This would mean striving, as with the third approach, towards a pure 'Pareto optimal' (no losers) outcome - but through a more economically benign policy route than passive compensation. This approach can be called the *efficiency and equity approach*.

Response 1: The efficiency only approach

The first option is simply to focus on efficiency — total economic welfare or aggregate utility — and ignore intermediate distribution effects.

At the risk of over-simplification, advocates of this approach argue that:

- it is reasonable to assume rational individuals successfully maximise their own utility in the market place;
- GDP can be taken as a broad indicator of the sum of the individual preferences of citizens;
- there is plenty of evidence that NLM can increase GDP per capita over a period of time, so it meets the aggregate utility test;
- any attempt at redistribution would involve making unacceptable inter-personal comparisons of utility;
- redistribution has such high economic costs that it would prove counter-productive even for the poor;
- the benefits of NLM should 'trickle down' to everyone in due course and in the meantime there is a firm welfare safety net in place to protect losers from undue hardship.

The welfare test that is being implicitly applied here is the so-called 'Hicks-Kaldor compensation principle'. It says that a reform is justified so long as the winners are capable of compensating the losers and still remain better off than before. Under this formulation, all that is needed is that the potential be there to compensate losers without actually having to compensate them.

This approach has three advantages. One is simplicity. By looking only at two aggregate consumption (production) equilibriums — the starting point and the point when the reforms have had their full effect — it is able to ignore short term, transitional adjustment costs. And by implicitly assuming that a dollar's worth of gain to one individual deserves the same utility weight as a dollar's worth of loss to another, it is also able to side-step the distribution issue. Under this approach, economists can avoid the complex task of trying to determine winners and losers.

For economists, a second appeal of this approach is that it allows them to do what they are best at without having to intrude into other disciplines (a kind of 'horses for courses' argument).

The third argument for it is that as 'equity' is a multi-dimensional concept, it would be wrong to simply focus on income distribution (an issue we revisit below).

On the other hand, the 'efficiency only' approach is open to four serious objections.

The first is its undue focus on estimated long term GDP gains. By simply looking at two equilibrium positions, it ignores the timing of benefits and losses and transitional adjustment costs.

More fundamentally, the link between GDP and aggregate utility is not as strong as the proponents of this approach imply.

Apart from the fact that our consumption habits are often based on inadequate information about prices and quality and on non-price considerations such as rules of thumb, attitudes of peers and advertising pressure, GDP is limited by convention of national accounting and only captures the wellbeing which results from the production and consumption of goods and services, ignoring non market transactions such as household or community-based activities that are not sold. More importantly, it fails to adjust for consumption (and associated

production) which has negative effects on third parties such through pollution of the environment or through socially undesirable spending activities. For example, a GDP gain from NLM can involve an involuntary reduction in leisure, a loss of employee control over working hours, a decline in the quality of personal relationships in the workplace and at home or an increase in workers' perceived sense of income uncertainty and insecurity.

To be fair, GDP is a common benchmark employed in much of the public policy literature. But its use creates special problems for an approach which targets aggregates only and ignores quality of life effects.

A second fundamental deficiency of the 'efficiency only' approach is that it does not, as its proponents claim, avoid interpersonal utility comparisons. What it is doing is effectively assigning the same marginal utility weighting to rich and poor, implicitly assuming that an equal transfer of income from poor to rich has no effect on the aggregate sum of their satisfaction — a value judgment no less arbitrary, and in many ways less defensible, than one that assumes the poor have higher marginal utilities. As one of the fathers of modern welfare economics, Little (1957), put it, 'scarcely anyone would want to say that all changes such that the gainers could over-compensate the losers, must be good. For most people it would depend on who the uncompensated losers were' (p. 93). This is not to deny that equity issues are hard to debate objectively (noted below).

Behavioural economics studies consistently show that, although people with more income tend to be somewhat happier than those with less, an extra dollar has a higher value to a poor person than a rich person and that as people become richer, they need progressively bigger increases in income to buy an extra percentage point of happiness. Once their incomes rise above the mean, further increases do not make people much happier unless they markedly out-perform their peers. Behavioural studies also show that the fraction of time spent in an unhappy (unpleasant) state is greater on average for low income households than high income households and that people react more strongly to potential losses than to equal sized potential gains (Tversky and Kahneman, 1981; Treasury, 2004:10-11; Eurak, 2006; Kahneman and Krueger, 2006:20; Gittins, 2007:236ff).

If the benefits of NLM are very unevenly spread across social groups with different utility functions, the 'efficiency only' approach is not necessarily welfare maximising. Even if NLM increased aggregate wellbeing — it may not if the pain suffered by losers exceeds the pleasure accruing to winners — it would not, in the absence of redistribution, necessarily maximise it. That is, it may be possible through a redistribution of the gains from winners to losers to achieve more optimum conditions of production and exchange.

Moreover asking the victims of policy reform to shoulder the whole cost when everyone else benefits is likely to be damaging to social cohesion and to community attitudes to future reform.

A third weakness of the efficiency only approach is its implicit assumption that the benefits 'trickle down' to everyone in due course and in the meantime there is a firm welfare safety net to protect losers. It may well be that everyone benefits over the long term but on the US experience (where more than 90 percent of the gains from economic growth over the last quarter of a century have gone to the richest 10 per cent of the population), the trickle-down effects are

often slow and uncertain. And, while Australia's welfare safety net is effectively targeted, the benefits provided are far from generous (Whiteford, 2006).

A fourth problem with the efficiency-only approach is its dubious claim that any redistribution would be so economically counter-productive as to ultimately hurt the poor. This argument lacks credibility. We argue later that redistribution has the potential to slow down economic growth but it *need not* if market-friendly and productive methods of redistribution are used, a minimum level of labour market freedom is maintained and the scale of change is slow and gradual.

Despite its many deficiencies, the 'efficiency only' approach is very popular among economists and in this paper it will be treated as the 'baseline' option.

Response 2: The integrated approach

Economists who are asked for advice on NLM could try to explicitly build the distribution effects into their overall evaluation by assessing how the benefits and costs of the reform are spread across social groups and then giving appropriate weights to winners and losers according to their likely marginal utilities. Suppose the minimum hurdle rate for a Pareto-optimal reform (making some better off and no one worse off) is an increase in GDP per head of X per cent (in discounted present value terms). For reforms with highly regressive distribution effects, the minimum hurdle rate could be set at say X plus Y with Y being the loading.

What this approach does is redefine the efficiency-equity trade-off by insisting that society should only tolerate a decrease in the utility of the poor if it is associated with a much larger than normal increase in aggregate utility. If a reform like NLM met the higher hurdle rate, it could proceed without compensation. That approach would not prevent an increase in inequality but if the expected economic gains are abnormally large, the likelihood of trickle down effects to the poor is that much greater.

The idea is a sensible one in principle. It would force governments to examine closely the distribution effects and to recognise that an economic reform which is socially disruptive should be treated with more caution than one that is not disruptive. It could also have a high degree of public support as most Australians, if asked, would accept that the pain suffered by each low income loser for every dollar foregone would be greater than the satisfaction gained by well-off winners from each additional dollar consumed. In practice, however, it would be beyond an economist's capacity to make precise assessments of relative marginal utilities, especially when the winners and losers are hard to identify. The ultimate choice of loading (weighting for distribution) would have to be left to the Government's 'political judgment'. This would inevitably end up being arbitrary, and consequently the integrated approach might produce (at the political level) a very similar outcome as the efficiency only approach.

For these reasons, the idea will not be pursued further in this paper.

Response 3: The equity first approach

Some economists might accept that NLM should proceed unhindered and undiluted but insist that every attempt should be made to compensate fully the

losers, especially those already disadvantaged, through the tax/transfer system — even if that meant foregoing some of the potential efficiency gains.

To distinguish this response from 'response 4' discussed below, we assume that the method of compensation used here is 'passive' in character. That is:

- it relies principally on additional cash social security transfers (over and above existing social security benefits) or tax offsets;
- the assistance is offered unconditionally (except for a means test and a requirement to search for work); and
- it is principally intended as a palliative.

One example of this type of response was the Howard Government's tax and social security compensation package associated with the introduction of the goods and services tax. Another example was the set of proposals put by the so-called 'five economists' in the late 1990's which included a freeze on the minimum wage with compensation for low-paid households with tax credits or offsets (Dawkins, 2001). Again, the idea of wage insurance, which is discussed later, is a form of compensation for pay losses suffered as a direct result of reforms which facilitate retrenchment of workers. In all these cases, the compensation is seen as desirable principally on equity grounds and does not require any offsetting obligations from recipients.

The objectives of policy response 3 (equity first) are laudable — to spread the gains of NLM more widely across the population and strive for a Pareto optimal outcome.

The problems are twofold. One is that it is only feasible where the losers are clearly identifiable and their losses can be quantified. In practice many of the people adversely affected by NLM cannot be specifically targeted even if the focus is only people of low socio-economic background. In any case, while fiscal measures can compensate for wage inequalities, they cannot effectively make up for a decline in workers' quality of life due to loss of workplace control and family time.

The other problem is that increases in passive welfare and taxes can create perverse economic incentives in regard to work, saving and employment. Advocates of this approach see the trade-offs in less stark terms than those who embrace the 'efficiency first' approach but they accept that some efficiency may have to be sacrificed.

For these various reasons, the equity first option, while having merit, is not discussed further in this paper.

Response 4: The efficiency and equity approach

Another possible response might be to go back to the drawing board and look for a new policy mix which can achieve the same goals as NLM but with a better balance between efficiency and distributional equity. This is the fourth and last option — and potentially the most rewarding because it aims to maximise both efficiency and distributional equity.

The principal objective of the NLM reforms is to lift labour participation rates. It achieves its ends by allowing more room for downward wage flexibility, giving

managers greater autonomy in hiring and firing and tightening welfare access, while reducing the role of collective bargaining and regulation.

An alternative strategy can be called 'liberal-interventionist' or LI. It would retain most elements of the liberal economy built up over the last thirty years. For example, welfare support for able-bodied people would remain conditional on actively searching for work or training (with appropriate penalties for breaches). There would still be plenty of structural wage flexibility, so that wages can remain sensitive to shifts in relative productivity and structural change. And managers would retain a considerable degree of autonomy in hiring and firing (to allow firms to respond quickly and effectively to changes in market conditions).

However LI departs from the NLM agenda (completely free labour markets) in three ways.

First, it would offer extra compensation to workers who were forced by the policy change into lower-paid jobs. For example it could incorporate a system of wage insurance or temporary wage supplements for older workers who are retrenched as a consequence of LI.

Second, it would be more tolerant of social and workplace regulation, where such regulation was considered necessary to avoid creating a large population of welfare-dependent 'working poor' and where it was considered the only effective way to protect important values such as employees' right to bargain collectively and control their working hours and family time.

Third, and most importantly, the LI agenda would rely as much on social spending as on deregulation to achieve its employment objectives. The spending would be on productive ('active') social programs — those which enhance human capital and help correct labour market imperfections (such as geographical immobility). In particular, under LI, the government would invest in:

- measures to correct early childhood disadvantages;
- improved access to employment-enhancing services such as health, public education and public transport in low-income areas;
- remedial programs for older school children and youth who are under-performing;
- adult retraining and life long learning programs;
- well-funded job search and placement services, personal case management and assistance with career development;
- wage subsidies targeted at the low-skilled group;
- targeted job-creation in the community and public sector; and
- family-friendly policies such as flexible working patterns, paid parental leave and good quality and affordable child care assistance.

As well, on the supply side, it would use tax credits (in-work bonuses) to ensure that inactive people of working age had adequate financial incentive to move from welfare to work and offer more generous relocation assistance to reduce the geographical mismatch between job vacancies and job seekers.

LI programs have two distinctive characteristics. They are prepared to sacrifice some of the economically rewarding neo-liberal elements of NLM where these have potentially very damaging effects on inequality. And they involve a retreat from the more traditional methods of passive redistribution which have damaging effects on efficiency, relying instead on 'active' redistribution measures.

Evaluating Response 4 Relative to Response 1

In this section, we evaluate response 4 relative to response 1. We know that well-designed LI programs — outlined in the previous section — can produce lower inequality and higher mobility (Argy, 2006). Thus, on the equity criterion most used by economists, that is, vertical distribution, response 4 wins out.

But does it involve a heavy economic sacrifice? In particular, given its high initial demands on taxpayers, what does it do to the dynamism of the economy — employment, productivity and per capita incomes growth? This is the issue discussed here.

Higher tax levels can damage economic efficiency if (a) they weaken incentives (for example, induce people to work less and take fewer risks) (b) force people into less preferred choices (causing personal welfare losses) and (c) impose additional administrative and compliance costs. However, the effects of redistribution depend heavily on the starting point (the tax and spending levels), the scale of the increase in taxes required and the methods of redistribution used.

A standard proposition in economics is that the 'deadweight loss' (choice-distorting, welfare-reducing effect) of a tax tends to increase approximately with the square of the tax rate: if we double the size of tax, deadweight loss increases four-fold and if we triple the size of the tax, the deadweight loss increases ninefold (Gans, King and Mankiw, 1999:160-162). Low tax countries like Australia, therefore, can be expected to suffer less than high tax countries from an increase in the scale of redistribution, provided it is gradual.

The method of redistribution used is also crucial. For example, if governments seek to advance social goals through direct budgetary methods, the adverse effects on efficiency are much less significant than if governments used rent controls, restrictions on trade, directions to banks or elaborate and extensive labour market regulations to achieve their distribution goals. More importantly, while passive fiscal redistribution can create perverse economic incentives in regard to work, saving and employment, this is not true of 'active' social investment and work-related incentives (depending on budgetary methods used).

Whereas passive assistance merely seeks to temper the effects of market change on persons and regions, active redistribution seeks to make markets function more effectively. Even a completely deregulated labour market does not adjust quickly and efficiently to shocks because of barriers to geographical and occupational mobility, imperfect or asymmetric information and a tendency for credit markets to be biased against asset-poor people with irregular incomes (and thus limiting access to finance for human capital formation). There is also often monopsonist power in the markets for certain kinds of human capital or locations, and workers do not have the flexibility to adjust their labour supply at the margin.

Once we move into the realm of 'second best' decisions in economics, the welfare outcome from free labour markets becomes more uncertain. By addressing market failure, LI programs can produce a better match between job vacancies and job-seekers, improve workforce participation and reduce the risk of a long term loss of employability.

This view has strong empirical support. Countries which tightly regulate their economies and spend heavily on passive (unconditional) redistribution, with high

tax levels, suffer from slower economic growth than those which rely heavily on labour deregulation and low government spending. However, in between we find a large cluster of countries that use a mix of market-freeing policies, moderate regulation and relatively high levels of 'active' government social spending without suffering any significant economic penalty. That is, beyond a certain level of labour market freedom, correlation between levels of redistribution and economic growth becomes inconclusive either way (Arjona, Ladaique and Pearson, 2001; Pressman, 2005; Perotti, 1996; Smeeding, 2005; and Rehme, 2006).

Smeeding's (2005:12 and 17-19) literature review makes two salient points: (a) social programs such as those adopted by the Nordic countries are effective in reducing inequality; and (b) there is no evidence that the stronger economic performance of the US and UK in the last ten years, relative to many other OECD countries, was caused by their lower levels of social spending. Quiggin (2006:52) writes: 'the general consensus of the literature is that there is no well-established relationship between economic growth and *aggregate* levels of government expenditure'. Decomposition of government expenditure, for example, shows that government investment in both physical infrastructure and human capital increases subsequent growth. This may explain why economists cannot find any correlation between size of government and economic growth per capita (Caserta, 2007) — obvious anyway from a scatter diagram of all the developed countries.

In short, both theory and empiricism suggest that the LI strategy, correctly implemented, can be economically benign. It is capable of delivering work force participation outcomes comparable to those produced by NLM (Argy, 2007) — for the obvious reason that it specifically targets potentially disadvantaged workers. Nor does it seem to adversely affect productivity and per capita income growth.

The productivity outcome might appear counter-intuitive to many classical economists. So it is worth speculating why response 4 does not suffer on the productivity front relative to response 1. One reason is that the 'efficiency only' approach, which relies principally on NLM, is not all positive for productivity. Labour market deregulation implies more flexibility in resource management within the enterprise and that is a plus relative to the alternative. However as it relies heavily on a reducing input costs to employers to facilitate the entry of low-productivity 'fringe' workers into employment, it must inevitably lead to a lowering of average labour productivity. Greater flexibility also gives employers less incentive to improve efficiency since they can readily cut wage costs instead. In addition, it could have adverse effects on employee team spirit and morale (Argy, 2007). There are conflicting forces at work and the net effect on national productivity of the 'efficiency only' approach is uncertain.

Much the same can be said of the 'equity and efficiency' approach which relies at least as much on interventionist policies as on deregulation. On the one hand it involves a strong investment in human capital with good pay-offs in the long term (as noted earlier). On the other hand, until the programs start to pay for themselves, LI requires higher taxation, with potential effects on incentives and innovation. As noted earlier the adverse effects of higher taxes can be minimised by relying on revenue base-broadening measures which have a minimal distorting effect on choices and incentives. But higher taxes must leave some residual cost, even for a low-tax country like Australia.

Thus, the net effect on productivity of the efficiency and equity approach, like the NLM approach, is uncertain and it is hard to choose between them on this criterion.

Some Complexities About the Meaning of Equity

If the above analysis is correct, the choice between response 1 and response 4 must rest ultimately on social value judgments rather than on economic considerations. Since response 4 produces less vertical income inequality, shouldn't it be the preferred option of economists?

Unfortunately the story is not so simple. Apart from inevitable analytical disagreements among economists about the economic effects of LI relative to NLM, there is also a need to take account of elements of equity other than vertical income distribution.

The kinds of equity goals that are important to Australians (Argy, 2006:51-56) and need to be considered in any evaluation of a proposed policy reform are that:

- the reform should not adversely affect the well-being (income, quality of life or opportunity for advancement) of the poorest and most vulnerable in the community;
- it should be consistent with equality of opportunity;
- it should not discourage individual responsibility and self-reliance;
- and it should not unduly impede individual freedom of choice and action.

As already discussed, LI meets the first criterion better than the neo-liberal agenda. Moderate labour market deregulation is compatible with a stable distribution of final incomes if it is matched by appropriate tax-transfer and social investment policies. But the more reliance a government places on deregulation to deliver good employment outcomes, the greater the likelihood that the poor will come out losers.

Australians also attach great importance to quality of life and perceived stability of incomes. Here, LI scores well too. Under the neo-liberal option, low-skilled, disadvantaged workers lose some control over their working hours and family time and their income becomes more uncertain (more exposed to down-grading or dismissal). Income and hours uncertainty following a program of deregulation is damaging to happiness and trust and could create a climate of hostility to further economic reform in the future. LI is less open to these risks.

The second equity dimension is equality of opportunity — the notion that everyone should be able to develop their full potential irrespective of the original circumstances of their birth and childhood and people's earnings prospects should be determined overwhelmingly by their own ability and character. This notion captures best what Australians mean by 'fair go' (Argy, 2006).

On this criterion, the advantage is again with LI, although more marginally. The neo-liberal strategy (NLM) widens the role of impersonal markets, allowing earnings outcomes to be more freely determined by an open competitive process. But even in the most competitive markets there are many barriers to income mobility (Argy, 2006). LI strives hard to reduce these barriers for example by reducing early family environment and education inequalities. It thus enhances

the ability of low income people to move up the income and occupational scale during their lifetime.

However, and here we come to the third dimension of equity, Australians hate 'bludgers'. They want people to 'have a go'. Here, the balance of advantage may perhaps shift to the neo-liberal strategy, but not by much. Response 1 certainly leaves more room for personal responsibility and self-reliance. But response 4 tries hard to encourage the acquisition of human capital and self-confidence, without which people are unable to develop self-reliance. It also tries hard to encourage self-help and discourage a welfare culture.

The fourth dimension of equity is individual freedom of choice and action - the idea that people should be left to lead their own lives according to their own idea of what is good, so long as they do not harm others. Response 1 has again a slight advantage here as taxes are lower. But individual 'freedom' is an elusive concept. It is not just about the right of an individual to retain what he or she earns or produces and to choose from the consumption possibilities in the market. It is also about capability — the ability to participate actively in society (positive liberty) and overcome barriers to reaching their full potential (Sen, 1992). From the latter viewpoint (encompassed in the equal opportunity goal) response 4 offers a superior product. It widens the range of longer term employment opportunities and choices available to low-paid and jobless workers affected by structural change and make it easier for them to achieve their full potential.

Based on the results of opinion surveys (outlined in Argy, 2006:51-56) and the consistent and fairly strong majority opposition to the recent IR reforms, even by people who do not expect to be worse off themselves (for example, ACNielsen poll 19/6/06), it is reasonable to say that a majority of Australians would see the LI strategy as more equitable than NLM. But one cannot be sure!

Concluding Observations

The paper has examined four possible responses to a radical program of labour market deregulation and welfare reform (what we called NLM). It ruled two of them out on practical as well as economic or social grounds, thus narrowing the policy choice to one between response 1 (efficiency only) and response 4 (efficiency and equity). These two responses were then compared on the usual criteria of employment, productivity, distributive justice and other equity goals.

It concluded that both responses had the potential to produce good employment and productivity outcomes but markedly different social outcomes. The fourth response (with active social investment in human capital as the critical method of redistribution) is clearly superior on distributive justice and equality of opportunity criteria to the first response (with deregulation as the main policy weapon) but it may not do as much for choice and self-reliance. So it all depends on which mix of social values appeals most.

This is a very inconclusive position to arrive at. Yet there are two important messages in this paper. The first is that it is not good enough to evaluate a policy reform by simply comparing two equilibrium points — for example, 'GDP will be x per cent higher once the full effects of the reform have occurred' (which could be a decade later) — and pronounce it to be a 'desirable' reform without taking account of how the benefits are distributed and the transitional adjustment costs

and without declaring where their own values lie. When economists do this, they are producing a very incomplete analysis and giving the profession a bad name.

This is not to argue that economists should scrupulously avoid value judgments. They are as entitled as anyone else to make value-based policy recommendations. But they should be transparent about them. Fortunately, if they don't, other economists will see through them. As the famous British economist Joan Robinson said, 'the purpose of studying economics is to learn how to avoid being deceived by other economists'.

The second message from this paper is that, while economists should avoid dogma when approaching policy ideas involving equity redistributions, they still have a major role to play in resolving equity/efficiency or equity/equity trade-offs.

For one thing, they can help governments identify the set of alternatives or choices that are available to society (the realistic choices or sacrifice ratios). There is still much work still to be done on the effects of various market liberalisation reforms on distribution (which types of reforms are progressive and which regressive), the efficiency effects of redistribution (which instruments of redistribution are most efficiency-friendly) and the still unresolved relationship between inequality and economic performance.

Again, and most importantly, economists should continue to explore, at the micro level, the social effectiveness of alternative government social programs — for example how effectively job training programs boost employment and earnings, whether universal pre-school education enhances future education results and work force participation and so on. This means looking at the experience and research results in other countries as well as Australia. It also means making greater use of randomised trials and experiments.

And, more controversially perhaps, there is a role for economists in ensuring that policy advice proffered is sensitive to community preferences and grounded in reality. So they need to do more to understand community attitudes to equality and freedom and the 'gap' between community aspirations and reality. This would mean asking economists to work on issues which are at the periphery of their discipline and best done in conjunction with other sociologists — but it would be no more than an extension of the mushrooming field of behavioural economics.

References

- Argy, F. (2005), 'An Analysis of Joblessness in Australia', *Economic Papers* 24(1):75-96.
- Argy, F. (2006), 'Equality of Opportunity in Australia — Myth and Reality', The Australia Institute, Discussion Paper No. 85, April.
- Argy, F. (2007), 'Employment Policy and the Clash of Values', *Public Policy* 1(2):61-82, (John Curtin Institute of Public Policy).
- Arjona, R., M. Ladaique and M. Pearson (2001), 'Growth, Inequality and Social Protection', Organisation for Economic Co-operation and Development, Occasional Paper No. 51, June.
- Borland, J. (2000), 'Economic Explanations of Earnings Distribution,' NZ Treasury Report, Wellington.
- Breusch, T. and Wilson, S. (2004), 'After the Tax Revolt', *Australian Journal of Social Issues* 39(2):99-114.

Caserta, J. (2007), 'Digging Deeper into Heritage Foundation Data', blogspot.com/2007-05-01-archive.html, 7 February.

Dawkins, P. (2001), 'The Five Economists Plan', paper presented to a Melbourne Institute/ANU Conference, September.

Eurak, A (2006), 'How Does your Brain Respond when you Think about Gambling or Taking Risks?', *Science* 26 January.

Forster, M. and M. d'Ercole (2005), 'Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s', OECD, Social, Employment and Migration Working Paper No. 22.

Gans, J, S. King and G. Mankiw (1999), *Principles of Microeconomics*, Harcourt Brace, Sydney.

Gettler, L. (2006), 'Are Researchers Happy with Search for Happiness?', *Sydney Morning Herald* 4 August.

Gittins, R. (2006), 'An Economics Fit for Humans', The Ronald Henderson Oration, Melbourne, 5 August.

Gittins, R. (2007), *Gittinomics*, Allen and Unwin, NSW.

Jencks, C. (2006), 'Inequality: How Much is Too Much', Paper presented to Research School of Social Sciences conference, ANU, 2 November.

Little, IMD (1950), *A Critique of Welfare Economics*, Oxford Paperbacks, London.

Luciforo, C. (1999), 'Wage Inequalities and Low Pay: The Role of Labour Market Institutions', Facolta di Scienze Politiche, Paper presented to seminar at University of Napoli, November 1998.

Martin, J. (2006), 'Globalisation and Jobs: What Policies?', *OECD Observer*, October.

Perotti, R. (1996), 'Growth, Income Distribution and Democracy: What the Data Say', *Journal of Economic Growth* 1:149-187.

Pressman, S. (2004), 'The Decline of the Middle Class: An International Perspective', Luxembourg Income Study, Working Paper No. 280, Economics and Finance Faculty, Monmouth University.

Quiggin, J. (2006), 'The End of the Public Sector Debate', pp. 49-61 in C. Sheil (ed.), *The State of the Public Sector*, Evatt Foundation, Sydney.

Rehme, G. (2006), 'Education, Economic Growth and Measured Income Inequality', Luxembourg Income Study, Working Paper No. 428, February.

Saunders, P. (2002), *The Ends and Means of Welfare*, Cambridge University Press, Melbourne.

Scutella, R (2006), 'Unemployment and Low-Paid Work', Brotherhood Comment (www.bsl.org.au), November 2006.

Sen, A. (1992), *Inequality Re-Examined*, Harvard University Press, Cambridge.

Smeeding, T (2005), 'Poor People in Rich Countries: The United States in Comparative Perspective', Luxembourg Income Study, Working Paper No. 419, October.

Treasury (2004), 'Policy Advice and Treasury's Wellbeing Framework', Background paper presented to the Australian Statistics Advisory Council, Canberra, 25 May.

Treasury (2005), 'Prosperity and Sustainability', Statement No. 4, Budget Paper No. 1, Canberra.

Tversky, A. and D. Kahneman (1981), 'The Framing of Decisions and the Psychology of Choice', *Science* 211(4481):453-458.

Whiteford, P. (2006), 'The Welfare Expenditure Debate — Economic Myths of the Left and the Right Revisited', Address to ANU seminar.

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Conserving Biodiversity in the Face of Climate Change

Harry Clarke

Most climate scientists accept that environmentally-damaging, anthropogenic, global warming has been a reality over the past century and that, unless societies reduce their greenhouse gas emissions, warming will become an increasingly serious global concern. Even with active greenhouse gas management policies in place it is also widely agreed that global warming will continue because of lags in climate generation. This has led to policies being developed which promote *adaptation* to the effects of global warming as it is expected to unfold. These policies accept that future global warming will be a reality and seek to learn to live with it.

One class of adaptation strategies, of concern to Australia, relate to biodiversity resources. Biodiversity has intrinsic value if citizens value species and habitats that exist *per se*. Biodiversity also has instrumental value in improving the quality of life of citizens who consume the direct service flows (such as aesthetic values) stemming from it and, indirectly, through its role in ensuring a reliable supply of agricultural, water resource and other outputs. Biodiversity resources are already being lost because of human land use impacts such as land clearing and urbanisation. Climate change can be expected to exacerbate the rate of such losses in the sense that:

Climate change is projected to affect individual organisms, populations, species distributions, and ecosystem conservation and function both directly (for example, through increases in temperature and changes in precipitation and in the case of marine and coastal ecosystems also changes in sea level and storm surges) and indirectly (for example, through climate changing the intensity and frequency of disturbances such as wildfires). Processes such as habitat loss, modification and fragmentation, and the introduction of non-native species will affect the impacts of climate change. (Intergovernmental Panel on Climate Change, 2002:1).

This paper shows how to determine economically efficient public policies to reduce the impact of climate change on the range and richness of Australian biodiversity. It emphasises issues of limiting species extinctions to advance the community's demands for biodiversity conservation. Avoiding extinctions alone is, however, a narrow conservation perspective. More generally we think of policies to improve the resilience of Australian biodiversity as a whole to climate change, including the facilitation of species relocations and the prevention of unsought species invasions.

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The policy design task addressed is: to promote inevitably slow biodiversity adaptation responses to rapid climate change when costs and benefits of adaptation are uncertain, as are the physical and environmental effects of global warming; when there is controversy over the discount rate used to weigh the welfare of future generations; when damages associated with biodiversity destruction are nonlinear, involving irreversibilities and threshold effects; and finally, when policy makers must address uncertain policy objectives over distant time horizons.

This is a complex policy design task because of the interaction between the uncertain effects observed and possible irreversibilities such as species extinctions and habitat destruction. An analysis of such issues is provided based on 'real options' theory.

The next section provides background information on the biodiversity conservation problem posed and articulates the factors complicating its resolution. The subsequent section examines policy developments in Australia and articulates the approach provided by the Natural Resource Ministerial Council (NRMC, 2004). The paper then concludes with some final remarks.

Global Warming and Biodiversity Conservation

Most of Australia will be likely to warm by between 1-6°C over 1990 levels by 2070. Annual rainfall is likely to fall in the south and southeast where population and agricultural production are concentrated and evaporation will increase. Some sparsely-populated inland and north western areas will have moister summers (Preston and Jones, 2007). To provide perspective, with a 4-6°C increase in temperature, Melbourne's climate would resemble that of Moree in northern NSW. The forecast climatic effects could be *very* significant. Globally, a 6°C average temperature increase matches the average increase experienced since the last ice age (Wolfson and Schneider, 2002:16).

Climatic uncertainty

Precise climatic effects are complex and difficult to forecast. Meteorology suggests the relation between greenhouse gas concentrations and climate is uncertain. There is also uncertainty concerning effects on climate of measures to control emissions partly because the high natural variability of climate masks slowly-evolving induced climate trends. Furthermore, Australia spans regions from the tropics to the mid-latitudes with a range of climatic conditions and with high climatic variability. The highly variable climate arises partly because of the El Niño Southern Oscillation which brings about the poet Dorothy Mackellar's description of eastern Australia's climate as one of 'droughts and flooding rains'. Climate change can intensify extreme climatic outcomes with increased intensity and frequency of droughts, heavy rains, floods and cyclones. With higher temperatures, too, there will be more heatwaves and fewer frosts. Impacts on specific average rainfall patterns are highly uncertain with reduced rainfall in the southwest but with either increased or decreased rainfall in northern and eastern Australia. Pittock (2003; 2005:256-257) provides further information.

Thus while climate change is generated by global greenhouse gas emissions, its effects will differ widely by region (Wolfson and Schneider, 2002:36-40). But while information on general trends in climate is useful, species conservation concerns often involve analysing specific habitats in small geographic regions that are subject to localised climatic and environmental experiences. Conservation biologists will inevitably be forced to place weight on aggregated, uncertain climate forecasts.

A major initial observation is therefore simply that the effects of climate change on Australia are geographically diverse and uncertain in terms of both specific temperature and rainfall effects.

Environmental uncertainty

While most climate change science has focused on the impacts of climate change for human life, a growing literature addresses the consequences for non-human life and particularly for biodiversity. Even with *gradual* climate change, isolated populations of flora and fauna face difficulties in adapting to, or relocating away from, changed climates because human fragmentation of landscapes by agriculture and urban developments limits relocations. If, as expected, substantial climatic changes occur over a short period, such as 50-100 years — on a geological timescale this is *abrupt* — effects will be severe, particular since the current global climate is one of the warmest experienced over the past two million years (Overpeck, Cole and Bartlein, 2005). Climatic disturbances will increase rates of species loss and provide opportunities for the establishment of new invasive species.

A possible extreme environmental consequence of climate change globally is an ensuing wave of species extinctions and a destruction of biodiversity values. Thomas *et al* (2004) estimate that, in regions covering one fifth of the earth, 15-37 per cent of plant and animal species could face extinction by 2050 should a middle-of-the-road scenario for increased emissions eventuate. If emissions are on the high side, the range jumps to 21-52 per cent. Note the wide range in these estimates and their sensitivity to assumptions regarding mitigation responses. The Stern Review (2006) broadly endorsed these estimates: a warming of 2°C was expected to leave 15-40 per cent of the world's currently extant species extinct.

The Climate Change Network, at their website, draw on studies from 1995-2001 to compile a list of ninety Australian animal species at risk from climate change (see http://www.cana.net.au/bush/aus_animals.htm). Most species identified are *currently* threatened species. What is required is a more general indication of the resilience of species and habitats to climate change on which there is only partial information. As a guide, species with limited climatic ranges (such as endemic mountain species or species on islands or coastal areas) that live within restricted habitats are most vulnerable to extinction while those with greater ability to relocate living in extensive, non-patchy ranges are less threatened (NRM, 2004).

For example, Hughes, Westoby and Cawsey (1996) examine the distribution of 819 species of eucalyptus, the major tree type characterising the Australian landscape. The majority of these individual species occupy small discrete regions

defined by narrow temperature zones. More than 200 species have ranges spanning 1°C while 82 span just 2°C. If Australia's temperature should rise by 3°C half of Australia's eucalypts would grow outside their current zone suggesting the potential for a non-resilient response.

Knowledge of climate change effects on biodiversity is limited because of uncertainty about the effectiveness of natural adaptive responses, the role of geographical fragmentation of ecosystems and the assault that might be launched on certain areas by invading exotic and natural species. Species are unlikely to relocate in unison, with many species responding individually. With substantial time lags and periods of reorganisation, species assemblages may develop that are less diverse and more 'weedy', comprising species that are highly mobile and which can re-establish quickly (Intergovernmental Panel on Climate Change, 2002:17).

Most available resilience information is very partial and species-cum-habitat specific. Given ecosystem complexities, uncertainty is therefore intrinsic to analysing effects of climate change on species and habitat resilience. Pittock (2003:168) states:

... there is relatively little specific information about the long-term capacity for and rates of adaptation of ecosystems in Australia that can be used to predict likely outcomes. Therefore, a large degree of uncertainty inevitably exists about the future of the Australian natural ecosystems under climate change.

Our second major observation is also simple. The specific effects of climate change on biodiversity are highly uncertain.

Policy objective uncertainty

Finally, it is important to clarify what the policy objectives are with respect to conserving biodiversity. These are complex partly because the 'biodiversity' idea is a *pseudo-cognate* concept (Gaston, 1996:1). Different users of this term have distinct referents in mind (genes, different species concepts, populations, biomes) but use the term as if it had a common meaning. It is intrinsically difficult to formulate policies given such an ambiguous notion.

Even ignoring definitional niceties, the development of biodiversity conservation strategies in Australia, as in most countries, has been partly *ad hoc* and partly based on pursuit of clear conservation outcomes. It is acknowledged, for example, that land with high agricultural value (for example, grassland habitat) has been under-supplied for conservation.

With respect to biodiversity conservation *per se*, specific objectives of policy are diffuse and numerous (Environment Australia, 2001). Policies sometimes seek to limit extinctions, sometimes to retain representative habitats, and sometimes to perform the uncertain role biodiversity plays in maintaining ecosystem structure, functioning and productivity. In seeking strategies to deal with exogenous climate changes *simple* objectives are not being addressed.

Moreover, as benefits and costs from biodiversity conservation are distributed into the distant future the inter-temporal valuation issue of choosing a discount rate arises in choosing between conservation options. The disagreement and uncertainty over assigning discount rates becomes crucially important in problems

with long-term time horizons. If discount rates are significantly greater than zero, say five per cent, and if costs of acting are borne now while benefits accrue in the distant future, then on the basis of cost-benefit analysis, the best policy is to do nothing since discounted benefits may not justify costs. Conserving a species worth \$1 billion in 200 years is worth only \$58,000 today at a discount rate of five per cent. Moreover, intergenerational arguments such as placing significant weight on the environment we hope to transfer to our children, suggest discounting at a low rate. Pindyck (2007) shows that being uncertain about the discount rate *itself* means that the rate used should be set at less than the expected future discount rate in the absence of uncertainty with the reduction increasing as the planning time horizon increases. For long-term planning, setting a discount rate close to zero — as done by the Stern Review (2006) — for other climate change tasks is not implausible.

Irreversibilities

Important irreversibilities impact on policy-making. These pull in opposite directions both in terms of desired policy intensities and the timing of interventions. They substantially complicate policy planning.

Species loss effects, in particular extinctions, are irreversible. According to the 'real options' literature this creates incentives to adopt active adaptation strategies early *even if* benefits from doing so fall somewhat short of costs incurred. The existence of the possibility of a future benefit from not allowing a species to go extinct provides an 'option value' rationale for species protection that reflects the *irreversible loss of options* implied by extinctions. This is the core idea of the 'real options' approach to irreversible investments under uncertainty (Dixit and Pindyck, 1994) with such option values providing a bias towards *early* adoption of policy and for greater policy stringency.

Sunk cost effects arise because policies to deal with climate change problems impose sunk costs on society. For example, investing in captive-breeding programs or the translocation of species are expensive discrete investments that are not recoverable should the investments prove unwise. Such would be the case, for example, if long-term conservation costs turn out to be higher than expected while long term benefits are lower. This provides a *motivation to wait for better information* before undertaking investment in biodiversity protection. Cost benefit analysis which accounts for this 'value of waiting' will be biased toward *postponing* adoption of activist policy and for reducing policy stringency.

Combining these irreversibilities suggests that, depending on their relative importance, uncertainty can sometimes increase and sometimes decrease both the timing and extent of desired conservation effort. Without good empirical evidence, which is lacking, there is no simple way of making an *a priori* judgment of the relative size of 'species loss' and 'sunk cost' effects. Some literature, based on plausible though invented data, suggests 'sunk cost' effects are relatively strong, thus establishing a case for deferred, low-intensity investments rather than high-intensity conservation policies now (Pindyck, 2000; 2002).

Nonlinearities and thresholds

The case for emphasising 'sunk cost' irreversibilities is tempered by the prospects of non-linear environmental damage responses to climate change once uncertain critical thresholds occur (Pittock, 2005:99-105). Such non-linearities can be accounted for by allowing for catastrophic risks of substantial damages. A biodiversity example might be widespread species extinctions while, at the climate level, catastrophic risks include possible rapid deglaciation of the polar ice sheets or collapse of the conveyor belt circulation of ocean currents in the North Atlantic. It should be noted that, given the complexity of environmental systems, catastrophic risks could also take the form of 'unknown unknowns' or currently unanticipated possible consequences (Grant and Quiggin, 2006). Then previously undiscovered consequences of climate change for biodiversity may be discovered in the future and events previously regarded as impossible may turn out to be possible. We may also find out that we know less than we thought we did.

Clarke and Reed (1994) show that, if the degree of risk of catastrophic collapse is strongly related to the extent of policy intervention, a critical lack of conservation effort brings about a wave of costly extinctions, greater stringency in control is sought. This provides a case for pursuing 'safety first' options. If, however, greater risk is expected that is unrelated to the extent of policy intervention then, by a triage argument, less should be expended on protecting species since their value has unalterably fallen.

Intuition suggests that a case for early action is also motivated by standard arguments emphasising the increasing value of 'natural' relative to 'human-made' capital as technical progress proceeds. Human-made capital can be augmented and replaced while natural capital cannot. Also, with increasing wealth, if it is supposed that demands for biodiversity conservation are a luxury good, so higher conservation standards are demanded with increased affluence, there is again an argument for early adoption of adaptation policies to improve biodiversity resilience (Krutilla, 1967).

Summing up

There is uncertainty about the scale of climate change, about climate change impacts on biodiversity, and on what adaptive policy should seek to achieve. Significant irreversibilities add complexity to the planning task. Formal economic model-building can help sort out the qualitative role of these complicating factors and can suggest sensible policies.

As a general matter, the high uncertainty in analysing this policy task suggests a motive for investing in providing timely information on the likely future extent of climatic effects and consequent biodiversity impacts, and for monitoring current environmental responses to climate change. Also, the substantial risks suggest the case for a diversified policy mix, not an emphasis on a narrow range of options. Unless there are overwhelmingly large fixed costs, a number of policy responses need to be sought and backup 'insurance' options pursued lest major policies fail. For example, with respect to endangered species protection, one might simultaneously seek to strengthen protection accorded in current

environments, to translocate that species to new environments, and to perhaps also develop a captive breeding response as insurance.

Uncertainty needs to be incorporated into formal decision models by attaching Bayesian probabilities to anticipated outcomes with account taken for possible surprise events. Probabilities — however imprecise - should be assigned using expert judgement even if costs and benefits assigned to the outcomes reflect policy-maker or community values rather than those of the experts.

The general policy prescription involves increased investment in biodiversity conservation to reflect the increased risk that this valuable community asset is now exposed to. In part this investment reflects the fact that species will endogenously relocate as climate change proceeds. Thus investment effort will need to be devoted to improving the resilience of existing conservation resources, the adaptability of new areas as receptor sites for new species and towards preventing unwanted species invasions.

A Policy Framework

Australian governments through the Natural Resource Ministerial Council (NRMC, 2004) have prepared an 'action plan' for addressing climate change impacts on Australian biodiversity. The NRMC's intent is for each state and territory to undertake specific initiatives to implement this plan and for the Commonwealth to coordinate efforts. The plan splits into three undertakings that are broadly consistent with the framework above. They involve investing in information and in minimising the biodiversity impacts of climate change. An additional operational issue addressed by the NRMC is integrating policy designs into pre-existing conservation planning and policies for managing new efforts.

Suggestions are now made to develop this framework further. The economics of information and investment provide the main conceptual and practical guidelines to conservation planning where risk and irreversibility play a key role.

Increasing knowledge

This NRMC objective seeks to improve knowledge of the impacts of climate change on biodiversity over time horizons where adaptation planning is sensible, to improve understanding of adaptation responses and to increase the capacity to assess costs and benefits of different policy responses. These objectives can be augmented to include improving knowledge of the likely extent of climate change in specific areas. The NRMC also focuses on the need to transmit information to policy makers and the broader community.

Economically efficient investments in information depend on the extent of uncertainty faced, costs of acquiring information and benefits consequent to having better information. As emphasised earlier, there is substantial uncertainty regarding global warming effects and on the resilience and adaptability of biodiversity to climate change. Information about climate change is partly a global public good that is underprovided by private markets because it is costly to generate but can be accessed at low cost. Hence, there is a global case for public investment in long-term meteorological and climate research to gain information

and efficiency arguments for Australia to contribute to such provisions. There is also a local case for providing region-specific Australian climate change forecasts. At each level a key question is the extent of likely climate change given plausible assumptions about global mitigation responses.

Information on the adaptability of Australian biodiversity is mostly a local public good that will be generated mainly in Australia. This is likely to be more expensive than climatic information as it will be site- and species-specific. Since exhaustive characterisations are impractical, such informational investments require prioritization on the basis of implied threats to biodiversity and probable net rewards.

Climatic and biological information accrues through time with experience, through observing the adaptability of ecosystems, and through science-based learning in fields as diverse as climatology, zoology, botany, conservation biology and so forth. Given learning possibilities there are incentives to monitor developments and to delay acting on developments until information quality improves. While the need to 'wait' is a standard incentive in dynamically-evolving uncertain systems, significant effects of climate change will occur in the short-term, over perhaps thirty to seventy years. The opposing 'sunk cost' and 'species loss' irreversibilities that were rationalised above in terms of physical investments apply to information investment as well.

Moreover, it might be expected that adaptation strategies could become both more expensive and less effective as the extent of climate change increases. As with the climate change issue as a whole, there are incentives to act promptly on the basis of imperfect information rather than to wait for much more accurate information. This means that policy responses should take the form of closed-loop feedback rules reflecting current knowledge and which evolve as knowledge itself evolves.

A particular information concern is to identify 'at-risk' species and habitats and to list them as threatened under legislation. This makes sense if high costs are associated with extinctions. Addressing the extinction issue enables policy authorities to eliminate crucial, complicating irreversibility constraints.

A final specific information concern is to identify climate change effects on the distribution of new and established exotic, as well as native, invasive species. While some species will be damaged by climate change, the survival prospects of others may be improved, thereby damaging the survival prospects of competing species.

Optimising biodiversity impacts

These impacts are classified by the NRMCA into different categories by geographic area, and actions are sought to minimise the harmful effects of climate change in each. One focus is on impacts on hydrological cycles and consequent impacts on inland aquatic and semi-aquatic species. Another looks at impacts on marine, estuarine and coastal ecosystems. A third looks at terrestrial systems. Concern also focuses on minimising the impact of invasive species whether they are exotic or native species.

There is a range of adaptation investments that can improve the resilience of biodiversity. For the most part, the NRMCM emphasises investments building on current conservation efforts. These fall into several areas.

- Policies designed to increase the environmental resilience of existing conservation zones. This includes policies for increasing conservation reserve size, measures to improve and restore streams and aquatic environments, limiting land degradation and invasive pest species and providing fire management regimes. For many conservation efforts the general prescription for policy is for more active management.
- Investments in new reserves that seek to strengthen the capacity of the reserve system as a whole to act as a refuge for vulnerable species that relocate in response to climate change. This might include investments in wildlife corridors that facilitate migrations and the translocation of particular threatened species. An important aspect is to develop partnerships between government and landowners to facilitate linkages and stepping stones to assist biodiversity adaptations. The *BushTender* scheme for biodiversity buybacks on private land can provide linkages at low cost (Department of Sustainability and Environment, 2000).
- Efforts to protect species whose existence is threatened by climate change. These species require investments as discussed above, but might also call for conservation by means of captive-breeding programs, zoological and botanical gardens or germ-plasm and seed banks.

If a pessimistic assessment of the likely success of adaptation measures is taken, insurance policies can be adopted to reduce extinction probabilities. The NRMCM suppose captive breeding and translocation strategies are expensive compared to adapting current conservation policies. They make sense however if introduced selectively and if seen as fallback *insurance* options that imperfectly realise conservation objectives should more general programs fail.

Translocation policies require specific analysis since they are complex and expensive.

The radical strategy of *assisted relocation* involves moving species to climatic zones where they are expected to have improved survival prospects. This policy triggers strong, mixed feelings among conservation biologists because, although the procedure is risky, not undertaking it may condemn species to extinction. Parmesan (2006) reviewed studies on ecological effects of climate change and concludes that many plant species are already now budding earlier in the spring, animals migrate earlier and the ranges of many species are shifting to higher latitudes, as they track climates that suit them. Relocations have occurred through history and *are* occurring now.

These adjustments have occurred over the past two million years as the planet has swung between ice ages and warmer periods. But the current warming is different as the earth was already relatively warm when it began. It will also now be more difficult for some species to relocate because when the planet warmed at the end of past ice ages, retreating glaciers left behind empty landscapes. Today's species face the obstacle course of cities, farms and other human settlements. Animals and plants will also have to move quickly if they are to keep up with rapid climatic changes.

Many conservation biologists believe, alternatively, that conventional strategies may help combat extinctions from global warming. McLachlan,

Hellmann and Schwartz (2007) examine this debate. Bigger reserves and corridors connecting them, as envisaged by the NRM, provides species more room to move. However assisted relocation may be the only way to save some species if done safely and effectively. The basic questions are: Which species to move and where to take them? If numerous species face extinction then prioritization is inevitable. Those selected need to be relocated to regions where they can survive in a warmer climate but simply moving a species is no guarantee it will survive since most species depend on other species for survival. Also, a transplanted species is an invasive one which might harm the original inhabitants so relocated populations may need to be controlled.

Assisted relocation should be a measure of last resort that is used sparingly for species facing overwhelming extinction threats where natural relocation is impossible. But further species relocations will occur and, as species shift their ranges, some will push into preserves that are already refuges for endangered species.

Incorporating strategies into current practice

Finally, the NRM action plan examines the integration of thinking about climate change impacts into current biodiversity planning. The premise is that these programs exist so one can build on them. In addition, new land use strategies may need to be developed to accommodate adaptation. To make current conservation efforts responsive to climate change issues:

- Existing conservation strategies must incorporate climate change into monitoring and reporting systems and use this information to provide policy advice on climate change-induced effects on conservation. A particular concern is with rural adjustment policy and links between the action plans for biodiversity and for agricultural adaptations (NRM, 2006).
- Major issues concern how the national reserve systems can be linked to provide corridors for species migrations in the face of climate change. The weaknesses of traditional conservation planning, based on a set of independent reserves, become transparent with climate change. Integrated, cost-efficient planning measures linked to agricultural land reclamation programs must be developed.
- There is a need to review *new* land use and reserve planning policies to account for climate change and to make provision for species adaptations. Again there is the need to provide policy advice on these issues.
- Impacts of climate change must be included in listing threatened and endangered species and in developing recovery plans for such species. While emphasis should be on planning at habitat or biome level, flora and fauna species checklists should be used to identify vulnerable species that fall through gaps missed by 'higher level' conservation effort.

These developments belong *prior* to the derivation of specific investment policies. Their articulation and refinement is the major output of attempts to evaluate adaptive climate change impacts using economics.

Directing policy towards pre-existing conservation efforts is sensible also from the perspective of offsetting effects of uncertainties by emphasising *win-win* options. Such efforts are useful if anticipated climatic outcomes eventuate but, in

so far as they strengthen current programs, they will advance conservation objectives even if climate change impacts are less severe than expected. Win-win or 'no regrets' options can also be encouraged by thinking about synergies with agriculture through enhanced conservation and water resource management policies. In some cases, as emphasised in Intergovernmental Panel on Climate Change (2002:2), there are synergies between policies designed to mitigate climate change and policies designed to help biodiversity adapt. Thus environmentally sound energy, agricultural and forestry policies can mitigate the effects of warming and can improve biodiversity adaptability. High-yielding bioenergy plantations, on the other hand, can have adverse impacts if they replace ecosystems with greater diversity.

Adaptive policies lead to payoffs *even if* anticipated climatic changes are unrealised. These win-win payoffs have the incidental benefit of helping to secure community support for addressing climate change impacts on non-marketed biodiversity.

Final Comments

A major issue in conserving biodiversity with climate change is the interaction between high risk and irreversibility. Risk provides incentives to invest in information and provides incentives to wait for additional better information. However, extinction irreversibilities can drive an emphasis on dealing promptly with a problem before it becomes severe.

In this setting, utilising adaptation policies to ameliorate climate change impacts makes sense. These policies can be both *passive*, reflecting observed changes in biological systems, and *anticipatory adaptation* (Schneider and Kuntz-Duriseti, 2002). Proactive policies involve strengthening the resilience of biological systems now to deal with climate change impacts in the decades ahead.

As a general proposition it makes sense to rely on a range of policy responses and to view policy as adaptive or closed-loop rather than open-loop responses.

Biodiversity losses are irreversible so it is sensible to be prepared to deal with the worst that can happen. This suggests assigning higher than expected values to biodiversity losses to reflect their option values and to prepare worst-that-can-happen policy responses to climate change effects. Most importantly, it also implies the need to devise back-up plans involving species translocations and captive breeding.

With these uncertainties it makes sense to mix attempts to develop a comprehensive national conservation response with 'test run' projects and case studies at representative and highly endangered and or biodiversity rich conservation sites. These should include a focus on conservation efforts in Australia's single conservation hotspot, namely southwest Western Australia, in critically-threatened Alpine habitats such as the Victorian Alps or the Snowy Mountains, in the rainforest habitats of northern Queensland, in coral reef habitats such as the Great Barrier Reef and in the rangeland areas of southern Queensland or central Western Australia. The costs and benefits of various adaptation policies need to be measured and species loss and sunk cost effects identified in each of

these settings. Catastrophic risks should be identified and their implications for policy intervention identified.

The case studies should assess the economics of conservation efforts at the various sites, examine existing plans for dealing with climate change and, where necessary, look at cost-minimising options for improving resilience as discussed above. The options examined should include 'doing nothing', investing in improved resilience onsite and, as a limiting policy, arranging species translocations. The 'doing nothing' option is relevant for species whose viability is unthreatened and, using triage arguments, for species whose extinction is inevitable.

Given the information and management expertise possessed and pre-existing conservation resources it makes sense, as the NRM review suggests, basing adaptation strategies around current strategies. This will reflect the current reserve system and pre-existing efforts to promote conservation on private land, including wildlife corridors. But conservation priorities could change in regions most affected by climate change and this needs to be reflected in planning.

Along with attempts to strengthen pre-existing conservation efforts there needs to be a critical emphasis on identifying where existing efforts are vulnerable or made redundant by climate change impacts. As the NRM note, to the extent that climate change causes changes in agricultural land values, there are both problems and opportunities for new approaches to planning. 'No regrets' options that draw on synergies between mitigation policies and adaptation policies should be targeted.

References

- Clarke, H. and W. Reed (1994), 'Long-Run Consumption Pollution Tradeoffs in an Environment Subject to Pollution-Related Catastrophic Collapse', *Journal of Economic Dynamics and Control* 18:991-1010, reprinted pp. 497-516 in M. Hoel (ed) (2004), *Recent Developments in Environmental Economics, The International Library of Critical Writings in Economics*, Elgar, Cheltenham.
- Department of Sustainability and Environment (2006), *BushTender — The Landholder Perspective: A Report on Landholder Responses to the BushTender Trial*, Department of Sustainability and Environment, East Melbourne.
- Dixit A. and R. Pindyck (1994), *Investment Under Uncertainty*, Princeton University Press, Princeton.
- Environment Australia (2001), *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Commonwealth of Australia, Canberra.
- Gaston, K. (1996), *Biodiversity: A Biology of Numbers and Difference*, Blackwell Science, Oxford.
- Grant, S. and J. Quiggin (2006), 'Learning and Discovery', Risk and Uncertainty Program Working Paper R05-7, University of Queensland.
- Hughes, L., M. Westoby and E. Cawsey (1996) 'Climatic Range Sizes of Eucalyptus Species in Relation to Future Climate Change', *Global Ecology and Biogeography Letters* 5:23-29.

- Intergovernmental Panel on Climate Change (2002), *Climate Change and Biodiversity*, IPCC Technical Paper V, Bangkok.
- Krutilla, J. (1967), 'Conservation Reconsidered', *American Economic Review* 47:777-786.
- McLachlan, J., J. Hellmann and M. Schwartz (2007), 'A Framework for Debate of Assisted Migration in an Era of Climate Change', *Conservation Biology*, forthcoming.
- Natural Resource Ministerial Council (2004), *National Biodiversity and Climate Change Action Plan 2004-2007*, Department of Environment and Heritage, Canberra.
- Natural Resource Ministerial Council (2006), *National Agriculture and Climate Change Action Plan 2006-2009*, Department of Agriculture, Fisheries and Forestry, Canberra.
- Overpeck, J., J. Cole and P. Bartlein (2005), 'A "Paleoperspective" on Climate Variability and Change', pp. 91-108 in T. Lovejoy and L. Hannah (eds), *Climate Change and Biodiversity*, Yale University Press, New Haven.
- Parmesan, C. (2006) 'Ecological and Evolutionary Responses to Recent Climate Change', *Annual Review of Ecology, Evolution & Systematics* 37:forthcoming.
- Pindyck, R. (2000), 'Irreversibilities and the Timing of Environmental Policy', *Resource and Energy Economics* 22:233-258.
- Pindyck, R. (2002), 'Optimal Timing Problems in Environmental Economics', *Journal of Economic Dynamics and Control* 26:1677-1697.
- Pindyck, R. (2007), 'Uncertainty in Environmental Economics', forthcoming in *Review of Environmental Economics and Policy* 1(1):45-65.
- Pittock, B. (2003) (ed), *Climate Change — An Australian Guide to the Science and the Potential Impacts*, Australian Greenhouse Office, Canberra.
- Pittock, B. (2005), *Climate Change: Turning Up the Heat*, CSIRO Publishing, Earthscan, Collingwood.
- Preston, B. and R. Jones (2006), *Climate Change Impacts on Australia and the Benefits of Early Action to Reduce Global Greenhouse Gas Emissions*, CSIRO consultancy report for the Australian Business Roundtable on Climate Change.
- Stern Review (2006), *The Economics of Climate Change*, Cambridge University Press, Cambridge.
- Schneider, S. and K. Kuntz-Duriseti (2002), 'Uncertainty and Climate Change', pp. 53-88 in S. Schneider, A. Rosencranz and J. Niles (eds), *Climate Change Policy: A Survey*, Island Press, Washington DC.
- Thomas, C., A. Cameron, R. Green, M. Bakkenes, L. Beaumont, Y. Collingham, B. Erasmus, M. de Siqueira, A. Grainger, L. Hannah, L. Hughes, B. Huntley, A. van Jaarsveld, G. Midgley, L. Miles, M. Ortega-Huerta, A. Peterson, O. Phillips and S. Williams (2004), 'Extinction Risk from Climate Change', *Nature* 427:145-148.
- Wolfson, R. and S. Schneider (2002), 'Understanding Climate Science', pp. 3-51 in S. Schneider, A. Rosencranz and J. Niles (eds), *Climate Change Policy: A Survey*, Island Press, Washington DC.

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Public Private Partnerships and Public Procurement

Darrin Grimsey and Mervyn Lewis

Public Private Partnerships (PPPs) rarely get good press, and public opinion is quick to condemn a PPP that does not succeed as a failure of the concept itself. Perhaps it is because, as Tony Harris, one of the staunchest critics of PPPs, once observed '... good news stories receive little attention in public The private infrastructure projects which appear less credible ... get rather more attention' (Harris, 1998:11). His successor as NSW Auditor-General, Bob Sendt, admitted that 'the public — and possibly the political — mood has certainly turned against PPPs as a result of the Cross City Tunnel' (Sendt, 2006:3).

While many in the community may remain suspicious of private sector involvement in public infrastructure, the reality is that old 'command and control' structures in the public sector are breaking down and are being replaced by new interrelationships between government and private sector entities. Rather than as an aberration, PPPs (or perhaps more correctly 'traditional' PPPs) need to be viewed as one form of public procurement, supported by many hybrid approaches that blur the lines between them and conventional procurement methods.

This article examines this evolving marketplace. It begins by comparing conventional forms of public procurement with traditional PPPs, and then reviews the relative performance, and advantages and disadvantages, of these alternatives. PPPs are argued to introduce very different incentive structures and responsibilities into the procurement process. Nevertheless, traditional PPP models have some well-recognised limitations. Against this background, the article considers these problems and the new hybrids of PPPs and traditional procurement that have been developed, and experimented with, to address these issues. Consequently, there are no hard and fast rules as to what situations work best for PPPs. The real question is what particular procurement option, which may or may not be a PPP variant, is appropriate for the project on hand.

Forms of Procurement

With traditional procurement private companies have long been involved in building roads, hospitals, schools and public buildings, and in providing management and maintenance services. What differs with a PPP is that these separate arrangements are combined (bundled) into one contract and a private sector entity charged with providing, not a building, but a flow of infrastructure services over time.

For example, under conventional procurement, the public sector body may enter first into a Design-Build (DB) contract, engaging a private sector firm to design and build a facility in accordance with requirements determined by the

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government. After the facility is completed and paid for, the government assumes responsibility for operating and maintaining the facility. It may then use a service or management contract to outsource all or part of operations and maintenance.

With a PPP, these separate contracts would be combined. For example, with a Design-Build-Finance-Operate-Maintain (DBFOM) contract the private sector entity, usually a Special Purpose Vehicle (SPV) company created for the project, designs, builds, finances, operates and maintains a new or refurbished facility under a long-term lease (20, 30 years or more). At the end of the concession period, the private party transfers the facility to the public sector. This is only one example. There is a multitude of acronyms, covering a variety of transactions allocating to the private sector a right to operate traditional public sector services.

An obvious question is why a government body would engage in a DBFOM transaction. Why would it tie its hands in this way for 20-30 years, say, rather than opt for the flexibility of separate contracts? The question is heightened when it is appreciated that the SPV will itself enter into a separate contract for design or design-build with a construction company, a financing arrangement with senior lenders, and an operations and maintenance contract with a facilities management company. Why is it presumed that the SPV company can contract more cheaply or effectively with the other parties than can the government body?

One answer is that the arrangement does appear to work, at least in many cases, and we will provide some evidence on this point later. In our view the difference lies in different levels of responsibility and accountability. In conventional procurement, when the government acquires the infrastructure, designs the facility and delivers the service, it does so in an environment largely removed from the economic signals to which private entities are exposed. The government's cost of fund raising, whether by debt or taxation or charges, bears no relationship to the project's risks or its likely success or failure. A wide variety of performance outcomes can be swept under the administrative mat, and the principals involved are often insulated from the consequences of their actions and decisions. Infrastructure decisions necessarily have consequences and generate obligations that last for generations. Yet the politicians and senior officials making them bear little personal responsibility for the consequences, and thus face few incentives to modify or change their behaviour (Stone, 2006).

By contrast, a well structured PPP can introduce clear lines of accountability, transparency of outcomes and performance, clarity as to the roles and responsibilities of the contracting parties, an assessment of the project risks, competition for the delivery of services, and the motivation to succeed. Table 1 compares the characteristics, and thus the advantages and disadvantages of two forms of conventional procurement (fixed price, managing contractor) with a traditional PPP of the DBFOM or DBFM type. Some comments follow.

Fixed price

Under a Fixed Price contract, the government separately engages a design team to develop the design component of the documentation used to tender the construction contract. The successful contractor has to deliver the works at the fixed price tendered provided there are no variations to the design. In practice, such contracts are rarely delivered to the tendered price. Often the public sector

body varies its design either due to changes in scope or in response to risks that the government retains under this form of contract, such as latent conditions, and delays caused by the public sector entities.

Table 1: Comparing Traditional and PPP Procurement Models

Advantages	Disadvantages
<i>Traditional, fixed price</i>	
<ul style="list-style-type: none"> • Design complexities are resolved before tender award • Low cost of tendering to contractors • Because the full design is prepared and endorsed prior to tendering, the contract value is known before construction commences 	<ul style="list-style-type: none"> • Preparation of fully documented design drawings results in long lead times prior to construction • No input from the builder during the design development process • Innovative, lower operational costs design less likely when single design is developed • Public sector retains risk for overall design, 'fit for purpose' and documentation errors • After the construction phase there is no link between construction payments and the provision of the facilities to agreed standards over time
<i>Managing Contractor</i>	
<ul style="list-style-type: none"> • Allows public sector to retain control of design development (other than construction drawings) • Government requirements are in specific designs rather than a functional specification • Easier for stakeholders to approve specific designs to ensure accommodation of their requirements, whereas designs resulting from a functional brief may require significant amendment to meet stakeholder needs • Potential for shorter design and construction phase as construction can start during design development • Managing Contractor can interact with the design team on building issues during the design phase facilitating integrated planning of construction and operations • Documentation error risk lies with the contractor 	<ul style="list-style-type: none"> • Only one design is developed • Little potential for innovation based on whole-of-life operating conditions • Fixed lump sum can be expensive: usually negotiated — not a competitive tender • Time and cost overruns shared by public sector and contractor until end of design development • If design is not fully documented and agreed prior to construction starting, time and cost overruns can be substantial • Public sector retains design and 'fit for purpose' risk • No link between construction payments and infrastructure standards over time
<i>Public Private Partnerships</i>	
<ul style="list-style-type: none"> • Greater certainty of contract value before construction • Functional brief finalised prior to tendering • Designs are developed by the bidders • Complete integration of design, construction, operational, maintenance and refurbishment costs with potential to achieve value for money • Enables greater transfer of risk at each phase, including cost, to the private sector • Opportunity to fashion innovative solutions • Assumption of 'whole of life' cost risk encourages efficient design and attention to construction and material finishes • Contractor bears design and 'fit for purpose' risk • During the design phase, PPP construction contractor can inform design team on building issues to facilitate integrated planning of construction and operations • Operating and maintenance standards agreed and costs approved for period of concession • Payment for the services dependent on delivery of facilities and services to agreed standards 	<ul style="list-style-type: none"> • Well defined functional and service specifications may be difficult to achieve • Detailed stakeholders' discussions may be required to ensure design meets needs • A number of designs being developed simultaneously can translate into significant stakeholder resources being required • Complexity of contracting requires specialist skills from public sector • High contracting costs rule out many projects • Public sector managers need a different set of management skills • Not all risks can be transferred cost-effectively to private sector • Government's ability to make major changes restricted when private party has to accept design and 'fit for purpose' risk • Financing arrangements and risk pricing can result in potentially higher cost of variations once construction has begun

Source: Based on Ernst & Young Project Finance Advisory.

Managing contractor

Under a Managing Contractor arrangement, the public sector engages a contractor to manage some or all aspects of the design, documentation and build phases of a project on behalf of the government for an agreed lump sum (consisting of the management fee and the cost of the work done under the component sub-contracts). The benefits of this type of contract are its flexibility and the skills which the managing contractor may be able to apply to procuring of the works and to the preparation of the documentation and trade packages.

PPP

Under a PPP, the government instead becomes a purchaser of asset-based infrastructure services that are paid for against performance. There is potential for the PPP to deliver value for money where:

- it is possible to clearly define required outputs to allow a payment mechanism to be structured that aligns with project objectives;
- the project has scope for innovation;
- there are opportunities for the transfer of certain risks (for example, design, cost and time overruns) to the private sector that it can better manage;
- whole-of-life costing can reduce operating costs by building in features that a focus on immediate construction costs would ignore;
- reliance on user fees for revenue can create an incentive for private operators to provide good customer service; and
- proper maintenance can lengthen the life of the facility and increase residual asset value.

Relative Procurement Performance

Are these expectations that PPPs have the potential to deliver value of money realised in practice? Ideally, the performance of PPPs would be assessed over the entire lifecycle of the project, from construction to operations to end of contract (Blanc-Brude, Goldsmith and Valila, 2006). However, with most projects either under construction or in their early stages of realisation, available evidence relates mainly to two things: construction outcomes and projected value-for-money.

Construction under traditional procurement

One of the attractions of PPPs (especially to those in charge of allocating public sector resources) is their capacity to resolve the large cost overruns and delays in traditional public procurement ('optimism bias') that has been demonstrated in several studies:

- Hodgson (1995) notes that cost and time overruns under conventional procurements for UK roads are common.
- Mackie and Preston (1998) identify 21 sources of error and bias in UK transport projects.

- A study by Flyvbjerg, Holm and Buhl (2002) of 258 large transport infrastructure projects over 20 countries found costs to be underestimated in 90 per cent of cases by an average of 39 per cent.
- The Mott MacDonald (2002) study of 39 large UK infrastructure projects procured by conventional means found that completion time exceeded estimated duration by 17 per cent, while capital expenditure costs exceeded estimates by 47 per cent on average.
- Flyvbjerg, Holm and Buhl (2005) in a study of 210 transport projects found rail passenger forecasts were over-estimated by an average of 106 per cent and that one-half of road projects differ between actual and forecast traffic by more than 20 per cent.
- A report commissioned by HM Treasury in 2004 found that the outturn costs of conventional procurement projects were 2 to 24 per cent higher than the estimate in the business case (Leahy, 2005).

PPP construction performance

PPP's construction performance *vis-à-vis* traditional procurement was evaluated in several studies:

- Eleven of the 50 UK projects examined by Mott MacDonald (2002) were PPPs. On average they came in under-time (relative to 17 per cent over-time for conventional procurement), while capital expenditure was on average 1 per cent over budget (relative to an average cost over-run of 47 per cent for traditional procurement).
- HM Treasury (2003) researched 61 PPP projects. Overall 89 per cent of projects were delivered on time or early, and all projects were within public sector budgets.
- The UK National Audit Office (NAO, 2003; 2005) compared the construction performance of PPP and traditional procurement. Only 30 per cent of conventional projects were on time and only 27 per cent were within budget. By contrast, the PPPs were largely delivered on time or early (76 per cent versus 30 per cent) and on budget (78 per cent versus 27 per cent).
- A European Investment Bank study (Thomson, 2005) made an in-depth evaluation of 10 PPP projects financed by the Bank. Only 3 out of the 10 PPP projects exhibited time delays and cost overruns, but the additional costs were borne by the promoter not by the public sector bodies. By contrast, of the 50 public infrastructure projects under conventional procurement, 60 per cent were more than one year late.

Value-for-money tests

The figures above relate to construction cost and time overruns. Value for money (VFM) tests based on comparisons of the PPP application with the benchmark cost of providing the specified service using conventional public procurement methods (the Public Sector Comparator or PSC) enable us to put some numbers on the expected overall gains from PPPs.

- An early NAO (1998) study of the first four DBFO (design-build-finance-operate) road contracts found that they were likely to generate net quantifiable financial savings of around 100 million pounds (13 per cent).
- A study by LSE/Arthur Andersen (Arthur Andersen, 2000) analysed 29 public sector projects that used the private finance initiative (PFI: the UK programme encompassing PPP) and calculated that on average the predicted savings from using the PFI, compared with conventional procurement, was 17 per cent.

- The UK National Audit Office (NAO, 2001) produced VFM reports on 15 projects, 7 of which were evaluated for VFM against a PSC. Overall, the total cost savings of these projects was 20 per cent.
- Parker and Hartley (2003) record claims that PPP contracts for UK defence services have resulted in cost savings between 5 per cent and 40 per cent compared with conventional public procurement, although the authors question whether these apparent cost savings will be realised due to uncertainties of long-term contracting.
- In Australia, a review in 2004 of the Partnerships Victoria policy found evidence of net benefits of PPPs, and that for the 8 PPP projects examined the weighted average savings was 9 per cent across all projects (Fitzgerald, 2004).
- In Germany, a pilot PPP programme has been underway in the Lander since 2004. A VFM test involving a PPP-PSC comparison is required to be applied in three steps: when selecting the project for PPP treatment; to assess possible VFM gains prior to tender; and after tender with data from the preferred bidder. For projects developed to date, PSC calculations were made, and VFM gains were achieved with all assessed projects varying from 1-25 per cent for VFM tests prior to tender to 6 to 15 per cent for the preferred bid (Sachs *et al*, 2005).

Finally, there are some individual case studies. In the Netherlands, the Wastewater Treatment Delfland PPP (Europe's largest water PPP), concluded in 2003, has an expected saving of around 15 per cent compared with the PSC. Grimsey and Lewis (2004c, 2005a) provide eight case studies of PPP projects in the US, Australia, UK and Pakistan covering waste water projects, two hospitals, two prisons, light rail and a road project. In three cases, no PSC calculation was made and value for money was sought by means of a competitive bidding process. In two cases, the VFM gains were trivial (less than one-half of one per cent)¹. In the case of the other three projects, VFM gains ranged between 9 and 16 per cent.

Why? How can we explain such findings? What aspects of a PPP are likely to influence performance? The next section seeks to provide some answers.

Explaining Performance Differences

It might be argued that PPPs are handpicked to succeed. Despite the attention given to, and concerns raised about, PPPs in the academic literature and in public discussion, they are a small part of the public infrastructure market. PPP/PFI accounts for between only 10-14 per cent of public sector investment in the UK and PPPs for about 10 per cent in Victoria, the leading market in Australia. Most public infrastructure projects are still traditionally procured. On these grounds it could be said that PPPs are the *crème de la crème* and thus more likely to be successful. However, this overlooks the resistance to PPPs, within much of the public administration and also, if true, begs the question of why any PPPs fail.

Economic theory suggests that the performance differences may lie in the characteristics of PPPs that differentiate them from conventional procurement. The economic literature on PPPs has identified three features of a PPP that may

¹ In one of these projects the lowest bidder was not chosen to widen the market for PPP contractors, while in the other case, the PPP was preferred on the basis of lower risk to the public purse.

cause its productive efficiency to differ from traditional procurement: ownership, bundling and risk transfer (Blanc-Brude, Goldsmith and Valila, 2006).

Ownership rights

Blanc-Brude, Goldsmith and Valila (2006) argue that ownership rights are a good starting point for considering the economic consequences of PPPs, under incomplete contracting arrangements (Macniel, 1974; Grossman and Hart, 1986; Hart and Moore, 1990). Under a PPP, the public sector transfers land, property or facilities controlled by it to the private sector which is given ownership or control rights for the term of the concession or lease. This assignment of the residual control rights provides an incentive for the private sector entity to undertake relation-specific cost-saving investment (for example, in road maintenance technology) that increases productive efficiency. In the absence of this assignment the private firm would not be sure that the investment would pay off and there would be under-investment in the new technology. Turning over the control rights for the infrastructure can alleviate this problem.

Bundling

Another defining characteristic of a PPP is 'bundling', whereby the infrastructure asset's construction and operation is combined in a single contractual framework (Hart, 2003). Hart framed the issues in terms of transactions costs, with the choice between bundled or unbundled structures governed by whether it is easier to write contracts on service provision than on the quality of the building. The PPP is better if the quality of the service can be well specified in the original contract, whereas the quality of the building cannot; *vice versa* for 'unbundling'. In addition, however, bundling may be a way of altering incentives, by allowing for the internalisation of externalities between the construction and operation phases of the project (Blanc-Brude, Goldsmith and Valila, 2006). Bundling of construction and operations offers an incentive to make larger upfront outlays in the construction phase in order to achieve lower life-cycle maintenance costs. In the absence of bundling, these externalities would not be taken into account in construction and productive efficiency would be lower.

Risk transfer

The transfer of risk to the private sector can also make a PPP more cost efficient than traditional procurement. Grout (1997; 2003; 2005) emphasises information costs and the incentive structure created by the PPP service payment mechanism. Determining responsibility for cost overruns is a serious source of conflict when there are design changes or other unexpected developments. Writing the contract in terms of the flow of services from the infrastructure facility rather than the process of construction can change the incentive system. If, for example, the same entity is responsible for both construction and supplying the services, but is remunerated only for the successful provision of services of a suitable quality, the entity needs to build the correct facility, get the delivery process right, and contain

costs while not sacrificing quality. These incentives are blunted under traditional procurement if the public sector carries most construction cost and delay risk.

Indeed, in all respects, an effective transfer of risk from the public to the private sector can lead to a more explicit treatment of risk, since it is the acceptance of risk that gives the private entity the motivation to price and produce efficiently. Private finance (debt and equity) is central to this process, although its role has been overlooked so far in the theoretical PPP literature. Having the privately-provided finance at risk acts as a catalyst for the injection of risk management techniques into the project in a way that is not possible under government financing. For the latter, the cost of capital is artificially low, because the public sector can transfer risks to taxpayers and end users without having to compensate them. This underpricing of risk in traditional procurement skews decision-making by removing it from the incentives to prevent cost overruns and project delays that would put revenue streams under threat.

These insights carry implications for the *ex ante* costs of constructing infrastructure under a PPP in comparison with traditional procurement. Asset construction costs should be higher under a PPP whenever there is scope for relation-specific, cost-saving investments to be made. Likewise, construction costs under bundled contracts will exceed those with unbundling if there is the potential to make additional outlays in the construction phase which lead to life-cycle cost-savings. Construction costs will also be higher under PPPs because of the explicit recognition, quantification and pricing of construction and other risks transferred to the private sector partner, who will want to be compensated for carrying them. In general terms, this would appear to be the case based on a study of European road projects, with the largest part of the estimated difference seemingly representing the cost of passing on construction risk to the private entity (Blanc-Brude, Goldsmith and Valila, 2006). In effect, it would seem that the public sector pays more for a PPP road *ex ante* primarily to avoid time and cost overruns. Since changes due to client requirements are the main cause of cost variations in both PPP and traditionally procured projects, 'one of the arguments for PPP is that the process of preparing output based specifications makes the public sector focus on exactly what it wants. Hence changes causing cost increases become less likely.' Besides, 'the incentive to present realistic construction budgets are weaker in traditional procurement, given weaker accountability in the event of cost overruns' (p. 32). Overall, the authors conclude that 'while it would thus seem that the transfer of the construction risk is successful in PPPs, one can nevertheless not conclude that it unambiguously creates "value for money" ', because 'the public sector could transfer construction risk in traditional public procurement by entering fixed-price, date-certain construction contracts' and 'making use of schemes to provide incentives' (p. 31). Some of these alternatives are considered below.

Problems of PPPs

Readers may object that we have offered a very selective account. What about the Cross City Tunnel fiasco, the difficulties of Spencer Street Station, controversies about PPPs in the UK National Health Service and the high cost of private finance (and financiers' fees) relative to government funding of projects?

It is too early yet to know what impact the Sydney Cross City Tunnel will have on public finances. What can be said is that the two (east and west) 2.1 km 'long 80' tunnels exiting east of the Kings Cross Tunnel to the east and connecting to the Western Distributor in the west, along with a third ventilation tunnel, are an engineering triumph, delivered on time and on budget. Rather, the size of the up-front payment to the public purse (not an unusual payment: see Brown, 2005) and its implications for the tariff levied, along with the road closures to 'return William Street to the people' that were seen as putting cash into the developers' pockets, all undermined the legitimacy of the venture. The primary objectives of the project, to remove much east-west traffic from central Sydney streets, improve the environment of central Sydney streets, and reduce east-west travelling times, were thus compromised.² In the words of the NSW Auditor-General, 'the focus became the tunnel itself, rather than the wider objectives' (Sendt, 2006:5).

Spencer Street Station in Melbourne (now Southern Cross Station) with its iconic roof is an architectural triumph, and also illustrates the potential for innovation that a PPP can bring. From the outset the winning bidder did not think of the project as a station, which is what might have happened under traditional procurement. Instead, Civic Nexus saw the location as a junction point where people congregate with cash in their pocket, and it set about combining transport, retail, commercial office space, and residential inner-city accommodation in a way that integrates the adjoining Docklands development and stadium into the City of Melbourne. Press reports (over 100 in one year alone) made much of access problems and delays encountered by the contractors. Yet the reality is that a world-class transport interchange has been completed, with office accommodation and shops, and nearly all of the \$110 million of construction losses are borne by the contractor and do not fall upon the taxpayers.

Elsewhere, the authors (Grimsey and Lewis, 2005b) have addressed some of the criticisms made of PPPs. In that article we focused on a number of issues: PPPs in the National Health Service, the role of the PSC and the PPP-PSC assessment, the discount rate used for PPP cashflows and the PPP-PSC comparison, the treatment of uncertainty in risk transfer, and the long-term evaluation of PPP projects within a governance framework (Grimsey and Lewis, 2004b). Here we examine some different issues.

Some contentious issues

Cost of finance. One of the perennial objections to PPPs is that the private sector's cost of funds is more expensive than the government's cost of debt used to fund a traditional procurement. This is true, but only up to a point, for the 'lower government borrowing cost' argument is also seriously flawed. What is important is the 'true' risk of the project. Private provision of finance, that is, the PPP route, explicitly builds this risk into the cost of funds, whereas the government's cost of borrowing does not. The relevant comparison needs to allow for risk and uncertainty (Grimsey and Lewis, 2004a).

² We thank Vikram Bhatia of the University of South Australia for his valuable research into this project.

Excess returns. A study commissioned some years ago, and undertaken by PricewaterhouseCoopers (PwC) (2002), analysed the projected rates of return on a sample of 64 PFI projects to ascertain whether the returns that the private sector expected to earn for managing and bearing risk were excessive or in line with what might be anticipated from a competitive market among bidders. We noted earlier that, on similar reasoning, construction costs on PPPs might be expected to be higher than for traditional procurement. The PwC study takes as its starting point the proposition that, with competition, project internal rates of return should reflect exactly the returns required by diversified investors, as indicated by the weighted average cost of capital. Across all projects in the sample, the real internal rate of return is found to average 7.7 per cent per annum. By comparison, the average weighted cost of capital is estimated using CAPM to be 5.3 per cent per annum. Thus the 'spread', the amount by which the average project internal rate of return is higher than the cost of capital, is 2.4 per cent per annum. Of this amount, 1.7 per cent is thought to be accounted for by two factors: unrecovered bid costs on other projects (about 1 per cent); and the higher cost of private sector borrowing compared with public sector borrowing (about 0.7 per cent). Consequently, the 'excess' project return to project investors is estimated as being at most about 0.7 per cent. We say 'at most' because some part of this margin, attributed in the report to 'structural issues' that have limited competition in the bid market, could be a margin built in for uncertainty, which is not allowed for in the analysis (Grimsey and Lewis, 2004c).

Nevertheless, in a number of well-publicised cases, debt has been re-financed, boosting the sponsors' rate of return (in one case from 12.8 to 39 per cent pa, and in another from 19 to 60 per cent pa) and providing investment banks with large upfront fees. In one case concerned (Fazakerley PFI prison), the consortium was able to refinance the project because of its success in delivering the project ahead of time and establishing a track record of operations, lowering the perceived risk of PFI-backed debt. HM Prison Service argued the importance of not removing the opportunities for the private firms to benefit substantially from successful risk-taking. The solution that emerged was a cost-sharing formula to apply to such windfall gains in new contracts, although it remains an issue with existing contracts (House of Commons Committee of Public Accounts, 2006a). Revenue-sharing provisions are common for PPP road projects in Australia, with the public sector sharing in toll revenue in excess of base case forecasts (Brown, 2005).

Drag on government budgets. Payments under PPP schemes involve significant fixed payments to cover interest charges and capital repayment. These debt repayment charges introduced into the finances of public sector authorities are said to limit the later flexibility of these bodies, by 'mortgaging the future' in return for immediate gains since payments are transferred to the future. The counter-argument is that construction can be brought forward with the cost of infrastructure investment spread over the life of the asset, much as homebuyers do when they take out a mortgage or use leasing and hire purchase facilities. At another level, the contractually binding commitment over the project life for the services included in the project can be criticised for reducing the autonomy of

public sector management in relation to discretionary spending. Concurrently, however, it removes the ability to divert funding from needed maintenance work.

Incomplete risk transfer. Critics often suggest that there is no substantive risk transfer under a PPP. However, this is truer of the traditional approach with design and construct. As the builder is not responsible for how the buildings function, there is an implicit temptation to build (or at least tender) cheaply. There is also not an incentive to take into account the whole of life trade-offs that might exist. Under a PPP approach the contractor is forced to think longer term and also cannot just 'walk away' having completed the construction. The contractor has ongoing, long-term responsibility for the facility's performance, which is reflected in performance-based monthly payments. Even if the contractor is unable to fulfil its obligations, and terminates the partnership, it cannot take the facility away and, in most cases, the assets revert to the public sector.

Access. Concerns are also expressed about community access and user fees charged for access, although these can be addressed in the contract to ensure that access rights are the same as other facilities and that user charges are limited to the rate of inflation or some other predetermined rate. Privately-owned and operated toll roads have been especially controversial in Australia. Some, such as Tony Harris (2006:1) are opposed to the very idea: 'in an urban environment toll roads are ridiculous and privately owned toll roads are even more ridiculous'. The objection is that the toll roads break up a complex network into segments with separate tolling creating additional transactions costs (Harris, 1998:6). Another objection raised is that 'direct tolling forces between 20 and 40 per cent of motorists off these low-cost infrastructure facilities on to more expensive stop-start arterial roads and therefore reduces the economic benefits of the facility' (Cox, 2005:8). These difficulties can be avoided by remunerating the contractor by shadow tolls based on availability and other performance indicators (such as surface conditions, lighting and verge conditions). But then other problems arise. Clarke and Hawkins (2006) criticise City Link and other urban road networks because the tolls are for cost-recovery and not efficiency-based, such as being higher at peak periods to reflect higher congestion costs. There are no easy answers to such matters. These issues are being played out also in the United States as roads, bridges and airports are being sold off to private interests such as Transurban and Macquarie Infrastructure Group (Thornton, 2007).

Some other concerns

Technological change. PPPs are said to require a degree of certainty about the type of infrastructure or services needed. A high degree of certainty is needed as to the desired output specification and infrastructure required. For this reason, the conventional wisdom is that information technology (IT) projects are subject to such uncertainties and complexities as to render them unsuitable for PPP delivery. Interestingly, however, the Glasgow Schools PFI Project, awarded in 2000, involving the construction of 12 new schools and modernisation of 17 schools, included an Information Communication Technology (ICT) network for all 29 schools incorporating scope for expansion and upgrades for technological change (Goldstone, 2001; Ernst & Young, 2006).

Inflexibility. PPP contracts contain detailed specification of the outputs required and the penalties for not meeting them under long-term contracts that are inflexible. If the government wishes to alter its service requirements, this is possible but may prove to be costly. While PPPs in particular have been criticised on this score, the reality is that inflexibility is present regardless of the procurement route. There are few things more irreversible than a building or piece of infrastructure. If flexibility and catering for changing needs is important, then these features need to be incorporated into what is being procured irrespective of the method of procurement. Indeed, PPPs might be said to have merits in these terms. First, the PPP model forces upfront consideration of what long term flexibility is likely to be required to respond to demographic and other changes. Boundaries for flexibility can then be specified and the risk of designing in and delivering on this flexibility can be transferred to the private sector under the PPP. Second, the costs of doing away with all or part of a PPP are accurately known whereas the costs of changing conventionally-procured facilities are hidden from view and are frequently under-costed because such long-run considerations are usually ignored.

Procurement costs. The average procurement time for PPP projects is around 22 months in the UK and 12-18 months in Australia. It takes a long time to agree the risk transfers, payments and terms that are acceptable to both parties — imposing considerable legal and due diligence costs on both the contractors and public sector side. The combination of time and due diligence means that multi-million dollar bid costs are at risk. Private parties will expect the contractual arrangements to cover the financial risks that they face. PPPs are generally not recommended for small individual projects, although combining a number of small projects helps to spread procurement costs across several projects. Overall procurement costs could be reduced if it were accepted that PPPs had been sufficiently 'road-tested' in certain applications, thereby dispensing with the (not inconsiderable) cost of preparing the PSC. A competitive bidding process would then ensure VFM. This is effectively what France has done with concessions for water and many other municipal services.

Wrapping a number of projects together is one of a number of developments that have occurred in recent years to lower procurement costs of traditional PPPs, introduce flexibility and allow for uncertainties and technological change. Because they often combine some elements of PPPs and conventional procurement we refer to them as hybrids.

Hybrid Approaches

Table 2 summarises the advantages and disadvantages of the hybrid models, which are also outlined below. All seek to retain the incentive structures and clear lines of responsibility that mark the PPP approach.

LIFT/LEP

The Local Improvement Finance Trusts (LIFT) and Local Education Partnership (LEP) can be seen as variants of a broadly similar approach to procurement, whereby contracting with a single partner for several small-sized projects on a

staged basis reduces the costs of transacting and shortens the length of the procurement process. Both are based around the formation of joint venture (JV) companies in which the various public sector entities have a minority interest. The JV LIFTCo signs a 20-25 year undertaking to deliver partnering services in relation to the provision of local primary health needs, agreeing to develop a certain number of projects initially, others later, with funding staged. The programme was launched in the UK in 2000. Under LEP the initial work is likely to be undertaken by the particular private partner to establish VFM benchmarks. Thereafter the public sector has the right to market test proposals. The first LEP (for Bristol) reached financial conclusion in June 2006.

Table 2: Comparison of Hybrid Models

Advantages	Disadvantages
<i>LIFT/LEP</i>	
<ul style="list-style-type: none"> • Potential for lower procurement costs over project life • Allows for flexibility over programme delivery • Enables the public sector to maintain influence over strategic direction of investment • Commitment in terms of early commercial input from private sector partner • Builds in scope for continuous improvement throughout successive phases of work 	<ul style="list-style-type: none"> • Scope for conflict of interest for strategic partner • VFM relies on benchmarking of early work • Reluctance for public sector to utilise alternative providers
<i>MoDEL (Prime Plus Contractor)</i>	
<ul style="list-style-type: none"> • Enables lower procurement costs over project life • Gives flexibility over programme delivery • Public sector can retain influence over strategic direction of investment • Has the potential for continuous improvement over project stages • Commitment from early commercial input from private sector partner • Creates clear roles and responsibilities, with less conflicts of interest • Allows greater competitive pressures 	<ul style="list-style-type: none"> • Should the appointment of the strategic partner occur before there is any fixed price tender for works provision there may be less certainty about their capacity to commission the appropriate services • Piecemeal approach may militate against an integrated supply-chain
<i>Incremental partnership</i>	
<ul style="list-style-type: none"> • Can help to lower procurement costs • Arrangement gives high flexibility to meet changing requirements • Does not require a long-term contractual relationship, although can be formed gradually • Competitive pressures are maintained 	<ul style="list-style-type: none"> • Major risks are held by the public sector
<i>Alliancing</i>	
<ul style="list-style-type: none"> • There is a shared responsibility for ensuring that the design is appropriate • Allows flexibility to modify design and enables on-going changes to be incorporated during construction • Incentives are given to both parties to complete the project on time and on budget under the gain / pain sharing philosophy • An environment of 'no blame' eliminates the cost of disputes 	<ul style="list-style-type: none"> • Both parties must be genuinely committed to openness and collaboration • Requires on-going involvement of appropriately senior staff with public authority to resolve issues • Costs of establishing and maintaining alliance can be considerable • The approach has had only limited applications in the public sector • Only one design is developed • Less likelihood of achieving an innovative design that maximises operational benefits • The government may bear the price risk • Public sector is left with overall design and 'fit for purpose' risk

Source: Adapted from Deloitte Research (2006) and Ernst & Young Project Finance Advisory.

MoDEL project

This applies in similar circumstances to the LIFT/LEP model, but is especially designed for situations where the work is heterogeneous. MoDEL involves the consolidation of seven UK Ministry of Defence (MoD) sites to a single location in London. The approach taken has been to appoint a Prime Plus Contractor who assumes the principal risk on project delivery. All elements of the work are subject to open competition and the contractor competes for the initial specified works via a Fixed Price contract. All unspecified works are then competitively procured by the Prime Plus Contractor. The contractor primarily is paid through net disposal receipts from surplus property and is responsible for ensuring that timescales and quality standards are met, with rewards and penalties.

Sales proceeds are used to pay debt, direct project costs, and the contractor's management fee for delivering the project. Any excess is shared by the MoD and the contractor according to a profit-sharing mechanism. This formula ensures that there are strong incentives for keeping costs down. Facilities are thus rationalised and upgraded within a single contractual framework, with a partner who can take significant risks on behalf of the public sector. The project reached financial conclusion in summer 2006.

Incremental partnership

Here the government enters into a framework agreement with a private sector entity to procure the necessary infrastructure and services on behalf of the public sector. As its requirements become clearer, the government agency can 'call off' individual projects without any long-term commitment. The private sector partner competitively procures the services and infrastructure from subcontractors using its procurement expertise to negotiate the best deals. It also has overall responsibility for service levels against clear performance measures. Nevertheless, the authority is not bound to use the private sector partner, and retains the right to use alternative providers in which case the contracts and licences would revert to the public body. This avoids large-scale contracts that are difficult to reverse and require a long-term commitment from both parties. Such an incremental partnership approach was used in 2002 by Greenwich Council, London for its ICT facilities and services with Deloitte acting as 'service integrator' under the five year arrangement (Deloitte Research, 2006).

Alliancing

Under an alliance contract the public sector shares all the risks with the contractor in a relationship which encourages a 'no blame', 'solutions' based culture. The contract is based on an open book approach in which the contractor is generally paid for direct costs, with allowances for corporate overheads and a normal profit margin. A target cost for the works is established. Delivery of the project at a cost lower than the target amount will result in a sharing of the benefits, just as cost overruns will also be shared. Suitable for complex projects with considerable uncertainties and scope for design innovation, it presupposes that the public sector is an experienced manager of infrastructure projects and is able to retain

all significant project risks. The intellectual origins of the collaborative framework lie in the 'partnering' agreements that emerged in the mid-1990s (Crowley and Karim, 1995; Hellard, 1995; Wilson, Songer and Diekmann, 1995), while cost-plus contracts have long been used in defence applications. The National Museum in Canberra was constructed under such an alliance approach.

Conclusion

In this article we have argued that PPPs are a way of introducing very different incentives into the procurement process. The theory of PPPs suggests that incentives to productive efficiencies can be introduced into infrastructure procurement by vesting control rights with the private sector, bundling into one contract the design, construction, operation and maintenance of the facility, and by transferring the risk of cost and time overruns to the private partner. To these arguments we would add, at a practical level, the disciplines injected by the participation of private capital that is genuinely 'at risk' and that is not artificially low and divorced from project risk. Evidence has been presented that the private sector does appear to respond to these signals.

Nonetheless, PPPs are not without difficulties. They are too complex, and costly, for many small projects. In some cases, they may be beyond the capacity of the public sector agency to implement and manage. For other projects the tight specification of the outputs required may be difficult to detail for an extended period. Recognition of these problems has seen the development of new hybrid PPPs, embodying different degrees of partnership, with the aim of reducing procurement costs and generating flexibility for evolving infrastructure needs, while retaining clear lines of responsibility and the proper motivation for the parties involved. The upshot of this blurring of conventional procurement and traditional PPP structures is a continuum of delivery models available to accommodate different risk preferences and infrastructure service needs.

References

- Arthur Andersen (2000), *Value for Money Drivers in the Private Finance Initiative*, Arthur Andersen and Enterprise LSE, London.
- Blanc-Brude, F., H. Goldsmith and T. Valila (2006), 'Ex-Ante Construction Costs in the European Road Sector: A Comparison of Public-Private Partnerships and Traditional Public Procurement', European and Financial Report 2006/01, European Investment Bank.
- Brown, C. (2005), 'Financing Transport Infrastructure: For Whom the Road Tolls', *Australian Economic Review* 38 (4):431-8.
- Clarke, H. and A. Hawkins (2006), 'Economic Framework for Melbourne Traffic Planning', *Agenda* 13 (1):63-80.
- Cox, J. (2005), 'Caught on the road to nowhere', *The Australian* 28 November:8.
- Crowley, L. and M. Karim. (1995), 'Conceptual Model of Partnering,' *Journal of Management in Engineering* Sept/Oct:33-39.

Deloitte Research (2006), *Building flexibility: New Delivery Models for Public Infrastructure Projects*, Deloitte & Touche LLP, London.

Ernst & Young (2006), 'PPPs in Education', October, Project Finance Advisory, Australia.

Fitzgerald, P. (2004), *Review of Partnerships Victoria Provided Infrastructure*, Review of Partnerships Victoria, Melbourne.

Flyvbjerg, B., N. Bruzelius and W. Rothengatter (2003), *Megaprojects and risk: An Anatomy of Ambition*, Cambridge University Press, Cambridge.

Flyvbjerg, B., M. Holm and S. Buhl (2002), 'Underestimating Costs in Public Works Projects — Error or Lie?', *Journal of the American Planning Association* 68(3):279-295.

Flyvbjerg, B., M. Holm and S. Buhl (2005), 'How (In)accurate Are Demand Forecasts in Public Works Projects?', *Journal of the American Planning Association* 71(2):131-146.

Goldstone, D. (2001), 'Output-Based Education', *Public Policy for the Private Sector*, The World Bank Group Private Sector and Infrastructure Network, Note Number 233, May.

Grimsey, D. and M. Lewis (2004a), 'Discount Debates: Rates, Risk, Uncertainty and Value for Money in PPPs', *Public Infrastructure Bulletin* 3(March):4-7.

Grimsey, D. and M. Lewis (2004b), 'The Governance of Contractual Relationships in Public Private Partnerships', *Journal of Corporate Citizenship* 15(Autumn):91-109.

Grimsey, D. and M. Lewis (2004c), *Public Private Partnerships: The Worldwide Revolution in Infrastructure Provision and Project Finance*, Edward Elgar, Cheltenham.

Grimsey, D. and M. Lewis (eds) (2005a), *The Economics of Public Private Partnerships*, Edward Elgar, Cheltenham.

Grimsey, D. and M. Lewis (2005b), 'Are Public Private Partnerships Value for Money? Evaluating Alternative Approaches and Comparing Academic and Practitioner Views', *Accounting Forum* 4(29 December):345-78.

Grossman, S. and O. Hart (1986), 'The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration', *The Journal of Political Economy* 94(4):691-719.

Grout, P. (1997), 'The Economics of the Private Finance Initiative', *Oxford Review of Economic Policy* 13(4):53-66.

Grout, P. (2003), 'Public and Private Sector Discount Rates in Public-Private Partnerships', *Economic Journal* 113(486):C62-C68.

Grout, P. (2005), 'Value-for-Money Measurement in Public-Private Partnerships', *EIB Papers* 10(2):32-56.

Harris, A. (1998), 'Credulity and Credibility in Infrastructure Funding', ACT Department of Urban Services Summer Seminar Series, Financing Urban Infrastructure and Services, University of Canberra, 6 March, www.audit.nsw.gov.au/publications/speeches/ag_speech/1998/uc6398.htm, (accessed 30 April).

Harris, A. (2006), 'Edited Transcript of *Four Corners* Interview', www.abc.net.au/4corners/content/2006/s1573798.htm, accessed April 27, 2007.

- Hart, O. (2003), 'Incomplete Contracts and Public Ownership: Remarks, and an Application to Public-Private Partnerships', *Economic Journal* 113(486):C69-C76.
- Hart, O. and J. Moore (1990), 'Property Rights and the Theory of the Firm', *Journal of Political Economy* 98:1119-1158.
- Hellard, R. (1995), *Project Partnering Principle and Practice*, Thomas Telford, London.
- HM Treasury (2003a), *The Green Book — Appraisal and Evaluation in Central Government*, TSO, London.
- HM Treasury (2003b), *PFI: Meeting the Investment Challenge*, HMSO, Norwich.
- Hodgson, G. (1995), 'Design and Build — Effects of Contractor Design on Highway Schemes', *Proc. Civil Engineers* 108(May):64-76.
- House of Commons Committee of Public Accounts (2006a), *The Refinancing of the Norfolk and Norwich Hospital*, Thirty-fifth report of session 2005-06, May, London.
- House of Commons Committee of Public Accounts (2006b), *NHS Local Improvement Finance Trusts (LIFT)*, Forty-seventh report of session 2005-06, July, London.
- Leahy, P. (2005), 'Lessons from the Private Finance Initiative in the United Kingdom', *EIB Papers*, 10(2):58-71.
- Mackie, P. and J. Preston (1998), 'Twenty-One Sources of Error and Bias in Transport Project Appraisal', *Transport Policy* 5:1-7.
- Macniel, I. (1974), 'The Many Futures of Contracts', *Southern California Law Review* 47:691-816.
- Mott MacDonald (2002), Review of Large Public Procurement in the UK, HM Treasury, London.
- National Audit Office (1998), *The Private Finance Initiative: The First Four, Design, Build, Finance and Operate Roads Contracts*, HC 476, Parliamentary Session 1997-98, HMSO, London.
- National Audit Office (2001), *Managing the Relationship to Secure a Successful Partnership in PFI Projects*, HC 375 Session 2001/2002, HMSO, London.
- National Audit Office (2003), *PFI: Construction Performance*, Report by the Comptroller and Auditor General, HMSO, London.
- National Audit Office (2005), *PFI: Construction Performance*, Report by the Comptroller and Auditor General, HMSO, London.
- Parker, D. and K. Hartley (2003), 'Transaction Costs, Relational Contracting and Public Private Partnerships: A Case Study of UK Defence', *Journal of Purchasing and Supply Management* 9(3):97-108.
- PricewaterhouseCoopers (2002), *Study into Rates of Return Bid on PFI Projects*, OGC, London.
- Sachs, T., C. Elbing, R. Tiong and H. Alfen (2005), 'Efficient Assessment of Value for Money (VFM) for Selecting Effective Public Private Partnership (PPP) Solutions — A Comparative

Study of VFM Assessment for PPPs in Singapore and Germany', CACS, School for Civil and Environmental Engineering, Nanyang Technological University, Singapore.

Sendt, R. (2006), 'Public Private Partnerships', CEDA Lunch, 10 April, The Audit Office of New South Wales.

Stone, T. (2006), 'PFI — Is There a Better Way?' KPMG Global Infrastructure and Projects Group, London.

Thomson, C. (2005), 'Public-Private Partnerships: Prerequisites for Prime Performance,' *EIB Papers* 10(2):112-129.

Thornton, E. (2007), 'Roads to Riches', *Business Week* 7 May:50-7.

Wilson, R., A. Songer and J. Diekmann (1995), Partnering: More than a Workshop, a Catalyst for Change', *Journal of Management in Engineering* Sept/Oct:40-45.

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REVIEW

Myth Buster

*David Potts, **The Myth of the Great Depression**, Scribe, Melbourne, 2006*

*Reviewed by **Keith Rankin***

The *Myth of the Great Depression* is a timely publication with a provocative title. David Potts does not deny that there was an economic depression — indeed a Great Depression — in Australia in the 1930s. Indeed Potts states the Depression ‘was historically a unique moment’. Rather, his emphasis is to debunk the popular interpretation of the Great Depression as an extended period of collective poverty and misery. Potts discovers both a huge diversity of experiences and the widespread existence of positive memories among the most affected people.

The book's title, then, is very much a play on words, with the word ‘Myth’ being used more to mean ‘iconic national story’ or folklore, and ‘Depression’ being used as much in its clinical sense as in its economic sense. Potts observes: ‘While the great majority of people always wanted a job and pay, the Depression was the best time to be unemployed and the worst time to be in work.’ Indeed, in the middle years (1931-34) of the economic crisis, rates of crime, suicide and infectious illness were unusually low.

The primary source material for *The Myth of the Great Depression* comes from a large sample of interviews taken mainly in Victoria by Potts’ students in the 1960s. His archive was supplemented by later interviews from other states, and from a wide range of secondary sources.

Potts observes that most of the visible victims of unemployment were working-class men who were more likely to have been employed in industries, such as the construction industry, that are most susceptible to business closures and downsizing during a recession. Further, the dominant experience of joblessness was short-term. Most persons who were at some stage unemployed were employed in some capacity — often short-term casual work — through most of the Depression. Further, working class poverty did not begin in the 1930s. Throughout the 1920s there were fewer people in absolute poverty and many fewer unemployed. Nevertheless, experiences of poverty had been very real, and all the more painful because, in that decade, economic hardship was largely unacknowledged.

Middle-classes experienced much less unemployment and unpaid downtime, which meant that, given falling prices, most actually increased their material living standards in the early 1930s. (I always remember my economic history professor pointing out that, during the Depression, students at the University of New Zealand in Wellington were a surprisingly affluent group.) Those who were unemployed generally had personal savings or family connections to see them

through. Few middle-class professionals were among the 'conscripts' required to do relief work in order to get state assistance.

Children on the whole seem to have found the Depression a happy time, especially those who were able to spend more time with both their parents than most children today could dream of. 'Many [children] delighted in increased time spent with their unemployed fathers'. (Indeed my own mother was such a child. She adored her Dad, who subsisted at home for several years on a small New Zealand Railways pension.)

Potts argues, convincingly, that the introduction of unemployment benefits, however miserly or conditional, was critical to the minimisation of adverse social outcomes. Stabilisation of expenditure was enhanced through benefit recipients commonly not declaring their own or family members' low and variable casual earnings. Married women with jobs commonly used alias identities.

Potts argues that most contemporary and historical accounts of the 1930s are biased because they emphasised the most extreme incidents of hardship over the more normal experiences of those affected by reduced incomes. This bias had several intended and unintended effects. At the time, such emphasis made others' experiences seem worse than one's own, increased happiness by reducing expectations of what material living standards were required to achieve happiness, and generated political responses which were both effective and cathartic. In historical accounts, exaggeration of suffering acted as a warning for a new generation of policymakers, and helped to create a bonding myth (a national story of endurance and survival shared on a nationwide scale).

While not treating the 'added-worker effect' in an analytical way, Potts reveals the phenomenon of increasing labour supply at a time of unusually low labour demand. Hence much of the actual hardship (whether lack of money or overwork) was experienced by wives and daughters who were obliged to enter the labour force to try to make up for the reduced earnings of their husbands and fathers. Many of these women's earnings (or barter), at very low hourly rates, did keep their families solvent if only just.

Potts observes negatively-sloped supply curves in agriculture as well as in labour. He states 'Indeed, with increased production to cover falling prices, [primary producers'] main problem with work was too much of it.'

There are some areas that we can be critical of. For example, Potts says

Factory records suggest that the public at large, which must have included many of the poor, did not heavily cut the purchase of new clothing.... From July 1931 onwards into the worst years of unemployment, the value of [factory] production rose again.

He ignores significant reductions of imported goods. The Depression was in fact a period of import substitution, carried out substantially with the very cheap labour of teenage workers, male and female.

Despite best intentions, Potts' primary resource — his sample of interviewees — must have been, to some degree, biased in favour of the physical and

psychological survivors of the Great Depression. Those who failed to re-establish normal lives would have been much less likely to have been available to be interviewed in the 1960s or later. Some of the most dislocated young men of the depression era will have died relatively young; some will have become casualties of World War 2.

Overall, this book, which many readers will approach on account of its title as a neoconservative reinterpretation, turns out to be quite subversive in its concluding pages. In its own way, it is a paean to anti-materialism and work-life balance. The Depression was a time when many reached unexpected happiness through being forced to lead simpler lives, to rediscover nature, and to enjoy the camaraderie of the many friends and neighbours who faced very similar circumstances. More men than in previous decades were money-poor but time-rich; the opposite of the problem too many struggle with today.

An important though implicit theme is how we might cope with a similar-scale economic crisis today. Potts argues that the early 1930s was 'a moment in economic history particularly suited to self-help.' With few parents not already in the workforce today, there is less scope for additional family members to pitch in to save their families from insolvency. The modest 1930s-era unemployment benefits purchased so much then because widespread informal production helped to keep the prices of basic items very low. High market supply combined with low market demand. Could large proportions of today's 20- and 30-somethings switch at short notice, as their great-grandparents did, from industrial modes into informal handicraft modes of production in order to survive tolerably well? David Potts doesn't believe so. With not so many urban vegetable gardens and chicken runs, and with reduced cooking and sewing skills, we can infer that today's Generations X and Y would not cope at all well if faced with a comparable economic crisis.

The Great Depression remains a cautionary tale for today's policymakers.

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