

Risk Management and the Re-Invigoration of Reform

A paper delivered to the One-Day Symposium:

Debt, Risk and the Role of Government:
The bond market in a wider context

27 February 2003, ANU

Ric Simes
Chief Economist
ICAP

Nicholas Gruen
Lateral Economics



The principle governing risk transfer is that risk will be allocated to whoever is best able to manage it at least cost, taking into account public interest considerations. This does not mean that all risk is transferred. If risk is transferred inappropriately, the Government will pay a premium.

Victorian Government, Partnerships Victoria, 2001b, p. 10

1. Introduction

Risk matters. It matters in people's lives, security figuring prominently in every public opinion poll of the community's leading concerns and in their voting patterns. As Allen and Gale put it (2001: 14-15):

“The risks associated with holding stocks, bonds and other financial assets are only some of the risks that individuals face. There are many other risks, such as the risk of unemployment, illness, changes in the value of one's home, and changes in the value of one's human capital, to name a few. Despite the enormous pace of financial innovation in the 1980s and 1990s, there are very few ways in which these risks can be shared.”

Though risk features prominently in economic theory, we have not brought it centre stage in our thinking about economic reform. When one does, things look surprisingly different.

We might roughly characterise economic policy in Australia up until the 1980s as one that was motivated by the idea that economic development was about building physical fixed capital in infrastructure, industry and expanding what was then called 'know-how'.

A central theme of economic reform since that time has been the idea that the economy does more than make things. It is a giant hugely complex mechanism that not only makes things but also trades them. Shining the light of economic thinking on existing restrictions on trade and on the competitive terms on which that internal and external trade takes place revealed major gains to be made from reform.

That agenda needs to be continued. While this occurs we advocate integrating risk management more centrally into economic policy. If the economy is a giant risk management system, is risk well managed within our economy and can improvements be made? The potential welfare gains justify basing much of the next wave of reform on aspects of risk management.

1.1 Some economic principles of risk allocation

Each of us is beset by a plethora of risks large and small every day. We 'self-insure' against most small risks – that we will miss the bus or cut our finger. Markets can make a fair fist of dealing with a range of larger risks, particularly where pooling those risks can be done in a relatively straightforward way commercially as with house and car insurance. Here insurance companies pool similar risks and people opt into or out of the pool by paying insurance premiums.

If we are to ask who should bear a particular risk in our economy, two commonsensical economic principles are paramount – what we will call the capacity of parties to *passively bear* and their capacity to *actively manage* risk.

Other things being equal, particular risks should be borne by the parties with the greatest capacity to passively bear those risks. This can be measured as the rate of return they require to take on the risk. Amongst private funders for projects one would expect a competitive market to select for just that party as it would be prepared to bid the most to undertake the project.

The second issue is active risk management. For some risks can be greatly reduced with good management. As with passive risk bearing, one can measure the competitiveness of alternative risk bearers in opportunity cost terms. In the absence of pronounced externalities and other imperfections, market competition between firms should ensure that the lowest cost private manager of a given risk (considering both passive risk bearing and active risk management) is selected.

Government is almost always a lower cost passive bearer of risk than private agents.¹ Government ownership of an asset or a liability represents the pooling of risk *par excellence*. And government enjoys unique advantages over the private sector given its law making and taxing powers and resulting capacity to internalise externalities and reduce transactions costs. This gives it a lower cost of capital than that prevailing within the private sector. If no other considerations were brought to bear on the subject therefore, all assets would be best held in public hands and government would bear all risk.

But the second principle of active risk management changes things profoundly. Throughout the economy the capacity of private ownership to meet individual preferences, and generate and make use of local knowledge and incentives, gives it a huge advantage in actively managing a wide range of risks.

In between, there will be a range of policy issues where detailed analysis and fine judgement will be required to best configure structures so risks are most effectively pooled and managed. Note that even where the private sector bears primary responsibility for such risk, there may be crucial functions for government. In particular, and at the risk of over-simplification, the paper argues that the role for government is two-fold:

- to take a direct role in managing non-diversifiable (or macro) risks or risks where severe externalities are involved; and
- to establish sound institutions and tools for individuals to best manage diversifiable risks.

In order to explore some of these ideas, the paper expounds on five areas of economic policy. They are public-private partnerships, the management of financial crises,

¹ It is hard to imagine counter-examples in a closed economy. Amongst open economies, for some governments of sufficiently small countries there will be clear exceptions. Multi-national firms may be better passive bearers of investment risk than the government of a very small country. But for ease of exposition we ignore these counter-examples.

fiscal policy, retirement income policy and the overall management of the government's assets and liabilities.

Each of these policy areas has been subject to extensive reform over the past two decades. From a risk perspective, the record has been mixed. Much good has been done. We argue that we have also taken a wrong turn in some other areas. In other areas again our words have been finer than our deeds.

For example, Australia scores well on developing a financial system capable of coping with financial crisis. Similarly, many of the sales of public assets have shifted the risk to those who are best placed to actively manage it.

At the same time, there has been a strong tendency in many of the policy decisions to *minimise* the government's exposure to risk rather than *optimise* society's exposure.² Such considerations argue for a central role for government being its ability to help society manage risk. This should not be a startling observation, but it does stand in relief to some recent trends.

Rather than instituting the best possible risk management systems – not just narrowly for government but from an economy wide perspective – much of the reform of the last two decades has focused on minimising government risk. It is appropriate for all sorts of reasons that governments be prudent and that governments be risk averse. Governments are representative bodies and the people they represent are risk averse. Moreover governments are political, and political institutions are usually not particularly well adapted to entrepreneurialism.

Nevertheless, managing risk for the whole community is a core task of government. And in a wide range of areas – for instance retirement incomes – the choices at the end of the day for a democratic government are not between managing risk or offloading it. They are between managing it well and badly – managing it by design and not by default.

Of course it is easy to bemoan the 'short-termism' of politics and of governments. But it is not quite that simple. Recent history demonstrates that while there are inevitable short term biases in government brought about by the electoral cycle (not to mention the 24 hour news cycle) governments are paradoxically also under considerable pressure to show 'vision' and leadership. A coherent agenda for reform is a hard to come by political asset in such circumstances.

This paper argues that elevating the role of risk management as a priority for reform would lead to substantial economic gains. Further in the areas we identify in this paper, there would be no large political costs – of the kind sustained by tax and tariff reformers for instance.

That seems to us an inviting vista for politicians seeking some optimal mix of risk and return!

² Indeed, as we argue below, sometimes decisions which are justified as minimising risk for government, do not necessarily do so when viewed across the portfolio of government assets and liabilities.

2. Some Background ‘Stylised Facts’

A number of beliefs – even prejudices – as to how the economy operates in practice influences the discussion to follow. In particular, four aspects of the economy warrant consideration ahead of the review of various areas of policy.

2.1 Incomplete markets and the government’s time horizon

In theoretical economic models, the management of risk need not be any more difficult than the production and trade of oranges. But heroic assumptions are needed for such a result to be sustained. In reality, significant deviations from this starting point emerge, not least of which is incomplete markets.

The financial system manages some of these risks well and where those risks can be diversified, portfolio theory provides solutions to the various optimisation problems that arise. However, markets are notoriously thin or non-existent in many critical areas of risk. For example, there are very limited options for individuals to manage their risks associated with macroeconomic fluctuations.

And such macro risks matter. For example, Shiller (1997) estimated that the standard deviations of the expected present value of GDP per capita conditional on current information was 26 per cent for Australia and more than this for most other countries.³ So uncertainty is sizeable, and risk-averse agents would, presumably, like to be able to manage it.

Government is often in a better position – at least in theory – to pool many such non-diversifiable risks. This is certainly the case where incomplete markets arise from the inability of the existing generations to contract with future generations. The institution of government spans generations and through its taxing powers is able, in effect, to enforce such contracts.

2.2 Volatility and risk

Some interesting insights emerge from an examination of financial volatility as an (albeit imperfect) proxy for risk.

First, the volatility in inflation and output has declined over the past two decades in most major economies including Australia.⁴ While the causal factors behind this are open to debate, macroeconomic policies do appear to have been a contributing factor (as does the shift in the composition of national outputs). Of itself, this reduced volatility will have improved the welfare of the risk-averse.

³ Shiller’s estimates provide only an impression of the uncertainty individuals face on average (the so-called ‘representative agent’). They by no means claim to measure the many dimensions of uncertainty or risk experienced at a personal level. The estimates are derived from autoregressions of per capita incomes using data for the period 1950 to 1990 with a discount rate of 0.936 used to derive estimates of the present value of the income streams. Shiller’s measure of uncertainty relates to the standard deviations of the annual innovations to these estimates.

⁴ See, for example, Blanchard and Simon (2000).

At the same time, the volatility in equity and other asset prices has *not* shown a trend decline.⁵ This has been illustrated most recently by the relatively modest fluctuations in US growth relative to the pronounced swings in its equity market through the tech bubble. In a similar vein, Shiller (1997) noted “there is not much correlation between present values of national incomes and stock market prices”.⁶

And the economic welfare of many in the community, especially the elderly, will be intimately related to the fortunes of asset prices. As discussed in detail in subsequent sections, policy is struggling to come to terms with such fluctuations in asset prices, whether it be in the conduct of monetary policy or the management of retirement incomes.

2.3 Bounded rationality and financial market anomalies

Economists are becoming more interested in understanding some paradoxes that suggest that financial markets exhibit certain clear inefficiencies. Two such anomalies are relevant for the subsequent discussion:

- The high (and it is very hard not to believe sub-optimal) *equity risk premium*. For instance Mehra and Prescott (1985) estimate that on the basis of standard models of life cycle optimisation the debt equity premium should be around 0.5%. Yet it seems to remain at around ten times this amount or more.
- The ‘home country bias’ displayed by individuals and markets more generally. This anomaly is perhaps an even more puzzling departure from the doctrines of portfolio theory and the commonsensical notion of reducing risk through diversification.

Explanations for such empirical regularities have tended to focus on either departures in individual behaviour from the basic theoretical frameworks (including bounded rationality or prospect theory) or on various transactions costs. None of the explanations are fully satisfying. But whatever the underlying cause of the anomalies, once recognised, they reveal a fairly robust agenda for improving economic welfare.

Take the equity risk premium. Siegel (1994) found for US data between 1802 and 1992 that 20-year real returns on the equity market have been *less* volatile than the corresponding real returns on either long bonds or treasury bills while average returns have been much higher. This provides a *prima facie* case for action by government – at least one with a long time horizon.

It will not be prudent for governments to become active speculators in the market so as to correct these market failures, but they should certainly take them into account.

In particular, an element of the current policy debate is whether government should own a portfolio of financial assets including equities (appropriately managed at arms length). While the dominant arguments will relate to the desirability of raising

⁵ *ibid*

⁶ Shiller (1993, p72) also observed that the evidence on correlations of returns across countries or between capital and labour suggest that there is “a near-total failure to hedge income risk in existing markets.”

national saving levels, the possible impact on total returns – and the ERP – should not be ignored. And to the extent it does, it would presumably add to growth in the capital stock and GDP.⁷

Similarly, a further part of the debate is the extent to which any public sector portfolio of financial assets should invest in international assets. As the earlier quote from Shiller indicated, the amount of international risk-sharing taking place appears to be unduly, indeed remarkably, low. Again, there is a range of behavioural explanations for this situation, and again we have a *prima facie* case for some government involvement. Norway has in fact acted to build a large fund of international assets to manage its windfall from petroleum revenues with an important part of its rationale being precisely the risk management principles to which we are appealing – see Section 7. Australia should not shy away from including international assets in any diversified portfolio.

2.4 The optimal level of public sector net worth

The debate over the level of government debt – like many debates in economics is sharply polarised. Don Watson has provided us with two new labels to describe the two sides of this debate, as well as the two sides of many other economic debates. The debate is between the ‘pointy heads’ and the ‘bleeding hearts’.

In this schema, those arguing to reduce debt appeal to the fiscal rectitude that such a course of action implies. Zero debt is the responsible course where the future generations’ needs are looked after and the (structural) budget should be kept in surplus to achieve this goal. Or so the argument runs.

On this policy of budget surpluses, we are on the side of the pointy heads. It is not clear where the optimal level for public debt is, and the literature provides little guidance.⁸ But Australia’s persistent current account deficits and, on some measures, low national saving levels do suggest that we are under-accumulating for the future. Perhaps this reflects a bias in the tax system; perhaps it reflects a degree of myopia. Perhaps it represents generational changes in behaviour that are driven as much by culture as incentives. But whatever the cause, there is a case for the public sector to act on its own account to build up public sector net *worth*.

There is also another reason to build public sector net worth. The world is a dangerous place. Ask any South American. We should never forget our own inability to predict the future. As we argue below, a critical part of risk management is the avoidance of catastrophic loss. And government surpluses through time and the gradual and steady accretion of public sector net worth would stand us in good stead when the next crisis comes around. Indeed our strong fiscal position at the time of the Asian crisis played some role in helping prevent contagion spread to our shores.

⁷ In effect, the high ERP is an indicator that the private sector is investing too little in risky assets for the long-term health of the economy and government could act to compensate to a degree.

⁸ For example, Diamond (1965) provides a case of the issuing of debt to compensate for over-accumulation by the private sector. But as Abel *et al* (1989) point out, it appears that the conditions for dynamic efficiency are being met i.e. the private sector is not saving too much.


So when it comes to (structural) budget surpluses and net worth, we are pointy heads. But that does *not* translate directly into support for reduced debt levels, an issue addressed throughout the paper but especially in Section 7.

3. Public private partnerships

As indicated in the quote at the head of this paper, the policy framework being developed for Public Private Partnerships (PPPs) provides one area of policy innovation that is very close to the approach we are suggesting for risk – at least in form.⁹ This is one of the few areas of policy development in which “the optimal allocation of risk” is an explicit policy goal and a source of recent innovation.

According to the policy, governments consider how best to fund a project by specifying as meticulously as possible all the risks to be borne in providing a given service or building an asset. They then decide who will bear which risks depending on who is best placed to bear them. This is determined through a tender process and the construction of a detailed ‘public service comparator’ designed to specify the putative cost to government funding any part of the investment and bearing any risk (Government of Victoria, 2001, p. 11).

The procedure embodies the idea of gains through trade in risk, with each of the risks in the project being borne by the party best placed to do so and the variety of potential outcomes is illustrated in the diagram below.

				
Private party role	Infrastructure services only	Infrastructure and ancillary services	Infrastructure and partial private-to-public service delivery	Infrastructure and service delivery to users
Government role	All public-to-public services	Delivery of core public services	Delivery of core public services	No operational role
Example	Public buildings	Non-core hospital services, non-judicial court services	Community facilities linked to educational facilities (e.g. after-hours usage)	Roads, rail, port facilities, car parks

Source: Victorian Government, 2001c, p. 5.

However it seems likely that an excellent framework within which optimal risk allocation decisions are to take place is compromised by the context within which PPPs have been developed. The PPP framework in practice seems as much focused upon shifting risk from public to private sectors than it is to optimal reallocation between sectors.

⁹ Even here however, the appropriate consideration for government is not just least cost *for government*, but rather the least cost in an economy wide perspective.

Thus alongside the in principle commitment to optimal risk allocation, we read that the “major value for money drivers underlying the Partnerships Victoria approach” include “risk transfer, relieving *government* of the substantial, but often undervalued, cost of asset-based risks”. (Government of Victoria, 2001a, p.8 emphasis added).

Further PPPs are being pursued within a more general government commitment to minimise – rather than to optimise – government debt. In this context the danger is that PPPs become a vehicle for shifting debt off government balance sheets – a trend that has become well established in the 1990s.

For example, Governments have divested themselves of assets such as real property holdings in such a way as to reduce their own net worth even when the tenant is a government agency. The private sector has limited advantage in managing the risk associated with such assets. Not only can government raise debt at a lower price it also can internalise any risks associated with occupancy rates.¹⁰ Yet, the assets have been sold to private property investors who require a higher return than the governments’ opportunity cost of holding the assets.

This is an example where the government’s capacity to passively bear the risk of the investment outweighed any disadvantage in actively managing the asset. But there are worse examples where governments have either divested themselves of assets or insisted on private funding of assets when the private sector is in a worse position to both bear and manage the risk – as in the case of Sydney and Melbourne’s tollway developments of the 1990s.¹¹ Here governments face a substantially lower cost of funding, and have much greater control over the external risks to road development projects which are influenced by future transport and development planning decisions.

Their objective is to have an efficient transport system, with the commercial viability of any given link, within that network, being a subsidiary consideration against the economic efficiency of the whole system, and its contribution to economic efficiency in general.

It is not yet clear that the worst is behind us. Governments continue to find private development of roads an enticing prospect especially where they are committed to minimising their own debt. It will be seen from this example that if PPPs are to live up to the promise of their stated in-principle objectives, they must aim at optimal sharing of risk, rather than risk minimisation for any one party.

It is worthy of note that the technical materials for Victorian PPPs use an illustrative discount rate for appraising net present value and implicitly the cost of finance of 6 per cent real or 8.65 per cent nominal with inflation running at its target rate of 2.5 per cent. This rate is intended to capture both “the time value of money” to government plus some margin reflecting the “systematic risk” involved in projects of the kind being undertaken (i.e. within that industry), but not project risks themselves (Government of Victoria, 2001d, p.16).

¹⁰ Activities associated with the operation or maintenance of such property, as opposed to ownership, can be readily contracted out and often are.

¹¹ For instance, the example of the Citilink development in Victoria involved the privatisation of a public freeway as part of a larger project to upgrade and extend an expressway.

This illustrative number seems high and is certainly substantially above the marginal cost of funds for the government. If it is too high then the public sector does not get to contribute optimally to risk management and assets that would be best held within the public sector are pushed off the government's balance sheet. In effect, government is forced to come to the table at which the trade in risk is made with its light kept firmly under a bushel.

4. The Management of Financial Crises

Countercyclical fiscal policy provides a clear example of where government can engage directly in the course of economic trends to improve risk-sharing throughout the economy. The next policy issue we address, in contrast, involves establishing the best possible institutions in order for what is a decentralised market economy to perform.

The issue is the economy's ability to cope with stress, an issue that is of prime importance in practice. Consider, for example, comments made recently by a leading Finance Professor from Wharton on the role of central banks (Allen, 2001):

The role of central banks in preventing crises is their **most important** job. It is, for example, much more important than whether the inflation rate is 1% or 3%.

Exactly the same comment can be applied to macroeconomic management at a national level embodying the actions of both government and its central bank. History has demonstrated all too frequently that the damage inflicted by financial crises can be lasting and undo many years of steady economic progress. Such crises are best avoided!

4.1 The need for a strong and diversified financial system

But what are the best structures and the best institutions that both minimise the risk of financial crisis and, if one should occur, manage the consequences? The extensive literature on comparing financial systems – i.e. the relative merits of systems underpinned by strong banking systems such as Germany or Japan versus those based on broader capital markets including the United States – would seem to provide a starting point to analyse these issues.

Most of this literature is focused on matters such the implications for finance for investment and corporate governance. However, the advent of the Asian financial crisis triggered more extensive study on financial crises. While the research is still in its infancy, but two crucial conclusions have emerged:

- the need for a robust, transparent system of regulations and governance practices; and
- the desirability of having *breadth* in financial markets based on *both* strong banks and deep securities markets.

Alan Greenspan summarised the case in a speech given in the wake of financial crises seen in 1998 (Greenspan, 1999):

Developments of the past two years have provided abundant evidence that where a domestic financial system is not sufficiently robust, the consequences for a real economy of participating in this new, complex global system can be most unwelcome.

A recent study . . . suggests that financial market development improves economic performance, over and above benefits offered by banking sector development alone. The results are consistent with the idea that financial markets and banks provide useful, but different, bundles of financial services and that utilising both will almost surely result in a more efficient process of capital allocation.

Greenspan made two further comments directly relevant to the current policy considerations in Australia:

The addition of capital market alternatives [to banks] is possible only if scarce real resources are devoted to building a financial infrastructure – a laborious process whose payoff is often experienced only decades later.

Australia embarked on just such an investment over the past couple of decades. The payoff has been, in Greenspan's words:

Despite its close trade and financial ties to Asia, the Australian economy exhibited few signs of contagion from contiguous economies, arguably because Australia already had well-developed capital markets as well as a sturdy banking system. But going further, it is plausible that the dividends of financial diversity extend to more normal times as well. The existence of alternatives may well insulate all aspects of a financial system from breakdown.

Strong stuff!

The challenge for public policy, then, is to develop a financial infrastructure with such diversification – and then to maintain it. Greenspan's judgements about Australia's ability to weather the problems in Asia do seem to be well founded, but a few comments are in order:

- Australia's banking sector has indeed been "sturdy", although this is not a comment that would have applied to the late 1980s. The lessons learnt from some near misses during those earlier heady days were still fresh when the Asian financial crisis came around, and meant that the major banks' exposures to unfamiliar markets were relatively low. History, not only in Australia but around the world, suggests that the banking sector cannot always be expected to be as well placed going into a financial crisis.
- Deep capital markets that are based on instruments largely *independent* of the banking sector's liabilities are thus desirable. Government paper has provided

that foundation in the Australian capital markets as it has in all other developed markets.;

- Possible alternatives to government paper have been mentioned in the review into the Australian bond markets.¹² These include swaps and derivatives based on swaps, or US treasuries that are swapped into Australian dollars. In each case, the major banks would be involved in the management of the risks i.e. the capital markets may remain quite active but the entire system would be critically dependent on the soundness of the banks.
- History cautions against assuming that the banking sector will not, at some stage, again get into trouble. Simply reflect on the idea that the Japanese Banks were viewed as among the strongest internationally at the start of the 1990s but there have been systemic problems that could not be protected against. In fact, as stressed earlier, government has a natural advantage to bear such risks that may otherwise be undiversifiable.
- An almost inevitable consequence of such circumstances would be even stronger implicit government guarantees. A tighter regulatory regime would ensue.

4.2 The role of the central bank in managing financial stress

The above quote by Franklin Allen indicated that the central bank has a major role in managing financial crises, and so it has. However, just as the single-minded focus on debt and deficits has dominated debate on fiscal policy, the focus on inflation targeting has dominated monetary policy.

Elsewhere, one of the authors has argued that it is time to move explicitly to a broader objective, namely *financial and monetary stability*.¹³ Low inflation is a necessary but hardly sufficient condition. And achieving financial stability is crucial for the ultimate goal of macro policy, sustained high rates of growth.

Borio and Lowe, in highlighting the problems, argue that financial imbalances can build up in times of low inflation and, in fact, success in delivering a stable inflation environment can aggravate such imbalances.¹⁴ The more that low inflation anchors price and wage expectations, the lower an inflation targeting central bank will keep interest rates and the greater the chance of asset price bubbles building.

This story has a familiar ring to anyone watching the US Federal Reserve. Alan Greenspan has been criticised for failing to dampen the tech bubble, thereby risking a deep fallout. The criticism has substance. After cautioning about “irrational exuberance” in markets, the Fed did not act. Rather, Greenspan helped to fuel the bubble by preaching the virtues of the ‘new economy’. The RBA did not face the same dilemma primarily because the Australian economy and markets missed much of the tech roller-coaster – although next time this may not be the case.

¹² See Commonwealth of Australia (2002).

¹³ See Simes (2002).

¹⁴ See Borio and Lowe (2002).

Of course, there are legitimate questions as to just how much policy-makers can influence the course of a bubble when animal spirits take over. Effective policy will be difficult and only partial mitigation can be hoped for. But as Australia experienced a decade ago, and as the US has seen recently, allowing bubbles to emerge and run their course unfettered can be damaging.

Borio and Lowe argue the case for monetary policy to take account of symptoms of financial instability in certain circumstances. They argue that one symptom alone – say, sharply rising house prices – may give misleading signals. However, when combined with other symptoms including a rapid expansion of credit, the risk of instability becomes manifest. They go on to argue that central banks should, and can, act to lessen the risks (and to do so in cooperation with the prudential authorities).

4.3 Eternal vigilance!

Australia has an enviable record in being able to withstand the troubles witnessed in global financial markets over the past 6 years. But memories fade, behaviour can change. On the next occasion, the domestic banks may be more exposed than they were to the Asian crisis, or the overall economy drawn in more than it was to the tech bubble.

The above discussion argues for three aspects of prudent policy:

- an effective regulatory regime;¹⁵
- somewhat more controversially, monetary policy aimed at overall monetary and financial stability; and
- a deep and diversified financial system based on strong banks and a vibrant government bond market.

5. Risk and Retirement Incomes

Retirement income policy raises some interesting conundrums – and requires fine judgement – in terms of achieving the appropriate allocation of risk between the public sector and private individuals. It can be difficult to integrate aspects of risk into the range of other policy objectives that need to be considered. For example, consider the following (Orszag and Stiglitz, 1999):

Savings and growth are not ends in themselves, but means to an end: the increase in well-being of members of the society. Thus, we could perhaps induce people to save more by exposing them to more risk. But this need not improve their welfare. For example, risk-averse individuals might respond to increased variance in the real rate of their pension plan by increasing their saving rates. The increased risk, however, would make them unambiguously worse off.

¹⁵ Notwithstanding the difficulties over the collapse of HIH, Australia scores highly on its regulatory and legal regime.

The basic notion here is hardly radical – add a constraint and (risk averse) optimising agents will be made worse off. And the losses being incurred by superannuation funds in recent times has emphasised the uncertainties that individuals – including many ill-equipped for the task – need to respond to in their latter years.

This is not to say that the push towards superannuation has been inappropriate – to the contrary. Rather, the shift to greater reliance on individual schemes for retirement incomes reflects a range of other policy imperatives including the ageing population and the design of a system with appropriate incentives for heterogeneous agents. (We will discuss such considerations in more detail below.) Consequently, the debate has tended to focus on the desirability of increasing national saving and growth with the appropriate risk-sharing often receiving a fairly cursory attention.

The Orszag and Stiglitz quote argues for a more integrated approach where the allocation and management of risk play a more prominent role. To motivate this discussion, the following begins by focusing on risk in a simplified framework. Public policy can be thought of as aiming to optimise a welfare function such as:

$$W = f(Y, \zeta(y), \sigma) \quad (1)$$

where Y = average real incomes;

$\zeta(y)$ = the (*ex post*) distribution of income; and

σ = risk.

The *ex post* distribution of income¹⁶ and risk enter equation (1) because uncertainty influences well-being while, after the event, society, under many welfare functions, would want some means of assisting those who drew the short straw.¹⁷ However, the two terms will tend to be closely interrelated and, for the purpose of the following discussion, it will be convenient to primarily focus on just income and risk:

$$W = f(Y, \sigma) \quad (2)$$

Much of the economic policy debate in Australia over recent decades has concentrated on maximising incomes. Yet, the community's concerns about equity and uncertainty is evidenced by opinion polls consistently finding that individuals are concerned about inflation, unemployment, house prices, security in old age, and so on. The community's concerns arise primarily because of the related uncertainty itself rather than any indirect impact uncertainty may have on average income levels.

5.1 Retirement income in overlapping generation models

¹⁶ The term 'distribution of income' is being used as a short-hand description of the distribution of a broader notion of well-being. For example, access to health services will not be incorporated into simplistic notions of income distribution but obviously should enter such policy considerations.

¹⁷ For example, such a function could incorporate in a world where welfare reflects Rawls' 'veil of ignorance' but where *ex post* incomes should not be equalised because of deleterious effects on incentives.

In a general equilibrium world with complete markets, there will be no role for government in achieving optimality.¹⁸ However, add just a little realism into these models and government will be in a unique position to improve welfare.

For example, in practice markets do not exist allowing the current generation to trade directly with future generations. The market solution in these circumstances will generally be sub-optimal.¹⁹ The following framework provides some of the basic intuition.

Consider a world (taken loosely from Ball and Mankiw, 2001) where at any point there are two groups of risk-averse individuals, identical in all respects other than their age:

- The production function involves the use of a labour input to produce a storable good.
- The young work yielding a wage which will vary according to the state of the world (ie productivity), from which they decide how much to put away for old age; while
- the aged do not produce anything but consume whatever their claims on current production may be.

If the different generations were in a position to risk share *before* the state of the world were known in any period, optimality would see the claims of the young and old in each period vary according to the state of the world. For example, the aged would *not* be shielded from an economic downturn.

However, if the old and young are not able to trade ahead of time, there will be no risk-sharing. The old will consume whatever they have saved from the previous period while the young will bear the full brunt of current uncertainty. Given the individuals are risk-averse, the outcome will clearly be sub-optimal:

Proposition 1: A pure private sector outcome to intergenerational risk-sharing will be sub-optimal.

This conclusion carries over to more elaborate models with incomplete markets as long as the claims of the elderly on current production do not happen to be perfectly correlated with the younger generation's returns – see below.

In these models, government can improve welfare through its taxing powers. It is able to enact risk-sharing structures across generations that are simply not available to individuals, nor indeed to the private sector more broadly. In fact, *it would seem that a fundamental reason for governments to exist is to facilitate appropriate risk-sharing that may not be feasible in real world markets.*

¹⁸ That is, in an Arrow-Debreu world, all individuals (living at all points of time) will get together on day 1 and, with complete markets for all possible states of the world, trade. The result will be Pareto optimal.

¹⁹ See for example Ball and Mankiw (2001), Bohn (2002a, 2002b) and Shiller (1998).

Proposition 2: Government can facilitate risk-sharing across generations directly through the provision of pensions and/or indirectly by issuing riskless bonds.²⁰

5.2 On the design retirement income systems

Optimal policy for intergenerational risk-sharing in these models tends to involve **defined benefits** that are **state contingent**. Australia's pension arrangements in fact have precisely this characteristic i.e. they are a defined benefit with the level related to average wages. Of course, pensions are only one element of retirement incomes and we have no way of knowing how close the actual parameters embedded in the system are to optimality.

A degree of risk-sharing between the young and old will also be present if there is a positive correlation between capital and labour (or national) income i.e. a correlation between the young and old's respective sources of income. However, in practice the correlation tends to be quite low leaving a clear role for government.²¹

Among the messages that come out of such analyses is that the social security system should hold equities and that distributions from the funds should be quite dampened. This message is especially relevant to the current debate in the United States over the future of its social security system.²²

Australia, along with many other countries, is moving away from structures for our social security system that would be advocated by a close adherence to the OLG literature. Superannuation is based on individual accounts with defined contributions.

There is no doubt that this shift is placing additional risks at retirement. There are both intra- and intergenerational equity issues to be addressed:

- For example, two people with identical lifetime earnings and levels of contributions through their working lives could face very different retirement incomes if their funds' investment records are different. Indeed, by retirement the gap could easily be in excess of 20 per cent. Rene Rivkin may be happy to live with any poor investment decisions he may make, but everyone is now being forced to assume such risks regardless of ability.²³

²⁰ In certain circumstances, the issuance of bonds may reduce welfare from allowing the old to shield themselves from fluctuations in national income rather than share the risk. See Bohn (2002b). However, this result does not appear to be very robust and in more realistic models bonds do play an effective risk-sharing role.

²¹ For example, Shiller (1993) cites quite low correlations between returns from stock market and present value of national incomes (of around 0.2 to 0.25), although the calculations are necessarily imperfect because market returns for such income streams do not exist.

²² The ideas may seem to have some relevance to the Australian debate given the size of unfunded liabilities faced by the Commonwealth. The situation, however, is complicated by the fact that the liabilities relate to defined benefits that are determined by the past earnings of employees rather than the current state of the economy. Instead, the ideas add to the case for the Government to have exposure to the equity market.

²³ Indeed, even if everyone were able, information overload provides a basis for a community to elect government to assume a large part of managing such risks.

- What about the same two individuals, identical in every respect except that one retires a few years before the other? The differences in their retirement incomes can be large. For example, Barr (2000) cites Burtless (2000) who found that pensions received by workers in the US averaged an 80 per cent replacement rate in 1972 and a 40 per cent replacement rate in 1974. (Barr also provides other examples of such gaps.)²⁴

To quote Shiller (1998):

A proposal to have people invest their social security contributions in individual accounts invested in the stock market, and to be entitled only to their portfolio outcomes, is just a nonstarter as a national risk-management institution for the elderly.

5.3 Australia's hybrid system

In light of such considerations, why are many countries moving towards a greater reliance on individual accounts for retirement incomes? And what tools should government bring to bear on risk management for retirement incomes?

In part, the answer will depend on the particular society's welfare function. The basic results from OLG models lend weight to various European systems with benefits largely related to an individual's working life income.

Australia has different traditions, with greater reliance on narrowly targeted safety nets with the individual being responsible for outcomes above such safety nets. This is clearly the case with retirement incomes.

A degree of intergenerational risk-sharing is present in the Australian system due to such factors as the (limited) correlation between returns on capital and the state of the economy, the ability to use risk-free paper to spread risk across generations, the design of the pension safety net and the tax system.

Yet, intergenerational risk-sharing has not been centre-stage in the motivation for its design. Indeed, if it were the main motivation, a publicly run scheme is likely to be more amenable to achieving the appropriate design. Instead, greater responsibility is being forced onto individuals to bear (and manage) greater risks presumably, as the earlier quote from Orszag and Stiglitz suggest, *at a cost to individual welfare*.

The rationale for the shift towards greater individual responsibility of retirement incomes lies elsewhere. It reflects a combination of two main influences, namely:

²⁴ It may be thought that individuals retiring short periods apart will end up in similar circumstances overall in retirement because fluctuations in the value of their assets will average out given time. To some extent, this may be the case (as long as markets are not fully efficient). However, in practice, such opportunities for asset values to average out may not arise. The situation is complicated by longevity risk that can be managed through taking out annuities. The cost of taking out annuities is that individuals become more susceptible to the precise circumstances prevailing at the time of retirement when the terms of the annuity would be have to be settled.

- The objective to increase national saving levels in order to both address the future needs of an ageing population and to trim the uncomfortably large structural current account deficit. Note that raising national saving can influence the optimisation problem in equation (2) by increasing future income.²⁵ The decision to encourage private rather than public saving reflects, in part, a reluctance to allow this to force an expansion in the size of government and possibly, some concerns over governance of running public schemes.
- The need to have sufficient flexibility in the overall system to allow for individual circumstances (eg different profiles for income, wealth and preferences). In addition, adverse selection problems, although not generally severe, needed to be taken into account.

Importantly, no single publicly run scheme will be able to have the flexibility to deal with the issues that arise from having individuals in quite different circumstances. The resultant hybrid system based on individual accounts, *plus* a common pension as a safety net, makes it difficult to judge the extent to which there is actual intergenerational risk-sharing taking place.

In any case, whatever the precise motivations behind the system, it is clear that individuals, many of whom are not well placed to do so, are bearing considerable financial risks. Modifications at the margin can be envisaged where government assumes greater responsibility for *directly* influencing risk-sharing in retirement incomes, but it seems that most of that risk will remain with individuals.

5.4 Risk management tools

In these circumstances, there is a clear onus on government to do all it can to facilitate individuals managing such risk. This could include such matters as (i) an effective regulatory environment; (ii) ensuring simplicity; (iii) assisting in the education; and, importantly, (iv) establishing the best risk management tools for individuals (and the private sector more generally).

Just what are those risk management tools? Shiller (1993) argues for the creation of a series of new ‘macro’ markets in order to allow individuals to manage such risks. *If* such markets can be developed in a cost effective manner, economic welfare would be improved. Shiller’s proposals do warrant investigation to explore ways that such markets can be encouraged.

Shiller’s is a positive, proactive agenda. While investigating such ideas, however, it is vital that we do not lose sight of the very valuable and cost effective tools that have already been developed. Indeed, central to the best risk management system will include an active bond market (see ICAP, 2002).

²⁵ That is, it will tend to increase the accumulation of capital and/or reduce net external liabilities thereby improving the claims on future output by Australians.

6. Countercyclical fiscal policy

Macroeconomic policy generally, and fiscal policy in particular, can be viewed as an exercise in risk management where the downside risk being managed is the more general and systematic risk involved in economic downturn.²⁶ There is broad consensus that fiscal policy should be managed in a broadly counter-cyclical way though just how aggressively fiscal policy should be applied in particular circumstances inevitably involves judgement and is open to debate.²⁷

This is reflected the Charter of Budget Honesty, Section 5 of which reads:

The principles of sound fiscal management are that the Government is to [*inter alia*] ... ensure that its fiscal policy contributes ... to moderating cyclical fluctuations in economic activity, as appropriate, taking into account the economics risks facing the nation and the impact of those risks on the Government's fiscal position.

In this context, expansionist fiscal policy during an economic downturn whether this be a result of the action of 'automatic stabilisers' and/or more discretionary measures involves the government playing to those strengths as outlined at the outset of this paper. Individuals are poorly placed to diversify the systemic risks that arise from fluctuations in aggregate income through private markets.²⁸

However, a fiscal expansion involving increased debt of the public sector results in the government simultaneously:

- passively bearing more risk; and
- in the process, actively managing that risk.

That is, fiscal expansion not only relieves the private sector of some of the risk it holds; it also reduces the risk itself, by helping revive the economy.

In this context the tax system is not just a revenue raising system. It is a risk-sharing system, with different taxes providing differing risk-sharing characteristics. The 'automatic stabilisers' within the fiscal system are at the same time an automatic risk

²⁶ Part of the literature on fiscal policy also focuses more narrowly on the risk management of the government's accounts (see eg. Lloyd-Ellis and Zhu, 2000).

²⁷ Of course, there have been extensive debates in the academic literature about the effectiveness of fiscal policy with numerous theoretical models being devised where it has no impact. However, today few would argue against the potential for fiscal policy to play a role. Even Barro (1979) argues for public debt to vary over time to smooth changes in tax rates that would otherwise be necessary to maintain budget balance throughout the cycle. Barro's rationale is based on the desirability of smooth tax rates over time given that the welfare loss from taxation is approximately proportional to the square of the rates. Suppose expansionist fiscal policy during an economic downturn had none of the effects that are most commonly attributed to it. Even here the expansion of government debt during a downturn would represent a shifting of risk from private to public sectors at a time when private risk aversion is likely to be highest. And visa versa. This is invisible in Barro's model.

²⁸ Shiller's macro markets would alleviate these problems to some extent, although series principal-agent problems would limit their application to issues such as income insurance. See Shiller, (1993).

adjusting system with governments bearing more risk during economic downturn at just the time when private appetite for risk is likely to have fallen and retreating somewhat from this role during economic prosperity. And visa versa – during booms, the public sector retreats somewhat from bearing risk at a time when the private sector is well placed to take it on.

If we accept this role for fiscal policy – again however actively or passively it is pursued – we must resolve on a consistent and deliberate course of action *through* the economic cycle. Unfortunately, at least in its crudest form, the debate between active and more passive approaches to fiscal policy has tended to be seen as simultaneously a debate about the respective merits of fiscal rigour and fiscal laxity – in which pointy heads and bleeding hearts do battle. This is partly because the debate tends to intensify during economic downturns – when the question is how large a deficit should be.

It is also partly because of the influence of a ‘vulgar’ Keynesianism that tended to ignore ‘crowding out’ effects. Yet commonsense as much as theory tells us that expansionary first round effects will be offset and eventually dominated by ‘crowding out’ if fiscal expansion is not temporary and/or is not seen to be so by the investors who are funding it.

The way the debate has played out in this context has tended to push us towards a pre-occupation with short term issues which has restrained the use of fiscal policy – in both directions – to an unfortunate extent. In this debate responsible economic management tends to be associated with the avoidance of deficits *rather than* integrating short and longer term fiscal policy objectives.

But one of the lessons from Australia’s economic history over the past 15 years, if we did not already know it in our bones, suggests that surpluses – which are the corollary of deficits if budgets are to balance through the cycle – are politically difficult to sustain. The pressure to spend – maybe just a little at a time – on the latest good project is hard to hold back indefinitely. Also, building fiscal surpluses can provide a windfall for an incoming opposition.²⁹

Given these incentives fiscal policy is eased. Fortunately this is sometimes traded off against other policy objectives. Two such examples of an easing of fiscal policy in pursuit of other objectives were:

- the wage/tax trade-offs of the late 1980s that were directed at restraining wage inflation; while
- the fiscal stimulus that accompanied the introduction of the GST was clearly excessive, given the economic forecasts at the time, but was seen as politically necessary by those implementing the tax changes.

²⁹ The ousting of Clinton in the United States, the Nationals in New Zealand, and the Kennett Government in Victoria demonstrate, the perverse political incentives facing governments that build their fiscal position beyond the level of a steady, slim surplus.

As a consequence, in normal times, we seem to be trapped in a world where governments will aim to deliver small surpluses (so fine do they cut it that they occasionally deliver small deficits). Given this, the stated policies of pursuing countercyclical fiscal policy with balanced budgets over the medium term are then a recipe for one of two courses of action.

- Small deficits also perhaps sufficiently small that we would have to actively resist the effects of the automatic stabilisers with discretionary fiscal contraction during an economic downturn.³⁰
- Alternatively ‘balance through the cycle’ is really code for small surpluses during the good years and large deficits during the bad years, leaving our longer term fiscal position very much a hostage to fortune.

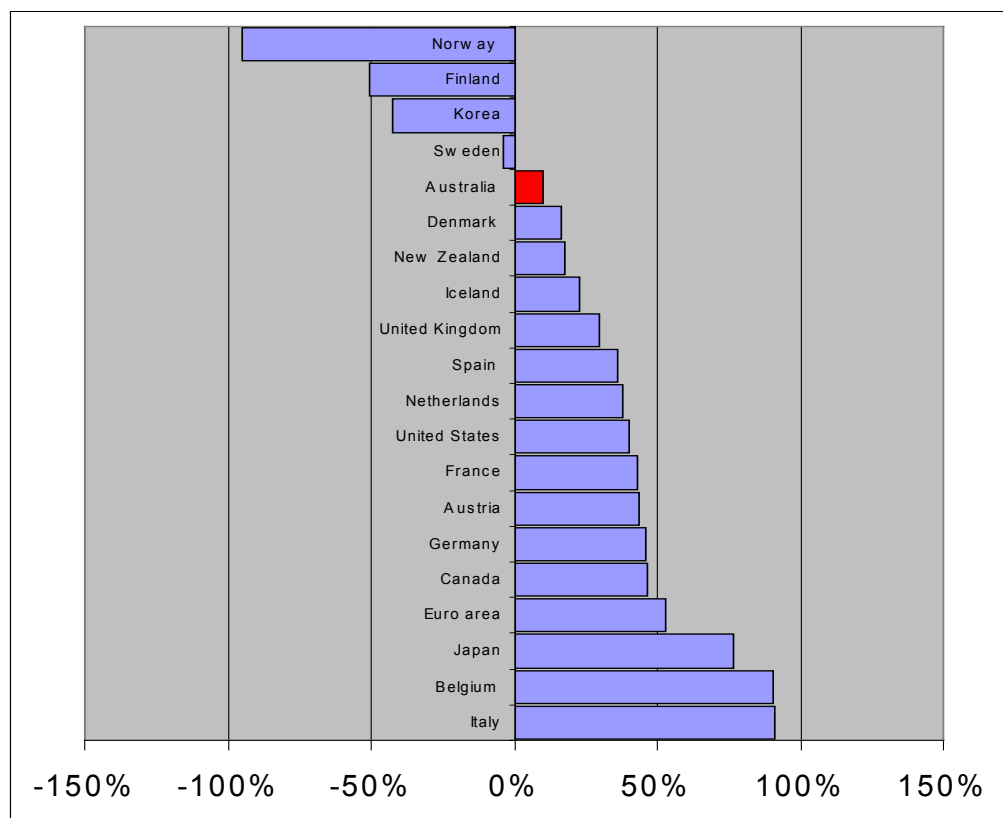
One response to this dilemma is institution building. We expand further on these issues in the section on balance sheet management below. However in some other countries institutions have been established to improve the conduct of medium term fiscal policy.

In 1990, the Norwegian Government decided that in response to the windfall of North Sea oil and gas development it would put aside the huge sums it would receive in royalties and invest it for the future. In effect it earmarked a substantial part of its budget surplus for investment – at least whilst the oil and gas fields remained in production. It shifted the fiscal goal posts to reflect long term fiscal objectives.

The idea of ‘investing for the future’ in this way was presumably attractive to the Norwegian electorate with spectacular results for Norway’s fiscal policy and net government financial liabilities as illustrated below.

³⁰ Of course this depends on the frequency and severity of downturns. We have not had a serious downturn now for over a decade. If however we experienced some downturn every seven to ten years, small surpluses would not offer much room for deficits during the bad years.

General government net financial liabilities



Source: OECD

If the Norwegian focus is on the positive one of the opportunities provided by a resources windfall, New Zealand is attempting something similar, though with a more typically antipodean pessimism! New Zealand recently began depositing a substantial sum each year from its budget into the partial funding of future retirement income liabilities.

In both cases, it may be desirable to complement the longer-term objectives with some capacity to vary contributions somewhat in response to changes in the cycle.

6.1 Financing fiscal policy

We believe that *prudent policy dictates that governments should have the wherewithal to readily apply sufficient fiscal stimulus in the face of economic downturns*. For such downturns will occur.

There may be circumstances where the government of the day should simply print money to finance the deficits – witness the current situation in Japan – but Australia’s economic experience suggests that bond financing will be preferable. In the past, the government’s ability to raise sufficient funds in such circumstances has not been an issue in Australia with the ready access to the government bond market. With the Commonwealth currently in the process of considering the future of the market, the issue becomes very relevant.

Ready access to how much is sufficient? Consider the following:

- Recessions in Australia since 1960 have tended to lead to a cumulative loss of production relative to trend of between 10 and 15 per cent. Without countercyclical policies that were operating at the time, the falls would presumably have been larger. It has taken around 3 to 4 years for production to return to trend.
- In such circumstances, it would seem reasonable for the combination of automatic stabilisers and discretionary policy to the equivalent of at least 5 per cent of GDP applied over a number of years. For example, this may be applied as a stimulus of 1 to 2 per cent of GDP to the budget for 2 years, with the stimulus progressively withdrawn over the subsequent 2 years.
- Such numbers are deliberately selected on the low side of experience. For example, they would be far lower than the shift in fiscal policy that has been delivered in the United States over the past couple of years (most of which has flowed from automatic stabilisers rather than the contentious long-term tax cuts).

Using these figures, prudent policy would suggest that, ahead of time, the Government should have ready access to at least \$30 to 40 billion. Without such access, the options would be to print money or raise taxes and/or cut spending (in the midst of a recession).

Access to such funds could come in a numbers of forms:

- The government bond market.
- If the bond market has been liquidated, the government could, in theory, re-enter at a higher price.³¹ In practice, it would be very reluctant to do so i.e. the extent of the borrowing needs will only emerge slowly over time and the announcement of each new issue could have negative political consequences. As a consequence, it is likely that the use of fiscal policy could be much more muted than desirable.
- The government of the day could also tap other parts of the market including, say, borrowing from the banking sector; or
- alternatively, the government could build up a stock of financial assets that could be drawn upon in an economic downturn.³²

The most attractive of these options – especially when considered in the broader context of the management of the Government’s portfolio of assets and liabilities as discussed in the following section – is a combination of using a deep bond market and a stock of government-owned financial assets. This combination would provide flexibility for fiscal policy while allowing other financial objectives of Government to be met.

³¹ This would probably be easiest to do through offshore markets.

³² These would be over and above the deposits the Government holds with the Reserve Bank to manage seasonal fluctuations in its cash position.

7. The Management of government balance sheets

It seems that our current approach to managing government balance sheets is the result of the application of a set of principles which, though one can understand their motivation, are too simplistic. In effect, much of our management of the government's balance sheet is arrived at by default rather than design.

Judging by the rhetoric of government and the relative space devoted to the subject by the media, one of the most critical indicators of the health of the government's balance sheet is its debt. Yet one does not require much financial sophistication to appreciate how partial a measure this is. Most people would rather owe \$100,000 on a million-dollar house than owe nothing on a half million-dollar house.

Or let us take a similar example from the balance sheets of two national governments. One has just sold a major asset and fully retired all net debt, and its balance sheet is in strong shape compared with other countries. Its net financial liabilities are a little over 5 per cent of GDP according to OECD definitions. Another country has gross financial liabilities (essentially its bond issue) amounting to around 25 per cent of GDP. But this is part of a larger portfolio. When the total picture is considered, the government has net worth just shy of 100 per cent of GDP.

The first country is Australia and the second country is Norway each in 2004 as projected by the OECD in 2001.³³ As we have observed above, Norway is one of the very few developed countries in recent years to have found a way of sustaining large fiscal surpluses for substantial periods of time. In the process it has developed an approach to government balance sheet management that is more sophisticated than our own. Yet the approach is nothing other than the approach taken by most private sector firms.

Firms borrow because they can earn higher returns investing the money they borrow than they pay on the debt they raise. Of course this is not an endless free lunch. As debt rises beyond a certain point, risk rises above a tolerable level. Thus the public balance sheet like well managed private balance sheets should be managed according to two overarching principles.

- First, we should maximise total value of all assets and liabilities with those things defined as widely as seems sensible in the circumstances. In this context measures of debt or any other liability or asset are highly partial.³⁴

³³ From OECD Economic Outlook No. 72, Annex Table 34. General government net financial liabilities and Annex Table 33. General government gross financial liabilities at <http://www.oecd.org/xls/M00037000/M00037558.xls>. These numbers seem now to be overly optimistic for both governments. Nevertheless they are the most recent figures available publicly from OECD at present. Updating the numbers would not change the comparative point being made here. Note also, that the sale of Telstra makes minimal difference to net financial liabilities in the short term, as it represents a conversion of assets from one form (equity) into another (bonds if they are purchased back with the proceeds of the Telstra sale).

³⁴ This paper does not seek to specify precisely how comprehensive we should make our definition of government assets and liabilities, but we do not deny that there are important definitional issues that need to be addressed. Section 2 of Grimes (2001) provides an interesting discussion of 'reported net worth' (RNW) and the much wider concept of 'comprehensive net worth' (CNW).

- Second, the risk inherent in the balance sheet should be treated in an integrated way rather than by component. The level of risk in the total portfolio should be prudent.

In addition, this risk management should take into account any interaction between risks to the government's portfolio and risks to the economy more widely. After all, government is there to improve the well-being of society and the effective management of community-wide risk is fundamental to this. However, we do not consider the interaction of public sector and community-wide risk in this discussion for the sake of exposition.

As far as the first principle is concerned, far from being bad, some level of debt is almost always good. The intrinsic advantage that government has in pooling risk – including a range of otherwise non-diversifiable risks – allows it to borrow at a better rate than private participants in the market. Through this mechanism, government on behalf of the community has an efficient means of both financing (public) investment and funding assets designed to match liabilities as they accrue (e.g. those associated with an ageing population). Such a structure will generally be more (economically) efficient than simply relying on current taxation.

Moreover, the combination of its cheap cost of funds and the persistence of what seems clearly a market failure – namely the excessively high returns the market requires for funding the risk of equity over debt (the debt-equity premium) – means that the issuing of debt that is matched by equities will both aid the government's finances and, at least at the margin, improve investment and growth. (As discussed in Section 2, the apparent market failure suggests that the economy is under-investing in risky – high growth – assets.)

To illustrate from the perspective of government, the equity risk premium has tended to average 4-8 per cent in most developed countries. The acquisition of a portfolio of financial assets by government would not take aim to capture the full ERP, but a suitably diversified basket of assets could be expected to yield average returns of at least 2 percentage points over bonds over time. Thus, for every \$10 billion the government borrowed to invest in such a diversified portfolio of assets would net at least an extra \$200 million per annum.³⁵

The above argues that optimizing net worth (and the associated risks) rather than minimising debt should be the object of policy. But, the question still remains as to how much debt should the government raise? This question can be broached from a number of angles including the level of bonds desirable for an efficient, robust and transparent financial system. Estimates for the *minimum* amount of bonds needed for them to fulfill current roles in the market vary, but centre on a range from \$35 billion to \$50 billion. A desirable or optimal amount would be noticeably higher, perhaps \$60 billion to \$80 billion. (See ICAP, 2002).

³⁵ Of course, there would be short-term fluctuations in such returns and this may cause some PR problems if not suitably managed. But the funds would presumably be invested for long-term purposes and held and managed on an arms length basis. The practical difficulties seem small in comparison with the gains.

From the point of view of the Government's balance sheet, it would seem that the Government could hold at least this amount. As argued, the government's finances in a narrow sense should be improved by increasing debt holdings. Of course, the free lunch no more goes on forever for governments than it does for firms. Too much debt will eventually increase risk above a level that is prudent. That level seems to be a way off.

The binding constraint is likely to relate to governance issues. In practice, government can raise debt to fund public investments (including fixed assets of various types) or to invest in financial portfolios that, we argue, should be managed on an arms length basis. A clear purpose for such portfolios will facilitate the establishment of institutions to manage or assist in the management of specific portfolios of assets or liabilities. While these institutions learn, prudence suggests that we will want to limit the size of these portfolios. Over time, their size will be determined by the purpose to which the fund is used.

At this stage, Australia has not given as much attention to the issue of managing the risk of the central government's balance sheet as have the New Zealanders and the Norwegians. New Zealanders in particular have developed an impressive body of analysis about government portfolio management in a series of publications particularly in their Treasury Working Papers series.

Much of the analysis echoes the material on intergenerational risk and retirement incomes discussed above. The similarity of themes is unsurprising since much of the risk being managed by governments is inter-generational risk. Some emerging themes of this literature are well introduced by the following passage (Davis, 2001: 6).

Individual citizens' risk exposure to Crown portfolio decisions is affected by taxes, transfers and the myriad of insurance and other services provided by the Crown. The Crown's tax and expenditure flows are expected to have implications for the desired risk characteristics of its financial portfolio. For example, a risky net debt portfolio may contribute to a low-risk Crown financial position due to natural hedges or diversification benefits. Those arguments do not necessarily weaken the argument that the Crown should have a low tolerance for risk. It merely changes the focus of the analysis, from net liabilities to some broader measure of the Crown's financial position.

As the comments above on debt suggest, we should not make portfolio decisions on the basis of some concept of the inherent riskiness of individual assets. What we care about is the riskiness of the portfolio of assets and liabilities as a whole. And risky assets can reduce rather than increase the riskiness of a portfolio depending on how their volatility correlates with the rest of the portfolio.

This point reverberates throughout the literature and throughout the choices all investors make at different levels. Thus assets that are highly risky on their own – for instance derivatives – can substantially lower risk within given portfolios. And from the perspective of government, a higher risk financial portfolio may have its place in lowering the risk entailed in the broader portfolio of government assets and liabilities including future tax receipts and retirement benefit liabilities.

The point is illustrated in simulations by Huther cited by fellow New Zealand Treasury Officer, Arthur Grimes (2001:7). An important policy focus was the funding of superannuation and the results highlight the importance of assets and liabilities being considered together on the balance sheet.

[Huther's] results demonstrate a beneficial effect of increasing the Crown's equity holdings . . . both in raising expected return and reducing the standard deviation of quarterly returns. These results raise questions concerning the then-existing policy . . . of paying down Crown debt; a comprehensive net worth approach would indicate a preference for using surpluses to build an equity fund while maintaining debt constant.

Grimes suggests for example "to fund the Government Superannuation Fund's existing unfunded liability through issuing Crown debt, enabling the purchase of equities within the fund".

Allen Consulting recently suggested something similar, proposing the full funding Commonwealth government superannuation liabilities through the issuance of debt to be used to purchase a higher yielding portfolio (Allen Consulting, 2002: 4).

The bond market problem could be resolved by creating a mechanism for the Government to improve internal budgetary discipline by accounting for a staff cost at the time that the cost is incurred (as distinct from when it is paid). This would not create new government debt. Rather, it only would securitise an existing liability of the Government. The approach suggested here would build upon the Government's achievements in controlling public finances and inject even greater rigour to the ongoing accounting for current expenses and management of the budget.

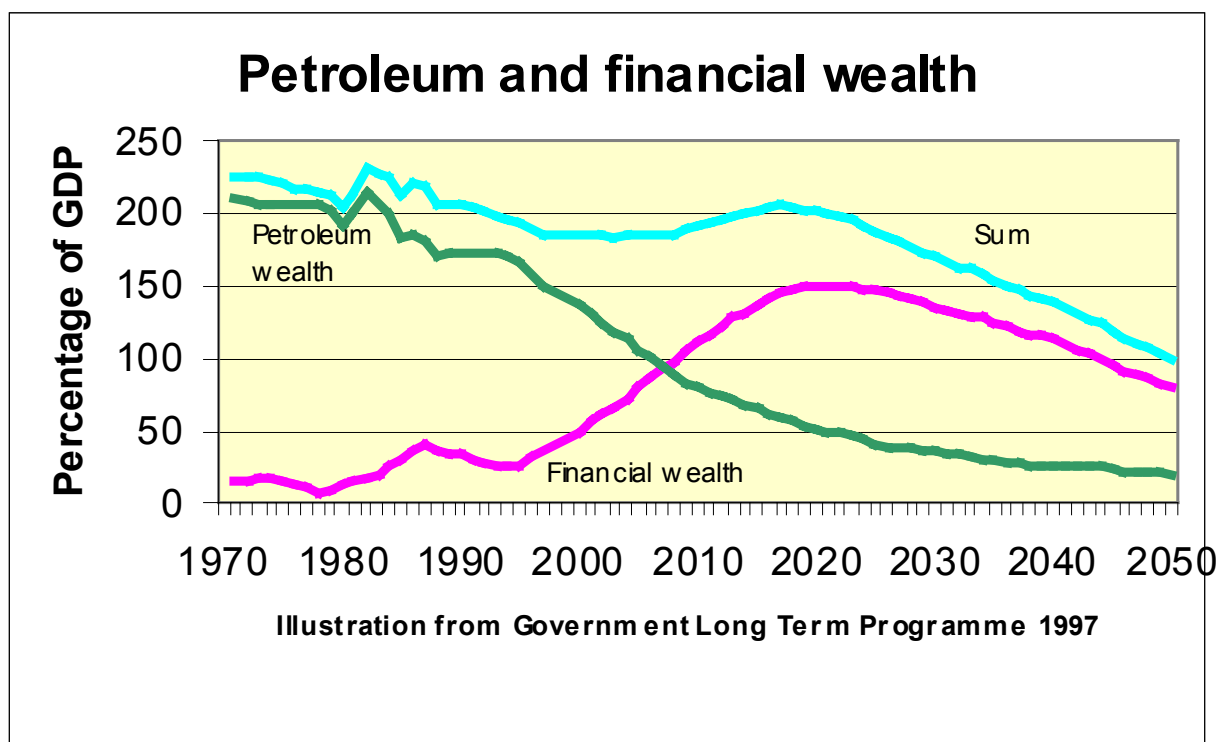
This option would require creation of a government asset fund and the associated governance and investment management issues would need careful consideration. Fortunately, there is nothing radical or new in this, as State Governments and many overseas governments have dealt effectively with these issues, while the existing Commonwealth superannuation arrangements illustrate the potential for arms length management of funds.

The BCA recently embraced the same agenda of issuing debt to fully fund superannuation liabilities (BCA, 2003: 22).

Another point of interest is that in most situations, the holding of foreign equities dominates the holding of domestic equities, particularly for governments of small economies whose asset holdings are a large proportion of the economy. The two strongest reasons for this are that it leans against the home-market bias of virtually all capital markets. This lowers exposure to systematic risk within the investor country and insulates the international purchasing power of future retirees. Secondly, and particularly for small countries seeking to engineer large inter-generationally smoothing investments, international markets offer much greater liquidity.

Governments from such countries can buy and sell with minimal adverse impact on price whereas they would move their own markets domestically.³⁶

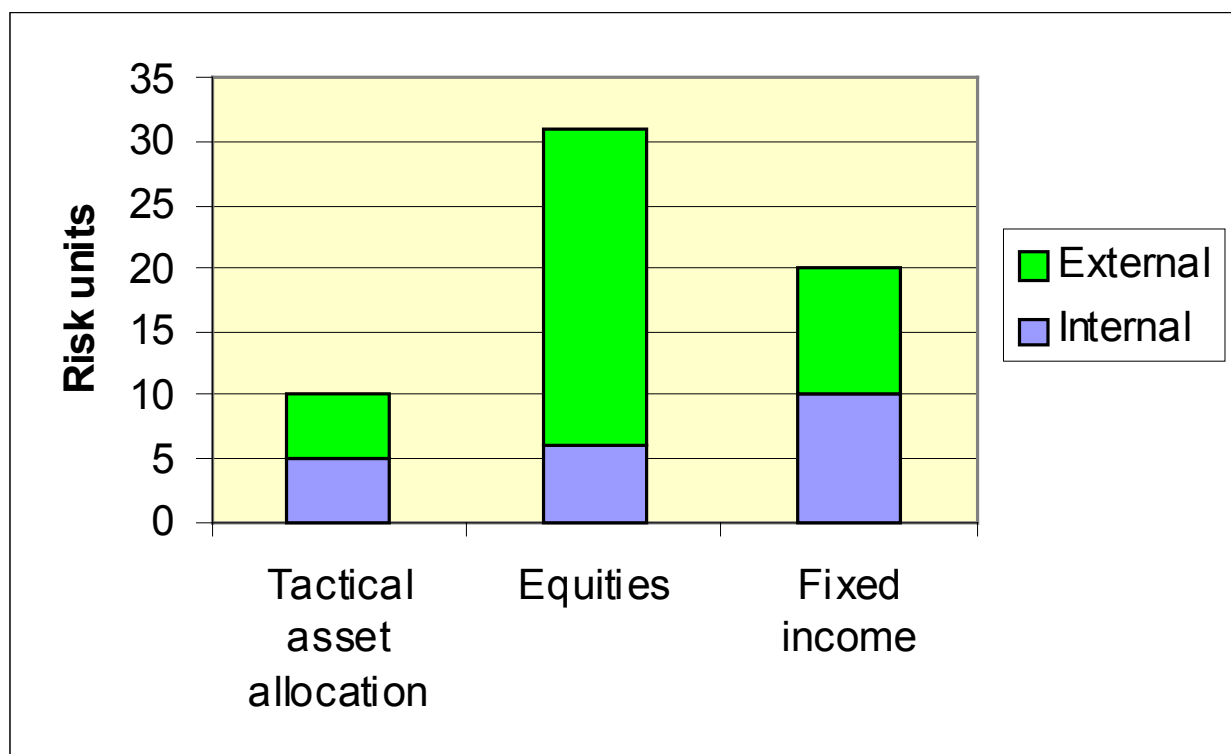
Norway is the classic case in point. When it decided to invest the proceeds of petroleum royalties into an investment fund, it did so explicitly to smooth intergenerational sharing of that windfall.



Source, Kjær, 2000

As the petroleum was exhausted it would give rise to an asset for all Norwegians to share. The investment was made through the central bank and early in the fund's life was restricted to foreign sovereigns. Management remains with the central bank, but at the end of 1997, 40 per cent of the fund was made available for foreign equity investment. Considerable effort goes into risk management with a core of the portfolios being index managed at low management expense ratios with some delegation to active managers in an effort to outperform. As will be seen from the diagram below, the bulk of the more risky investment is outsourced.

³⁶ A third and less important argument is that investment in foreign assets is less likely to be influenced by political considerations. But this is a bit of a straw man. Though it would be imprudent to imagine that government ownership of assets did not raise any specific issues of political economy, our own government and others have created institutions that can successfully manage investment decisions at 'arms length' from governments.



Source, Kjær, 2000

8. Concluding Comments

Australia has an impressive record on economic policy over the past two decades. A much more dynamic, competitive economy has been established. Growth has compared favourably with virtually all developed countries. And as witnessed over the past few years, Australia has the institutions and structures that make it well placed to weather the inevitable bouts of financial turbulence.

Yet, further reform is desirable – indeed necessary – to continue this impressive record. For this task, it is crucial that agendas be freshened. It has been all too easy to slip into the habit of couching what really are complex policy judgements in terms of a few easily conveyed messages. And the messages assume a life of their own. Debt is bad; deficits are bad; central banks should target inflation. Of course, such messages have served very useful purposes – and may continue to do so – but they should not handicap policy as new agendas that require a wider context are broached.

We have argued that bringing risk management to the centre of policy decisions, economic reform can be injected with new life. With past reform the gains were greatest when we first set about tackling our high barriers to internal and external trade (in fact the gains were proportional to the square of the height of the barriers). Likewise, with this agenda, there are some large gains to be had – some low hanging fruit to be picked. Some of the implications of the theory may be counter-intuitive to the person in the street, just as cutting tariffs was. Thus governments should invest (prudently) in risky assets to lower risk and should invest more offshore – again to lower risk. But the theory is robust, the ground is fallow and the gains are therefore considerable.

The two classes of policy issues to be addressed will be the appropriate allocation of risk between government and the private sector and the establishment of a suitable risk management infrastructure for the private sector to best manage certain risks.

This risk framework has some important implications for the policy issue of the day, namely the future of the government bond market. The bond market underpins best practice for the management of certain risks that individuals and firms are often not well placed to bear (such as retirement income, insurance). Similarly, it provides the basis for Australia's deep capital markets, and a basis that is independent of bank paper. A strong, diversified financial system is the result.

Finally, the management of the government's own finances is best conducted in the context of its overall portfolio of assets and liabilities. A component of this will be the management of countercyclical fiscal policy, a task assisted by access to a deep bond market (as well as, possibly, a portfolio of financial assets).

Determining the best policy with regard to the bond market is most important in its own right. The implications for the economic welfare of the entire society are substantial. (See ICAP, 2002).

But by raising broader issues about community-wide risk management, the debate over the future of the bond market can provide a catalyst for reinvigorated policy reform. This is our wish.

Bibliography

Abel, Andrew, "The Social Security Trust Fund, the Riskless Interest Rate and Capital Accumulation", University of Pennsylvania, *mimeo*, 1999.

Abel, Andrew, Gregory Mankiw, Lawrence Summers and Richard Zeckhauser, "Assessing Dynamic Efficiency: Theory and Evidence", in *Review of Economic Studies*, Vol 56, pp 1-20, 1989.

Allen Consulting Group, "Management of Government Assets and Liabilities: A Review of the Issues, focusing on Funding Unfunded Superannuation Liabilities", Appendix 2 to the CGS Market Industry Working Group's submission to the Review of the CGS Market, 2002, at <http://debtreview.treasury.gov.au/content/home.asp>

Allen, Franklin, "Comment" on Sir Edward George's "Comparing Financial Systems: How Much Convergence", Volkswirtschaftliche Tagung 2001, *Der Einheitlinche Finanzmarkt – Ein Zwischenbilanz nach zwei Jahren WWU*, Austrian National Bank, pp 29-31, 2001.

Allen, Franklin, and Douglas Gale "Comparative Financial Systems: A Survey", Wharton School, University of Pennsylvania, *mimeo*, 2001.

Angeletos, George-Marios, "Fiscal Policy with Non-contingent Debt and the Optimal Maturity Structure", MIT, *mimeo*, 2001.

Ball, Laurence, and N. Gregory Mankiw, "Intergenerational Risk Sharing in the Spirit of Arrow, Debreu and Rawls, with Applications to Social Security Design", *mimeo*, 2001.

Barbie, M., M. Hagedorn and A. Kaul "Government Debt as Insurance against Macroeconomic Risk", IZA Discussion Paper No 412, 2001.

Barr, Nicholas, "Reforming Pensions: Myths, Truths and Policy Choices", IMF Working Paper No 00/139, 2000.

Barro, R.J., "On the determination of the public debt", *Journal of Political Economy*, 87, 940-971, 1979.

Benartzi, S., and R.H. Thaler, "Myopic Loss Aversion and the Equity Risk Premium", *Quarterly Journal of Economics*, Vol 110, No 1, 1995.

Blanchard, Olivier, and John Simon, "The Long and Large Decline in US Output Volatility", MIT, *mimeo*, 2000.

Bohn, Henning, "Retirement Savings in an Ageing Society: A Case for Innovative Government Debt Management," in Alan Auerbach and Heinz Herrman (eds) *Ageing, Financial Markets and Monetary Policy*, Berlin: Springer, pp 139-181, 2002a.

Bohn, Henning, “Intergenerational Risk Sharing and Fiscal Policy”, UCSB, *mimeo*, 2002b.

Borio, Claudio, and Philip Lowe, “Asset Prices, Financial and Monetary Stability: exploring the Nexus”, Bank for International Settlements, 2002.

Business Council of Australia, “Submission to the Federal Budget Process: 2003-04”, Melbourne, 2003 at www.bca.com.au

Commonwealth of Australia, *Charter of Budget Honesty*, 1998, at <http://scaleplus.law.gov.au/html/pasteact/2/3115/top.htm>

Commonwealth of Australia, *Review of the Commonwealth Government Securities Market*, Canberra, 2002.

Cutler, David (1996) “Why Don’t Markets Insure Long-term Risk?” *mimeo*, Harvard University.

Davis, N., “Does Crown Financial Portfolio Composition Matter?” New Zealand Treasury Working Paper. 01/34, 2001.

Diamond, Peter, “National Debt in a Neoclassical Growth Model”, in *American Economic Review*, Vol 55, pp 1126-50, 1965.

Dolar, Veronika and Césaire Meh “Financial Structure and Economic Growth: A non-technical Survey”, Bank of Canada Working Paper 2002-24, 2002.

Gale, Douglas, “The Efficient Design of Public Debt”, in Mario Draghi and Rudiger Dornbusch (eds), *Public Debt Management: Theory and History*, Cambridge University Press, pp 14-47, 1990.

Government of Victoria, *Partnerships Victoria: Overview*, June 2001a at [http://www.dtf.vic.gov.au/dtf/RWP323.nsf/0/ffa08f5c9122d76b4a2569e30022155b/\\$FILE/PVGuidanceMaterial_Overview.pdf](http://www.dtf.vic.gov.au/dtf/RWP323.nsf/0/ffa08f5c9122d76b4a2569e30022155b/$FILE/PVGuidanceMaterial_Overview.pdf)

Government of Victoria, *Partnerships Victoria: Overview*, June 2001b, *mimeo*.

Government of Victoria, *Partnerships Victoria: Practitioners’ Guide*, June 2001c, at [http://www.dtf.vic.gov.au/dtf/RWP323.nsf/0/ffa08f5c9122d76b4a2569e30022155b/\\$FILE/PVGuidanceMaterial_PracGuide.pdf](http://www.dtf.vic.gov.au/dtf/RWP323.nsf/0/ffa08f5c9122d76b4a2569e30022155b/$FILE/PVGuidanceMaterial_PracGuide.pdf).

Government of Victoria, *Partnerships Victoria: Public Sector Comparator, Technical Note*, June 2001d, at [http://www.dtf.vic.gov.au/dtf/RWP323.nsf/0/ffa08f5c9122d76b4a2569e30022155b/\\$FILE/PVGuidanceMaterial_PublicSectorComp.pdf](http://www.dtf.vic.gov.au/dtf/RWP323.nsf/0/ffa08f5c9122d76b4a2569e30022155b/$FILE/PVGuidanceMaterial_PublicSectorComp.pdf)

Greenspan, Alan, “Do efficient financial markets mitigate financial crises?” Federal Reserve Board, 1999.

Grimes, Arthur, “Crown Financial Asset Management: Objectives and Practice”, Treasury Working Paper, 01/12, New Zealand Treasury, 2001.

Holmström, Bengt and Jean Tirole, “Private and Public Supply of Liquidity”, mimeo, 1996 – subsequently published somewhere.

ICAP “The Bond Market: A National Institution Worth Saving”, in *Economics and Strategy*, ICAP, 2002.

Kjær, Knut, N., “Rationale for the Strategic Asset Allocation in the Norwegian Government Petroleum Fund”, presentation to the Actuarial Profession Investment Conference, Norges Bank Investment Management, 26 June 2000, www.norges-bank.no

Lloyd-Ellis, H and Zhu, X., “Fiscal Shocks and Fiscal Risk Management”, University of Toronto, Economics Department, Working Paper 108, 2000, at <http://www.unites.uqam.ca/eco/CREFE/cahiers/cah108.pdf>

Mehra, Rajnish, and Edward Prescott, “The Equity Risk Premium: A Puzzle”, in *Journal of Monetary Economics*, Vol 15, pp145-61, 1985.

Orszag, P. R. and J.E. Stiglitz, “Rethinking Pension Reform: Ten Myths about Social Security Systems”, *The World Bank*, 1999.

Siegel, Jeremy, *Stocks for the Long-run*, New York, Irwin, 1994.

Shiller, Robert, *Macro Markets: Creating Institutions for Managing Society’s Largest Economic Risks*, Clarendon Press, Oxford, 1993.

Shiller, Robert, “Expanding the Scope of Individual Risk Management: Moral Hazard and Other Behavioural Considerations”, in *Economic Notes*, Vol 26, pp 361-78, 1997.

Shiller, Robert, “Social Security and Institutions for Intergenerational, Intragenerational and International Risk Sharing”, Yale University, *mimeo*, 1998.

Simes, Ric, “The New Target for the RBA: Financial Stability”, *Australian Financial Review*, November, 2002.

Woodford, Mark, “Public Debt as Liquidity”, *AER, Papers and Proceedings*, pp 382-388, 1990.