



***THE
AUSTRALIAN
ECONOMY
IN THE
1990s***



Economic Group
Reserve Bank of Australia

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THE AUSTRALIAN ECONOMY IN THE 1990s

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Economic Group
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The cover shows the portraits of famous Australians who appear on Australia's \$100 and \$50 polymer notes. The portraits are, from the top, Dame Nellie Melba, Sir John Monash, Edith Dircksey Cowan and David Unaipon. Brief biographical details are available on the Bank's Web site.

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Introduction

David Gruen

Harold Wilson's dictum that a week is a long time in politics surely does not apply to economics. The significance of economic events often remains opaque at the time, and the process of separating the important from the ephemeral requires a period more like a decade than a week.

This volume examines developments in the Australian economy over the decade of the 1990s. In what ways was the decade different from its predecessors? What were the economic successes, and why did they occur? What aspects of the Australian economy were less successful? What are the prospects for the future?

The papers in the volume were commissioned by the Reserve Bank to address these questions. They focus on topics that have been of particular importance for the Australian economy in the 1990s.

The International Environment

The economic landscape has changed quite considerably over the past decade, both within Australia and internationally. A recurring theme in discussions about the international economy a decade ago was the unprecedented success of the Japanese economy. Having witnessed this success over the whole post-World War II era, most observers a decade ago could see no reason why it would not continue. Indeed, it was widely argued that continuing Japanese economic success, in one industry after another, would come at the expense of the economic fortunes of other countries, notably the United States.

The experience of the 1990s has not been particularly kind to this crystal-ball-gazing exercise from a decade ago, to put it mildly. With the benefit of hindsight – that most powerful of analytical tools – it is now clear that the Japanese economic boom of the late 1980s led to an unsustainable bubble in asset prices. The bursting of that bubble in the early 1990s ushered in a period of economic stagnation that has lasted the whole decade and may only now be coming to an end.

By contrast, expectations formed a decade ago about prospects for the United States have turned out to be unduly pessimistic. The widespread expectation at the start of the decade was that the US economy would continue to grow at about the 2½ per cent annual rate that had been experienced in the 1970s and 1980s, as Bradford DeLong notes in his paper in the volume. But annual US growth over the 1990s was closer to 3½ per cent, and in the second half of the decade, above 4 per cent. Of equal significance, the sustainable rate of unemployment in the US at the end of the 1990s appeared to have fallen to levels previously thought to be unattainable.

Furthermore, the acceleration in US productivity growth in the second half of the decade has generated a rising level of optimism about the future, not only in the United States, but elsewhere as well. There are those who remain sceptical about the

extent and durability of the pick-up in productivity growth, since it has been observed primarily in the relatively small part of the US economy that *produces* computers and computer-related equipment, rather than in the rest of the economy that *uses* this technology. Nevertheless, most commentators share DeLong's optimistic perspective that the Solow paradox – 'you can see the computer age everywhere but in the productivity statistics' – may be in the process of being resolved.

A decade is indeed a long time in economics.

And yet there are aspects of the US economic experience in the latter part of the 1990s that may not be so benign. Are there some echoes of the Japanese experience in the late 1980s present in the US a decade later? For example, some analysts were of the view in the late 1980s that Japan was in the midst of a structural acceleration in productivity growth, as William White points out in his comments in the volume. Furthermore, by the year 2000, both the US stockmarket and the US dollar had reached levels that seemed unlikely to be sustained. Were a stockmarket correction to lead to a faltering in US growth, the implications might not be so benign for the rest of the world, especially for those English-speaking countries like Australia with business cycles so closely aligned with the US cycle.

The Australian Economy

The macroeconomy

Macroeconomic developments in Australia in the 1990s have turned out to be more favourable in many ways than would have been expected at the beginning of the decade. Economic growth averaged 3½ per cent, and over 4 per cent since the trough of the recession in mid 1991. Living standards, as measured by per capita GDP, improved at a rate not seen since the 1960s – a result shared only with Ireland among industrial countries. Inflation averaged 2½ per cent, again a return to a performance not seen in Australia since the 1960s. By contrast, the performance on unemployment was not so good; unemployment was higher on average than in any previous post-World War II decade, although by the end of the 1990s, it had declined to within sight of previous cyclical lows, with the prospect that it could decline further still.

In reviewing the 1990s, it is of interest to compare developments with those of the previous decade. In 1990, the Reserve Bank convened a conference on the Australian macroeconomy in the 1980s. The papers in that conference volume examined the macroeconomic policy issues of most importance at the time. Some of the topics that were then the focus of attention remain of central interest today, and they form the basis for some of the papers in this volume. Over the intervening ten years, there have of course been significant changes in institutional arrangements, economic outcomes, and the concerns of policy-makers and analysts, and this volume reflects those changes.

The paper on the labour market in the 1990 volume focused on the Accord, the incomes policy that formed the centrepiece of Australian macroeconomic policy for much of the 1980s. The key development in the 1990s has been the gradual move

away from centralised wage-fixing arrangements to a more decentralised enterprise-based focus. This gradual transition, its implications for real wages and unemployment, and the case for further deregulation of the labour market, perhaps in concert with explicit measures designed to reduce (after-tax) income inequality, are taken up in the paper by Peter Dawkins in this volume.

A decade of current account deficits averaging 4¹/₂ per cent of GDP and the associated sharp rise in external liabilities convinced many policy-makers by the end of the 1980s that the state of the external accounts was perhaps the most important economic issue facing Australia at the time. The 1990 volume tackled this issue from two perspectives, with a paper on the balance of payments, and another on developments in national saving and investment.

Concern about the current account and the build-up of Australia's foreign debt probably reached a peak around the time of the 1990 conference. Over the ensuing decade, the current account deficit again averaged 4¹/₂ per cent of GDP, as it had in the 1980s. As a consequence, debate about the appropriate public policy response, if any, to the sustained current account deficit did not go away over the course of the 1990s – indeed it grew in intensity whenever the deficit was rising as a proportion of GDP. But there were gradual shifts of view and refinements of argument. The evolution of this intellectual debate over the past two decades is taken up in the paper by David Gruen and Glenn Stevens.

A further manifestation of concern about the current account has been the widespread support throughout the 1990s for the proposition that saving in Australia is less than its optimum. This proposition has been supported by the observation that saving rates in Australia have been in long-term decline, that Australia's national saving is low by international standards, and that prospective population ageing implies increased saving requirements. Malcolm Edey and Luke Gower discuss these longer-term trends in saving and their public policy implications in their paper.

The final elements of the 1990 volume's review of the Australian macroeconomy over the previous decade were papers on money and finance, and inflation. Monetary policy in the 1980s had been dominated by the complexities that financial deregulation had brought for the relationships between monetary aggregates and nominal income. Inflation had been fairly steady throughout the decade but, at an average 8 per cent rate, was well above the rates of inflation experienced by most advanced industrial countries at the time.

Although it was not clear at the turn of the decade, inflation was soon to fall sharply, to rates not seen since the early 1960s. Paul Kelly, in his contribution, argues that the subsequent gradual introduction of the medium-term inflation target – from the nomination by then Governor Bernie Fraser in 1993 of an average inflation rate of 2–3 per cent as an appropriate aim, to the gradual acceptance of the Bank's position by both sides of politics, to the formalisation of the policy in 1996 – represents one of the most important economic policy developments in the 1990s.

It has meant that the business cycle expansion of the 1990s was different from the one in the 1980s, because it was based on low inflation and therefore offered the potential for greater longevity than the 1980s expansion. But Kelly cautions that,

despite its success over the seven years since its inception, the permanence of the inflation-targeting framework should not be taken for granted. Macroeconomic outcomes have so far been good, and so it has yet to be faced with a stern test.

Despite the relatively short history of inflation targeting (the first inflation-targeting regime began in New Zealand about a decade ago), it is a framework that has already made its mark as an important intellectual advance in the design of monetary policy. Of course, it was not developed in an intellectual vacuum – it was instead a response to the perceived shortcomings of alternative frameworks for monetary policy. It is therefore of interest to examine, especially with the benefit of hindsight, the development of earlier intellectual advances in macroeconomics and monetary policy, a task tackled by Robert Leeson in his paper.

Leeson focuses particularly on the contributions to macroeconomics made by Milton Friedman and AW (Bill) Phillips. He argues that a careful reading of their original works demonstrates that the subtlety of their arguments was often lost (sometimes deliberately) in later summaries of their contributions. For example, Leeson argues that, notwithstanding the caricature of his position by later critics, Phillips was keenly aware of the dangers inherent in attempting to exploit the short-run trade-off between inflation and unemployment that bears his name. In Leeson's view, the mistaken belief that this trade-off could be exploited led to one of the most serious macroeconomic policy errors of the post-World War II era.

Microeconomic reform

One of the enduring features of the Australian economic landscape over the past two decades has been the gradual implementation of a widespread program of microeconomic reform. The major reforms over this time include the dismantling of barriers to foreign trade, financial deregulation, corporatisation and privatisation of government business enterprises, competition reform including new regulatory arrangements for natural monopoly utilities, and labour market reform. (One could add the floating of the dollar to this list, although it is more natural to think of it as a macroeconomic reform.)

Most microeconomic reform is designed to improve economic efficiency, and there has been a longstanding expectation that the reform undertaken in the Australian economy would lead to an improvement in productivity growth. The evidence from the 1990s is that this improvement seems to have occurred. Whether examined for the market sector of the economy (which accounts for about two-thirds of the economy because it excludes those industries for which output is derived directly from inputs) or for the whole economy, measures of labour and multifactor productivity for the business cycle expansion of the 1990s show stronger growth than for any comparable period since the 1960s.

Most commentators, including Charles Bean, Peter Forsyth, David Gruen and Glenn Stevens, and Richard Snape in their contributions, attribute much of this improvement in productivity growth to the broad range of microeconomic reforms over the past two decades. While it is not possible to draw a direct link between particular reforms and the economy-wide improvement in productivity, the timing

of the productivity acceleration is suggestive that it was a consequence of microeconomic reform.

This interpretation stands in contrast to the explanation for the productivity acceleration in the United States over the past five years. The US experience is widely thought to be a consequence of the 'new economy', associated with heavy investment in computers, computer-related technology and the internet. While the 'new economy' may significantly boost Australian productivity growth in the years to come, there is little evidence that it has done so over the 1990s, as both Charles Bean, and David Gruen and Glenn Stevens conclude in their papers.

One of the sectors experiencing particularly extensive reform and deregulation in the 1980s was the financial sector. Marianne Gizycki and Philip Lowe argue in their paper that this deregulation now looks much more successful than it appeared a decade ago. In the early 1990s, deregulation appeared to have delivered relatively little, other than a speculative boom in commercial property prices and a lot of wasted investment. Over the remainder of the 1990s, however, the allocation of resources for investment appears to have been much more soundly based. Furthermore, strong competitive pressures – brought to the marketplace by new entrants rather than the existing incumbents – have delivered substantial benefits to consumers. Examples of these benefits include a fall in the interest-rate margin charged on housing loans from around 4 percentage points in the early 1990s to around 1³/₄ percentage points at the end of the decade, and a fall in the commission charged to retail investors for share transactions from 2 per cent in the early 1990s to as low as 0.1 per cent today.

Broader issues concerning the whole range of microeconomic reforms are taken up by Peter Forsyth in his paper. In his judgement, the benefits of reform have been substantial and have accorded quite closely with what had been expected. But he cautions that the benefits have been unevenly distributed – as was also to be expected, although this aspect of reform was less often highlighted. Consumers have usually benefited, although in some cases reform has required them to conduct more extensive search for suitable products and services than was previously necessary. Taxpayers have also benefited, especially with the improved performance of public enterprises. Workers in industries subject to significant reform or deregulation, however, have often lost out, through job losses and more demanding working conditions. Looking to the future, many of the sectors of the economy where performance could be improved are those that pose particular difficulties in the design of appropriate reform; these include education, health and infrastructure.

An alternative overview of microeconomic reform in Australia is presented by John Quiggin, who argues that one of its most significant effects has been to substantially increase unmeasured work hours and work intensity. Although he is hampered by a lack of data, Quiggin presents some guesstimates of the extent of the increase in work intensity, and argues that if these numbers are realistic, then the improvement in measured productivity in the 1990s is illusory as it can be explained entirely by increased work intensity. Quiggin also argues that there has been widespread community opposition to microeconomic reform, which he views as being a consequence of the increased work effort that has been required from the workforce.

The future

Crystal-ball gazing is a hazardous exercise, even when times appear tranquil. The experiences of Japan and the United States in the 1990s that were discussed earlier provide support for this proposition, if any were needed. And yet, several brave souls have been willing to commit to paper their visions of what may be the important and distinctive features of the Australian economy in the coming decade.

Had one engaged in such an exercise at the beginning of the 1990s, one would not have expected that economic outcomes in Australia would turn out as well on so many fronts as they did, an observation that Ross Gittins finds encouraging when he considers the prospects for the coming decade. He nominates fiscal policy as an area in which there will be particular challenges ahead. While The New Tax System represents, in his view, a structural improvement in fiscal policy that should generate buoyant growth in government revenues in the years to come, there will be areas of spending in which growth will be particularly hard to restrain, including defence, education and health care. Yet Gittins argues that there are grounds for optimism because, despite signs of 'reform fatigue', governments understand that they will not survive if they simply preside over changing circumstances – instead, they must be seen to be tackling the important public-policy issues of the day.

Although the overall performance of the Australian economy was impressive in the 1990s, some aspects of that performance were more worrisome. Among these were the relatively sluggish growth of full-time employment, the rising share of welfare recipients in the community, and the increase in inequality of earnings throughout the decade. Bob Gregory, in his contribution to the volume, argues that these trends represent grounds for concern about the future. Aside from a concern for equity in its own right, it may be that for economic reforms to have a long-run chance of surviving, they must be seen to be inclusive and to benefit a broad cross-section of the community.

Before looking forward, Rob Ferguson looks back and celebrates those aspects of societal change and technological advance that have transformed Australia for the better over the past few decades – changes that have enriched the culture, enhanced its diversity and reduced, if not eliminated, the 'tyranny of distance'. He takes issue with a prominent fear about the future, that globalisation will generate an exodus of talented people and head offices away from cities (or countries) on the world's periphery; a development he dubs 'the Adelaide effect'. Challenging this pessimism, he argues that globalisation provides more opportunities than threats, and that Australia must continue to demonstrate its capacity to thrive in this new world.

Based on the recent performance of US productivity, and an assessment of the portability of this improved performance to other countries with similar institutions and industrial structures, one can be optimistic about the prospects for strong productivity growth in Australia over the coming decade, as Bradford DeLong suggests. If this analysis turns out to be correct, it seems plausible that this improved performance will occur on the back of heavy investment in computer-related

technology, as it has in the United States. With greater requirements for investment, however, Australia may well experience, in DeLong's view, another decade of high current account deficits, similar to the previous two.

Another place to search for clues about the future is in countries that have had similar experiences to those of Australia. The state of the British economy in the late 1980s bears some resemblance to the current state of the Australian economy, as Charles Bean argues in his paper. Britain at that time had experienced an extended period of strong economic growth and declining unemployment, and measures of productivity suggested a structural improvement on the back of significant microeconomic reform. Households' balance sheets had expanded rapidly, with a big rise in indebtedness funding sharp increases in the real value of housing. The 1980s upswing in Britain ended unhappily, however, with a sharp economic downturn, precipitated in part by a rise in saving as households came to realise that their expectations of income and asset-price growth were unrealistic.

As there are echoes of these developments in the long 1990s expansion in Australia, the British experience early in the decade should serve as a cautionary tale for Australia. But while the comparison is instructive, Bean stresses that it should not be taken too far. The signs of excessive optimism about the future were clearer in Britain in the late 1980s than they are in Australia currently, and furthermore, there were constraints on both monetary and fiscal policy in Britain a decade ago that should not apply to Australia.

Overall then, the Australian economy performed well in the 1990s, both compared to its past and to the experiences of other countries. The gradual relative economic decline that had been a feature of so much of the 20th century – and had been the cause of so much soul-searching about Australia's perceived inadequacies – was not in evidence in the 1990s. Instead, Australia often found itself among a small group of countries, including the United States and a few smaller European countries, whose performance others sought to emulate. Although economic outcomes were not impressive on all fronts – with rising inequality being an obvious more worrisome development – the notable successes of the Australian economy in the 1990s suggest that there are good reasons to be cautiously optimistic about the future.

What Went Right in the 1990s?

Sources of American and Prospects for World Economic Growth

J Bradford DeLong¹

1. Introduction

1.1 Productivity slowdown and speed-up

In the second half of the 1970s productivity growth in the US and the rest of the OECD collapsed: the productivity slowdown. Then Chair of the President's Council of Economic Advisers, Charles Schultze, speaks of the years when the CEA's forecasts of nominal GDP growth were dead on – but their forecasts of real GDP growth were 2 percentage points too high and their forecasts of inflation were 2 percentage points too low. The causes of the productivity slowdown were a mystery at the time (Denison 1979) and remain largely a mystery even today: it was too large to be easily accounted for by oil prices, by environmental regulation, by the changing demography of the labour force, or by the shoe-leather and other identified costs of moderate inflation.

At the time economists doubted that the productivity slowdown would continue. But it did continue. And so it gave rise to what Paul Krugman (1990) called the Age of Diminished Expectations – an OECD-wide age that lasted for more than two decades of slow growth, depressing wage performance, and an increasing gap between public financial resources and the requirements of the social insurance state.

In the second half of the 1990s productivity growth in the US exploded: a productivity speed-up. Back at the start of the decade of the 1990s virtually everyone expected the Age of Diminished Expectations to continue, and for US economic growth in the 1990s to be as slow as it had been in the 1970s and 1980s: a growth rate of measured potential real GDP over the 1990s of 2.5 per cent per year. But actual measured growth in the US economy over the 1990s averaged more than 3.4 per cent per year. And since 1995 American measured real economic growth has averaged 4.1 per cent per year, with few (but some) indications that real output has materially exceeded the economy's long-run productive potential. This productivity speed-up caught economists and other observers – all save the editors of *Business Week* – by surprise, just as the productivity slowdown of the 1970s had.

1. I would like to thank George Akerlof, Larry Ball, Alan Blinder, Michael Froomkin, Dan Sichel and Janet Yellen for helpful discussions.

1.2 The questions raised

What have the sources of this good – extraordinarily good – macroeconomic performance been? Why weren't mainstream economists able to see it coming beforehand? Will the productivity speed-up last as long as the productivity slowdown did, or will it vanish in the next few years? And what does the acceleration of growth in the US in the second half of the 1990s have to tell us about growth in the world in the future?

These are important questions. But they are not questions to which I can give convincing solid answers. I can only guess, and I am going to do so.

My answers – or, rather, my guesses – focus on three factors: investment, computers, and the NAIRU. One possibility is that forecasts of US economic growth made in the early 1990s undershot because they did not accurately assess either the likelihood of large-scale deficit reduction or the effect of large-scale deficit reduction on investment. To confirm this possibility would be politically convenient – it is, after all, the line pushed by White House communications. To confirm this possibility would raise my confidence that my social marginal product is positive – I did, after all, work for the Clinton administration while it was focused on deficit reduction as job one. But the reduction in the deficit was too small and the boom in economic growth too large, to attribute more than a fraction of the speed-up in growth to the correction of previous fiscal policy errors. The lever is too small, and the rock to be moved too large.

A second possibility is that past forecasts of US growth undershot because they did not accurately assess either the rapid forthcoming fall in the price of data processing and data communications equipment or the slowness with which diminishing returns to computer power would set in. This possibility looks more likely with each passing month. The pace at which prices of computer and communications hardware fall continues to rise, and the rate at which computer and communications capital grows continues to rise as well. Limited diminishing returns show themselves in a higher and higher share of GDP received as income by owners of computer and communications capital.

The almost inevitable conclusion is – as Oliner and Sichel (2000) have argued most powerfully – that the computer sector has in the past decade come of age as a macroeconomic factor. The productivity speed-up is due primarily to events in information technology.

Since there is no reason to believe that the information technology revolution is anywhere near the upper asymptote of its logistic, we can forecast with some confidence that the productivity speed-up in the US will not evaporate. And we can also forecast with considerable confidence that productivity growth rates elsewhere in the industrial core are about to accelerate: investments in computer technology that have been undertaken in the US have, by and large, not been undertaken outside

the US; and investments in computer technology that have yielded high returns inside the US are likely to yield high returns outside the US as well.²

Thus the ultimate lessons for the future of economic growth drawn from the American experience of the 1990s have to be optimistic ones. The forces that made for rapid growth in the US in the second half of the 1990s seem likely to persist in America. These forces seem poised to be duplicated elsewhere in the world economy. At least as far as the OECD-wide industrial core of the world economy is concerned, the future today looks brighter than at any time since 1973.

2. The Growth Acceleration

2.1 Real GDP growth in the 1990s

Back at the start of the decade of the 1990s, virtually everyone expected US economic growth in the 1990s to be slow – as slow as it had been in the 1970s and 1980s. Forecasts at the start of the last decade (made on a basis consistent with today’s chain-weighted national income and product accounts), projected a growth rate of measured potential real GDP over the 1990s of 2.5 per cent per year or so – a 1 per cent per year increase in the labour force and employment and with a 1.5 per cent per year increase in real labour productivity.

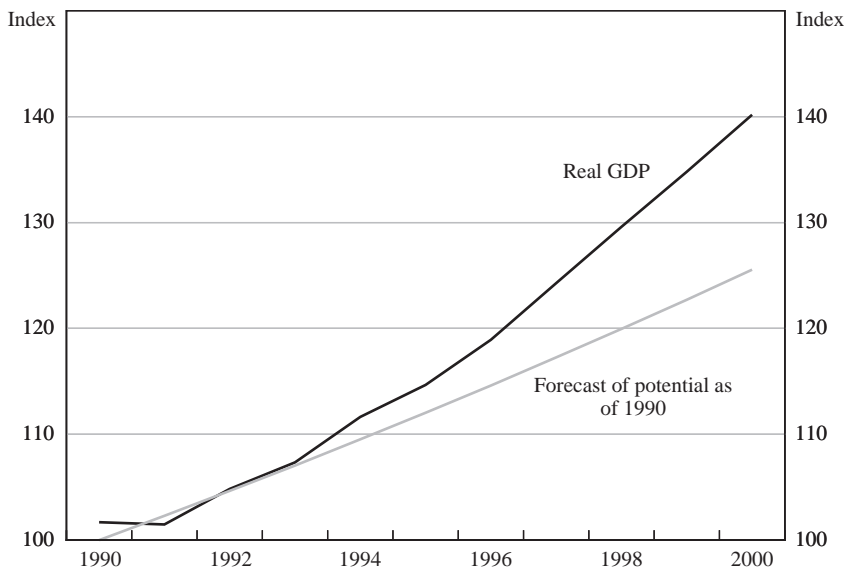
Such forecasts were overly pessimistic. Actual measured growth in the US economy over the 1990s has averaged more than 3.4 per cent per year – nearly a full annual percentage point faster than was predicted a decade ago by the then-consensus forecasts (Figure 1).

More remarkable still is the extent to which the recent acceleration in American economic growth has been confined to the second half of the 1990s. Between 1990 and 1995 measured chain-weighted real GDP grew at a rate of 2.4 per cent per year (Figure 2).

This was a fast enough growth rate for American policy-makers in the middle of the decade to be pleased with themselves, and to pat themselves on the back on their skilful management of economic policy. In the first half of the 1990s the recession of 1990–1992 had been kept mild. The subsequent recovery had carried the economy through then-current estimates of the NAIRU by the end of 1994. This recovery had been strong in spite of a substantial contractionary shift in fiscal policy toward budget balance (a shift that was expected to boost growth in the long term via capital deepening, but that many in 1993 and 1994 had worried would reduce growth in the short term by reducing aggregate demand). While all this had been accomplished, it had still proven possible to reduce inflation from 4 to 2 per cent per year.

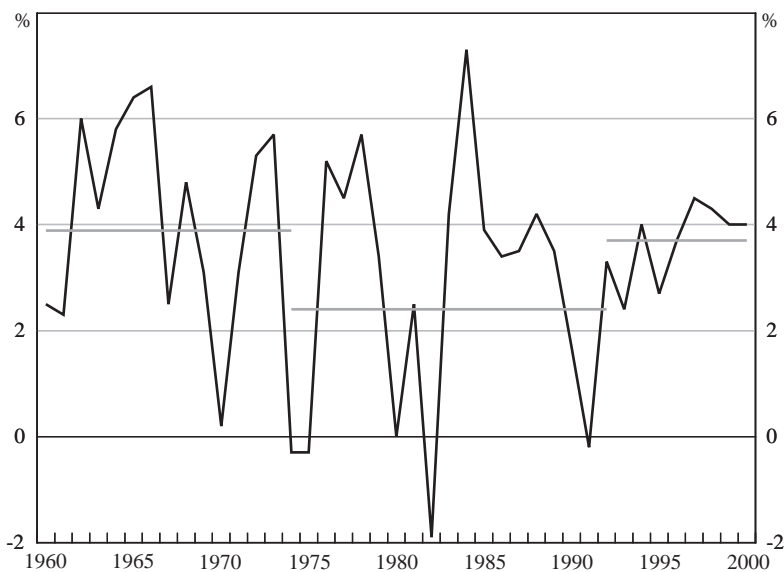
2. Possibly connected with the productivity speed-up is the sudden and swift fall in the American economy’s NAIRU in the 1990s. This factor is hard to pin down. Our models of what determines the NAIRU are poor, awkward, and do not work very well. NAIRUs bounce all over the place, for all kinds of reasons, many of which we do not understand (see Ball (1996)). One possibility, however, is that the fall in the US NAIRU is also a consequence of the information technology revolution.

Figure 1: US Economic Growth
Chain-weighted real GDP
1990 potential=100



Source: Department of Commerce; author's calculations

Figure 2: US Real GDP Growth
Year-ended, per cent per annum



Source: Department of Commerce

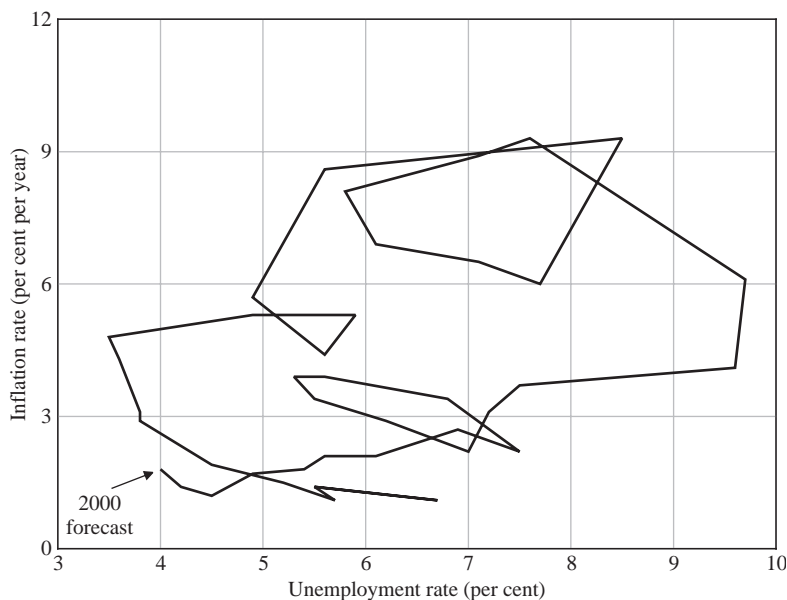
But, as of the middle of the decade, there appeared to be few opportunities for good macroeconomic news. Unless the Federal Reserve was extremely lucky and kept exact balance, the expectation as of the mid decade was either for a severe slowing of growth or for a rapid return of rising inflation. Only the editors of *Business Week* were materially more optimistic.

Yet since 1995, American measured real economic growth has averaged 4.1 per cent per year with few indications that real output materially exceeds the economy's long-run productive potential. Inflation has shown few signs of rising. The broadest index of inflation, the GDP deflator, rose by 2.1 per cent between 1994 and 1995 and by 1.5 per cent between 1998 and 1999. The last six months of the core CPI show inflation at 2.6 per cent per year; the last six months of the core PPI show inflation at 0.8 per cent per year; the last six months of the GDP deflator show inflation at 2.9 per cent per year.

2.2 Inflation and unemployment

Surprisingly good performance on output growth and inflation has been coupled with unbelievably good performance on unemployment (Figure 3). The short-run inflation-unemployment trade-off in the US now appears to be more favourable than at any time at least since World War II, perhaps ever. Back in 1994, American economic forecasters argued whether the NAIRU might be less than 6 per cent. Today they argue whether it might be less than 4.5 per cent.

Figure 3: US Inflation and Unemployment
1960–2000



Source: Bureau of Labor Statistics; Department of Commerce; author's estimates

Thus the US today is some 10–15 per cent richer than mainstream economists would have dared to forecast a decade ago. It has an unemployment rate – a hair more than 4 per cent – that is two percentage points lower than mainstream economists would have dared to forecast a decade ago. And it has a much more favourable short-term inflation-unemployment trade-off than the US economy had a decade ago, when a decline in unemployment below 6 per cent set off increases in inflationary pressures reminiscent of the late 1960s or the late 1970s.

How far can standard factors and forces go in accounting for this burst of macroeconomic good news?

3. Investment

3.1 The federal deficit and low investment

At the peak of the 1982–1989 business-cycle expansion nominal spending on private investment amounted to only 15.4 per cent of GDP. Such a nominal private investment share compares unfavourably to the 16.5 per cent of GDP in nominal private investment at the peak of the 1970–1973 expansion, or to the 18.4 per cent of GDP at the peak of the 1975–1979 expansion. The 1980s expansion was the only recent one in which the nominal share of investment in GDP fell as the expansion proceeded.

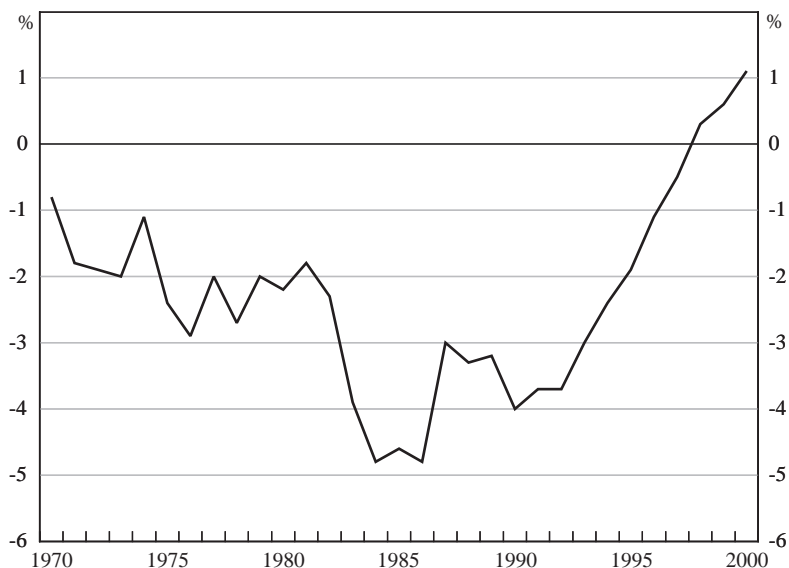
The reasons for this relatively low share of investment in total spending were twofold: a decline in the private savings rate, and the large budget deficits that had emerged during the 1980s as a result of Reagan administration fiscal policy (Figure 4). (These two factors, however, were counterbalanced by the rise in foreign net investment in America – the flip side of the high trade deficits of the 1980s.)

The change in fiscal policy stance since the early 1990s has been dramatic. The productivity-slowdown years of the late 1970s saw a structural federal budget deficit of some 2 per cent of GDP. The Reagan-deficit and the read-my-lips-no-new-taxes years of the 1980s and early 1990s saw structural deficits of some 4 per cent of GDP. Since 1993, however, the structural budget balance has improved steadily by 0.6 per cent per year, bringing the federal budget into surplus (although not resolving the potential long-run funding crisis of the social insurance state).

Forecasts of potential output growth made as of 1990 had to assume the continuation of large federal budget deficits and of relatively low shares of nominal investment in GDP. The political system seemed incapable of reducing the structural deficit: Democrats anxious to avoid further reductions in rates of spending growth confronted Republicans unwilling to raise taxes. Large deficits were, for each side, preferable to abandoning its core values. Given the continued decline in the private savings rate and given the expectation that continued gridlock in Washington DC would produce continued high deficits³, a forecast of high investment in the 1990s simply did not add up.

3. As seen in Cogan, Muris and Schick (1994), for example.

Figure 4: Structural Budget Balance
Per cent of GDP



Source: Congressional Budget Office

Yet the premises of such pessimistic forecasts were wrong. Political gridlock in Washington DC did not continue. The 1990 deficit-reduction program imposed on President Bush by the (Democratic) congressional leadership cut the structural deficit from 4 to 3 per cent of GDP, and – more important – it changed the rules by which the American Congress debated and considered the budget in a way that gave a permanent structural advantage to forces pushing for deficit reduction.⁴ The 1993 Clinton deficit-reduction program then cut the structural deficit from 3 to 1 per cent of GDP. And the structural deficit then vanished completely as strong economic growth led to higher revenues.

3.2 The effects of reduced deficits

What effect did the successful reduction and elimination of the structural deficit have on measured American real GDP growth? What difference does a shift in the structural budget balance from –4 per cent of GDP back to zero make? Clinton administration policy-makers early in the decade certainly hoped that deficit reduction would lead to lower interest rates, a high-investment recovery, and faster output and income growth (see Woodward (1994)⁵).

4. The contrast between the success in the 1990s of the *Budget Enforcement Act* and the failure in the 1980s of Gramm-Rudman to control the deficit is striking.

5. A book that can be read with profit if one remembers that Woodward's principal sources came from the media affairs section of the White House, and that both Woodward and his principal sources had very, very limited understanding of the substantive debate over macroeconomic policy conducted within the Clinton administration.

The answer depends on three factors: (a) the rate of return on capital, (b) the proportion of additional budget deficits that are financed from abroad, and (c) the impact of budget balance shifts on private saving. And it turns out that conventionally calibrated Solow (1957) growth models cannot attribute much of the acceleration in post-1995 productivity growth to the reduction in the federal deficit.

First of all, the structural deficit was not eliminated until the end of the decade. For the period relevant for growth in the second half of the decade, the structural deficit averaged 1.5 per cent of GDP – less than 4 per cent, true, but not zero.

Second, conventionally calibrated Solow growth models predict a marginal product of capital on the order of 10 per cent per year. Thus a 2.5 per cent of GDP reduction in the deficit and increase in national investment could boost real GDP growth by one-quarter of a percentage point in its first year, and by somewhat less in subsequent years as a smaller and smaller proportion of the increase in *gross* investment added to the *net* capital stock.

In all likelihood, however, the boost to growth would be lower. At least a third of the reduction in the deficit would be likely to generate not an increase in domestic investment but a reduction in the inflow of capital from overseas (see Feldstein (1993a, 1993b)). The effects of shifts in budget deficits on private savings rates remain hotly disputed, with no argument changing anyone's mind (see Barro (1974); Bernheim and Bagwell (1988)), but surely reductions in budget deficits do not *increase* private savings.

Thus straightforward application of the standard Solow growth model suggests that one-sixth of a percentage point per year is a good estimate for the share of the post-1995 growth acceleration that can be attributed to better fiscal policy. Switching from Solow to new growth theory models does not materially help. Even the 25 per cent per year rate of return on investment in machinery and equipment estimated by DeLong and Summers (1991) does not materially help. This is because machinery and equipment are only one part of investment; even their highly optimistic assessments of rates of return on investment can account for only one-third of a percentage point per year of the post-1995 growth acceleration.

This does not mean that deficit reduction in the 1990s was not important, or was not worth doing. But it does mean that the post-1995 growth acceleration is a much larger phenomenon than can be easily attributed to better fiscal policy: the lever is simply not large enough to move the stone. To account for the lion's share of good economic performance, we must look elsewhere.

4. Computers

4.1 Economists' scepticism toward computers

Until the past several years, economists were sceptical of claims that the computer revolution was having a material effect on the productivity of the American economy as a whole. As Solow (1987) put it, 'you can see the computer age everywhere but in the productivity statistics'. As Gordon (1997) put it, 'for more than a decade American corporations have been shovelling billions of dollars in computers down

a black hole, with no response at all from the sluggish growth rate of American productivity’.

The most thorough and reasoned statement of this point of view came in Sichel (1997). He concluded that up through the early 1990s the information technology sector had contributed about 0.3 per cent per year to the growth of GDP (and perhaps half that to the growth of NDP, net domestic product). He went on to argue that this contribution to economic growth could not rise rapidly unless ‘the return earned by computer hardware and software... surge[d] in coming years’.

Oliner and Sichel (1994) provided the details underpinning this reasoning. The real stock of computers would grow rapidly in the future, but the real economic return to investments in computers would fall as computer prices fell. Back in the 1970s computer CPUs were carefully scheduled with batch jobs to keep their capacity utilised. Today most of the CPUs installed are idle, running Solitaire or screensavers or – in the best case – searching for extraterrestrial intelligence.

4.2 More recent estimates

Yet by the year 2000 there was a new article by Oliner and Sichel (2000) with a very different conclusion:

[the contribution to productivity growth from] the *use* of information technology – including computer hardware, software, and communication equipment – ... surged in the second half of the [1990s]. In addition, technological advance in the *production* of computers appears to have contributed importantly to the speed-up in productivity growth. All in all, we estimate that the *use* of information technology and the *production* of computers accounted for about two-thirds of the 1 percentage point step-up in productivity growth between the first and second halves of the decade.

What had changed? In the first half of the 1990s the stock of computer hardware grew at about 17 per cent per year, and owners of computer hardware received 1.4 per cent of GDP as income. The contribution of computer hardware to economic growth was approximately the product of these two numbers: about 0.22 percentage points per year (Table 1). But as Oliner and Sichel (2000) calculate their estimates, by the second half of the 1990s owners of computer hardware received 1.8 per cent of GDP as income, and the stock of computer hardware grew at some 36 per cent per year – implying a growth contribution from computer hardware that had more than doubled to 0.58 percentage points per year.

Oliner and Sichel then add on the benefits from increases in the stock of software capital and communications equipment, and add productivity gains not just from the use of computer technology as capital but in the production of semiconductors and other information technology products as well. They reach their conclusion that two-thirds of the acceleration in post-1995 productivity growth can be attributed to the computer sector. Moreover, Oliner and Sichel’s estimates of recent contributions are not extreme. Whelan’s (2000) are a little bit larger. Jorgenson and Stiroh’s (2000) are a little bit – but not much – smaller.

Table 1: Decomposition of Non-farm Business Sector Productivity Growth

Period	1974–90	1991–95	1996–99
Growth rate of labour productivity	1.43	1.61	2.66
Contributions from:			
– Capital deepening	0.81	0.60	1.09
– Information technology capital	0.45	0.48	0.94
– Hardware	0.26	0.22	0.58
– Software	0.10	0.21	0.26
– Communication equipment	0.09	0.05	0.10
– Other capital	0.36	0.12	0.16
– Labour quality	0.22	0.44	0.31
– Multifactor productivity	0.40	0.57	1.25

Source: Oliner and Sichel (2000)

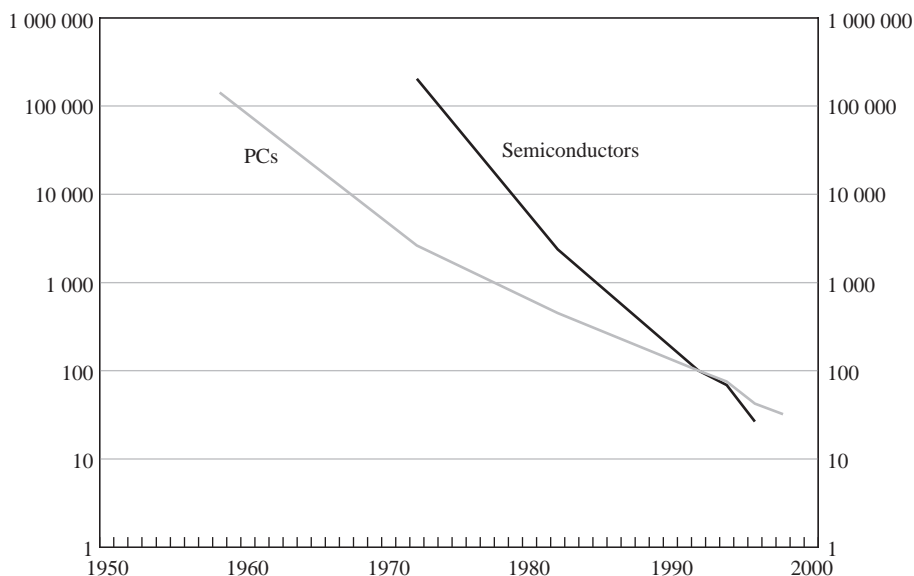
4.3 Understanding the change

The earlier – pessimistic – conclusions about the likely contribution of computers to American economic growth were implicitly driven by a belief that investments in computers were subject to rapidly diminishing economies of scale. Thus marginal returns to computers would diminish at least as rapidly as the stock of computers and computing power grew.

Jack Triplett’s (1999) estimated price indices for computers and semiconductors could show that a computer in 2000 cost one-ten thousandth as much as a computer in 1960 (Figure 5). But that would have little effect on economic growth because the marginal computer in 2000 would perform services only one-ten-thousandth as useful as the marginal computer in 1960. Thus the income share of computers in real GDP would not rise. And with a constant rate of technological progress in computers and communications, the contribution of information technology to economic growth would not rise either.

Yet these assumptions have turned out to be false. In the American economy the income share received by information technology equipment and software has grown: returns to computers have not diminished as rapidly as Oliner and Sichel (1994) expected. And the pace of improvement and cost reduction in information technology has accelerated, with no sign of any forthcoming deceleration. For two generations the folk wisdom has been that the rate of technological improvement in semiconductors and computers is constant: ‘Moore’s Law’ is the rule of thumb that the density of circuits on a piece of silicon doubles every eighteen months. Yet the second half of the 1990s saw the pace of cost reduction in information technology approximately double.

Figure 5: Price Indices for Computers and Semiconductors
Index, 1992=100, log scale



Source: Triplett (1999)

4.4 Computers and investment

There remains one loose thread to be tied. Was the more-rapid-than-usual decline in computer prices driven by the increase in investment made possible by the reduction in the budget deficit? To the extent that the recent explosion in computer power and in the contribution of computers to GDP growth came about because higher-than-usual demand pushed computer manufacturers and computer users alike down a learning curve, there is a possibility that we might have had this burst earlier had investment been earlier. But the relatively low-investment, high cost-of-capital late 1980s were not an attractive time to undertake the large scale transformations of business organisation and communications that underpin the current wave of extraordinarily high investment in computers.

One possibility is that investment and productivity are very closely linked, and that a balanced budget for the US in the 1980s would have brought the productivity speed-up forward in time by perhaps five years. A second possibility is that the sudden high contribution of computers to growth hinged on key innovations that were only tangentially related to macroeconomic factors.

I cannot tie this loose end here.

5. NAIRU

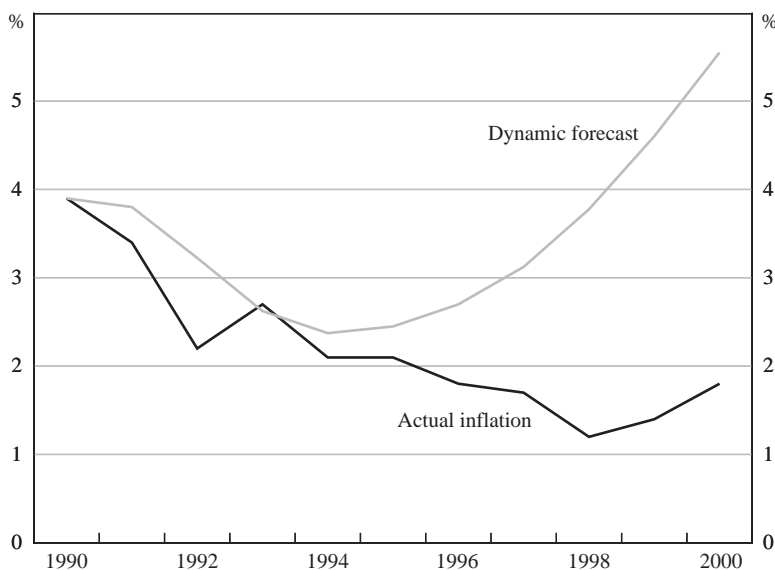
Alongside astonishingly rapid productivity growth in the US in the 1990s has come astonishingly good inflation-unemployment performance. Note that the apparent large inward shift of the short-run Phillips curve is a separate issue from the productivity speed-up: it is completely conceivable that growth could have accelerated without having any effect on inflation-unemployment dynamics. But not only is the same unemployment rate associated with a higher level of real GDP as labour productivity has boomed, but the same unemployment rate is associated with a lower level of inflation.

Figure 6 shows actual inflation and the dynamic forecast starting in 1990 for the simplest of all Phillips curve models: expected inflation is equal to last year's inflation, and this year's inflation is equal to expected inflation plus a parameter times the difference between the NAIRU (here set at 6 per cent, at the low end of possible NAIRU estimates as of the start of the 1990s) and the unemployment rate.

Given how low the US unemployment rate has fallen in the 1990s, the inflation rate would have been expected to be nearly 6 per cent per year by now. But it isn't: the NAIRU in the US has fallen remarkably far, remarkably fast.

There is some question whether it is worth trying to determine the causes of the fall in the American NAIRU in the 1990s. If truth be told, the standard neo-Keynesian Phillips curve never worked very well at all outside the US. Only the fact that too

Figure 6: Inflation in the 1990s: Actual and Dynamic Forecast
Year-ended, per cent per annum



Source: Author's calculations

large a proportion of major journal editors and textbook writers lived in the US allowed it to become the default model at all. On the other hand, the standard neo-Keynesian Phillips curve did a very good job at explaining the behaviour of US inflation and unemployment from the mid 1960s up to the early 1990s.

It is entirely possible that the surprisingly good behaviour of the NAIRU in the US during the 1990s is largely unlinked to the speed-up in productivity growth. But Alan Blinder (2000) has raised an interesting possibility: a productivity speed-up can drive a wedge between the real wage aspirations of workers and the rate of productivity growth. If productivity growth suddenly speeds up but this speed-up is not generally recognised or incorporated into the wage bargaining process, then the NAIRU will fall.

This is not an equilibrium story. Unless real wage aspirations are and remain unrelated to productivity growth, such a fall in the NAIRU is likely to be temporary. As people's perceptions of productivity growth – and thus of real wage aspirations – rise to actual trend productivity growth, the wedge between wage aspirations and productivity growth will disappear. The NAIRU will then rise again.

How long are these misperception lags? I do not know. Is this theory the explanation for the extraordinarily good inflation-unemployment performance of the US in the 1990s? I do not know. It is, however, clearly a possibility. It is hard not to be struck by the coincidence of a relatively low American NAIRU during the rapid productivity growth 1960s, of a relatively high American NAIRU during the productivity slowdown period of the late 1970s and 1980s, and now a low NAIRU again during the high-productivity-growth late 1990s.

6. The Future

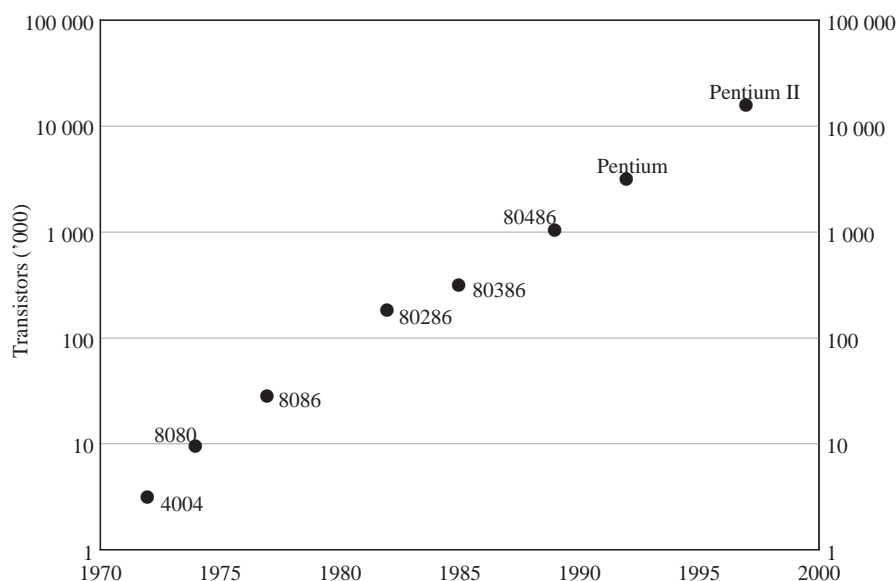
If the Oliner-Sichel interpretation that the speed-up in productivity growth is the result of innovations in computer and communications technology is correct – and it looks like a good bet – then obvious conclusions follow.

First, returns to investment in computer capital have run into diminishing returns relatively slowly. There is no reason to believe that this will change – no reason to believe that the marginal product of computer capital in the US is about to drop to zero. There is also no reason to believe that the pace of innovation – and cost reduction – in data processing and data communications is about to slow. Moore's Law has been good for more than three decades, and promises to hold for at least one more: few things about technology are more predictable than the continued rapid fall in computer and communications hardware prices (Figure 7).

Hence productivity growth in the US appears likely to continue to be strong for at least the next decade. The productivity slowdown is over. The Age of Diminished Expectations is past.

Furthermore, most of the rest of the world has not yet undergone the data processing and data communications revolutions that the high-tech part of the US economy has experienced. There are exceptions: Finland, for example. But throughout

Figure 7: Moore's Law in Action for Intel Microprocessors
Log scale



Source: Intel Corporation

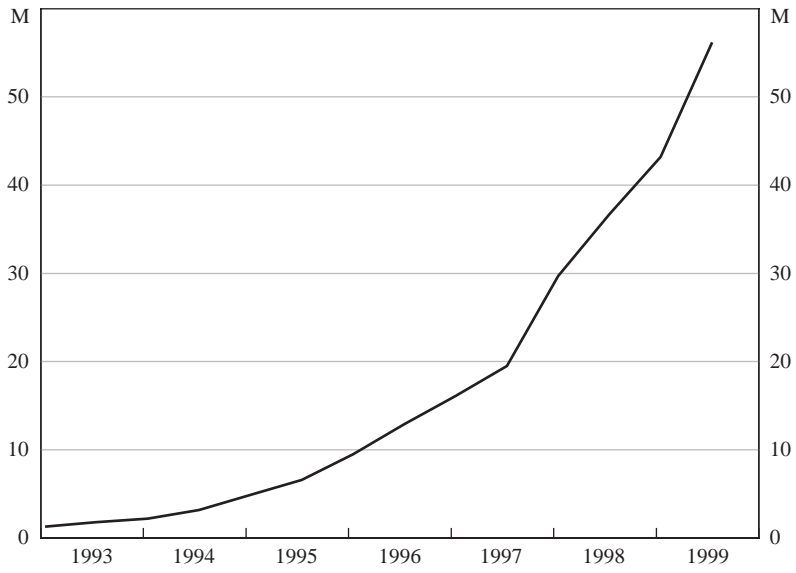
most of the world – even most of the developed world – the benefits of entering the information age have not been captured.

Leave to one side the implications of better communications technologies – the ‘death of distance’. Even ignoring the fall in communications costs, there is every reason to think that productivity growth outside the US is about to accelerate as well: the trail has been blazed. Imitation is often much easier than innovation.

There is plenty of room for imitation. There are fewer than 70 million internet hosts worldwide (Figure 8). Even in the most computerised and information technology-intensive sectors of the world economy, it is clear that there is still plenty of room for additional investments in information technology.

There is no reason for things that have proven to be relatively high marginal product investments inside the US to be low marginal product investments outside the US. To the extent that the productivity speed-up is due to the information technology revolution, what has happened in the US over the past decade is likely to be a mirror in which others can see aspects of their futures.

Thus from a growth-oriented macroeconomic standpoint the future looks bright for the whole OECD, the whole industrial core of the world economy – brighter than it has looked at any time since the beginning of the 1970s.

Figure 8: Internet Hosts Worldwide

Source: Nua Internet Surveys

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Discussion

1. William R White

In keeping with the organisers' desire to provide a broad international backdrop to the other papers that deal more directly with the Australian economy, my presentation will be in three parts. I begin by commenting directly on Professor DeLong's paper, which focuses exclusively on the supply side of the US economy. This is an important issue given the relative size of the US economy and the lessons that it may imply for the growth of economic 'potential' elsewhere. While I find some things to agree with in the paper, I generally feel that his conclusions are not borne out by the evidence he musters.

Richard Nixon once famously said 'We are all Keynesians now', indicating his recognition that any economy has a demand side as well as a supply side. Moreover, all transactions on the real side have their counterpart in financial developments which can feed back in various ways on the real economy. Such considerations are entirely absent from Professor DeLong's current paper, though central to many other articles he has authored, and will form the basis of my second set of comments. In contrast to his rather rosy view of the future, I think that prudent policy-makers should be open at least to the possibility of a significant economic setback in the United States as various excesses and imbalances are unwound. Let me emphasise that this is not a forecast, rather an assessment of the downside risks.

Finally, my third set of comments will have to do with developments elsewhere in the global economy and the implications for others of faster trend growth in the United States (supply side) as well as a possible near-term contraction (demand side). Of particular interest to an Australian audience, I would emphasise the recent similarity of economic performance across the major English-speaking countries. While correlation is not causation, it may be that these countries will be particularly affected by what happens in the United States.

Comments on the DeLong paper

To summarise briefly, DeLong argues that the rate of growth of productivity has risen significantly in the United States and that this higher growth will continue for the foreseeable future. Moreover, he feels there is no reason to believe that the phenomenon will not spread to other countries. The underlying reason for this optimism is that the process is driven by new information processing and communications technology. Capacities will continue to expand in accordance with Moore's Law and such advances are internationally highly fungible. Underlying these processes, and justifying continuing high levels of investment, are relatively high profits for both the makers and users of such equipment.

Considering first the issue of whether trend productivity has risen in the United States, I think the Scottish judicial verdict of 'not proven' is most apt here. In fact, the average annual rate of growth in the United States in the 1990s upswing has been

smaller than in the upswing of the 1980s, and average growth in the last four years (1995:Q4–1999:Q4) has only just matched that of the 1980s (around 4.4 per cent annually). While both labour productivity and total factor productivity (TFP) have risen in the last few years, it is extremely difficult, viewed from a longer historical perspective, to conclude that this is the beginning of a new trend rather than being due to some cyclical or other temporary disturbance. It is interesting if not conclusive to note that the same maxims of a New Era in productivity growth were expressed in Japan in the late 1980s.¹ While DeLong does not always distinguish clearly between producers and users of IT equipment, the evidence for a trend upturn in TFP for the former seems much stronger. The evidence concerning TFP is less clear for users of such equipment even if recent capital deepening does seem to have raised labour productivity somewhat.² In the final analysis, it is how users benefit from new technology that will primarily determine the degree of welfare enhancement. The fact that companies can buy more millions of instructions per second (MIPS) per dollar is one thing, their efficient use is another.

As for the assertions of enhanced profits accruing to the ‘owners of computer and communications capital’, this must have economy-wide implications since all companies are such ‘owners’. Again, I would suggest the case is not proven. The share of profits in GDP did rise sharply from 1991 to 1997 in the United States in response to the cyclical rebound and a sharp fall in interest rates. However, the share of profits has fallen from this earlier peak even as measured labour productivity has increased. This has been due to more competitive markets along with sharply higher depreciation charges reflecting the shorter life of IT investments relative to more traditional machinery and equipment and especially structures. In effect, it appears that consumers are quickly getting the benefits of whatever productivity gains might have occurred.³

Finally, it is worth asking whether the suspected benefits of higher IT spending will be easily transferred to other countries. To date, even in countries like Canada and Australia, there is only little evidence of a recent increase in productivity growth linked to higher levels of IT investment.⁴ On the one hand, this may be circumstantial evidence that the US improvements stressed by Professor DeLong are more ephemeral than real. On the other hand, it could be that only the United States currently has the labour market flexibility to allow the full capture of the benefits of the new technology. In this case, structural reforms will be required in other economies before the US ‘miracle’ can be exported.

1. See Yamaguchi (1999).

2. See Gordon (2000).

3. Insofar as profits accruing to the makers of IT equipment are concerned, these industries appear highly competitive and generally incapable of generating economic rents. And to the extent they did, the recent antitrust case directed against Microsoft Corporation indicates that governments would be disinclined to allow this to continue for a long time.

4. In Australia, productivity growth has in the 1990s been unusually strong, especially in retail and wholesale trade and construction, but this seems more likely to have been driven by structural reforms. See the paper by Gruen and Stevens in this volume.

Professor DeLong also considers whether the reduction in the 1990s of the US government's structural deficit has played a role in 'crowding in' higher levels of IT investment with its associated productivity benefits. He draws a negative conclusion noting that 'The lever is too small and the rock to be moved too large'. Intuitively, I am inclined to agree with him although more formal proofs in this area are bedevilled by many uncertainties. First, simply measuring changes in the structural deficit is very difficult when the underlying rate of growth of potential is itself in question.⁵ Second, whether increased government saving will lead to increased national savings will depend largely on the extent to which private savings will decline in consequence (the 'Ricardian equivalence' effect). It is a striking fact that in recent years the negative correlation between these two types of savings does seem to have been very high⁶ in a number of countries including the United States. Third, there must be growing doubts, given the emergence of a sustained and large current account deficit, that national investment in the United States (and indeed Australia) is constrained by the availability of national savings.

Professor DeLong also notes that estimates of the NAIRU in the United States have fallen and 'One possibility is that the fall... is also a consequence of the IT revolution'. He refers sympathetically to Blinder (2000), who suggests that faster productivity gains can for a time cause real wage increases to lag behind warranted wages. With cost pressures under control, inflationary pressures also diminish, leading to lower estimates of the NAIRU. The only problem with this story is that, as noted above, the share of profits in GDP has actually fallen over the last two years when the gains in labour productivity have actually been the greatest. Moreover, it should be noted that the United States has benefited from a number of other disinflationary shocks that would also give the appearance of a lower NAIRU.⁷ Commodity prices have been very weak in recent years, even if oil prices have rebounded somewhat. The US dollar has strengthened sharply from its trough in early 1995, and the domestic prices of many manufactured goods (especially electronics) weakened after the East-Asian crisis.

Finally, DeLong asserts that 'the short-term inflation-unemployment trade-off in the United States now appears to be more favourable than at any time since World War II'. If he is referring to the short-term slope of the Phillips curve, there is indeed growing evidence that the trade-off became flatter in the United States in the 1990s. However, a similar observation can be made for many other countries where the IT

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5. If the ultimate variable of interest is productivity growth, the source of the increase in government spending must also be relevant. Cuts in bridge maintenance or, over a longer period, health care and education will not have the same positive impact on productivity growth as lower transfer payments.
 6. See BIS (1998), Graph II.5.
 7. According to Rich and Rissmiller (2000), the behaviour of US inflation during the 1990s can easily be explained by conventional factors, such as demand inertia and, above all, relative import prices, and does not require a new model having a larger impact from increased productivity growth. Andersen and Wascher (2000) come to a similar conclusion, finding that the fall in relative import prices has reduced US inflation by nearly one half of a percentage point per year during the 1990s.

revolution⁸ seems much less well advanced. Whether due to the widespread commitment of central banks to maintain low inflation, or some other factor, a flatter short-run Phillips curve has both an upside and a downside. A sticky inflation rate is good, allowing potential output gains to be more easily harvested, as long as inflation stays at desired levels. However, should inflation be shocked upwards by a reversal of previously favourable shocks, an extended period of reduced demand might then be required to bring inflation back down to the required range.

Macroeconomic imbalances in the United States

While recent IT advances may well have augured in a ‘New Era’ of economic growth in the United States, some commentators (particularly in Europe) have come to a different conclusion. What they see is a credit-driven asset price boom, particularly in equities but spreading as well to property,⁹ that is contributing to various imbalances and vulnerabilities in the US economy. Consistent with the traditional Austrian form of reasoning, they expect the nature of these imbalances to determine both the depth and the length of any resulting downturn in the US economy. While many developments could act as the catalyst to end the recent boom, the most likely would be a hard landing should there be a need for further substantial interest rate increases to resist traditional inflationary pressures. In such an event, which is by no means certain, equity prices might be significantly affected. Within the framework of the Gordon pricing formula, not only would higher discount rates have an effect but there might also be a simultaneous revision upwards of the equity risk premium. In such an environment, a reduction in the expected growth rate of dividends could also occur with still further implications.

While it is true that investment spending in the United States has been unusually strong in recent years, the real Hamlet of the piece has been consumption. As equity prices have risen to record levels, the household savings rate has fallen almost to zero. While there has been some modest selling of shares by the household sector, much of the consumption boom was financed by borrowing, which has led to a record high in the household debt to income ratio. These high levels of spending have contributed materially to both corporate profits and government tax revenues, and both are now materially dependent on such spending continuing.¹⁰ However, should there be a downward adjustment in asset prices, spending could fall sharply as households attempted to reconstitute their wealth out of current income. Indeed, the fact that so much of recent consumption spending has been on durable goods implies that still further expenditures on such items would be easily postponable. Whether the result would be a moderate and welcome decline in spending from current levels, or something greater and correspondingly unwelcome, remains to be seen.

8. See BIS (2000b), Table II.4.

9. See BIS (2000a).

10. See Godley (2000).

On the corporate side, debt levels are also high even if debt service levels currently benefit from relatively low interest rates. Indeed, virtually all of the recent increase in corporate investment appears to have been financed by debt issue rather than the more traditional vehicle of retained earnings. Moreover, over the last few years there has been a significant degree of sectoral re-allocation as traditional firms have bought back shares in high volumes and firms in the IT sector have sharply raised the level of initial public offerings.¹¹ The upshot of this is that recent investment has been skewed sharply in the direction of IT expenditures. Should these expenditures fail to generate the profits anticipated, there would be a corresponding need to cut back capacity in this area and a reduction in investment spending might also be anticipated. Fortunately, and unlike the earlier overinvestment in Japan and East Asia, the rapid depreciation rates for IT equipment might lead to this process being completed relatively quickly.

Another unwelcome aspect of recent developments in the United States is that much of what has happened has been financed with foreign money. As a proportion of GDP, the US current account deficit is at a record high, as is the level of international debt. While net debt servicing requirements are still relatively low, this could change in an environment of generally higher interest rates. It is also remarkable that an increasing proportion of the external funding has been provided through equity markets and foreign direct investment. While this reduces the contractual obligation to service debt, it might also imply some vulnerability of the US dollar should there be a change in sentiment about the prospective rates of return on such investments.¹² On the one hand, this might be thought a stabilising factor since a lower dollar (via substitution effects) would raise aggregate demand even as lower asset prices were working in the opposite direction. On the other hand, such an outcome could seriously complicate the lives of policy-makers if a lower dollar directly raised inflation at a time when other inflationary pressures were still working their way through the system. While the interaction of all these influences could conceivably result in a soft landing from rates of spending growth which are clearly unsustainable, the prospect of a hard landing can by no means be ruled out.

The implications for other economies

The US economy in 1999 produced 22 per cent of global GDP. Moreover, over the last two years, spending in the United States has accounted for 32 per cent of the increase in spending globally. A hard landing in the United States could then still have material effects elsewhere. The major English-speaking countries would seem particularly exposed. For most of them, including Australia, the alignment of their business cycles with the United States has grown increasingly close. Moreover, in many cases, the imbalances identified in the United States also seem evident. In Australia, for example: credit growth has been very rapid; asset prices are very high

11. See BIS (2000b), pp 109–110, especially Graph VI.5.

12. In sophisticated financial markets like those in the United States, FDI can be hedged for currency exposure rather than sold.

(indeed property prices have risen much more strongly than in the United States); the household savings rate has fallen sharply; and external deficit and debt numbers are at near record and record levels respectively. A change in sentiment concerning prospects in the United States might also imply changes in sentiment elsewhere. Again, this could be a welcome change on the one hand or ‘too much of a good thing’ on the other.

Elsewhere, the implications of a slowdown in the United States would seem more negative than positive. A significant factor in the rebound in growth in East Asia has been IT-related exports to both the United States and Japan. While consumer spending has begun to rise, it is not yet very robust. Countries in Latin America, particularly Mexico but to a much lesser extent also Brazil, are highly dependent on exports to the United States. They also rely heavily on commodity exports, whose prices might be sensitive to a US downturn. The recovery in Japan remains very fragile, with consumer spending continuing to stagnate and confidence likely to be further assaulted by job losses associated with further restructuring. Were the yen to strengthen further as the US economy weakened, this would unquestionably be bad news for Japan and for the region. On a significantly more positive note, aggregate demand in Europe now seems to be growing strongly and fears are beginning to re-emerge about a rise in inflation. Some strengthening of the euro in the context of a possible US slowdown might reduce the need for a cautionary hike in interest rates, perhaps contributing to the sustainability of the current expansion.

Finally, it may be worth noting that financial markets increasingly seem to take their cue from the United States.¹³ Higher bond rates and lower equity prices could well spill over into other jurisdictions, with implications for spreads as well as market volatility. While the events surrounding the collapse of LTCM and the Russian debt moratorium indicate that European markets might be less affected, the financial markets of emerging markets might be particularly vulnerable. Whether, as during the Asian crisis, Australian markets would benefit from a flight to quality would very much depend on how financial markets assessed the severity of the internal imbalances referred to above. Perhaps the only thing that is clear is that future developments in the Australian economy will increasingly reflect international as well as domestic influences.

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2. General Discussion

Much of the general discussion of DeLong's paper focused on the contribution of computer technology, and in particular, information technology (IT) to economic growth in the US in the 1990s. Participants also debated the extent to which other OECD countries can expect to benefit from IT over the next decade.

In considering the various ways in which computer technology has contributed to macroeconomic performance, one participant noted that the increased use of the internet during the 1990s had been crucial, and went on to point out that the internet has intensified competition among producers, thereby forcing them to become more efficient. Another argued that by facilitating communication and access to information, the internet has also reduced producers' costs. The resulting decline in prices has meant that consumers have been the primary beneficiaries of the IT revolution.

While participants were generally convinced by DeLong's assertion that the main source of the US's remarkable economic growth in recent years had been advances in computer technology, they were not convinced that productivity growth would continue at the same rate in the foreseeable future. Rather, they tended to agree with White's view that while DeLong had focused exclusively on supply-side factors, there were reasons to be concerned about the demand side. There was some discussion of the asset price boom in the US equity market, with a few participants expressing concern about the possibility of a major correction, and its consequences not only for the US but also for markets elsewhere. One suggested that major English-speaking OECD countries may be especially vulnerable to a sharp slowdown in the US economy, given that business cycles in these countries are highly correlated with those in the US. While acknowledging this possibility, one participant pointed out that we now have reasons to be more confident in the ability of monetary authorities in OECD countries to effectively manage aggregate demand.

There was considerable disagreement as to the likely contribution of IT to growth in other OECD countries. Several participants noted that a key difference is that while the US is at the frontier of technological innovation and production, the other countries are in the process of gradual catch-up. A few pointed out that it is important

to distinguish between productivity gains resulting from the *production* of computer technology, and those resulting from the *use* of computer technology. It was felt that if the productivity gains derive mainly from the *production* of computer technology, then productivity gains linked to IT will most likely be less in other countries.

There was also some discussion of problems associated with measuring the contribution of computer technology investment to national income. For example, since computer technology depreciates rapidly, high rates of investment in this sector are necessary to maintain the capital stock. To the extent that this effect of rapid depreciation is not adequately accounted for, calculations of the contribution of computer technology would tend to be exaggerated.

In discussing Australia's experience in this regard, it was argued that the widespread use of information technology has been a very recent phenomenon and therefore, cannot fully explain economic growth over most of the 1990s. Instead, a range of structural reforms, including trade reform, labour market reform, and financial market reform, that were undertaken during the last two decades were seen by many participants as the primary source of Australian productivity growth in the 1990s.

Australian Macroeconomic Performance and Policies in the 1990s

David Gruen and Glenn Stevens¹

1. Introduction

A decade ago, in July 1990, the Australian economy had just entered a severe recession. Real GDP slowed in the first half of 1990, and then began to fall in the second half of the year. The rate of unemployment in mid 1990 was around $6^{3/4}$ per cent but rose sharply in the following year. The rate of inflation was around 6 per cent, but was about to decline quickly, to levels not seen since the early 1960s. For many, the decline in inflation was completely unexpected, and many believed for several years that it could not last.

The recovery from the recession began some time in the September quarter of 1991. It was initially slow and tentative, with the result that the unemployment rate, instead of falling rapidly as had occurred in the early phase of recovery in 1983, in fact continued to rise until late 1992. Pessimism about the prospects for the Australian economy, and particularly about unemployment, became intense in that period.

Yet as of mid 2000, the economy has recorded nine years of continual growth, averaging about 4 per cent per year, the longest expansion in the Australian economy since the 1960s, and a performance similar in many respects to that in the United States. Per capita growth in GDP was noticeably higher than in the preceding two decades, helped by a marked lift in productivity growth. The rate of unemployment has declined, albeit gradually, to within sight of previous cyclical lows. At the same time, the CPI inflation rate has averaged less than 3 per cent for a decade. Equally, the variability of both inflation and GDP growth have declined compared with the preceding two decades.

In looking back over a decade, there are two basic approaches that might be taken. One is chronological – to treat the important trends and episodes in order, in the form of a historical narrative. It can be taken for granted – it is by the present authors at any rate – that capitalist economies display cyclical behaviour. A narrative chronology would trace out the evolution of these forces. This has its value, but many of the episodes – particularly the early 1990s recession and the immediate aftermath – have been treated at length before.

An alternative approach is to take the period as a whole, to ask in what ways the performance of the economy was noteworthy. How was it different to earlier periods? What were the changes to the underlying structure of the economy, and the policy regimes under which it operated, which affected this performance? How did

1. We are very grateful to Meredith Beechey for tireless research assistance, to Guy Debelle and Nicholas Gruen for helpful comments, and to Dominic Wilson for discussions about productivity growth.

the external forces affecting the economy differ in the 1990s from those of the 1980s and 1970s? What was the nature of the policy debate, how was it different to those in earlier periods, and why?

The latter approach is the one attempted here. Necessarily, the treatment has to be reasonably selective, but it is a more interesting approach, mostly because the 1990s outcomes tell a pretty good story.

Section 2 of the paper contains a recounting of the key macroeconomic features of the 1990s, with sections on output and productivity growth, inflation, the labour market, the balance of payments, and financial trends. Section 3 covers the policy debates, with sections on monetary policy, the current account and fiscal policy. Section 4 offers some concluding observations.

2. Features of Macroeconomic Performance in the 1990s

2.1 Growth

Table 1 offers some decade average comparisons for key macroeconomic variables. Dating things by calendar decades is, of course, completely arbitrary, but as it happens, these decade average figures are a reasonable basis for comparison. Each calendar decade includes one large recession. These were in 1960–61, 1974, 1982–83, and 1990–91. Each decade had a lengthy period of expansion, punctuated by a mid-cycle pause. There was a noticeable slowing in growth in 1965 (and again in 1972). The 1970s included a secondary slowdown in 1976–77, which some classified as a recession.² The 1950s also had a mid-cycle pause/recession around 1957. The mid-cycle episodes in 1986 and 1996 were milder affairs, in terms of GDP at least.

Growth averaged 3.5 per cent in the 1990s as a whole. This was slightly higher than in the 1980s, lower than the 1960s by a good margin and a little lower than the

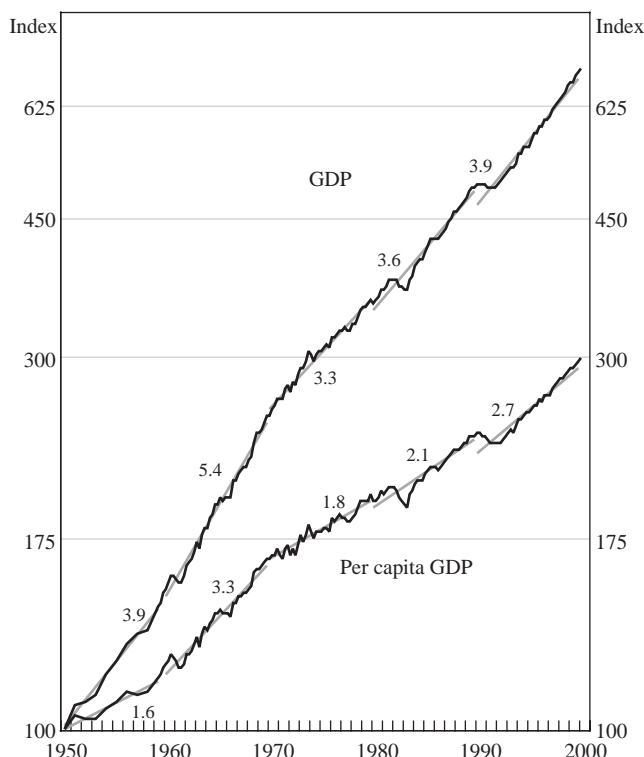
Table 1: Key Macroeconomic Indicators

	1950s	1960s	1970s	1980s	1990s
Real GDP growth	4.2	5.3	3.5	3.3	3.5
Standard deviation of GDP growth					
– Four-quarter-ended	2.3	2.8	2.1	2.6	1.9
– Quarterly	na	2.5	1.4	1.1	0.7
Per capita GDP growth	1.8	3.3	1.8	1.7	2.3
CPI inflation	6.1	2.5	10.1	8.3	2.3
– Excluding interest	na	na	na	8.1	2.8
Standard deviation of CPI inflation (quarterly)	1.9	0.5	1.2	0.8	0.6
Unemployment rate	2.2	2.2	4.2	7.6	8.9
Current account balance ^(a) (% of GDP)	–2.2	–3.0	–1.8	–4.7	–4.4

(a) Excludes RBA gold transactions.

2. See Table 2 in Boehm and Summers (1999).

Figure 1: Real Gross Domestic Product
1950 = 100, log scale



Note: Annual data until September 1959. Trend growth rates in each decade are shown.

1950s. On this basis, comparing the 1990s with the 1980s, there is not much in it in terms of average output growth.³ The bigger difference is in the inflation performance, to be taken up below. Before that, however, two things about growth rate a mention.

First, since population growth in the 1990s slowed, as immigration declined and birth rates dropped, per capita growth was noticeably faster than in the 1980s. In fact, per capita GDP growth in Australia was the fastest since the 1960s, something that Australia shares only with Ireland among OECD countries. This reflects the quite noticeable pick-up in productivity growth; the share of the working-age population in work declined slightly in net terms over the decade, whereas it had risen through the 1980s. The acceleration in productivity growth is also taken up below.

Second, GDP growth was much less volatile in the 1990s than in any of the preceding three decades. Table 1 shows the standard deviations of quarterly and

3. One issue is how such growth rates might be computed. The average growth rates in Table 1 are computed between the fourth quarter of 1989 and the fourth quarter of 1999, for the 1990s, with corresponding calculations for earlier periods. An alternative is to fit a log-linear trend through the levels, and compute the slope of the trend. Doing this yields alternative growth estimates shown in Figure 1, where the 1990s growth rate is well above the 1970s, and in per capita terms the 1990s growth was easily superior to performance in any post-war decade except for the 1960s.

annual rates of GDP growth, by decade. Volatility had been declining each decade, but it fell noticeably in the 1990s, which was the only decade of the past four in which the standard deviation of the quarterly GDP growth rate was lower than its mean. It is intriguing to contemplate why that occurred. Several hypotheses might be advanced.⁴

One is that the weight in total output of activities which are inherently more stable has increased. Services, for example, often thought to be relatively stable, are now a higher share of the economy than they were, whereas agriculture, highly volatile due to climatic events, has steadily declined in share, to be only a few per cent of GDP by the end of the 1990s. However, an examination of the data on GDP by industry reveals that the standard deviation of growth rates declined in the 1990s, as compared with the 1980s, in fourteen of the eighteen major categories. Among the expenditure components, volatility also declined in most cases. The decline in volatility of overall growth does not, therefore, appear to be due only to compositional effects.

A second hypothesis, which the authors find plausible, is that the shocks hitting the economy were smaller than they have been in the past. Such shocks could be external, or they could be internal, possible policy-induced. Some candidates are shown in Table 2.

Among external shocks, the most common is large shifts in the terms of trade. The standard deviation of the terms of trade in the 1990s is indeed considerably smaller

Table 2: Standard Deviations of Selected Variables
Per cent

	1980s	1990s
US real GDP – quarterly growth	1.0	0.6
World GDP – annual growth ^(a)	1.3	0.9
Australian terms of trade	6.6	3.9
Real short-term interest rates (cash rate less Treasury underlying inflation)	2.7	1.8 ^(c)
Real 10-year bond rate (nominal 10-year bond less Treasury underlying inflation)	1.6	1.2
Fiscal impact (change in ratio of general government underlying cash balance to GDP)	1.2	1.6
(change in ratio of general government structural balance to GDP) ^(b)	1.5	1.3
Real TWI	13.5	7.0
Real US short-term rate (Fed funds less core inflation)	1.3	1.3

(a) Source: IMF

(b) Source: OECD

(c) Over the period 1993–99, the standard deviation of real short-term interest rates was 0.7.

4. One possibility is that this phenomenon reflects, in part, better measurement. If the true variance of the economy is constant, better measurement could reduce the degree of random error in the measurement of growth rates, and lead to less variability in the movements between successive quarterly estimates of the level of GDP.

than in the 1980s, and in fact smaller than in any of the three preceding decades.⁵ So this class of shock, which has historically been one of the most important factors driving fluctuations in the Australian economy, was a smaller source of instability in the 1990s.⁶

This may well be related to greater stability in the US economy, which also saw a decline in GDP volatility in the 1990s, as Table 2 shows. The strong correlation between the Australian and US GDP data – much closer than between Australian GDP and world GDP – suggests that the smoother course of the US economy in the 1990s may have been particularly important in contributing to the smoother outcomes in Australia.⁷

Other shocks to be considered would be policy-induced shocks. It can be observed that the variance of the real short-term interest rate and of the real 10-year bond rate declined in the 1990s. So it is apparent that monetary policy impulses have been smaller in the 1990s. In the low-inflation period after the end of 1992, the variance of short-term interest rates was even lower. The variance of the fiscal impact, as defined by the change in the general government underlying cash balance, rose somewhat in the 1990s, while the variance of the change in the OECD's estimate of the structural balance fell.

One of the difficulties in drawing strong conclusions from such partial statistics is that the various shocks interact. For example, the exchange rate moved down sharply in the mid 1980s in what, with the benefit of hindsight, appears to be a one-time shift to a lower mean. This was associated with a large decline in the terms of trade – larger than anything which occurred in the 1990s. Instability in the foreign exchange market associated with this move, compounded by the difficulties in articulating a well-developed monetary policy framework after monetary targeting had to be abandoned, meant that aggressive interest rate responses to exchange rate fluctuations were required on occasion. In the 1990s, policy was not faced with the same situation. The terms of trade shocks were smaller, and the size of 'warranted' and actual movements in the exchange rate were considerably smaller. Hence the likelihood of complications was smaller to begin with.

At the same time, however, a more fully articulated and better understood regime for monetary policy paid dividends in the face of shocks. During the Asian crisis, for example, which saw a very substantial decline in the exchange rate, a macroeconomic policy regime which was more credible allowed monetary policy more latitude than

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5. It is worth noting here that while the terms of trade swings in the 1980s are well remembered as having caused significant adjustment problems for the Australian economy, those in the 1970s were considerably larger. Large but temporary terms of trade increases, such as in the early 1970s, bring their own problems, just as do declines.
 6. Econometric evidence suggests that terms of trade shocks have had little impact on economic activity in the floating rate era (Gruen and Shuetrim 1994). The exchange rate movements that accompany them, however, can have an impact on domestic inflation, and therefore induce policy responses which do affect activity.
 7. Simon (2000) documents the decline in volatility of US growth rates, and concludes after a VAR analysis that this reflects smaller shocks in the US economy, particularly aggregate demand shocks.

it had enjoyed during the events of the 1980s. The net result of all this is that individual monetary policy changes have become smaller. The 25 or occasional 50 basis point movements in interest rates which have recently become the standard currency in monetary policy adjustments are in another league entirely from the 100 or even 200 basis point movements which were common in the late 1980s and early 1990s.

A final possible hypothesis for explaining the economy's greater stability is the improvements in supply structure which have occurred under the general heading of 'microeconomic reform'. These are taken up in detail in Peter Forsyth's paper in this volume, but in brief things like deregulation in the financial sector, widespread tariff reductions, privatisation/corporatisation of government businesses in telecommunications, air transport, utilities, and liberalisation in labour markets have had profound effects on the economy.

Elementary economic analysis suggests that, in themselves, the improvements in supply elasticity would be expected, for a given variance of demand disturbances, to result in *more* measured volatility in output (and correspondingly less in prices) than would be the case otherwise. But they would also mean that temporary demand disturbances would elicit less aggressive responses from demand management policies since they would be less likely to result in persistent inflationary pressure. So it is plausible that supply-side reforms have also contributed, indirectly, to the diminished activism of monetary policy noted above, and hence to more stable economic activity. It is not possible to be definitive on this without much more complex analysis.

2.2 Productivity

After the disappointing performance of the previous two decades, productivity growth in the 1990s returned to rates last seen in the 1960s. Figure 2 shows more precise measures of productivity, specifically labour and multifactor productivity growth in the market sector of the economy since the mid 1960s. The market sector, which accounts for about two-thirds of the economy, excludes those industries for which output is derived directly from inputs.

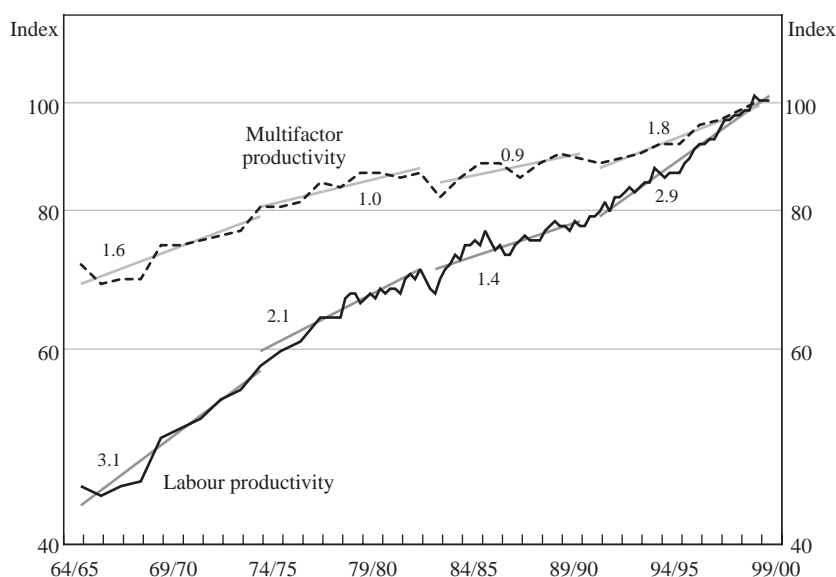
Measured productivity growth varies over the business cycle, as inputs are used more intensively during expansions than contractions. To control for this effect, the trend lines in the figure show the average rates of labour and multifactor productivity growth over economic expansions (that is, from troughs to peaks in output).⁸ Growth rates of both labour and multifactor productivity in the 1990s expansion are closer

8. There are some data issues that slightly complicate the analysis. The multifactor productivity data from the ABS are available at an annual frequency from 1964/65 to 1998/99. The labour productivity data are available at an annual frequency from 1964/65 to the present, and at a quarterly frequency from 1978:Q1 to the present. The trend lines are calculated, as closely as the data allow, from GDP troughs to peaks. We also include a break in productivity growth in 1973/74 to allow for the world-wide productivity slowdown at that time, even though there was no decline in Australian GDP at that time. Of course, the data begin some way into the 1960s economic expansion, and end in 1999 when the expansion is continuing.

to the rates seen in the 1960s than in the 1970s or 1980s. Estimated multifactor productivity growth is faster in the 1990s than in the previous three decades.⁹

Focusing on the two most recent economic expansions, labour productivity growth accelerated from 1.4 to 2.9 per cent per annum. Labour productivity growth

Figure 2: Productivity in the Market Sector
1998/99 = 100, log scale



Note: Trend growth rates over economic expansions are shown.

9. John Quiggin (personal communication) argues that productivity growth (particularly labour productivity growth) in the market sector in the 1990s has been artificially boosted by the treatment of the property and business services (PBS) sector. This sector is not part of the market sector, but most of its output is used as input for the market sector. It has seen very strong 5.7 per cent per annum trend growth in hours worked in the 1990s expansion, and its output is calculated assuming no productivity growth. As there has undoubtedly been some productivity growth in this sector, inputs into the market sector will have been understated, and market-sector productivity growth will have been overstated. One response to this problem is to calculate productivity growth for a broader segment of the economy that includes the PBS sector. Doing this for the non-farm economy reveals that labour productivity growth in the 1990s expansion was slower than for the market sector, but the relative productivity performance in the 1970s, 1980s and 1990s expansions in the non-farm economy was the same as for the market sector. For the non-farm economy, the relevant numbers for annual trend labour productivity growth are 2.0 per cent (1970s expansion), 0.8 per cent (1980s) and 2.2 per cent (1990s). Using ABS estimates for capital stock (extrapolated to the end of the 1990s) and assuming a Cobb-Douglas production function with labour hours worked and capital stock as inputs yields estimates for annual trend multifactor productivity growth in the three expansions of 0.9 per cent (1970s expansion), 0.8 per cent (1980s) and 1.8 per cent (1990s) implying, as for the market sector, that multifactor productivity growth was particularly strong in the 1990s expansion.

in the 1980s was probably slower than it would otherwise have been because of the Prices and Incomes Accords negotiated between the trade union movement and the Federal Government at the time. Those Accords held down real wage growth, and thereby generated faster growth in employment but as a consequence labour productivity growth was slower (Chapman 1990, Stevens 1992).

We can, in principle, abstract from this factor-substitution effect by examining multifactor productivity growth, which controls for different rates of growth of factor inputs. Multifactor productivity growth in the market sector accelerated from 0.9 to 1.8 per cent per annum between the 1980s and 1990s expansions, suggesting that there was a genuine pick-up in the rate of technological progress in the 1990s.¹⁰

It is of interest to see which parts of the economy account for the pick-up in productivity growth in the 1990s. Although data for multifactor productivity by industry sector are not available, Figure 3 shows labour productivity growth by industry for the two most recent economic expansions. Faster labour productivity growth in the 1990s is a widespread phenomenon – it occurs for most of the industries in the market sector of the Australian economy.

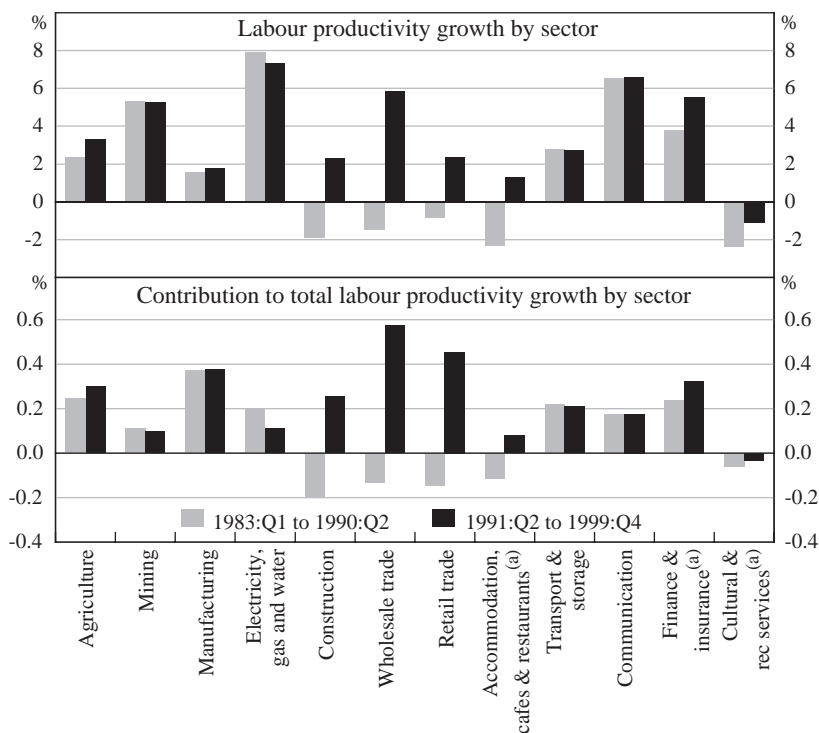
Interestingly, the sectors which account for the bulk of the aggregate productivity pick-up in the 1990s are not those one might have expected. The utilities (electricity, gas and water) sector experienced very rapid productivity growth in the 1990s, but no faster than the 1980s.¹¹ The mining and communications sectors also saw rapid productivity growth in the 1990s, but with minimal pick-up from the 1980s. The pick-up in labour productivity growth between the two expansions appears instead to be largely a phenomenon of the non-traded sector of the economy. The three sectors that make the largest contribution to the labour productivity pick-up – together accounting for more than 100 per cent of it despite contributing only 40 per cent of hours worked in the market sector – are wholesale trade, retail trade and construction.¹²

10. It is not possible to eliminate all measurement issues from the estimation of multifactor productivity (mfp). For example, the ABS currently makes no allowance for improvements in labour quality in its estimates of mfp. The experience of the US, where allowance is made, suggests however that this refinement would make only a small difference (see, for example, the estimates of the contribution of improved labour quality to output growth in DeLong (this volume, Table 1, p 17)). Dowrick (2000) discusses some further reasons why estimates of market-sector multifactor productivity growth might be biased. He also presents an econometric analysis suggesting an improvement in annual trend mfp growth in the Australian market sector of 1.4 percentage points between the period 1974–1989 and the 1990s, i.e., somewhat larger than our estimate of a 0.9 percentage point improvement between the 1980s and 1990s expansions.

11. There was considerable structural change and deregulation in this sector, and the rapid labour productivity growth in the 1990s is partly accounted for by job shedding, with the share of hours worked falling from 2½ per cent of market-sector hours in the 1980s to 1½ per cent in the 1990s.

12. The pick-up may be overstated because at least part of the falls in measured productivity in the 1980s in these sectors is probably spurious. Falling measured labour productivity in retailing in the 1980s probably had a lot to do with the deregulation of shopping hours at that time (Lowe 1995). This effect would have had less impact on measured labour productivity in the 1990s because the lengthening of retail shopping hours had largely run its course by early in the decade. In the wholesale trade and

Figure 3: Labour Productivity Growth in the 1980s and 1990s
Annual trend growth rates



- (a) Due to data limitations, labour productivity growth in these sectors over the 1980s expansion is calculated from 1984:Q4, not 1983:Q1.

Overall then, labour productivity growth in the 1990s expansion appears to have been very strong, with the pick-up from the 1980s fairly widespread across the industry sectors of Australian economy, but particularly strong in the non-traded sector.

2.2.1 Is it the 'new economy'?

How does the 1990s acceleration of productivity in Australia compare with that in the United States? Much has been written about a 'new economy' in the US – the idea that the rising importance of computers, information technology, and the

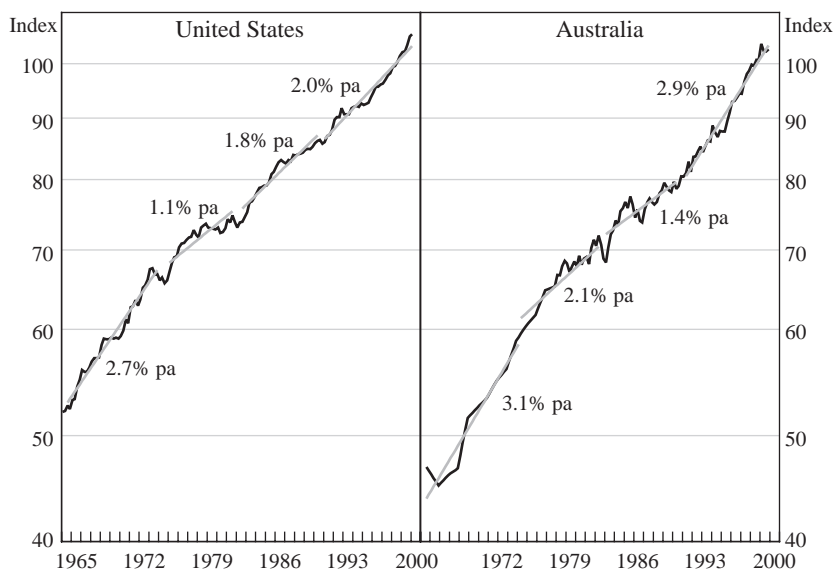
construction sectors, alternative sources of data (the Wholesale and Construction Industry Surveys) suggest some rise in labour productivity in these sectors over the 1980s, rather than the falls implied by the data used here (which are quarterly output data from the national accounts and labour input data from the Labour Force Survey). These alternative sources of data are however less useful for the 1990s. The latest published Wholesale Industry Survey is for the 1991/92 financial year. The latest Construction Industry Survey, for 1998/99, could be used to compare outcomes with the previous survey for 1988/89, but the ABS cautions that the industry output data from this survey are very imprecise. So again, the pick-up in productivity in these two industries between the economic expansions in the two decades may be overstated.

internet is generating a new economic order leading, among other things, to an acceleration in US productivity growth.

Figure 4 shows a comparison of labour productivity in the market sectors of the Australian and US economies over the past thirty-five years. The Australian panel simply repeats the data shown above in Figure 2. Labour productivity growth has been more rapid in Australia than the US over most of this period. This observation is of course consistent with the idea that the US is a technology leader and that Australia has been, and remains, in a process of gradual catch-up.

Focusing on the 1990s expansion in the US, there is very little evidence of a pick-up in market sector productivity growth until the second half of the 1990s. Furthermore, a significant part of this pick-up can be accounted for by extremely rapid productivity growth in the *production* of computers. Beyond that, however, there is controversy about how much the *use* of computers and computer-related technology has contributed to US productivity growth.¹³

Figure 4: Labour Productivity
Market sector, 1998 = 100, log scale



13. Oliner and Sichel (2000) argue that computer usage has contributed significantly. They estimate that the production of computers and the use of information technology together account for two-thirds of the one percentage point pick-up in US labour productivity growth between the first and second halves of the 1990s. Gordon (2000) agrees that the production of computers, and more broadly, the manufacture of durable goods (which includes the production of computer peripherals and telecommunications equipment) has contributed to the pick-up in US aggregate labour productivity growth. But he argues that there has been no improvement in trend labour productivity growth in the second half of the 1990s for the other 88 per cent of the US market economy, i.e., that part outside durable-goods manufacturing. Since Oliner and Sichel work with measured productivity growth, while Gordon attempts to partition it between cycle and trend, much of the controversy revolves around tricky issues to do with how much of the improvement in measured labour productivity growth is an improvement in trend and how much is cyclical.

There are two things that are strikingly different about the 1990s productivity pick-up in Australia compared to that in the US. The first is that the Australian pick-up occurs over the whole of the 1990s expansion rather than the past four years, as in the US (Table 3). The second is that the productivity pick-up appears much more broadly based across the sectors of the Australian economy than it is in the United States.

Table 3: Labour Productivity Growth

	Market sector	Pick-up from 1980s expansion	Manufacturing sector	Contribution of manufacturing to pick-up from 1980s
	Per cent per annum			Per cent
Australia				
1980s expansion	1.4	–	1.6	–
1990s expansion	2.9	1.6	1.8	3
Late 1990s	3.2	1.8	2.6	12
United States				
1980s expansion	1.8	–	2.9	–
1990s expansion	2.0	0.1	4.1	184
Late 1990s	2.7	0.9	5.3	55

Notes: Numbers are derived by fitting trends to (log) labour productivity over the periods shown. The expansions are defined from GDP trough to peak, and therefore differ slightly between the two countries. For Australia (US), the 1980s expansion is 83:Q1–90:Q2 (82:Q3–90:Q2), while the 1990s expansion is 91:Q2–99:Q4 (91:Q1–99:Q4). Late 1990s (95:Q4–99:Q4) is the period identified by Gordon (2000) of faster trend labour productivity growth in the US market sector. Numbers differ in some cases due to rounding.

As we have seen previously in Figure 3, there has been a mild pick-up in labour productivity growth in the Australian manufacturing sector between the 1980s and 1990s expansions. But this pick-up accounts for very little of the overall pick-up in labour productivity growth in the market sector of the Australian economy (Table 3). By contrast, much if not all of the aggregate pick-up in labour productivity growth in the US market sector between the two expansions is accounted for by the pick-up in the US manufacturing sector.

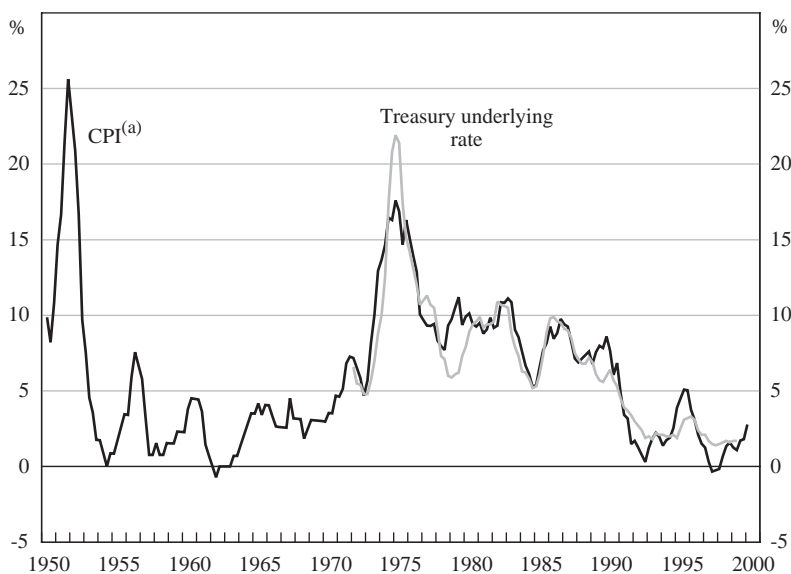
The productivity accelerations in Australia and the US in the 1990s are therefore very different in kind. Australia produces very few computers, computer peripherals, or telecommunications equipment. In contrast to the US, therefore, productivity growth in Australia has been affected hardly at all by the very rapid productivity growth in the production of these goods. But there has been a big acceleration in productivity across the wider Australian economy, which appears to have occurred particularly in the non-traded sector. The 1990s Australian experience appears to be one of more rapidly approaching the technological frontier, rather than benefiting directly from the rapid productivity growth in the production of the component parts of the new economy.

An important question for Australia is how much it matters to miss out on the monopoly profits that are expected to be generated in the new-economy sectors of the US. For one thing, it remains to be seen how large these monopoly profits will be, before they are eroded away by new entrants. If past waves of technological innovation are a guide, moreover, many of the dividends from the productivity gains in the new economy are likely to ultimately accrue elsewhere – to other sectors of the US economy and to other countries. The rapid productivity growth across broad sectors of the Australian economy in the 1990s is, after all, probably an example of this process in action.

2.3 Prices

The 1990s marked a major break from the lamentable inflation performance of the 1970s and 1980s (Figure 5). CPI inflation peaked at around 18 per cent (and over 20 per cent in underlying terms) in Australia by early 1975, after the oil shock and the wage break-out of 1973 and 1974 – although even before this dual shock, it had reached 10 per cent. Macroeconomic policies generally articulated a goal of disinflation thereafter, and successive cyclical peaks were indeed lower – about 11 per cent in the early 1980s, and 9 per cent in 1985. But by the end of the 1980s inflation was still around 7 per cent, and had averaged 9 per cent over two decades. Inflation expectations remained stubbornly high.

Figure 5: Consumer Price Inflation



(a) Adjusted for the introduction of Medicare in 1984.

As the economy slowed and then went into recession during 1990, inflation began to fall. By the middle of 1991 it had fallen to 4 per cent. Eighteen months later, at the end of 1992, it had settled at 2 per cent in underlying terms, where it remained for a couple of years before a temporary rise in 1995 and 1996. That rise was successfully capped and reversed by an early response from monetary policy under the inflation-targeting regime introduced in 1993. Subsequently, towards the end of the 1990s, inflation ran under the target for a period.

These episodes have been treated elsewhere (Stevens 1999). What is of more interest here is the whole decade's performance, where CPI inflation averaged 2.3 per cent, the lowest average of any of the five post-war decades. This is a slight overstatement of the degree of improvement since the practice between 1986 and 1998 of including mortgage interest charges in the CPI meant that the downshift in the mean inflation rate in the 1990s, because it was accompanied by a corresponding downshift in interest rates, artificially reduced the measured rate of CPI inflation during the period of disinflation. Even excluding interest from the CPI, however, the decade inflation average of 2.8 per cent was much lower than in the 1970s or 1980s and comparable to the 1960s. Not only was the average inflation rate low, but the variability of inflation and of the price level itself around its trend were also lower than in the preceding two decades.

This was also a feature, of course, seen in many countries around the world: global inflation was lower and more stable in the 1990s than it had been in the preceding two decades. Much of this is presumably attributable to the more consistent pursuit of low inflation by policy-makers in most countries after the problems of the 1970s. Performance was also assisted, no doubt, by the fact that the large supply-side shocks in the mid and late 1970s did not recur, so that the observed transitional output cost of reducing inflation was not as great as it would have been in the 1970s.¹⁴ Indeed, as we have seen in the previous section, the latter part of the 1990s was characterised by increasing discussion of favourable supply shocks emanating from technological advance, under the general (if somewhat ambitious) heading of the 'new economy'.

This global environment of lower and less volatile inflation clearly must have been advantageous in achieving better outcomes in Australia. It is noteworthy, however, that the decline in average global inflation in the 1990s continued a trend which had begun in the 1980s, but that Australia had not shared fully in the fall in inflation in the 1980s: the average inflation rate in Australia in the 1980s was only marginally lower than in the 1970s. So lower global inflation, while helpful, does not necessarily translate into lower domestic inflation. Price stability begins at home.

Many observers would be quick to point out the role of structural change in the economy, particularly the lift in productivity performance in the 1990s and the opening up of product and (to some extent) labour markets to competitive forces, as contributing to sustaining low inflation. In practice, these have made the job of

14. An alternative view of the OPEC I and II episodes is that they represented a lumpy 'catch-up' of oil prices to persistent inflation of the general price level over a number of years. In this view, the absence of such shocks in the 1990s would presumably reflect the general low inflation environment itself.

keeping inflation low easier – once it was decided that monetary policy should be devoted clearly to that end. This still depends, however, on monetary policy pursuing the appropriate objective. High labour productivity growth could still coincide with high inflation (indeed labour productivity growth in the second half of the 1970s was higher than in the 1980s, but so was inflation). It is also possible that policies which successfully keep inflation down prompt greater efforts to generate productivity gains across the economy, though admittedly the cross-country evidence is not very supportive of this proposition.

Surely it was the more resolute pursuit in Australia of a decline in inflation, and the determination to keep it low once it had fallen, which made the crucial difference. The use of a flexible inflation-targeting regime has been one of the success stories of Australian economic policy of the past twenty years. It can be immediately acknowledged, of course, that the international trend in this direction was influential in pushing the RBA in the direction of inflation targeting. This is discussed later in the paper. At this point, it is sufficient to record that Australian inflation performance improved dramatically in the 1990s, at the same time as economic activity continued to grow, and in a less volatile fashion at that.

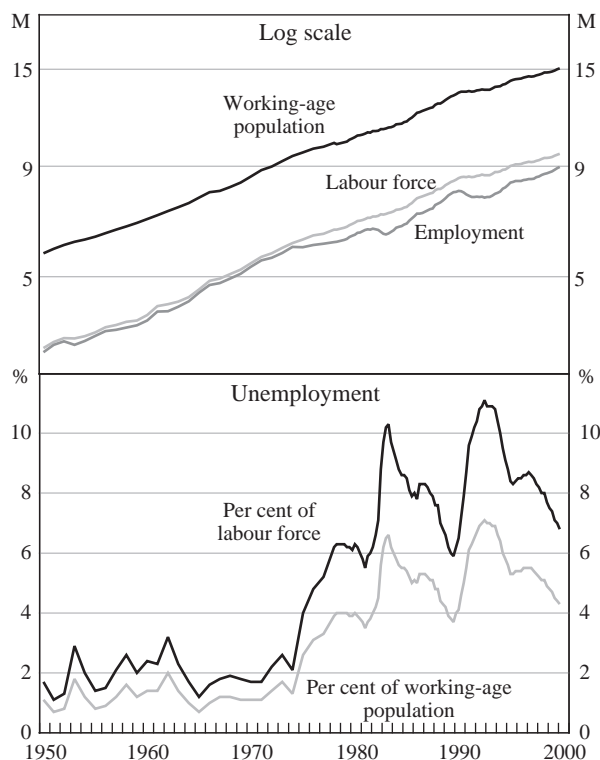
2.4 Labour market

The rate of growth of Australia's working age population declined during the 1990s, due to the completion of the 'baby boomers' entry into the relevant age cohort, and the reduced immigration levels in place for much of the decade (Table 4). Participation rates for women also increased more slowly for most of the decade than they had in the 1980s. Hence labour force growth was much lower than in the 1980s. Employment growth, at 1.3 per cent per annum on average, was also lower, at just over half the pace recorded in the 1980s.

In late 1989, unemployment was at a ten-year low, just under 6 per cent (Figure 6). During the following two years it rose to over 10 per cent as the economy went into recession and experienced only a relatively subdued recovery initially. By the end of 1992 it had moved over 11 per cent, a new post-war high. Pessimism about the prospects for reducing unemployment also reached new highs.

Table 4: Labour Market Aggregates
Per cent

	1980s	1990s
Employment growth	2.4	1.3
Working-age population growth	2.0	1.4
Labour force growth	2.4	1.4
Net change in unemployment rate	-0.4	1.1
Average unemployment rate	7.6	8.9
– Peak unemployment rate	10.4	11.2

Figure 6: Labour Market

However, unemployment did begin to decline in 1994. In rough parallel to the experience of the 1980s, it fell to about $8\frac{1}{2}$ per cent by late 1995, rose slightly, then began to fall again in 1997 and continued to do so until early 2000, by which time it was around $6\frac{3}{4}$ per cent. Still, the average unemployment rate in the 1990s was higher than in the 1980s.

The 1990s demonstrated again what had been seen in the 1980s and 1970s: that unemployment rises very quickly in periods of recession, and tends to fall much more slowly in recovery. A comparison with the United States is revealing. The peak US unemployment rate in the 1980s was over 10 per cent – very similar to Australian experience in 1983. But the peak 9 years later in mid 1992 was 7.8 per cent, compared with Australia's at over 11 per cent. The rate of decline in unemployment after the early 1990s recessions in the two economies was almost identical. Even recognising the more flexible, and more brutal, nature of the US labour market, and leaving aside the question of whether or not the very low unemployment rates reached in the US in the past couple of years will be sustained, one observation stands out. It is that a major part of the difference between the two experiences is simply that the early 1990s recession in the US was relatively shallow, and in Australia (at least in its labour-market dimension), relatively deep. Avoiding deep downturns, even if

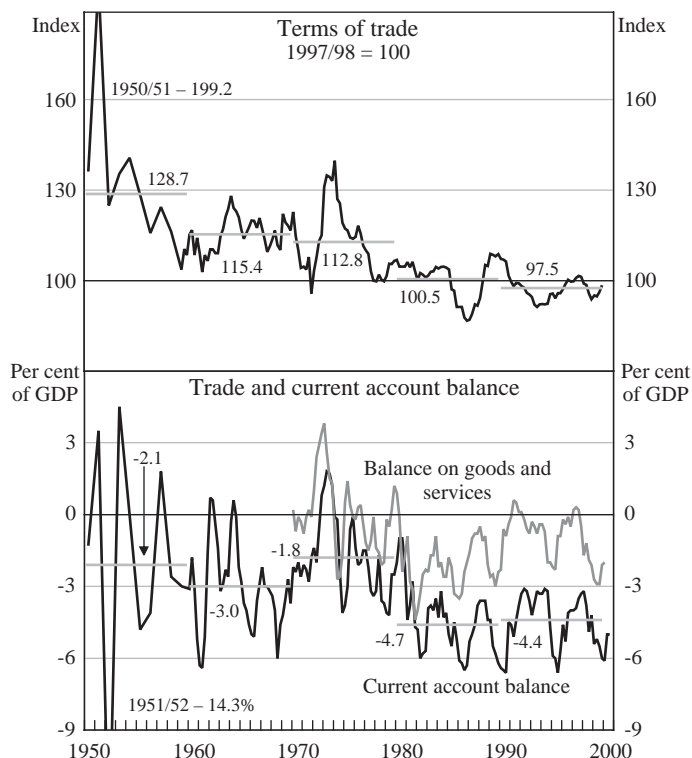
shallow ones cannot be avoided, appears to make a large difference to the time path of unemployment rates. There is at least the hope that in this respect, the first decade of the twenty-first century might turn out to be a much better one for the labour market than the 1990s. Further issues in the labour market are taken up in Peter Dawkins' paper in this volume.

2.5 The balance of payments

Figure 7 and Table 5 summarise the key developments in Australia's balance of payments over the past five decades. Even though the 1960s and early 1970s turned out to be a relatively benign period on average for Australia's external accounts, there were quite large swings. The secular decline in the terms of trade is apparent, something which continued in the 1990s.

As has already been noted, however, the terms of trade were less volatile in the 1990s than they had been in earlier decades. Moreover, while they were lower on average than in the 1980s, the extent of the decline was smaller than had to be absorbed in the 1980s.

Figure 7: Balance of Payments



Note: Decade averages are shown for the terms of trade and current account balance.

Table 5: Balance of Payment Aggregates

Average annual growth rates, per cent

	1970s	1980s	1990s
Exports of goods and services	5.3	4.1	8.1
– Resources	na	5.7	6.7
– Rural	na	–2.4	7.0
– Manufactured	na	8.9	12.2
– Services	4.5	6.3	7.8
Imports of goods and services	3.3	6.6	6.5
– Consumption	na	na	7.4
– Capital	na	na	10.1
– Intermediate and other ^(a)	na	na	7.0
– Services	3.6	6.5	2.2
Balance of trade ^{(a) (b)}	0.0	–2.1	–0.9
Current account ^{(a) (b)}	–1.8	–4.7	–4.4

(a) Excludes RBA gold transactions.
(b) Per cent of GDP: average for decade.

The figure also shows the trade and current account balances. On the back of very strong growth in export volumes, the trade deficit declined significantly on average in the 1990s. The average rate of growth of export volumes in the 1990s was the highest of any post-war decade. Growth in manufactures and services outpaced that of the more traditional resource and rural products (although this was also true in the 1980s). The Asian crisis, together with the ensuing decline in global growth and a small fall in the terms of trade, resulted in a loss of export income equivalent to 2–3 per cent of a year's GDP. As of the time of writing, it was apparent that a strong recovery in exports was under way. Whether this will be sufficient to make up the earlier loss, restoring the trade balance to its earlier trend, remains to be seen.

The current account deficit averaged around 4½ per cent of GDP in the 1990s, much the same as its 1980s outcome.¹⁵ Cyclical fluctuations have been of the same order of magnitude across the two decades, with about 3 and 6 per cent of GDP

15. Edey and Gower (this volume) present inflation-adjusted estimates of the current account balance in their Table 1. Their estimates, 3.8 per cent of GDP in the 1980s and 3.2 per cent in the 1990s, suggest quite a significant fall in the inflation-adjusted current account deficit to GDP ratio between the two decades. These inflation-adjusted numbers are calculated using ABS estimates of the currency denomination of Australia's net external debt. It seems clear, however, that a significant portion of the foreign-currency-denominated part of this debt is hedged, in a way that cannot be captured in the official statistics. That portion is then effectively A\$-denominated, which affects the appropriate inflation adjustment. If, as seems plausible, much of the foreign-currency-denominated portion is hedged, the inflation-adjusted current account deficit to GDP ratios are roughly the same in the two decades (Luke Gower, personal communication).

defining the lows and highs. The capital flows which were the counterpart of the current account deficit changed in nature in the 1990s, with much more in the way of equity inflows, and less in the form of debt flows. At times in the 1980s, in contrast, debt flows had more than funded the current account deficit, with net equity outflows being observed. The occurrence of the Asian crisis did not appear to affect adversely Australia's access to international capital markets, and capital flows actually increased at that time (not without a decline in the exchange rate of course), with Australia apparently having some 'safe haven' status despite the expected effect on exports.

Few observers in 1980 would have considered it likely that a current account deficit of 4¹/₂ per cent of GDP could be sustained for two decades. The fact that it has been – admittedly not without some exciting moments – has itself changed the nature of debate about the current account. That debate is taken up in some detail below.

2.6 Finance

A feature of the 1990s was the way in which the older discussion of monetary and credit aggregates waned. Milbourne's paper for the predecessor to this conference in 1990 contained extensive discussion of the financial aggregates. Much of the RBA's published work in the mid and late 1980s focused on the aggregates, as even after the demise of monetary targeting there was a need to demonstrate rigorously the case that the demand for money had become unstable.¹⁶ Around the turn of the decade, there was much attention on credit and the linkage to asset prices, and on the role of these dynamics in exacerbating the cyclical downturn in 1990. But by the mid 1990s, with the clearer focus on inflation targeting, and the restructuring of corporate balance sheets well advanced, attention on the aggregates tended to wane.

There were, however, some important financial developments in the 1990s. The balance sheet of the household sector, in particular, changed dramatically in size and composition.

The change in size is illustrated in Table 6 and Figure 8, which show the ratio of gross household wealth to annual disposable income for the household sector.¹⁷ For many years, this ratio was about four. By the end of the 1990s it had risen to almost seven. Similar trends are observable in the United States and the United Kingdom. Household debt burdens also rose sharply in the 1990s, from levels which (relative to income) were well below those in comparable countries, to levels which were much more in the middle of the international pack.

16. See, for example, Stevens, Thorp and Anderson (1987), Blundell-Wignall and Thorp (1987), and the papers in Macfarlane and Stevens (1989).

17. RBA estimates of household wealth based on financial accounts and value of household dwellings (sources: ABS, CBA/HIA Housing Report, RBA); household disposable income from national accounts, no exclusions; household debt from RBA measure; consumption from national accounts, includes consumption of fixed capital.

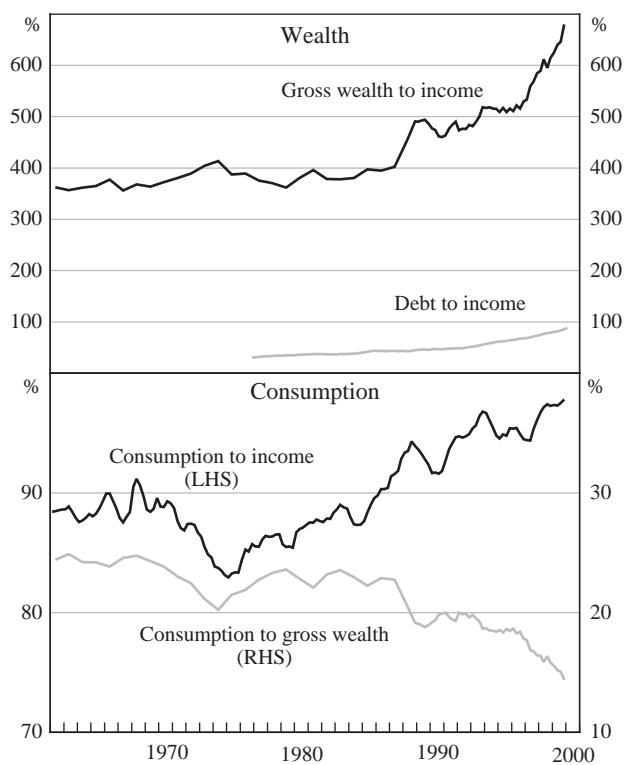
Table 6: Household Wealth

Per cent, as at December

	1979	1989	1999
Gross wealth			
% of income	362	487	683
Proportion of:			
– Dwellings	62	60	60
– Financial	29	34	36
of which:			
– Equities ^(a)	5	10	18
– Currency and deposits	14	12	9
– Other financial	9	12	9
– Other	9	7	4

(a) Includes equity held in life and superannuation funds.

Source: ABS Cat No 5232.0; CBA/HIA; RBA staff estimates

Figure 8: Household Wealth

The forces at work in driving these trends, in the Australian case at least, were financial deregulation, competition and innovation, and the decline in inflation. Privatisation also played a role. After the rise in corporate leverage in the 1980s, business debt levels were reduced in the 1990s, and banks spent the early years of the decade trying to restore asset quality. But Australian households, under-g geared by international standards, represented a major opportunity for profitable balance sheet growth. The decline in inflation, by bringing interest rates down to levels not seen in a generation, made mortgage borrowing much more affordable. This allowed an increased number of borrowers to pass the standard sorts of repayment-to-income-ratio tests for borrowing, and also meant that existing borrowers could service substantially larger loans. With this demand-side incentive, and the supply-side willingness of lenders, not to mention increased competition from new entrants in the housing loan market, it is not surprising that there was a very substantial lift in household debt in the 1990s (Stevens (1997) and Gizycki and Lowe (this volume) provide more detail on this).

But as the data show, assets increased as well, and household net wealth rose strongly across the decade. A good portion of this increase came in the form of higher house prices late in the decade, the counterpart of freely available and low-cost credit. Other assets also increased, however, with financial assets increasing at a faster rate than tangible assets. This reflected the impact of privatisations of major publicly owned corporations, which introduced large numbers of Australians to direct share ownership for the first time and pushed the proportion of the adult population with direct share ownership to over 40 per cent, one of the highest rates in the world. There was also an increasing tendency for individuals to own shares directly anyway, as the low interest rates available on conventional assets like bank deposits prompted the search for higher yield by savers. As a result, the share of equities in total financial assets increased noticeably, while that of deposit instruments declined.

Compared with the United States, the run-up in the value of equity holdings was smaller in Australia. Nonetheless, there have been echoes of the US debate in Australia, with wealth gains commonly thought to have affected consumption trends, and the likelihood that balance sheet impacts will be more important in the future than they have been in the past, simply by virtue of their greatly increased size, and factors such as the enhanced capacity to borrow against previously locked-up collateral in the housing stock.

3. The Debates

3.1 Monetary policy

The nature of debate about monetary policy has changed considerably in the past ten to fifteen years. In the 1990 conference, monetary policy in the 1980s was discussed in some detail by Milbourne. Re-reading that paper, one is struck by the extensive discussion of the impact of financial liberalisation and innovation, and the complexities that it brought for monetary policy. These developments were the dominant feature of the policy environment and discussion of the 1980s.

The prevailing monetary policy framework in operation in the first half of the 1980s was that of monetary targeting, which had been in place since 1976. The regulation of interest rates and exchange rates in the 1970s and early 1980s meant, however, that the stock of money could not be adequately controlled. It was driven by the vagaries of capital flows, and administrative decisions on interest rates on government securities. These at times made it impossible to keep financial conditions where they needed to be to achieve monetary policy goals.

Deregulation of the key financial prices – interest rates on government debt, and the exchange rate – in the 1980s gave the Reserve Bank the capacity to control the cash market much more effectively. But the extensive liberalisation agenda also led to large changes in the behaviour of financial institutions, which were now freed of many of the old administrative restraints, and were also facing increased competition from new entrants. There was also a change in the behaviour of the non-financial private sector, particularly the corporate sector, whose appetite for leverage increased dramatically. This inevitably meant large shifts in the relationships between the financial aggregates and the economy. Hence even as the RBA finally gained effective instruments, the strategy of targeting M3 broke down.

At the same time, a floating exchange rate came with its own issues. In early 1985, having just abandoned the M3 target in the face of the shifting financial relationships, monetary policy was confronted with a crisis of confidence in the Australian dollar, something which recurred periodically for some time. *The Australian Financial Review*'s 9 April 1985 headline, 'Australia's Monetary Policy Confusion', gives something of the flavour of the times.

It is no surprise, therefore, that there was much discussion in the second half of the 1980s and the first few years of the 1990s about the impact of deregulation, the struggle of the monetary authorities to cope with it, and the possible alternative strategies which might be employed in response to it. Coming to terms with a floating exchange rate in particular, which could at times be subject to very large movements, required adjustments both by the authorities and by those involved in economic activities which were exposed to the outside world.

This was a period of transition from the idea that monetary policy proceeded by directly controlling some sort of quantity, with financial prices endogenous, to the notion that it proceeded by using the short-term interest rate as the instrument, with the financial quantities endogenous in the short to medium term (see Grenville (1997)). This appeared to take longer to be accepted in mainstream Australian discussion than it apparently did in most other places. Admittedly, it was not until the late 1980s that the Reserve Bank clearly articulated this view of the process (Macfarlane and Stevens 1989, Grenville 1990).

At the same time, there was a tension in the 1980s between two ideas. The first, based on the main insight of two centuries of monetary economics, was that monetary policy ultimately determined inflation. The quantity-theory version of this view had been the intellectual underpinning of monetary targeting. The other was the long-standing tradition in Australian economic policy-making and many academic circles that wages outcomes were the proximate determinant of prices, and that

wages could be influenced independently of monetary policy. Australia's industrial relations arrangements contributed to this view, and economists trained in the 1970s learned of the 'four arms' of economic policy, of which wages policy was one. (Exchange rate policy, at the time of the fixed exchange rate, was another.)

Even among those inclined to be critical of monetary policy for being too lax or inconsistent, this view was often central. In the issue of the *AFR* which carried the 'confusion' banner quoted above, the editorial lamented at length the course of the Australian dollar and the failures of monetary and fiscal policies. It then concluded by saying that '... in the end, the key is wages policy'.

This tension is evident in Milbourne's 1990 paper, and it is notable that in that same conference, there was an entirely separate paper (Carmichael 1990) on inflation. 'Money and finance' were often discussed quite separately from inflation outcomes. Carmichael offers a reconciliation between the 'money' view of inflation and the 'wages' view, in which monetary policy accommodates the inflation stemming from wage outcomes. In this view of the world, the wages Accords of the 1980s, at the heart of the Hawke Government's economic strategy, determined the rate of wage and price expectations. Actual inflation could be made to differ from this by monetary policy, but only by having substantial impacts on output, monetary policy not having any independent capacity to affect expectations (and not being invited to attempt it).

In the 1990s, this view of the world gradually gave way to one in which inflation was seen as the specific responsibility of monetary policy. This reflected partly the global intellectual shift towards inflation targeting, but also the shift in wages policies towards microeconomic, rather than macroeconomic goals, and the reduced emphasis on centralised wage setting. The extent of the contrast with the mid-1980s view of the world can perhaps be seen most clearly in the outcome of the 1997 *Safety Net Review*, conducted by the Australian Industrial Relations Commission. The prospect that monetary policy would respond to large wage increases which threatened inflation performance appears to have had a major impact on the decision.¹⁸

In the wake of the early 1990s recession, the debate about monetary policy became even more intense. Recessions tend to cause reconsideration of all manner of policies. The theme of deregulation and its effects continued through this discussion, since the distinguishing feature of the late 1980s boom and subsequent slump was the role of asset prices, accommodated by rapid credit expansion by newly-liberated intermediaries, despite exceptionally high real interest rates almost all the time in the second half of the 1980s (see Macfarlane (1989), (1990)). That discussion did not turn back deregulation, but did result in much more attention being given to prudential supervision in the 1990s (see Gizycki and Lowe (this volume) for more details on this).

18. The decision included the following: 'we have noted the Reserve Bank's intimations of the order of increase which, in its view, accords with its inflation target. Any increase greater than the amount which we grant carries a risk, in our view, of leading to a rise in interest rates. In the current state of the economy, with a high and seemingly stationary unemployment rate and an inadequate growth rate, we are unwilling to take that risk' (Australian Industrial Relations Commission 1997, p 50).

The discussion in this period widened, however, beyond the quasi-technical issue of the effects of deregulation, to focus on the overall framework of monetary policy, including issues of the appropriateness of multiple objectives, the structure and governance of the Reserve Bank, and its independence. Many criticisms in this period appear to have been motivated by a genuine frustration with perceived failures of policy, particularly as regards inflation control, over a long period. These critics were not convinced that the decline in inflation which accompanied the recession could be sustained without far-reaching reform of the Bank. Some commentators remained suspicious that monetary policy had not really pursued an anti-inflation strategy at all in the late 1980s and early 1990s, and had paid too much attention to the balance of payments, to the detriment of more appropriate domestic goals (an issue we return to in the next section).

Hence there was great debate in academic circles. A whole issue of the *Australian Economic Review* was devoted in 1990 (Creedy 1990) to publishing papers from a conference on monetary policy. Among a range of reasonably conventional papers, monetary-base targeting was advocated by McTaggart and Rogers (1990), on the grounds that this would lessen an apparent (and in their view inappropriate) positive relationship between the money stock and the terms of trade. Monetary-base targeting was an idea with a very respectable pedigree amongst academic economists, but was actually practised at that time only by the Swiss National Bank (which has in recent years adopted an inflation target instead). Hence in Australia it has tended to be regarded as rather radical. But in another conference, with the less than even-handed title 'Can Monetary Policy be Made to Work?', organised by the Institute for Public Affairs in December 1991 (Moore 1992), monetary-base targeting was one of the *least* extreme proposals on offer. The more adventurous ones included a currency board (modelled on a program being developed for Albania by, *inter alia*, Steve Hanke (Hanke, Porter and Schuler 1992)), and free banking – no central bank, but competitive moneys offered by private banks (presumably including the same ones which had made the disastrous corporate loans of the 1980s). Edey (1997) discusses these ideas in more detail. They never gained serious support, but the fact that they were raised in respectable circles at all only nine years ago seems remarkable now.

In political and policy-making circles, more attention began to be given to the model which combined an inflation target and clear central bank independence. In New Zealand, the Reserve Bank was undergoing very substantial changes to its structure and mandate. Both there and in Canada, the idea of an explicit, numerical inflation target took shape, and was implemented. The goal was set by the government, but with the central bank given complete operational independence in pursuit of that agreed goal. Such regimes were producing declines in inflation in those countries – though admittedly inflation was declining almost everywhere else as well. Inflation targeting became more appealing through the 1990s, as a number of countries one by one found the alternative anchors, and the prospect of completely unconstrained discretion, unsatisfactory.

In Australia in the early 1990s, inflation was also falling rapidly, a result of determined application of monetary policy. But inflation had also fallen in the early

1980s, only to rise again, so the question was whether the decline could be sustained. In the minds of many sceptics, the result was an accidental by-product of policies really directed at other goals. In the event, inflation continued to fall and remained low, and without any change to the RBA's charter or structure. There was, however, a gradual shift towards an inflation-targeting model. This began in March 1993 when Bernie Fraser as Governor gave a speech within which the outlines of the '2–3 per cent over the course of the cycle' inflation target can be seen (Fraser 1993). As time went by, the target was progressively firmed up, endorsed by Treasurer Willis and then endorsed much more explicitly by the present Government. The target formulation was of the Bank's choosing to start with, and therefore it gave some weight to the reservations about the apparent narrowness of the other models on offer at the time. This was initially at the cost that it took longer to build credibility for the regime, but had the benefit of conferring an appropriate degree of flexibility. Stevens (1999) gives an account of Australian experience with inflation targeting. As argued earlier in this paper, the stronger anti-inflation focus from the late 1980s, developing into the inflation-targeting framework since 1993, has made an important difference to the inflation performance, and a tangible difference to economic performance more generally.

Issues of independence of the RBA also came to the fore in the 1990s, especially as the conduct of monetary policy became hotly contested in the political arena between 1990 and 1993. The importance of the principle of independence was never in dispute; what was at issue was how independent the RBA had been in practice. Proposals for changing the charter to a sole focus on inflation, and strengthening the Board's independence emerged from various quarters. These issues are taken up at some length in Macfarlane (1998). As it turns out, the structure and governance of the Bank remains unchanged, from the time of its inception in 1960. The degree of formal independence has not changed, although the extent of the perception of independence has increased greatly.

There was still a measure of debate about monetary policy at the end of the 1990s, but its nature was completely different to that of ten years earlier. The focus was no longer on deregulation, and its effects on money and credit, against a backdrop of the centrality of wages policy in thinking about the inflation outlook. Nor were the role of monetary policy in controlling (or not) the current account, or the Bank's *bona fides* on inflation any longer hotly contested issues. The more extreme ideas which intruded to an unusual extent in the early 1990s had lost force.

The more recent discussions have been conducted on the assumption that monetary policy is and should be set within an inflation-targeting framework, that the Bank is independent of the Government in adjusting interest rates in pursuit of the target, and that interest rates are the instrument of policy. Critics of monetary policy in recent times tend mostly to have made a different judgment to the Bank's on the necessity of a policy adjustment. To be sure, some debate still continues about the amount of detailed information (such as forecasts, Board minutes etc) the Bank should or should not release, and there is the occasional foray into governance issues. But no mainstream commentators appear to be saying that the whole framework is inadequate and needs replacement, or that the Bank's decisions are politically

motivated. This seems a long way from the debates of ten years ago. Of course, should there be unexpected turbulence for the economy at some future time, things may well change.

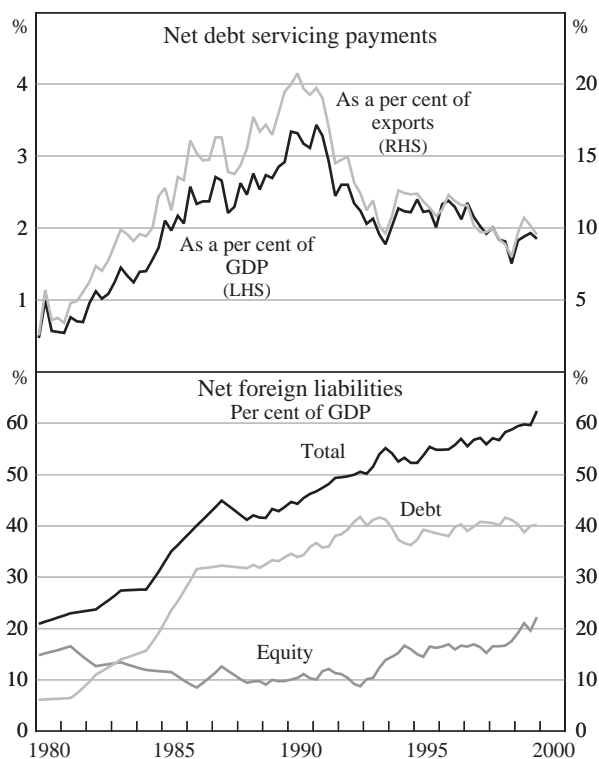
3.2 The current account and foreign debt

3.2.1 The 1980s: rising concerns

One of the enduring features of the economic landscape over the past fifteen years has been the debate about the current account deficit and the growth of Australia's foreign debt. In this section, we discuss this debate and offer some reflections on how it evolved in the 1990s. We begin however with the 1980s, the decade in which the foreign debt debate took shape.

One of the early warnings that the debt build-up might have serious implications was issued by the then Head of the Department of Treasury, John Stone, in his 1984 Shann Memorial Lecture '1929 and All That ...'. Stone used the lecture to compare Australia's predicament at the time with the predicament discussed by Shann in the years leading up to the Great Depression. While Stone's remarks might have been

Figure 9: Australia's Foreign Liabilities



thought to be unduly alarmist at the time, the debt debate did grow in intensity over the next few years as events conspired to convince many observers that the implications of the debt build-up might indeed be serious. Over eighteen months from the beginning of 1985, the terms of trade fell significantly, and the currency depreciated by 40 per cent in trade-weighted terms. The current account deficit, which had averaged $4\frac{1}{4}$ per cent of GDP over the first half of the 1980s, widened to $5\frac{1}{2}$ per cent in 1985 and $5\frac{3}{4}$ per cent in 1986. With the deficit financed primarily by borrowings rather than equity, the stock of foreign debt and debt servicing ratios rose sharply (see Figure 9).

Worsening assessments of Australia's credit worthiness by the two main international credit rating agencies, Moody's and Standard and Poor's, added to the general level of concern. Australian Commonwealth Government debt had long been rated AAA by both organisations. Between September 1986 and October 1989, however, both agencies twice lowered the long-term foreign-currency debt of the Commonwealth Government, to Aa2 and AA.

According to some, Australia risked becoming a 'banana republic', a phrase made famous in the Australian context in an impromptu interview on commercial radio by the then Treasurer, Paul Keating, in May 1986. From around that time to the end of the 1980s and into the 1990s, there was a broad consensus – encompassing the whole political spectrum, and shared by policy-makers, economic commentators, business leaders, and the wider community – that the current account deficit and the growing stock of foreign debt represented the most serious economic problem facing Australia.¹⁹ Reports were written by a range of organisations, diagnosing the problem, and suggesting solutions.²⁰

Given the perceived seriousness of the foreign-debt problem, there was also a broad consensus that all arms of economic policy needed to play a role in responding to it. In a renegotiated Prices and Incomes Accord with the trade union movement, award-based superannuation was introduced to contribute to private saving, and a 2 per cent fall in centrally determined real wages was agreed to reduce the inflationary implications of the exchange rate depreciation. Fiscal policy was tightened progressively, with the general government underlying balance moving

19. Newspaper headlines from the time give a feeling of the level of concern: 'Fall in Productivity Leads Economy to the Edge of Debt Quagmire' (*Sun-Herald*, 20 November 1988), 'Scary Arithmetic in our Debt Figures' (*The Sydney Morning Herald*, 17 July 1989), 'Australia's debt hovering on the cliff-face of crisis' (*The Australian Financial Review*, 21 September 1989); and 'Australia Sliding into Debt Trap Says Bank' (*The Age*, 20 November 1989). Less apocalyptic prognostications were also reported, but tended not to capture the headlines. For example, Westpac pointed out that 'contrary to the Cassandras, Australia was not on the brink of financial disaster and could expect to reap the benefits in 1990 from the strong growth in business investment of the past few years' (*The Australian Financial Review*, 27 December 1989).

20. Perhaps the most dramatic of these was a booklet issued in November 1989 by Macquarie Bank, entitled *A Boiling Frog: Australia's Economic Challenge*. This booklet argued that Australia's problem with its foreign debt could be likened to that of a frog immersed in water that was initially cold but was gradually being heated. Failing to realise the impending danger, the frog is eventually boiled.

from a deficit of 3½ per cent of GDP in 1983/84 to a surplus of over 1 per cent by the end of the decade in 1989/90.²¹ There was also a widely held view that tighter monetary policy was part of the appropriate response to the external imbalance.²²

Towards the end of the decade, however, the idea that large current account deficits and the associated build-up of foreign debt were matters of concern that required a public policy response faced an intellectual challenge. In the Australian context, the challenge was mounted primarily by John Pitchford (1989a, 1989b, 1990) and subsequently Max Corden (1991). Pitchford and Corden began with the accounting identity linking the current account deficit to the excess of investment over saving in the private and public sectors. Private-sector investment and saving decisions, it was argued, were made by consenting adults, who would either reap the benefits or incur the costs of those decisions. Public-sector decisions, and the resulting fiscal balance, should be judged on their own merits, rather than in terms of their influence on the current account. If large deficits were a symptom of distortions in the economy, the distortions should be tackled at their source, rather than providing an excuse to use monetary or fiscal policy to influence them. There should be no presumption that large current account deficits were either good or bad.

When these ideas were first presented, they were treated as academic, in the pejorative sense of the word.²³ But they gradually became more influential. Although many commentators continued to disagree with the policy implications of the consenting-adults view, the debate was increasingly conducted in the terms in which it had been set out by Pitchford and Corden.

3.2.2 *The 1990s: the dog that didn't bite*

Concern about the current account and Australia's foreign debt probably reached a peak at the beginning of the new decade. At times during the 1990s – especially when the deficit was rising as a proportion of GDP – the debate was again intense, but there were gradual shifts of view and refinements of argument.

An important early shift was in the analysis of the appropriate role of monetary policy. As previously discussed, Pitchford (and later Corden) had challenged the

21. We discuss fiscal policy in more detail in the next section of the paper. For further discussion of superannuation, see Edey and Gower (this volume).

22. Judging by its public statements, the Reserve Bank shared this view at the time. In its 1988 *Annual Report*, the Bank argued (p 8): 'Australia's external imbalance and the high level of external debt were major issues for general economic policy throughout 1987/88. It was of some concern, therefore, that strong domestic demand boosted imports over the year. Also, in the second half of the year, earnings and prices appeared to be growing uncomfortably quickly, threatening the downward course of inflation and the improving trend in the balance of payments. The tightening of monetary policy in the second half of the year was in response to those developments'. The Bank's later views on the subject will be discussed shortly.

23. For example, no-one from the consenting-adults school was invited to the high-profile National Summit on [Foreign] Debt convened in early 1990 by the Business Council of Australia, and attended by over 300 leading businesspeople. In the background report prepared for the Summit by Access Economics (1990), the consenting-adults view was discussed, and dismissed.

view that had been broadly held in the late 1980s that monetary policy (along with other policies) should be tightened in response to the external imbalance. Around the turn of the decade, the Reserve Bank publicly acknowledged the intellectual force of this challenge (although not the wider implications of the consenting-adults view). In the Bank's 1989 Annual Report and in two speeches delivered in September 1989 and June 1990 by the then Deputy Governor John Phillips, it was argued that monetary policy's appropriate role was to establish low inflation, and that any structural imbalance in the balance of payments was a result of the 'community's attitudes to savings, consumption, investment and debt' (Phillips 1989, 1990). As such, it was not a problem that could be 'targeted directly by monetary policy'. This position generated considerable controversy on the second occasion on which Phillips presented it (though curiously, not on the first) but in time it became more generally accepted.²⁴

By the early 1990s, there had been ample opportunity for anyone so inclined to come to an informed view about the foreign debt build-up. Those who were concerned about the build-up argued that with no significant fall in the current account deficit, the rising debt burden would generate rising vulnerability to the possibility of a loss of confidence by foreign investors. They pointed to an apparent rise in the risk premium on Australian assets such as 10-year government bonds and the downgrades by credit-rating agencies to argue that foreign investors were becoming increasingly concerned. Some also argued that the current account was imposing a constraint on the rate at which the Australian economy could grow, or would be allowed to grow.²⁵

As it turned out, economic outcomes over the remainder of the 1990s were much more favourable than might have been expected, especially by those who were most concerned about the debt build-up. From the trough of the recession in 1991:Q2 to the end of the decade, annual output growth averaged just over 4 per cent, with little sustained change in the current account deficit. If the external accounts were imposing a constraint on growth, it was not a very severe one.

Furthermore, necessary adjustments were taking place in the economy. The real exchange rate in the 1990s was more than 10 per cent lower in trade-weighted terms

24. The day after Phillips' June 1990 speech, *The Australian Financial Review* reported his arguments in its lead front-page story under the headline 'Reserve [Bank] seeks shift in gov[ernment] strategy'. It was clear from reactions to the speech that the arguments put by Phillips were indeed contentious at the time.

25. Two examples give a flavour of this last argument. 'In practice we are muddling into using low economic growth as a technique for 'coping' with Australia's current account problems – even though it is widely conceded that this is an inefficient solution to the problem.' (Gruen and Grattan 1993, p 174–175). 'Increasing dependence on foreign savings, as reflected in growing net foreign liabilities, ... place[s] an external "speed limit" on the pace at which economic growth can be sustained' (Budget Statements 1996, p 1-9). In a related argument, Andersen and Gruen (1995) argued that rising external liabilities/GDP would require gradual real depreciation, which in turn would require domestic costs to rise more slowly than aggregate (traded and non-traded goods) domestic prices. To generate the required restraint in domestic costs would require a lower *level* of domestic output than would otherwise be the case, although output growth would not be affected.

than it had been in the 1980s, and this was generating a transfer of resources into the traded sector. Exports of goods and services over the 1990s grew at more than twice the rate of economic output, and in contrast to the 1980s, significantly faster than imports (see Table 5).

There was also a sharp turnaround in the method of financing the current account. Debt financing had dominated the 1980s, but this was largely replaced by equity financing in the 1990s. As a consequence, although the ratio of net external liabilities to GDP continued to rise through the 1990s, the net external debt ratio did not; it remained at about 40 per cent of GDP from 1992 to the end of the decade (see Figure 9). This no doubt reduced the vulnerability of the domestic economy to external shocks, since the cost of servicing equity investments tends to vary with domestic profitability, and so more closely reflects the economy's capacity to pay.

After the two downgrades by both Moody's and Standard and Poor's in the late 1980s, there were no further downgrades of Australian Commonwealth Government debt by either agency. Indeed, there was an upgrade by Standard and Poor's in May 1999 to AA+. Perhaps more importantly, however, it became increasingly clear how little information was revealed about a country's vulnerability to possible future changes in foreign-investor sentiment by its credit rating.²⁶

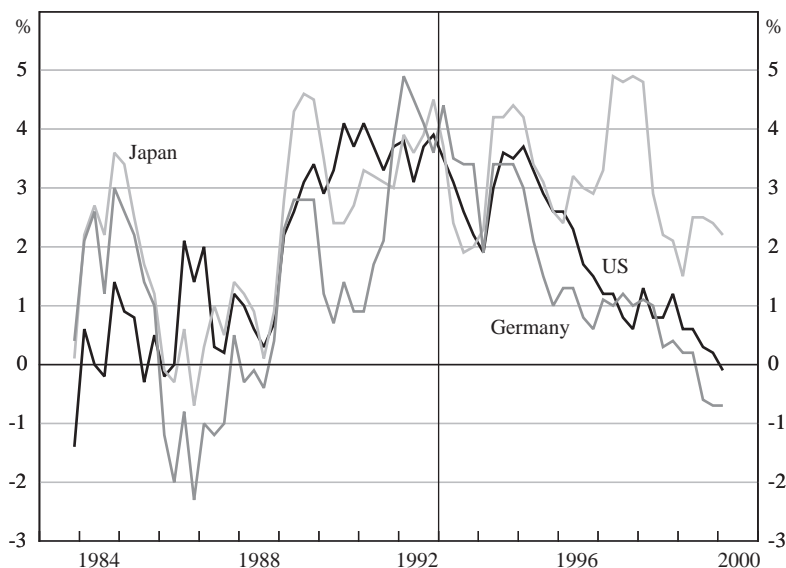
Nevertheless, while credit downgrades might not provide much information about future vulnerability, they might be associated with a higher cost of borrowing in international capital markets. As previously mentioned, many commentators argued that Australia was being forced to pay a sizeable risk premium on borrowings as a result of the debt build-up. For example, FitzGerald (1993), in his report to the government on national saving, provides estimates of the real interest differential between 10-year bonds in Australia and in the G3 countries, United States, Germany and Japan, which certainly suggest a sizeable risk premium on Australian long-term bonds in the few years leading up to the end of his sample in 1992.

Figure 10 shows an updated version of the figure presented by FitzGerald (p 13) in support of this argument.²⁷ With the benefit of an extra seven years of data, a rather different conclusion emerges. Although Japan is an outlier (presumably for domestic Japanese reasons) it is much less clear that Australia has been paying a sizeable risk premium as a consequence of the external debt build-up. By the end of the 1990s, the real yield on A\$-denominated bonds was roughly the same as those on German and US bonds. A more natural explanation for the relatively high Australian real bond

26. Downgrades have almost always been a sign of current or past difficulties, rather than increased future vulnerability. For example, the countries most affected by the Asian financial crisis (Thailand, Malaysia, Indonesia and Korea) received either steady or gradually improving credit ratings from Moody's in the years leading up to the 1997–98 crisis. After the crisis was upon them, however, their credit ratings dropped sharply.

27. FitzGerald used the past year's change in OECD private consumption deflators to deflate nominal bond yields. We use the past year's core consumer price inflation because it is a more commonly used measure. This change makes minimal difference to the results. FitzGerald also registered the relevant caveat that past inflation may be only an imperfect measure of expected future inflation.

Figure 10: Real Long-term Interest Differential
Australia versus US, Germany and Japan^(a)



(a) Ten-year government bond yields deflated by core consumer price inflation over the past year.

rates in the early 1990s, and their subsequent fall, is that markets took a long time to be convinced that the step-down in inflation at the beginning of the decade would be sustained.²⁸

In coming to a view about Australia's vulnerability to external shocks, the Asian financial crisis was also a revealing event. Of the countries severely affected by the crisis, two had run significant current account deficits in the years leading up to the crisis, and two had not.²⁹ But it is clear that current account deficits were not an important reason for the crisis. The countries had serious domestic vulnerabilities not present in Australia; in particular, large stocks of unhedged foreign borrowings in combination with the nature of their corporate governance and financial systems. There were, undoubtedly, also self-fulfilling elements to the crisis as market euphoria turned to panic. But the serious domestic vulnerabilities meant that, when

28. This alternative explanation also accords with the cross-country empirical evidence presented by Orr, Edey and Kennedy (1995). Their results imply that a rapid fall in inflation of the kind experienced in Australia in the early 1990s leads to significantly higher real bond yields for several years afterwards. Higher sustained current account deficits also lead to higher real bond yields, but the effect is small empirically.

29. The Thai current account deficit averaged 6¹/₂ per cent of GDP over the five years 1992–96, with the corresponding figures being 5³/₄ per cent for Malaysia, 2¹/₄ per cent for Indonesia, and 1³/₄ per cent for Korea.

the currency pegs collapsed, the resulting exchange rate depreciations generated widespread bankruptcies and savage recessions, rather than expanding domestic activity as was the case in Australia.

As the crisis intensified, there was less appetite for risk on the part of international investors, and risk premia on bonds issued by developing countries – even those with no links to East Asia – rose dramatically. Australia was, however, treated as a safe haven. The current account deficit widened by over 2 per cent of GDP from mid 1997 to mid 1999, but this was treated with equanimity by capital markets and yields fell on A\$-denominated bonds. There were no signs of enhanced Australian vulnerability, at least from this external shock.

The recent academic literature has also not been particularly kind to the idea that high current account deficits or foreign-debt exposures necessarily increase a country's vulnerability to crisis. In a survey of 28 empirical studies on currency crises, Kaminsky, Lizondo and Reinhart (1998) uncover a series of economic indicators that receive support as indicators of impending crisis. These include an overvalued real exchange rate relative to trend, rapid credit growth, and indicators of banking sector problems. They observe (p 12), however, that '*variables associated with the external debt profile [do] not fare well*'. Also, contrary to expectations, *the current account balance [does] not receive much support as a useful indicator of crises*' [emphasis in the original].³⁰

Most of the studies surveyed by Kaminsky *et al* focus on the collapse of fixed exchange rate regimes, or exchange rate bands of one sort or another. Most examine the experience of developing rather than industrial countries. We should therefore not overstate the relevance of such work for Australia. Nevertheless, it is still of interest that high current account deficits and/or high levels of external indebtedness do not systematically seem to signal enhanced vulnerability to crisis.

A final point about countries with large external debts. These are, of course, countries to which international investors have lent large quantities of funds. In many cases, this is because the countries have a range of characteristics – macroeconomic, microeconomic and regulatory – that inspire the confidence of investors. Without these characteristics, the countries might not have been able to build up their large external debts in the first place. But these characteristics also render these countries more able to adjust to shocks; that is, they reduce the countries' vulnerability to crisis. It should therefore not come as such a surprise that high levels of external indebtedness are not good indicators of enhanced vulnerability to crisis.

To conclude then, the current account debate in Australia never completely went away over the course of 1990s, but its intensity gradually subsided. The current account deficit showed no sustained improvement over the decade, with its average

30. The authors qualify this last statement with the remark: 'This may be because the information provided by the behavior of the current account balance to some extent may already have been reflected in the evolution of the real exchange rate'. This comment would seem of particular relevance to pegged rather than floating-rate regimes.

ratio to GDP almost as large as it had been in the 1980s. Nevertheless, at no time in the 1990s did the predictions of those most pessimistic about the current account look like they would be realised. The economy grew strongly and by many measures, Australia's vulnerability to possible changes in sentiment by foreign investors declined over the course of the decade.

Notwithstanding the favourable experience of the 1990s, however, we can still pose the question: Is Australia significantly more vulnerable to external shocks because of the foreign debt build-up? Perhaps the right answer remains the one attributed to Chou En Lai when he was asked his opinion of the French revolution: 'It is too early to say'. It may still be true that the foreign debt build-up is of concern because, were there to be a serious domestic policy mistake or political instability at some time in the future, the associated costs could be much higher than would otherwise be the case. Nevertheless, we can at least say that the 1990s experience has been kind to the consenting-adults view of the current account.

3.3 Fiscal policy

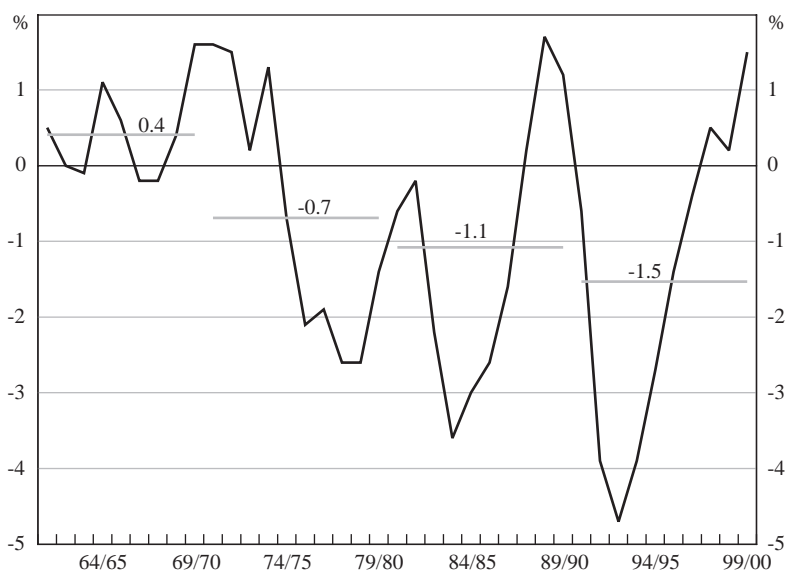
In the immediate aftermath of World War II, Australia had a large stock of government debt, amounting in gross terms to more than 100 per cent of GDP. This ratio declined rapidly over the next several decades, mainly as a consequence of prudent fiscal policy until the mid 1970s, but also because of a period of unanticipated inflation in the 1970s. By 1980, the net debt of the Australian general government sector had fallen to about 10 per cent of GDP.³¹

During the 1980s, a further significant deterioration in the fiscal accounts associated with the recession early in the decade occurred, followed by a long period of consolidation culminating in fiscal surpluses at the decade's end. This pattern was repeated, at least in rough outline, during the 1990s (see Figure 11). The net effect of these cycles in the fiscal balance over the two decades was that general government net debt in 1990 and again in 1999 was largely unchanged from its 1980 level of about 10 per cent of GDP.

The maintenance of low levels of government net debt over the past two decades is quite unusual by international standards. Figure 12 shows snapshots of the level of general government net debt for 17 OECD countries including Australia in 1980,

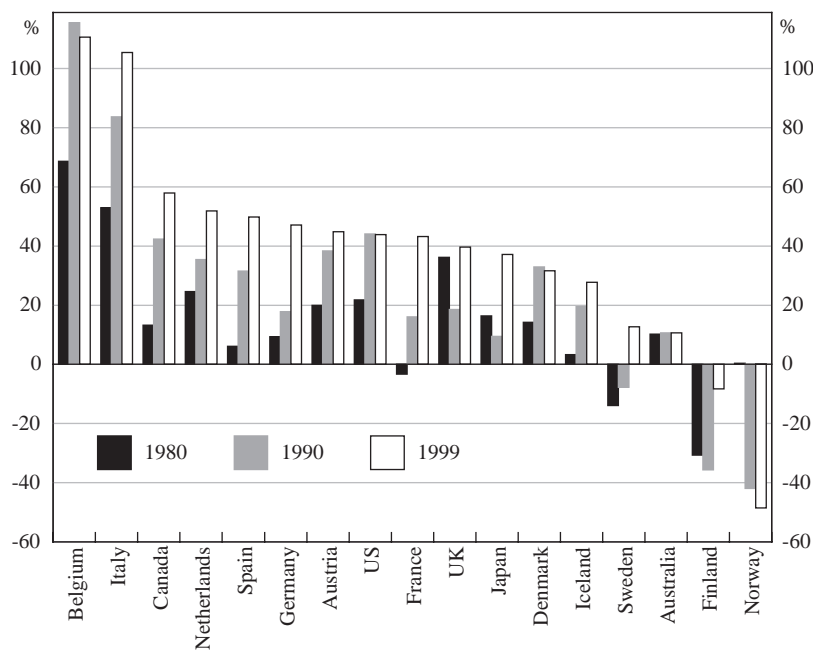
31. Data issues complicate comparisons over time. Commonwealth Government Securities on issue amounted to more than 100 per cent of GDP in 1950; this ratio had fallen to 25 per cent by 1980. We use the alternative figure for general government net debt (or net financial liabilities) because it is one of the measures used by the OECD to make cross-country comparisons of government indebtedness. The general government sector is a consolidation of the central, state and local governments, and the social security sector (which does not exist as a separate sector in Australia). Net debt includes all financial liabilities less all financial assets. The government's equity participation in public trading enterprises is not included as part of its holdings of financial assets. As a consequence, therefore, the use of the proceeds from the sale of public trading enterprises to retire government debt reduces general government net debt. Adjusting the Australian figures for the proceeds of such sales would change the numbers somewhat, without making much difference to the overall qualitative picture.

Figure 11: General Government Underlying Cash Balance
Per cent of GDP



Note: Decade averages are shown.

Figure 12: General Government Net Debt
Per cent of GDP



Source: OECD

1990 and 1999. Australia is right in the middle of the international pack in 1980, with eight of the countries shown having lower ratios of net government debt to GDP, and eight higher. By 1999, however, only Finland and Norway among this group of countries have lower ratios of net government debt than Australia. The two extended periods of fiscal consolidation in the latter halves of the past two decades have meant that Australia has not experienced the significant fiscal deterioration suffered by many other industrial countries over this time.

In discussing Australian fiscal policy in the 1990s, it is convenient to separate its role as a counter-cyclical tool from analysis of its medium-term focus. There is general agreement that fiscal policy's automatic stabilisers should and do play an important counter-cyclical role. But beyond that, there has been growing disillusionment, both in Australia and elsewhere, about the capacity of discretionary fiscal policy to be genuinely counter-cyclical. The problem is not the transmission lag. Indeed, changes to fiscal policy, once implemented, should be expected to have a quick impact on economic activity – probably quicker than the impact of monetary policy. This is particularly true of changes to government expenditure, which feed directly into economic activity.

The problem, as has been widely understood, is instead the implementation lag. Fiscal policy is implemented, predominantly, on an annual cycle, with the timetable determined by the calendar rather than the state of the economy. Even in circumstances in which governments decide to provide a fiscal boost to the economy, the process of deciding exactly which expenditures and taxes to change, having the changes passed through the Parliament where that is necessary, and implementing them, leads to inevitable delay. For example, the Federal Government's main fiscal initiative in response to the early 1990s recession, *One Nation*, was announced in February 1992, when the economy was in its third quarter of expansion following the recession, but still growing quite slowly. While there were some small spending initiatives in the package that began immediately, the bulk of them were implemented in the following financial year, 1992/93, and beyond. They therefore came into effect when the economy had begun to expand robustly (growth over the 1992/93 financial year was 4.2 per cent, and over the 1993/94 year, 4.7 per cent).

In contrast, monetary policy could, subject to the medium-term inflation target, respond counter-cyclically. Monetary policy decisions could be made and implemented quickly, even though the transmission lags were long.

These perceived institutional disadvantages of fiscal policy suggested to some that the institutional arrangements for implementing it should be changed so that it could play a more effective counter-cyclical role. This suggestion had been put forward by Larry Ball (1996) in New Zealand, Alan Blinder (1997) in the US, and Nicholas Gruen (1997) in Australia. It received more prominence in the Australian debate with the release of a discussion paper by the Business Council of Australia, 'Avoiding Boom/Bust', in late 1999. This paper argued that politically independent officials should be given the power to make small across-the-board changes to tax rates to deliver effective counter-cyclical fiscal policy. This suggestion generated

widespread interest and discussion, although at present it appears unlikely that it will be implemented in the foreseeable future.

Aside from its counter-cyclical role, fiscal policy also has a medium-term influence on national saving. For most of the period since the mid 1980s, discussion about fiscal policy's appropriate medium-term stance has been strongly influenced by concern about the current account. Notwithstanding the consenting-adults view, there has been a broad consensus, shared by governments of both political persuasions, that sustained high current account deficits represent *prima facie* evidence that national saving is insufficient and that public saving should make a contribution to raising it.

This position is expressed clearly in Budget documents in the second half of the 1980s, and throughout the 1990s. At the time of the early 1990s recession, this medium-term requirement is balanced against the immediate need for fiscal policy to support economic recovery. 'In the face of weak private sector demand, ... discretionary increases in expenditure have provided a direct stimulus to activity ... As private sector activity consolidates, ... [f]iscal policy can ... resume its important medium term role of increasing national saving and reducing recourse to foreign financing of domestic investment' (Budget Statements 1992, p 2.59).

With recovery from recession, the medium-term task of improving the fiscal balance again becomes the dominant influence on fiscal policy. The need for this improvement is argued forcefully in the June 1993 FitzGerald report, the major report on national saving commissioned by the Federal Government. The report opens with the observation that national saving had fallen to its lowest level in the twentieth century, except in times of world war and the Great Depression. It continues (p xiii) '*prima facie*, there is cause for concern – particularly since we already have a very high foreign debt and a high current account deficit adding constantly to it. If we do not save more, then the investment necessary to ensure higher growth and more employment will only be funded by even greater recourse to foreign savings and further build-up of foreign debt'. Of particular relevance to fiscal policy, the report goes on to argue (p 16) that 'the greatest scope for raising ... national saving lies in the public sector. A concerted effort to strengthen the national public sector fiscal position is thus one of the major economic imperatives for Australia in the years ahead'.

In its response to the FitzGerald report in the 1993/94 Budget, the Federal Government committed itself to lifting public saving in the medium term and specifically to achieving a Commonwealth budget deficit of around 1 per cent of GDP by 1996/97, compared to the deficit of nearly 4 per cent that had been recorded in the 1993/94 financial year that had just ended. (As events turned out, the goal for the 1996/97 budget deficit was achieved, but under a new government.)

The bipartisan nature of the general strategy to raise public saving was confirmed with the election of the Liberal/National Coalition government in 1996. In its first budget, the new government committed itself to a medium-term fiscal strategy 'to follow, as a guiding principle, the objective of maintaining an underlying [budget] balance on average over the course of the economic cycle' (Budget Statements 1996,

p 1–9). Assuming that this strategy is indeed maintained over the medium term, it will generate a ratio of government debt to GDP that gradually declines towards zero.³² As had been the case earlier in the decade, the primary justification presented for this fiscal strategy was that it was the appropriate response to the sustained high level of the current account deficit.

It would be an oversimplification to argue that concern about the current account has been the only reason advanced for tightening fiscal policy and raising the level of public saving in Australia in the 1990s. The FitzGerald report, for example, also points to the need to raise national saving because of the ageing of the population.³³ And it has also been argued that improving the budget balance in good times gives fiscal policy more capacity to respond flexibly to unforeseen future economic difficulties. But it would be fair to say that concern about the current account has been the primary reason advanced for raising public saving and returning gradually to a fiscal surplus through the course of the 1990s.

How one views this justification for maintaining very low levels of government debt (and further reducing them) depends on one's view about the current account. For those who do not regard the current account as a relevant consideration in determining fiscal policy's appropriate medium-term stance, there must be an alternative guiding principle. An appealing alternative is intergenerational equity. For given government spending, this principle would lead the overall level of taxes (and therefore the fiscal balance) to be set so that each generation's tax burden would (roughly) pay for the government services that it uses. Ageing of the population would be relevant to this calculus simply because taxes are mostly paid during individuals' working lives, while government services continue to be used in retirement.

This approach would, however, lead to separate treatment for current and capital government expenditures, rather than having a target for the overall medium-term fiscal balance. Government capital expenditure projects that, it is judged, would generate a social return over the life of the projects higher than the borrowing costs incurred to fund them would be undertaken, and financed out of new government borrowing. Provided one is not concerned about the implications for the current account, a cost/benefit analysis of such projects would therefore suggest that they should go ahead, despite their implications for the overall budget balance.

An alternative perspective, however, is the one discussed at the end of the previous section. Notwithstanding the favourable experience of the 1990s, Australia may still remain vulnerable to possible future changes in sentiment by foreign investors. In this view, one of the reasons Australia has maintained the confidence of foreign investors over the two decades of high current account deficits has been the fiscal restraint and discipline that has been demonstrated over this time. From this

32. Abstracting from the effects of any asset sales, maintaining an underlying budget balance in a growing economy gradually generates this outcome.

33. See Edey and Gower (this volume) for further discussion on the implications of population ageing for the fiscal accounts.

perspective, achieving continued medium-term fiscal balance and maintaining very low levels of government debt represent an appropriately prudent course of action. This approach, it could be argued, represents a small price to pay to enable Australia to continue to draw on foreign saving to fund that portion of domestic investment not funded by domestic saving, while maintaining the confidence of foreign investors.

4. Conclusion

The macroeconomic performance of the Australian economy grew progressively more impressive as the 1990s proceeded. While the decade began with a severe recession, by its close, growth had been strong and sustained for over eight years. The upswing had outlived its two predecessors. The economy had apparently become noticeably more stable than in the past. Living standards, as measured by per capita GDP, had improved at a rate not seen since the 1960s – a result shared only with Ireland among industrial countries. Public finances were, by any normal standard, in exceptionally strong shape. Unemployment rates remained high throughout the decade, but had declined by the end of 1999 by more than many would have dared hope six or seven years earlier. At the same time, inflation had averaged less than 3 per cent over the whole decade, and about 2 per cent since the inflation target for monetary policy was introduced in 1993. The combination of 4 per cent growth and 2–3 per cent inflation seen for a number of years now is one which a previous generation of economists and policy-makers would have only dreamed of – but to which many contributed through the hard grind of numerous reforms over many years.

That this combination would be achieved in a world in which Australia's current account deficit – the *bête noire* of the policy-makers of the 1980s – had apparently changed little, and had averaged 4½ per cent of GDP for twenty years, would have been considered even more unlikely a decade ago. Careful observers would probably be wary of concluding that this issue has been completely put to rest, or that problems could not at some stage appear. But it is undeniable that Australia's standing in international financial markets remained strong, and at few times in our history has it been stronger than during the financial crisis which engulfed our neighbours, and which clearly did not derail the Australian economy.

The policy debates of the 1990s shaped these trends, and also were shaped by them. Vigorous debate about the conduct of monetary policy, its objectives and even its very institutional structure, was a feature of the early part of the decade. Some elements of that debate contributed to constructive change in policy arrangements. It would be disingenuous to suggest that there is now no debate on these issues, but the debate is more confined, more focused, and less politicised. Likewise there seems to be broad agreement at present about the overall goals of fiscal policy, though the inevitable conflicts about how they are achieved naturally occur. Our guess would be that interesting intellectual debates may lie ahead in this area, assuming that surpluses continue for some years and debt on issue continues to run down. A decade from now, some important medium-term issues of public finance may well have been debated to a much greater extent than they have to date. If so, it

will only have been possible because of the efforts at fiscal consolidation and maintaining discipline in the period since the mid 1980s.

The key question in mid 2000 is whether these successes of the 1990s can be continued in the first decade of the new century. There is no shortage of actual or potential challenges. Most imminently, the various temporary effects of wide-ranging tax reform have to be coped with. There is the obvious potential for instability in international financial markets were a serious correction to take hold in US equity markets. The increased size of household financial balance sheets generally is something that may generate additional uncertainty, as is the pervasive effect of rapid technological change. Further ahead, environmental issues may become more prominent as factors requiring adjustments in relative prices and patterns of production – which in the past have been known to occasion disruption. Many of the factors pertinent to ongoing success lie in the social area rather than the strictly economic domain, though the two are related.

Yet despite this, and evident concern that the economic gains have been unevenly distributed, and despite the tendency of the Australian media to give more prominence to bad economic news than to good, and to threats to growth than to opportunities for it, there is perhaps more optimism in many informed circles now than there was ten years ago about Australia's economic possibilities. A decade of low inflation has done a lot to eradicate the old inflation mentality, with all the distortions that came with it. Stable growth, and a long expansion, mean that talk of sustaining unemployment rates below 6 per cent might now seem only slightly ambitious; seven years ago it would have seemed ludicrous to many. The benefits of productivity growth for living standards, a result of all the difficult microeconomic reforms, and perhaps of the more stable macroeconomy, have become clearer and will surely be clearer still in future. Finally, comparisons with the performance of other countries, particularly our Asia-Pacific neighbours, made so unfavourably even five years ago, are more balanced now.

The successes in the 1990s, and of the latter 1990s in particular, have generated a lot of this confidence. It was surely not, of course, all good management; good fortune has, perhaps, favoured Australia at times in the 1990s, in ways it did not in the 1980s. Only time will tell whether further performance like that of the past several years is within our grasp, or not. There are areas of risk to watch out for. But there are also good reasons for cautious optimism.

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The Australian Economic ‘Miracle’: A View from the North

Charles Bean

Abstract

This paper analyses a variety of aspects of the ‘miraculous’ performance of the Australian economy in the 1990s from an international perspective. We start by considering the conduct of macroeconomic policies, arguing that a mixture of good institutional design and wise decision-making has ensured an appropriate macroeconomic stance, particularly through the turbulent period of the Asian Crisis. This has supported good supply-side performance underpinned by labour market institutions that have proved reasonably flexible and robust trend productivity growth. Although cross-country evidence suggests that the information and communications technology revolution does help to explain the recent international behaviour of total factor productivity growth, it seems to play little role in explaining the remarkably good relative productivity performance of the Australian economy which we attribute to the increased competitive pressure stemming from the past removal of tariff barriers and the low level of regulation more generally. However, the increasing level of external debt and the low level of household savings means that the economy remains vulnerable.

1. Introduction

In the last few years plenty of media attention has focused on the miraculous economic performance of the US. Across the other side of the Pacific, however, the performance of the Australian economy has in its own way been equally remarkable, especially since 1997 during which growth has remained buoyant and inflation low despite the Asian Crisis. Unfortunately economic miracles have an unfortunate tendency to turn sour. After all, five years ago people were lauding the economic policies and performance of countries such as Malaysia, whilst fifteen years ago Japan was the miracle economy that the rest of the world aspired to emulate. Can we be sure that the good economic performance of Australia in recent years will be continued? Or will it all end with a nasty hangover?

In this contribution I give an outsider’s view of Australia’s economic performance during the 1990s, noting some points of similarity, and of contrast, with the rest of the OECD. In particular, since my comparative advantage lies in observing and analysing the British economy, I shall seek to draw some lessons by comparing and contrasting the performance of the Australian economy in the 1990s with that of the UK. For we too have also experienced a period of sustained growth and falling unemployment since early in the decade, although the performance on the productivity front has not been as impressive as Australia’s. But the more interesting contrast in many ways is not so much with the UK economy of today, but rather with that of

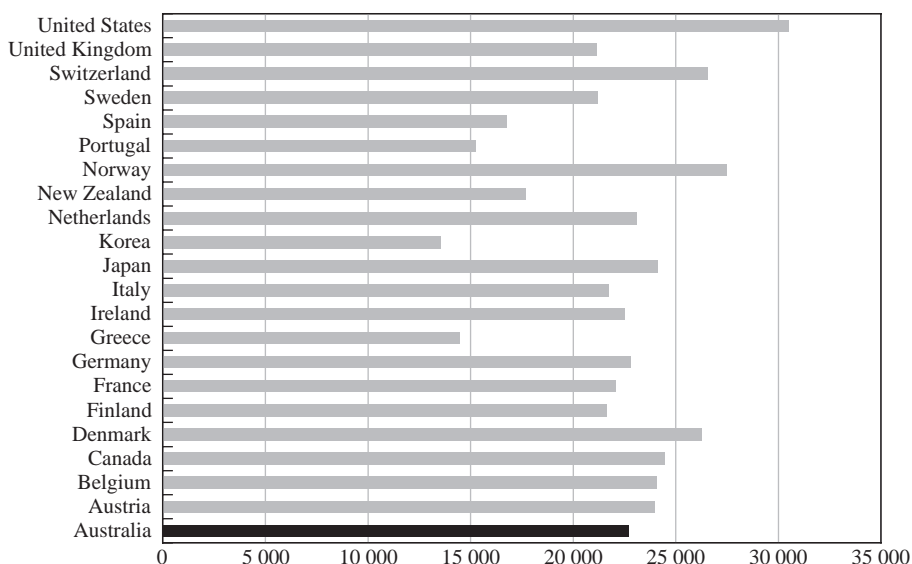
Mrs Thatcher's Britain a decade ago. That too was labelled an economic miracle, and it too was one that turned sour with Britain experiencing its second deepest post-war recession during 1990–92. There are some uncomfortable parallels between the UK at the end of 1980s and Australia at the end of the 1990s, although policy-makers in Australia are in a better position to counteract any downturn than were their British counterparts.

The rest of the paper proceeds as follows. In the next section I begin by surveying the main macroeconomic indicators, and then move on to discuss the macroeconomic policy framework. Section 3 examines the behaviour of unemployment in more detail, whilst Section 4 discusses the sources of the acceleration in productivity growth. Finally Section 5 looks at the behaviour of savings and the current account of the balance of payments.

2. Macroeconomic Performance and Policies

The key features of Australia's comparative economic performance are summarised in Figures 1–4. Figure 1 shows the OECD estimate of the level of GDP per head, measured at purchasing power parity exchange rates, together with that of most of the other developed economies. This shows that Australia's relative position in the pecking order had risen from sixteenth at the start of the 1990s to eleventh by the end, by which time living standards were on a par with those of Germany, and well ahead of the UK. However, income per capita is still some 25 per cent lower than in the US which is indicative of the margin for catch-up that still remains.

Figure 1: GDP per Capita
US\$, 1998

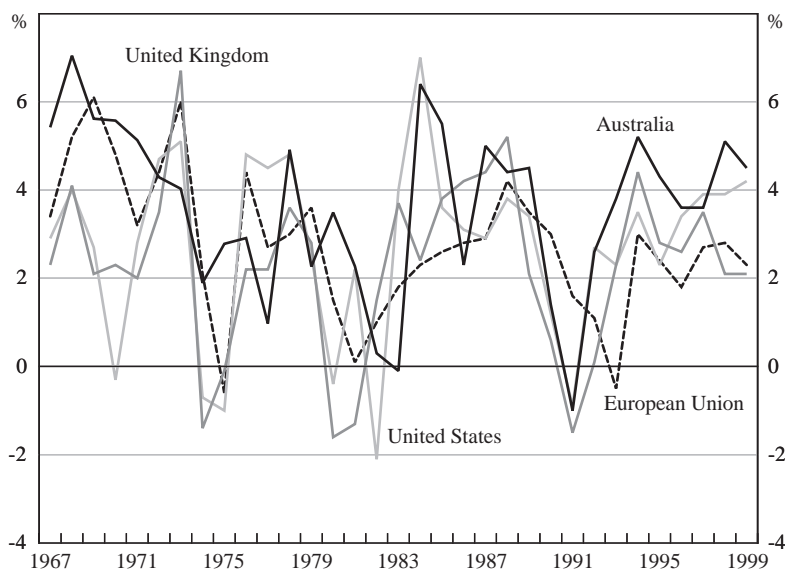


Source: OECD

Figures 2–4 show the evolution of the growth rate of GDP, the unemployment rate and the inflation rate, three key indicators for Australia, and for the US, the EU¹ and the UK. Figure 2 shows that since the 1991 trough the growth rate of the Australian economy has consistently exceeded that of both the US and that of the UK, also a good performer over this period. The growth of all three Anglo-Saxon economies comfortably outstrips that of the EU. Associated with this excellent growth performance, unemployment rates have fallen steadily, although from somewhat higher initial levels in the case of Australia and the UK; by contrast unemployment in the EU has stagnated at double-digit levels until only very recently (Figure 3). Despite this contrast between the growth and unemployment performance of the Anglo-Saxon three and that of continental Europe, the inflation performance has been quite similar, with inflation brought down to around 2 per cent in all four regions (Figure 4), betokening improved supply-side performance in the Anglo-Saxon three. As we shall see below, this improved supply-side performance has been associated not only with falling natural, or equilibrium, rates of unemployment, but also with an acceleration in trend total factor productivity growth in Australia and the US, although not the UK.

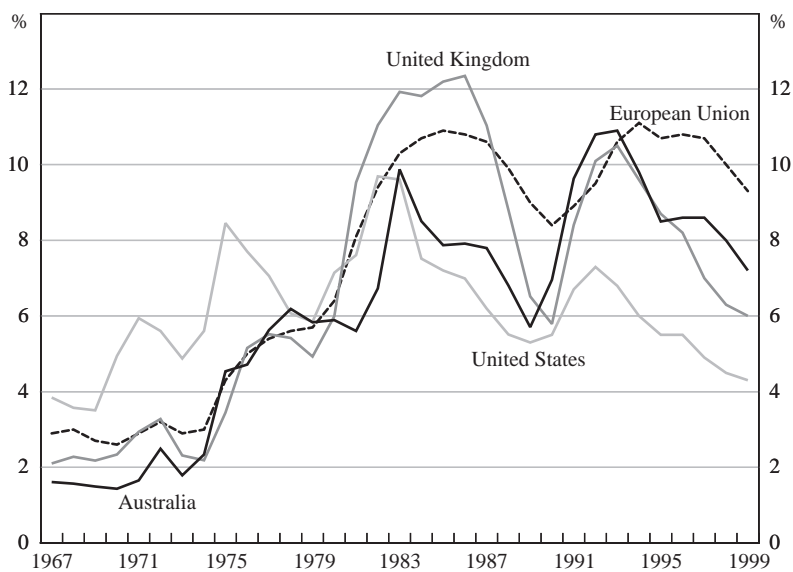
In all four regions the 1990s has also been a period not only of low, but also relatively stable, inflation. Moreover, as Table 1 shows, this low variability in

Figure 2: Growth Rates
Year-ended, per cent per annum

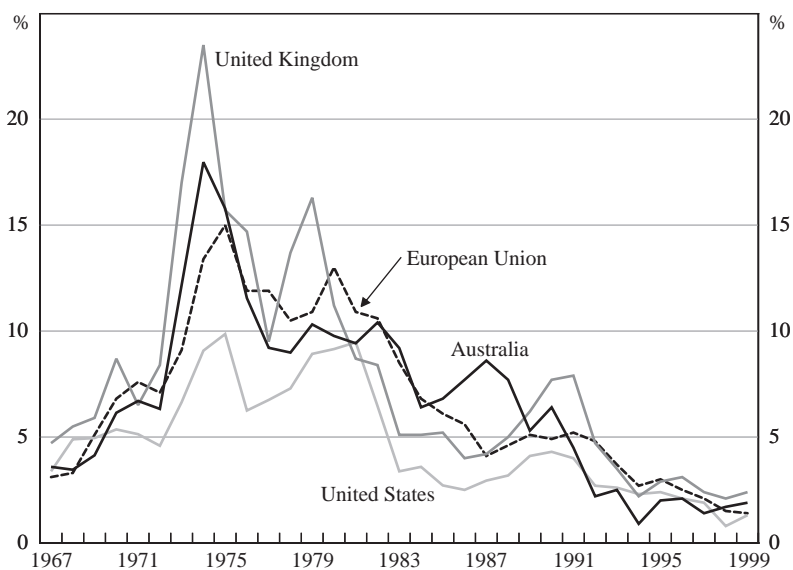


Source: OECD, *Economic Outlook*, various issues

1. The data are for the EU15 and thus include the UK. However the weight of the UK in overall EU15 GNP etc is only 15 per cent, so the picture would be quite similar for the EU excluding the UK. However, when the text refers to the EU, I shall generally mean the EU excluding the UK.

Figure 3: Unemployment Rates

Source: OECD, *Economic Outlook*, various issues

Figure 4: Inflation Rates
Year-ended, per cent per annum

Source: OECD, *Economic Outlook*, various issues

inflation has not generally been bought at the expense of more variable growth rates. Of course, a major factor behind this has been the absence of major external shocks such as the oil price hikes. Nevertheless, macroeconomic policies in the OECD seem for the most part to have generally played a benign role, and have only rarely acted as a destabilising force. The main exception is obviously Japan. Here overly tight monetary policies, in conjunction with unwillingness to undertake necessary real and financial reform, have led to a decade of stagnation and the return of that Keynesian pathology, the liquidity trap (see Krugman (1998)). The other significant macroeconomic policy error was the handling by the Europeans of German re-unification. This would have been most comfortably handled by a revaluation of the Deutsche Mark, but a refusal by most (non-German) members of the Exchange Rate Mechanism to countenance this, coupled with an understandable reluctance on the part of the Bundesbank to lower German interest rates, led to a period of overly tight macroeconomic policies.

Table 1: Standard Deviations of Annual Inflation and Growth

Standard deviation	EU	US	UK	Australia
<i>Inflation</i>				
1970s	2.8	1.8	5.2	4.0
1980s	3.1	2.6	2.3	1.6
1990s	1.4	1.1	2.2	1.6
<i>Growth</i>				
1970s	1.8	2.5	2.2	1.5
1980s	1.2	2.5	2.3	2.2
1990s	1.1	1.6	1.7	1.9

Source: Author's calculations from OECD data

Viewed in comparative perspective, Australia's success in keeping the variability of inflation and growth low is thus not especially remarkable. It should, however, be remembered that the Asian Crisis was of far greater significance for Australia than for Europe or the US. The cut in the cash rate of $\frac{1}{2}$ a percentage point at the end of July 1997 soon after the Asian Crisis broke and the RBA's acceptance of the subsequent depreciation of the A\$ by nearly a quarter, allowed Australian growth, sustained by strong domestic demand, to continue despite the downturn in key Australian export markets. The contrast with New Zealand is instructive. The RBNZ, with a Monetary Conditions Index (MCI) as its operational target, initially allowed short-term interest rates to rise to offset the depreciation of the NZ\$, before subsequently cutting them in the second half of 1998. The consequence was a sharp reduction in growth in 1998. The RBA should therefore be allowed some credit for skillful navigation through this period. Simulations by the OECD (2000), using the OECD Interlink model, support this view. They suggest that compared to a counterfactual scenario of an unchanged real MCI, output (inflation) was

1 (3/4) percentage point higher in 1998 and 1 1/2 (2) percentage points higher in 1999 under the RBA's strategy.²

An interesting question is whether the generally low variability of output growth in the 1990s in most OECD countries is just a case of good luck, coupled with the absence of major policy errors (Japan excepted). Are there any reasons for expecting output growth to be less variable in the future than it was in the past? One possible reason might be the increasing share of services at the expense of manufacturing. Many of the goods produced by the latter are durable, and therefore consumption is decoupled from purchase. However, as noted by Gruen and Stevens (this volume) in their paper at this conference, this explanation is inconsistent with the fact that volatility has fallen in most industries during the last decade.

They note that deregulation and competition might have a role to play, without identifying a particular mechanism at work. I think it is, however, worth pointing to a particular consequence of the information and communications technology (ICT) revolution that may be important, namely the impact on business management and inventory control methods. Advances in computing power mean that producers and retailers can monitor their stock levels far more accurately than before and respond quickly when the need arises. On the face of it this might seem to imply a closer matching of production to movements in demand, and thus greater volatility if the primary source of disturbances to the economy is on the demand side. However, one thing we do know about inventories is that they are not anti-cyclical, as is predicted by the production-smoothing model in which inventories are held to smooth out production in the face of fluctuations in demand. Instead they are quite strongly pro-cyclical. Whilst a variety of explanations have been put forward for this apparently paradoxical behaviour, such as the presence of cost shocks, none has so far gained widespread acceptance. If the ICT revolution allows a closer matching of production to demand, it could reduce the importance of inventories as a business cycle magnification mechanism.

An alternative explanation is that the low volatility of both growth and inflation is in part a response to the generalised acceptance in most industrialised economies of the importance of stability-oriented monetary policies. Governments in all four of the regions under consideration now have monetary policy delegated to an independent central bank. Both the US and the EU (in the guise of the Bundesbank, the de facto hegemon of the European Monetary System) have, of course, had independent central banks for some while, whilst the RBA and the Bank of England have acquired responsibility for monetary policy only more recently. But in all four regions there is now a considerable degree of public confidence that inflation will be kept low and stable through appropriately pre-emptive monetary action. This,

2. In the counterfactual the nominal interest rate is actually some 2 percentage points higher, i.e. it corresponds to an *increase* in actual interest rates of about 1 1/2 percentage points rather than the 1/2 a percentage point cut that occurred. This episode is, incidentally, an excellent illustration of the danger in targeting an MCI, as the appropriate weighting between the components should depend on the nature of the shocks hitting the economy. Indeed the only occasion weighting interest rates and exchange rates together into an MCI makes much sense is when exchange rate shocks are entirely exogenous, e.g. driven by bubbles.

reinforced by formal inflation targets in the case of Australia and the UK, appears to have helped cement private sector inflationary expectations. Although it is difficult to test the hypothesis, this greater certainty about the inflationary outlook may quite plausibly have removed or attenuated one source of disturbances to the economy. It should also have helped to reduce the risk premia associated with nominally-denominated debt.

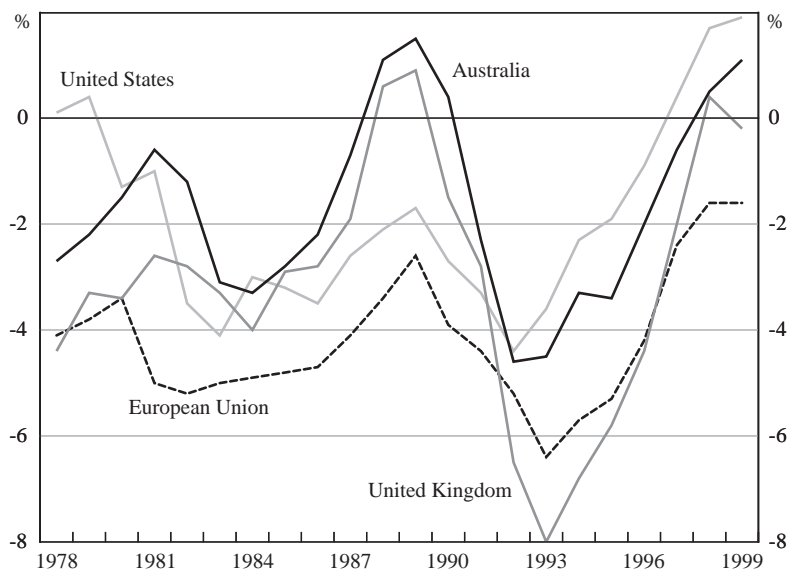
Are there good reasons for preferring an explicit inflation target along the Australian or British lines to what Mishkin (1997) calls the 'just-do-it' approach of the Americans? Or should one prefer some variant of the Bundesbank's reliance on an intermediate monetary indicator, an approach which survives today in one of the twin pillars of the European Central Bank's monetary strategy (the other being a 'broad-based' assessment of inflation prospects)? These are issues that have been discussed extensively at an earlier RBA conference (see Lowe (1997)) and I shall not dwell on them here. However, it does seem that an inflation target, provided it is specified and pursued sufficiently flexibly³, does have considerable merit in terms of communicating the primary objective of the monetary authorities to the public. It also enhances democratic accountability by providing a clear mandate to the central bank. Both of these are particularly important to new central banks, or ones that have only recently acquired independent status.

So the conduct of Australian monetary policy has generally been good, although not notably superior to that of most other developed countries. In contrast the conduct of fiscal policy really does seem notable. Although budget deficits in the recession of the early 1990s approached 5 per cent of GDP, they pale into comparison against the burgeoning deficits in Europe (see Figure 5). Indeed budget deficits have generally been smaller than in our comparator countries for most of the last twenty years. Only very recently has the US bettered the Australian performance as a mix of high growth and determined efforts to halt the rising public debt ratio have held things in check. The good comparative fiscal position of Australia is even more pronounced if one looks at (net) public debt ratios (Figure 6). These are low in comparative terms and more importantly have not exhibited the same increasing trend observed in Europe and the US.

An interesting question is why successive Australian governments have managed to resist the temptation to borrow rather than tax to meet their spending commitments, when governments elsewhere, especially in Europe have so often failed. Certainly current fiscal innovations such as Charter for Budget Honesty (1998) and the adoption of accruals accounting are likely to help by increasing the transparency of fiscal policy and make it harder for profligate governments to conceal their behaviour. In fact openness in fiscal plans is a dimension along which antipodeans seem to be leading the way. For instance the New Labour government in the UK quite consciously models key aspects of its fiscal framework on the New Zealand and Australian examples. By contrast fiscal plans in some EU members are quite opaque, and accounting conventions allow governments to disguise the true budgetary

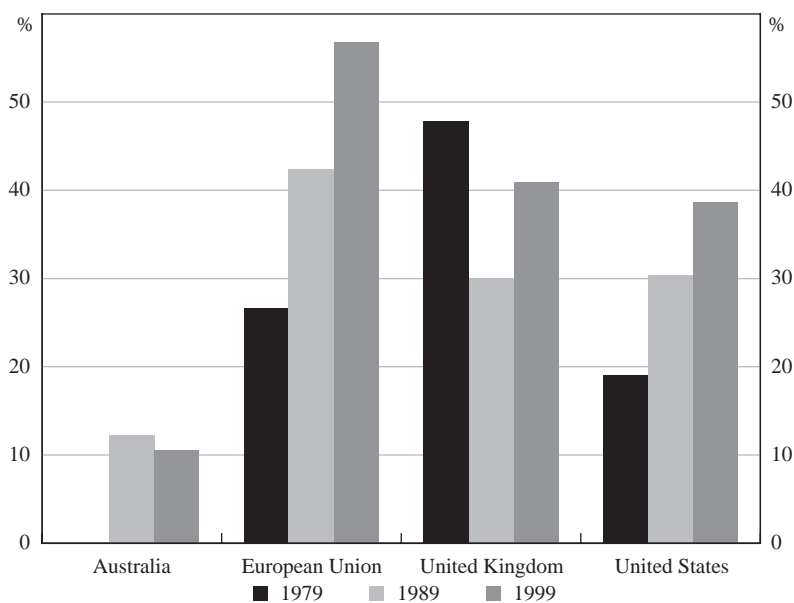
3. Both the RBA's '2-3 per cent over the cycle' and the UK's 2½ per cent target coupled with the explicit recognition that it will not be met continuously because of shocks seem to satisfy this criterion.

Figure 5: Budget Balance
Per cent of GDP



Source: OECD, *Economic Outlook*, various issues

Figure 6: Net Public Debt
Per cent of GDP



Source: OECD, *Economic Outlook*, various issues

position. This was most obviously the case in the run-up to the start of EMU when France, Germany and Italy all resorted to fiscal jiggery-pokery in order to satisfy the Maastricht entry criteria. However, the Charter for Budget Honesty and accruals accounting are only recent innovations, so they cannot be the main explanation for a responsible fiscal policy that dates back a couple of decades.

Rather the explanation probably lies in the belief, which survived until the late 1980s, that the current account deficit was a binding constraint on the country's ability to run an excess of national investment over national saving, and thus also on budget deficits. This view seems to have been held by many Australian policy-makers and economists until the late 1980s when it came under attack from John Pitchford (1989, 1990) and Max Corden (1991); see Gruen and Stevens (this volume) for a discussion of the evolution of thinking in Australia. In many other OECD countries, by contrast, this view had largely evaporated in the 1970s as obstacles to international capital mobility had progressively been removed. If this hypothesis is correct, then the realisation by Australian politicians that the current account is no longer a constraint raises the danger that less responsible fiscal policies might be adopted, particularly in the face of adverse shocks. In that case the recent innovations to increase openness and transparency in fiscal plans may well prove crucial.

Both a benign external environment and judicious macroeconomic policies thus seem to have played a role in sustaining robust, but non-inflationary, growth. Given this lack of inflationary pressure supply-side developments must also have been beneficial. The rest of this paper will therefore concentrate on this side of the story. I start by looking at developments in labour markets in Australia and elsewhere. Then I will look at the behaviour of productivity, and in particular at the roles played by information technology and deregulation. Finally I will return to the question of the current account and the savings/investment balance.

3. Labour Markets

Figure 3 showed that Australia suffered the same trend increase in unemployment during the 1970s and 1980s as much of the rest of the OECD and especially Europe. Since early in the 1990s, however, unemployment has been falling, matching the falls seen in the UK although falling short of the extraordinary performance of the US; it is in stark contrast to the experience of much of the EU where unemployment rates have only recently begun to fall much. As noted in Section 2, this was in spite of the stabilisation of inflation, so cannot represent a purely cyclical phenomenon.⁴ In this section I shall look more closely at the comparative labour market performance of Australia, noting which labour market institutions seem to be desirable on the basis of the international evidence and which might be improved.

4. Unless one assumes implausibly that Australian workers and firms were expecting even lower inflation than occurred.

3.1 Existing literature

There is now a large literature on the great rise in unemployment experienced by so many developed countries during the 1970s and 1980s; surveys include Bean (1994a), Nickell (1998) and Layard and Nickell (1998). Much of the initial debate revolved around the question of the relative importance of supply and demand factors, with some authors stressing the importance of generous unemployment benefit provisions, high levels of employment protection, and strong unions in generating excessive real wages, whilst others stressed the role of contractionary macroeconomic policies. This simple 'Supply versus Demand' dichotomy still survives in much media and political discussion of the unemployment problem, particularly in Europe. However research in academia and the OECD has pointed to a rather more complex picture in which a series of adverse shocks have interacted with institutions which, whilst of themselves not necessarily generating high unemployment, do mean that the economy is less efficient at dealing with the shocks. Perhaps the most eloquent statement of this view is contained in Blanchard and Wolfers (2000), but the idea underlies much of the earlier work in this field.

That an explanation in terms of deficient demand cannot fit the facts is fairly obvious just from Figures 3 and 4. The standard undergraduate text book model has a natural rate of unemployment determined by structural factors such as the generosity of unemployment benefits, coupled with demand-driven fluctuations around that natural rate; there is a short-run trade-off between unemployment and inflation, but no long-run one. Only the US experience even approximates this model (and then not in the most recent past). In most of the other OECD countries unemployment stayed high long after inflation had stabilised. That invites the alternative hypothesis that perhaps the natural rate itself has risen. Implicitly such an outcome was always a possibility even in Milton Friedman's (1968) original formulation of the natural rate hypothesis, but it was not a possibility that economists focussed on until recently. Researchers then began to develop empirical models of the natural, or equilibrium, rate of unemployment with progressively richer structures. The original Layard-Nickell (1986) model and the work of Phelps (1994) are examples of this 'structuralist' approach to understanding high unemployment.

The difficulty with the story is that in most countries there were no obvious major changes in labour market institutions that could plausibly generate such a large increase in the equilibrium rate of unemployment. Admittedly in some European countries unemployment benefit regimes became more generous and employee protection legislation somewhat stronger, but the changes were small relative to the pre-existing differences between countries. Europe also had more generous unemployment benefit provisions, more employment protection, higher unionisation, etc, in the 1950s and 1960s too, yet unemployment rates then were low relative to the US.

The other striking thing about Figure 3 is that the main increases in unemployment are coincidental across countries (this is also true if the EU is broken down into its constituent countries, and other countries such as Canada and New Zealand are included in the analysis). This suggests that the prime drivers behind the movements

in unemployment are likely to be common across the OECD countries, with the heterogeneous country experience explicable in terms of different reactions to those shocks. The list of potential common shocks includes:

- The slowdown in total factor productivity (TFP) growth at the beginning of the 1970s. Whilst a very long-run historical perspective suggests that the level of productivity must be neutral in terms of its effect on equilibrium unemployment⁵ because the former is trended whilst the latter is not, the same argument does not apply to productivity *growth*. In the early unemployment literature the argument was simply that workers were slow to adjust their wage aspirations downwards, leading to excessive real wages relative to the economy's ability to pay. This should clearly be just a transitory effect that will disappear once expectations have adjusted. However, there are two possible effects from productivity growth that might be more permanent. On the one hand higher productivity growth raises the expected future profitability from opening up a new job slot and increases the rate of job creation (this is referred to as the 'capitalisation effect'; see Pissarides (1990)). On the other hand if productivity growth occurs through 'creative destruction', with old jobs being replaced by new ones, it will also lead to a higher rate of job destruction (Aghion and Howitt 1994). In principle either effect could dominate, although there is some mild evidence that the former dominates empirically (see Alogoskoufis *et al* (1995)). This may be relevant in considering the likely impact on Australian unemployment of the pick-up in productivity growth that is discussed in the next section.
- Movements in the price of oil and other raw materials, especially in 1974 and 1979. This lowers the consumption wage for any product wage and raises equilibrium unemployment if workers try to maintain their purchasing power.
- The contractionary macroeconomic policies that squeezed inflation down in the early 1980s and again in the early 1990s. Although the extent of the squeeze may have varied from country to country, the timing was largely coincidental across countries, giving it the appearance of a common shock.
- The increase in world real interest rates that occurred around the middle of the 1980s. This reduces the present value of the profits associated with a job, reducing investment in all forms of capital. The result is a decline in the rate of job creation and an increase in the rate of job destruction unless wages fall sufficiently. The mechanism figures prominently in Phelps' (1994) explanation of the rise in unemployment.
- A fall in the demand for unskilled workers due to increased competition from low-cost producers in the Far East. The result follows directly from the Stolper-Samuelson theorem that international trade benefits the relatively abundant factor(s) (skilled labour and capital in the OECD). If unskilled workers resist the required decline in wages, as Krugman (1994) suggested happened in Europe,

5. I am assuming that unemployment benefits, etc, are raised in line with wages so that replacement ratios remain unchanged.

then the result is rising unemployment.⁶ This line of argument has been pushed most strongly by Wood (1994), but subsequent research has tended to suggest it is likely to explain just a small fraction of the increase in wage inequality in the US/unemployment in Europe.

- A fall in the demand for unskilled workers stemming from skill-biased technical change. This has similar effects to the global competition story, but as Krugman (1994) points out helps to explain the fact that the widening in the US earnings distribution has occurred within occupations as well as between them. It also explains the apparent fall in the demand for unskilled labour in the non-tradeable sector of the economy, even though wages of unskilled workers were stagnant or falling.

There are, of course, also country-specific shocks that may have been important. One factor that has achieved quite a lot of attention in continental Europe is increases in labour taxes, particularly on employers, to pay for the high level of social security spending (see Daveri and Tabellini (2000)). In addition, demand movements have not always been synchronised, the most obvious idiosyncratic demand shock being associated with German re-unification. However, the big picture seems clearly to be one of heterogenous responses to largely common shocks.

The main factors that the literature has identified as determining the response to such shocks are:

- The generosity of unemployment benefit regimes, encompassing not just replacement ratios, but also the duration for which unemployment benefits (or some equivalent state support) are payable, the coverage of the benefit system and the vigour with which any work test is applied. Generally speaking, generous benefit regimes are expected to raise the equilibrium rate of unemployment, magnify the response to shocks and increase unemployment persistence. With regards to the last of these, authors such as Layard, Nickell and Jackman (1991) have pointed particularly to benefits that are payable indefinitely as a key ingredient in helping generate long-term unemployment. In turn they argue that the long-term unemployed are less effective job seekers than the newly unemployed because they become disconnected from the labour market and so are less effective at constraining wage pressure.
- The structure of wage bargaining, including the level of unionisation and the extent of co-ordination between unions and employers and the government in the setting of wages. High levels of union power are usually thought to be bad for unemployment, but a high level of co-ordination between unions and employees can ameliorate the response to adverse shocks by helping to internalise externalities from bargaining and the problems posed by the staggering of wage settlements. A notable contribution by Calmfors and Driffill (1988) argues that the relationship between the number of unions and unemployment should be non-monotonic with the intermediate position of a number of large unions being the worst of all worlds.

6. A nice recent contribution to this literature is provided by Tyers and Yang (1999) who show how fragile the basic Stolper-Samuelson result is to changing the product market structure to allow trade in differentiated goods.

- Employment protection legislation. The effect of this on equilibrium unemployment is not immediately clear in that it reduces both the flows in and out of the unemployment pool, and indeed in the simplest models, such as that of Bentolila and Bertola (1990) it has a negligible effect on the average level of unemployment. It does, however, have an effect on the dynamics of unemployment by reducing the speed of adjustment and can generate hysteresis in (un)employment. In addition high levels of employment protection are a potent source of insider power and can help to generate the effects seen in insider-outsider models of the kind advanced by Lindbeck and Snower (1989). The interaction of high levels of employment protection for those on permanent contracts coupled with sectoral bargaining appears to be an important ingredient in explaining why unemployment in Spain was so high until the recent reforms.
- Spending on active labour market programmes (ALMPs) that help the unemployed, particularly the long-term unemployed, find work or retrain. They can be thought of as representing the 'carrot' that goes with the 'stick' of a tight unemployment benefit regime. The most important effect of these programmes is likely to be increasing the speed of recovery after a shock. However, Calmfors (1994) notes that badly designed active labour market programmes can also raise equilibrium unemployment, for by reducing the unpleasantness of a spell of unemployment and thus raising the outside option of workers they can also raise the equilibrium wage.
- The flexibility of nominal wages, for if nominal wage contracts are relatively long-lived the effect of shocks, both nominal and real, is likely to be greater and longer lasting.

3.2 A simple cross-country model

In order to see where Australia lies in the scheme of things, I shall utilise some simple empirical estimates that employ and extend a methodology applied in Bean (1994b). This relies on first using a non-linear generalised fixed effects model for the unemployment rate in a panel of 18 OECD countries, during 1956–99, to estimate the common shocks and country-specific responses to those shocks. The model takes the following form:

$$\Delta u_{it} = \lambda_i (\alpha_i + \beta_i \gamma_t - u_{i,t-1}) + \varepsilon_{it} \quad (1)$$

where: u_{it} is the logarithm⁷ of the unemployment rate in country i in year t ; α_i is a country-specific fixed effect corresponding to the average value of the (logarithm of) the natural rate of unemployment in country i over the sample; γ_t is a time-specific fixed effect representing the common shocks, whose impact on country i is allowed to vary via the country-specific coefficients β_i ; λ_i are country-specific speeds of adjustment; ε_{it} is an idiosyncratic disturbance; and Δ denotes a first difference. The

7. I use the logarithm because many models suggest that the mark-up of wages over the outside option is convex in the unemployment rate. Statistical tests also suggests this specification is preferable to using the level of the unemployment rate in the model.

γ_i are specified so that they sum to zero over the sample period. Finally to be able to identify the β_i and γ_i separately we also need to make one normalising assumption, namely that $\beta_{Australia}$ is set to unity. This sort of model can be thought as representing the reduced form of a standard dynamic ‘battle-of-the-mark-ups’ model of the equilibrium rate of unemployment.

One would only expect this to provide a good model of unemployment movements if: (i) shocks are predominantly common rather than idiosyncratic; and (ii) changes in labour market institutions are small compared to the pre-existing differences between national institutions. Both of these seem to be reasonable assumptions over this particular sample period. The presence of serially uncorrelated idiosyncratic disturbances causes no difficulty. Thus if one were to assume a ‘price surprise’ supply function of the standard New Classical variety one could accommodate purely national business cycle effects. Serially correlated idiosyncratic shocks will, however, generate downward bias in the adjustment coefficient λ_i , although if the serial correlation process in the ε_{it} is similar across countries the ranking of the λ_i should be unaffected. Any changes in labour market institutions that affect unemployment will obviously show up as movements in this idiosyncratic component.

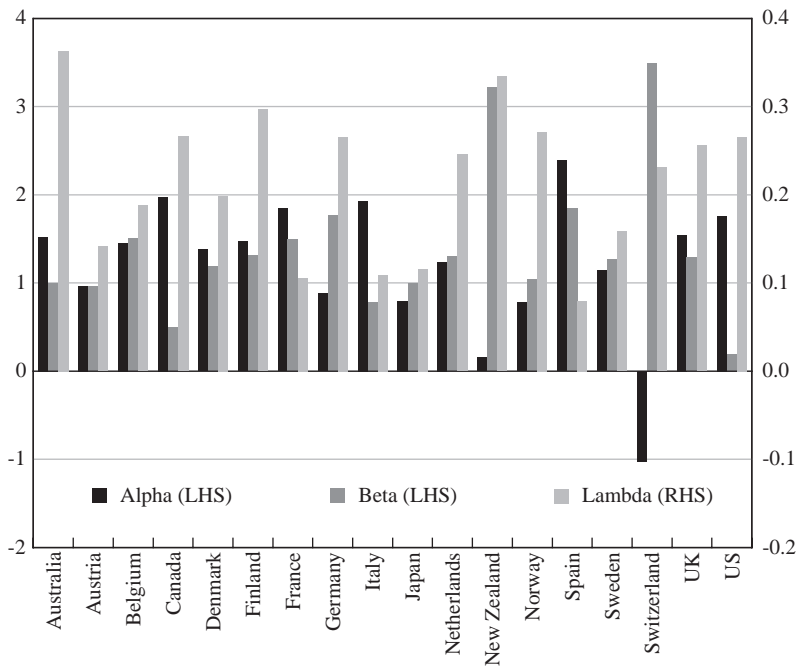
Equation (1) is estimated by non-linear least squares. The estimated country-specific coefficients $\{\hat{\alpha}_i, \hat{\beta}_i, \hat{\lambda}_i\}$ are plotted in Figure 7.⁸ Australia is pretty much in the middle of the pack as regards $\hat{\alpha}_i$ and $\hat{\beta}_i$ (mean natural rate and responsiveness to shocks), but has the highest $\hat{\lambda}_i$ of any country, suggesting relatively rapid adjustment and therefore comparatively low unemployment persistence.

In order to shed further light on the causes of the inter-country differences in the estimated parameters and the nature of the driving shocks, we next relate them to variables reflecting institutional differences between countries and to observable measures of the shocks. Such a two-stage process is more robust than simply including the observable shock and institutional variables in the first-stage regression instead of the time and country-fixed effects.

Following the discussion above, the institutional variables we include in the models for $\{\hat{\alpha}_i, \hat{\beta}_i, \hat{\lambda}_i\}$ are: the unemployment benefit replacement ratio; the duration for which such benefits are payable; the share of output/head spent on ALMPs; for $\hat{\alpha}_i$ a measure of union power, expected to raise average unemployment; for $\hat{\beta}_i$ and $\hat{\lambda}_i$ a measure of union-employer co-ordination on the grounds that corporatist economies should exhibit more muted response to shocks and more rapid adjustment; for $\hat{\alpha}_i$ and $\hat{\beta}_i$ a measure of the flexibility of nominal wage contracts based on the length of contracts, the extent of indexation and the degree of synchronisation of settlements; and finally for $\hat{\lambda}_i$ a measure of the extent of employee protection. All of these variables are taken from Layard *et al* (1991) with the exception of the employment protection measure which is drawn from the recent OECD (1999) study. Appendix A provides fuller detail on the data used.

8. In case the negative estimated value of α for Switzerland seems odd, remember that the dependent variable is the *logarithm* of the unemployment rate, and that Swiss unemployment rates were below 1 per cent for much of this period.

Figure 7: Parameters of Unemployment Model



The results for the national coefficients $\{\hat{\alpha}_p, \hat{\beta}_p, \hat{\lambda}_i\}$ are provided in Table 2. This table also gives the value of each of the explanatory variables for Australia, together with the average value for the other 17 countries so that the reader can see whether Australia rates high or low on each characteristic. Given both the small sample and the broad-brush nature of the analysis, the results are surprisingly sensible. Generous unemployment benefits raise average unemployment, increase the sensitivity of unemployment to shocks and raise unemployment persistence. The same is generally true if benefits are payable for a long period, although the effect on persistence is perverse; this runs counter to a number of other results in the literature suggesting that high benefit duration significantly raises persistence. Spending on ALMPs tends to lower average unemployment and reduce persistence. It apparently raises the response of unemployment to shocks, but the effect is statistically weak. Union power raises unemployment, whilst a high degree of union-employer co-ordination reduces both the responsiveness to shocks and speeds adjustment. A low degree of nominal rigidity reduces both average unemployment and the response to shocks. Finally, high levels of employment protection have a very strong statistical effect in reducing the speed of adjustment and thus in raising unemployment persistence.

As noted, Australia seems to have pretty average values of α and β , but a high value of λ . In terms of lowering α and β Australia scores well⁹ in terms of having a low replacement ratio, but badly on the duration for which benefits are payable. It

9. By 'well' I mean in terms of generating low unemployment. Of course this is not the same as maximizing welfare.

Table 2: Explaining Cross-country Parameter Differences

	Dependent variable		
	$\hat{\alpha}_i$	$\hat{\beta}_i$	$\hat{\lambda}_i$
Constant	0.748 (1.82)	0.953 (1.31)	0.357 (8.99)
Replacement ratio – % (Australia: 39; average: 61.7)	0.023 (2.34)	0.006 (0.59)	–0.001 (1.68)
Benefit duration – months (Australia: 48; average: 30.7)	0.007 (1.63)	0.017 (3.03)	0.001 (1.37)
Labour market programmes (Australia: 2.8; average: 7.8)	–0.018 (1.36)	0.021 (0.79)	0.001 (0.55)
Union power (Australia: 1; average: 0)	1.236 (3.55)		
Union-employer coordination (Australia: 3; average: 4.1)		–0.081 (0.42)	0.017 (1.04)
Wage flexibility (Australia: 6; average: 3.6)	–0.292 (2.89)	–0.082 (0.42)	
Employee protection (Australia: 1.2; average: 2.1)			–0.077 (7.06)
R ²	0.462	0.232	0.454

Note: Heteroscedasticity-consistent (White) *t*-statistics in parentheses

also does badly on account of relatively high union power and low spending on active labour market programmes. On the other hand it does well in terms of a high degree of nominal wage flexibility which tends to lower unemployment. So it is a bit of a mixed bag. As far as the relatively rapid speed of adjustment, λ , goes, Australia again scores well because of low replacement ratios, and does especially well in terms of a low level of employment protection.

However, it should be noted that most of these institutional indicators are based on pre-1990 data (the main exception being the employment protection series). The 1990s have seen a number of important labour market reforms that on the basis of these results might have been expected to improve the functioning of the labour market. The most important of these are:

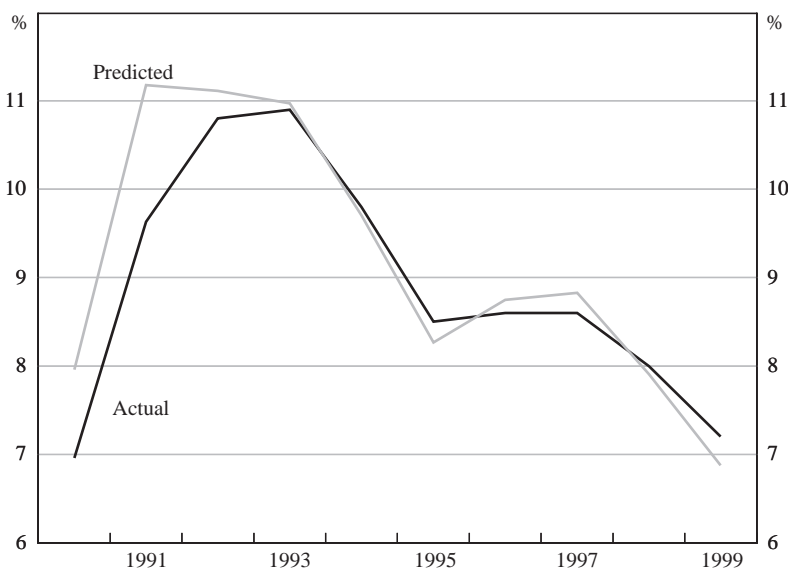
- Limitations on union power through the *Workplace Relations Act 1996*.
- An extension of ALMPs through the Working Nation programme (1994) focussed especially on re-integrating the long-term unemployed back into the labour market.

- The re-organisation of, and introduction of competition into, the employment services market (1997).
- A workfare scheme for the young unemployed (Work for the Dole, 1997) that emphasises the obligation to work or train in return for state support. This is very similar in both concept and design to the UK government's New Deal program.

Because of these reforms one might expect unemployment to have been lower than would have been predicted from an equation estimated on a sample including earlier data. To investigate this we can examine the residuals from the model for Australian unemployment over the 1990s. The implied actual and (one-step ahead) predicted levels of the unemployment rate are plotted in Figure 8. There is a tendency to overpredict unemployment in 1990–92, but the equation tracks quite well in the latter part of the decade. Remembering that inflation has been relatively stable in most OECD countries, including Australia, during the latter part of the 1990s, it does suggest that, to date at least, the labour market reforms of the last decade may not yet have borne significant fruit.

To complete the picture we briefly report estimates of a model for the sequence of time dummies $\{\hat{\gamma}_t\}$ describing the common shocks. As explanatory variables we include: the current and lagged change in the rate of growth of nominal GDP in the OECD (Δx) to pick up world business cycle effects; the (lagged logarithm of the) relative price of raw material and fuel to the price of OECD exports (P_o) as a measure of the OECD terms of trade; the growth-corrected real short interest rate, that is the nominal short interest rate minus the rate of growth of nominal GDP ($R_s - \Delta x$), since

Figure 8: Actual and Predicted Unemployment in Australia in the 1990s



it is this variable that models of the natural rate such as those of Pissarides (1990) and Phelps (1994) suggest are relevant rather than the conventional real interest rate; and the term structure of nominal interest rates ($R_L - R_S$). We also include a time trend to control for the effects of globalisation and skill-biased technical change. The results are (White t -statistics in parentheses):

$$\begin{aligned} \hat{\gamma} = & -0.403 + 0.029t - 0.063\Delta x - 0.095\Delta x_{-1} + 0.734Po_{-1} \\ & (2.55) \quad (6.62) \quad (2.19) \quad (3.63) \quad (3.21) \\ & + 0.048(R_S - \Delta x) + 0.165(R_L - R_S) \\ & (1.75) \quad (2.61) \end{aligned} \quad (2)$$

$$R^2 = 0.743; DW = 1.49$$

Again the results are fairly sensible, although the importance of the trend represents a measure of the incompleteness of the explanation.

4. Productivity

We now turn to the behaviour of productivity. Underpinning Australia's good economic performance over the last decade has been a high rate of productivity growth, both in historical terms and relative to other countries. This is documented in Figure 9, which gives the average annual rate of growth of total factor productivity (TFP) in the business sector of the economy for Australia, the EU, the UK and the US for the four sub-periods: 1960–73; 1974–79; 1980–1991; and 1992–97.

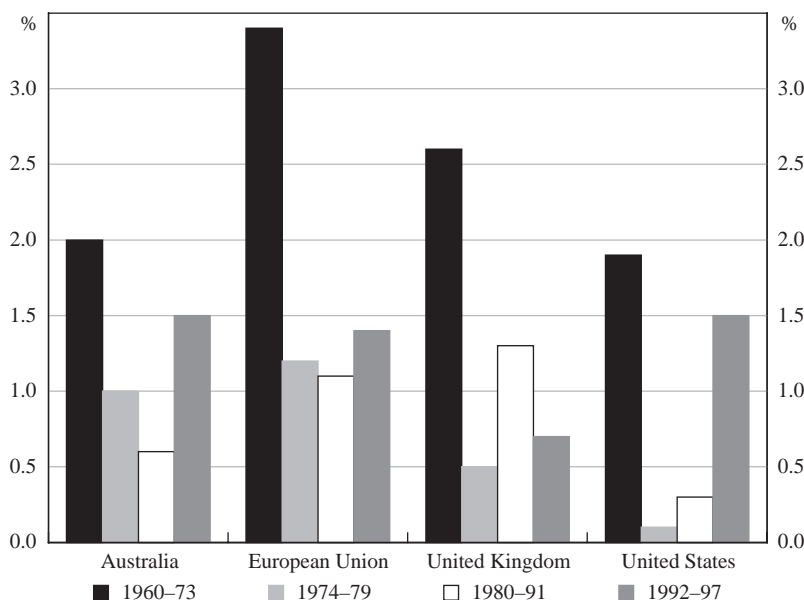
Whilst hardly disastrous, the Australian economy's performance during the first three periods was generally below par compared to that of other members of the OECD with similar per capita GDP; the apparently weak performance of the US – the technological leader – merely indicates the limited catch-up possibilities there, of course. The most recent period, however, shows Australia rivalling even the resurgent US economy¹⁰ which many believe is experiencing a sustained increase in TFP growth caused by the burgeoning information and communications technology (ICT) revolution. An obvious question is whether the Australian experience reflects the operation of similar forces, or whether something else is at work.

4.1 A technological miracle?

As Figure 9 makes clear, the acceleration in US TFP growth is a relatively recent phenomenon, dating from the second half of the 1990s. Despite rapid advances in computing power, the advent of the personal computer, networking, etc, the ICT revolution for a long time seemed to have had a negligible effect on productivity in the US and elsewhere, leading Solow (1987) famously to quip that 'the computer age is everywhere but in the productivity statistics'. This so-called 'productivity paradox' has been the subject of a now rather extensive literature; key empirical studies

10. This outstanding performance would probably be even more marked if the most recent couple of years were included. However, the introduction of the European System of Accounts (ESA) have led the OECD to temporarily suspend publication of the data.

Figure 9: TFP Growth – Business Sector
Per cent per annum



Source: OECD, *Economic Outlook*, various issues

establishing the apparently negligible impact of ICT investment on (US) productivity include Oliner and Sichel (1994), Jorgenson and Stiroh (1995), and Sichel (1997).

There are basically five extant explanations for this productivity paradox (see Pohjola (1998)).

- That there is in fact no paradox at all. Much of the 'new' growth literature, particularly in respect of the 'weightless' economy, draws attention to the non-rivalness of ideas and blueprints, and to the associated increasing returns and externalities. In that case conventional growth accounting techniques will understate the contribution of ICT investment to TFP growth because they ignore such externalities. Jorgenson and Stiroh question whether there are indeed such non-pecuniary externalities from ICT investment, arguing instead that any externalities are pecuniary in nature and therefore fully taken account of in growth accounting calculations. Hence there is no paradox.
- That output and productivity are mismeasured because much of the gains from the ICT revolution are in the form of quality improvement and do not figure in the official measures of output and productivity, although they nevertheless may result in an improvement in the standard of living. Now it is true that allowing for quality improvements is difficult, but statisticians have been dealing with this sort of problem for years and have devised all sorts of ingenious ways to try to handle it. It is not clear that the ICT revolution has made things any worse than they were before. Ultimately this explanation does not seem very satisfying.

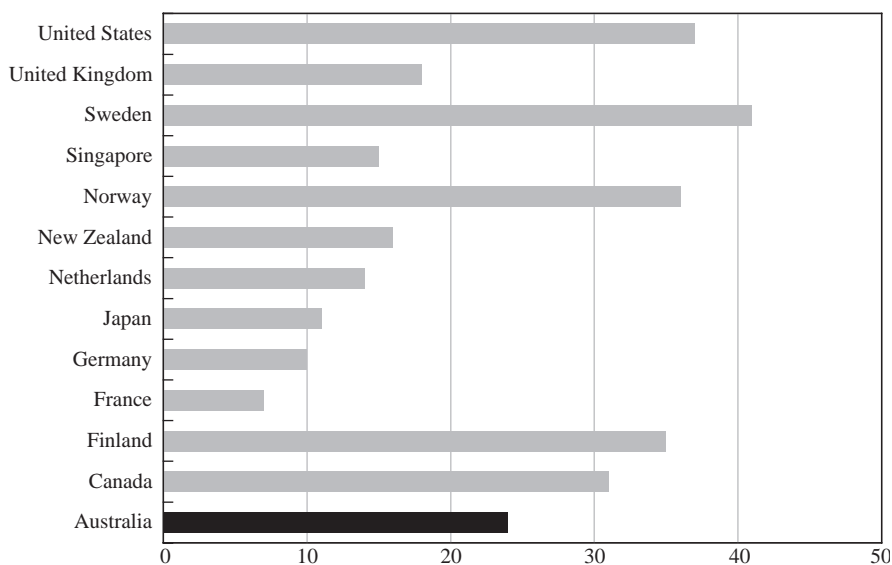
- That the new technology needs to be matched to an appropriate organisational structure within the firm. Brynjolfsson and Hitt (1997) note that successful exploiters of ICT investment are typically decentralised in structure with a high premium on knowledge. ICT investment in the wrong sort of firm may lead nowhere. However, whilst this may explain why some investing firms do better than others, it does not seem to be a very convincing explanation of the absence of any noticeable aggregate effects.
- Greenwood (1997) argues that there is a complementarity between new technologies and appropriate worker skills. With most new technologies there is usually a diffusion lag as workers have to come to grips with the new technology before they can exploit it. Indeed during the learning phase productivity growth is likely to decline. He provides a number of examples from history of this phenomenon. Modest US TFP growth in the 1980s and early 1990s, together with a take-off in recent years can then be explained as being simply a consequence of this diffusion lag.
- Finally, even though the marginal returns from ICT investment may be high, the current stock of ICT capital is still small; for instance computers comprise only about 3–4 per cent of the US net capital stock. This means that, whilst very visible, they are nevertheless still relatively unimportant as a factor of production and will contribute relatively little to growth accounting exercises.

Whilst there was little evidence of a noticeable ICT effect on US TFP in the first half of the decade, this is no longer true when the latter half of the 1990s are taken into account. Alan Greenspan's (1996) – at the time derided – remark that ‘the rapid acceleration of computer and telecommunication technologies can reasonably be expected to appreciably raise our productivity and standards of living in the 21st century, and quite possibly in some of the remaining years of this’ looks remarkably prescient. Even long-time sceptics such as Robert Gordon recognise that something real has happened to raise the growth rate of potential output in the US, although he notes that there is little evidence of any structural change outside the IT production sector itself (Gordon 1999). Specifically he calculates that a little over half of the 1.1 percentage point acceleration in labour productivity growth since the end of 1995 is attributable to cyclical factors and improvements in price/quality measurement, with the remainder attributable to structural effects, but that the latter disappear if the IT production sector is excluded. The fact that the gains are confined to the IT sector accords with the Jorgenson-Stiroh (1995) view that beneficial spillovers and externalities from IT are (presently, at least) rather limited.

So where does this leave the Australian productivity miracle? A number of commentators have noted that Australia is relatively advanced amongst the industrialised countries in terms of the speed of adoption of the new information technologies (see e.g. *The Economist* (2000)). However, whilst it may be advanced, it does not appear to be that advanced. This can be seen from Figure 10, which shows a cross-country comparison of internet penetration as of 1998/99. While Australia shows higher levels of internet usage than the UK, and much higher usage than Japan, France or Germany, it is still quite some way behind the US and the Nordic countries. Given that Australia appears to lag somewhat behind the US and the

Nordic countries in ICT adoption, it is highly unlikely to have led the way as an exploiter of ICT. The fact that the Australian TFP take-off is coincident or even precedes that of the US suggests the cause is therefore unlikely to be ICT. Moreover, Australia is not an IT producer, but rather an IT importer, so if one believes Gordon's finding that ICT has mainly benefited the IT production sector, one should not expect it to have had much effect on Australian productivity.

Figure 10: Internet Usage – 1998/99
Per cent of population



Source: Wadhvani (2000)

To put a little more flesh on this hypothesising I have run a simple cross-country regression for the OECD countries of average TFP growth in the business sector over 1992–97, (a), on: the share of ICT investment in GDP in 1996 (*ict*) taken from Pohjola (1998); a measure of product market regulation (*pmr*) due to Nicoletti, Scarpetta and Boylaud (1999) whose role is discussed later; and the logarithm of per capita GDP relative to that of the US ($y - y_{us}$) to capture catch-up effects. I also include a zero-one dummy to control for Switzerland which is a rather large outlier over this period. I have tried adding TFP growth over 1980–91 (to capture any serial dependence) and the change in unemployment between 1991 and 1997 (to control for cyclical effects); neither are significant or have any major impact on the estimated coefficients. The results are (White *t*-statistics in parentheses):

$$a = -3.88 - 2.79 \text{ dummy} + 1.18 \text{ ict} + 0.96 \text{ pmr} - 3.17(y - y_{us})$$

(1.81) (8.63) (2.75) (1.69) (2.46)

$$R^2 = 0.284; \text{ Standard Error} = 1.02 \quad (3)$$

Both the ICT investment and catch-up terms thus have a statistically significant impact on TFP growth. Since the ‘direct’ effect of ICT investment is already taken account of in the construction of TFP growth, the ICT term here captures any beneficial spillover effects of ICT due to the presence of positive externalities. In respect of the catch-up term it is worth noting in passing that the estimated coefficient suggests that 3 per cent of any productivity gap is eliminated per year. This is close to the rate usually found in cross-country convergence regressions.

Investment in ICT is not only statistically significant, but its economic impact is also quite large, implying roughly a point-for-point response of TFP growth to an increase in the share of GDP spent on ICT investment. However, it does little to explain the Australian productivity miracle since the Australian ICT investment share is only 2.6 per cent compared with an average for the rest of the countries in the sample of 2.5 per cent (the US has the highest share at 3.9 per cent). Thus the regression attributes only about 0.12 percentage points of the excess Australian TFP growth to unusually high spending on ICT investment. By contrast a little over half a percentage point of Australian TFP growth is left unexplained altogether.

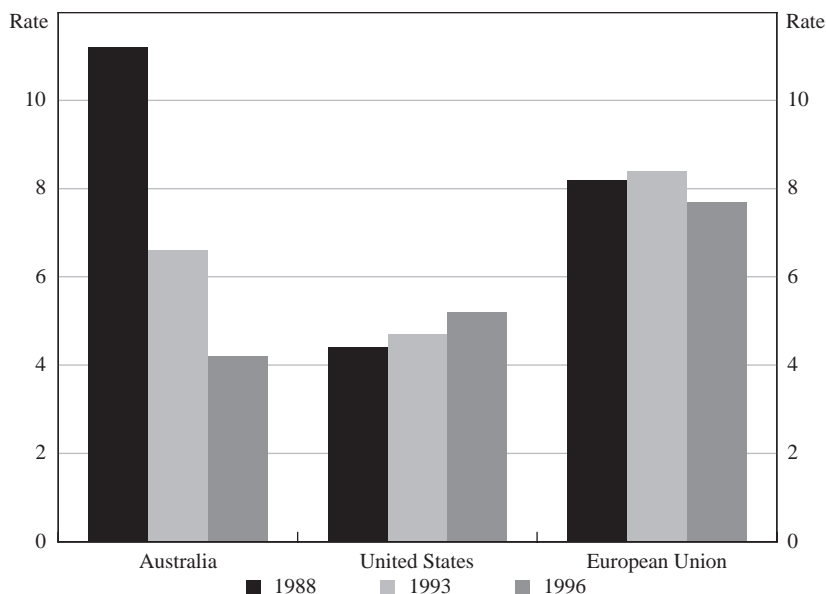
Of course, this regression model is pretty simple and one would not want to read too much into it. Nevertheless, taken together with the observation that Australia does not have especially high levels of computer usage penetration, and that the TFP acceleration in the acknowledged leader, the US, is itself only recent, it does suggest that the explanation for Australia’s good comparative productivity performance is not to be found in ‘new economy’ explanations.

4.2 The role of structural reform

A more plausible explanation for the good productivity performance of recent years would seem to be the complementary reforms that have steadily taken place in both labour and goods markets. For the first half of the post-war period economic institutions in Australia seem to have been built around the objective of redistributing rents, particularly from the rich primary commodity sectors. Key ingredients in this policy were high and complex levels of import protection, especially for manufacturing, and a centralised wage bargaining system that fixed a multitude of minimum terms and conditions for employment relationships. Scepticism about the wisdom of these policies began to emerge during the 1970s in a variety of reports and enquiries, e.g. the Jackson Committee (1975), leading to a steady, if sometimes erratic, reversal of these policies that continued into the 1980s and beyond.

Key reforms have been:

- A reduction in tariff barriers. Even in the late 1980s these were still high by international standards; by 1996 they were lower than in both the US and the EU (see Figure 11). First, trade barriers prevent the full exploitation of comparative advantage and imply, absent other distortions, that a country is not operating at the optimal point on its production possibility frontier, leading to lower real national income. Second, openness increases competitive pressure on domestic producers and, as noted below, the econometric evidence suggests this is good for growth. Third, openness to trade facilitates the international transmission of

Figure 11: Average Tariff Rates

Source: OECD, *Economic Outlook*, various issues

knowledge (see Coe and Helpman (1995)). A measure of openness is a significant explanatory variable in many cross-country growth regressions.

- Greater decentralisation in wage setting and industrial relations. Key recent moves include the *Workplace Relations Act 1996* which shifted the focus of workplace relations away from centrally determined awards towards bargaining at the enterprise level, with awards restricted to 20 'allowable' matters. It was also designed to facilitate enterprise bargaining by making individual and non-union agreements easier to implement. Finally it restricted the right to take industrial action with the result that strike activity is about one-sixth the level of 20 years ago. To the extent that these reforms have helped restore the 'right-to-manage' to employers they should facilitate a more efficient organisation of production. This will show up as an enhanced level of TFP.
- Increased product market competition through the ending of anti-competitive legislation and practices in some industries, and through a more vigorous application of competition policy. The impact of competitive pressure on productivity, and more particularly productivity growth, is in principle ambiguous. On the one hand competitive pressure ensures that the most efficient producers should survive and prosper. On the other, competition erodes the quasi-rents associated with successful innovation, thus reducing the incentive to innovate in the first place. The empirical results of Nickell (1996) suggest that the net effect of these two opposing forces is positive.

- Greater commercial pressures on government business enterprises through more explicit commercial objectives and the use of appropriate performance indicators, exposure to normal competitive pressures and in some cases outright privatisation. However, with the exception of one or two states such as Victoria, privatisation has not been as extensive as in the UK.

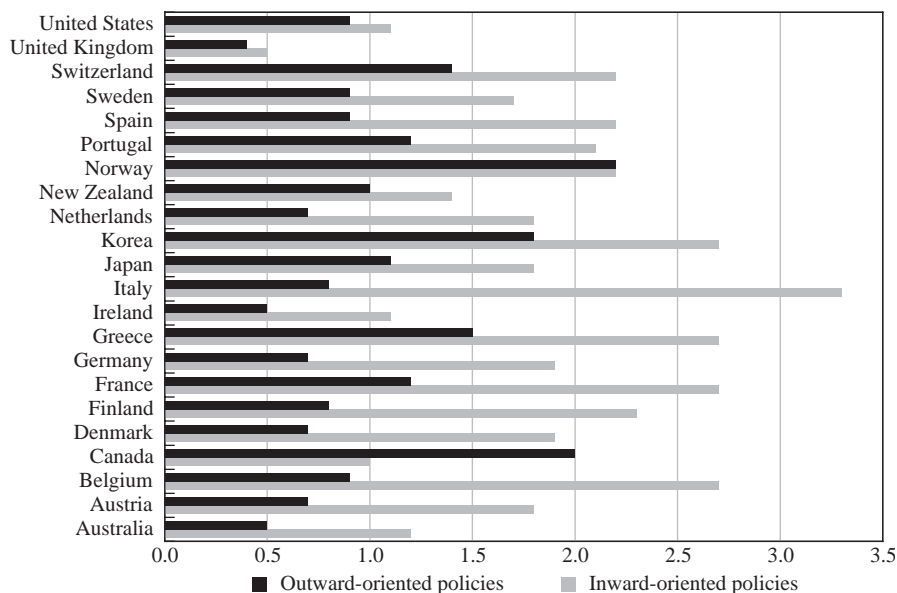
Whilst it is possible to calculate measures of effective levels of tariff protection, it is harder to construct measures that encompass the multi-dimensional nature of regulation, broadly considered, for Australia and the other OECD countries whose performance provides the benchmark. However, a heroic effort has recently been made to do exactly this by Nicoletti *et al* (1999). Their research uses factor analysis to distill information from a 1998 OECD questionnaire concerning economy-wide and sector-specific laws, regulations and administrative procedures into a variety of summary measures of the extent of product market regulation. These are distinguished under two broad headings – inward-oriented policies and outward-oriented policies – depending on whether the regulations are directed at domestic or foreign firms. Facets incorporated into the measure of inward-oriented regulations include: the extent of public ownership; the extent of involvement of the state in private business, e.g. through price controls; administrative burdens and opacities on business; and legal obstacles to competition, such as barriers to entry. Facets incorporated into the measure of outward-oriented regulations include: tariffs; restrictions on foreign ownership of firms; and regulatory barriers to international exchanges.

The measures for each country according to each of the two classes of regulations appear in Figure 12. As far as inward-oriented regulations go, the least regulated is the UK, with the US third and Australia fifth. The southern European countries do particularly badly. Australia comes joint second (with Ireland) on the measure of outward-oriented regulations, with the UK again first, whilst the US is joint ninth. There are less marked differences between countries in respect of this second set of characteristics because outward-oriented policies are increasingly governed by multilateral agreements and supranational institutions such as the World Trade Organisation. The authors also combine the two measures into a single overall measure of the extent of product market regulation, in which the UK comes top, followed by Ireland, Australia and the US, with the Mediterranean countries again bringing up the rear.

It is this composite indicator of the extent of product market regulation (*pmr*) that appears in the cross-country regression for TFP growth above (Equation (3)).¹¹ Since a low value of the indicator indicates a competitive product market environment we would expect it to have a negative sign. Instead the coefficient is positive, but insignificantly so. This is less worrying than it might seem for the hypothesis that the productivity resurgence has its roots in past structural reform. The primary effect of regulation is to ensure that a country is operating inefficiently, i.e. it lowers the level of TFP. The removal of regulations and barriers to competition should thus show up as a temporary spurt in TFP growth as a country gets closer to its production

11. I have also included the constituent parts separately; the gist of the results is unchanged.

Figure 12: Product Market Regulation



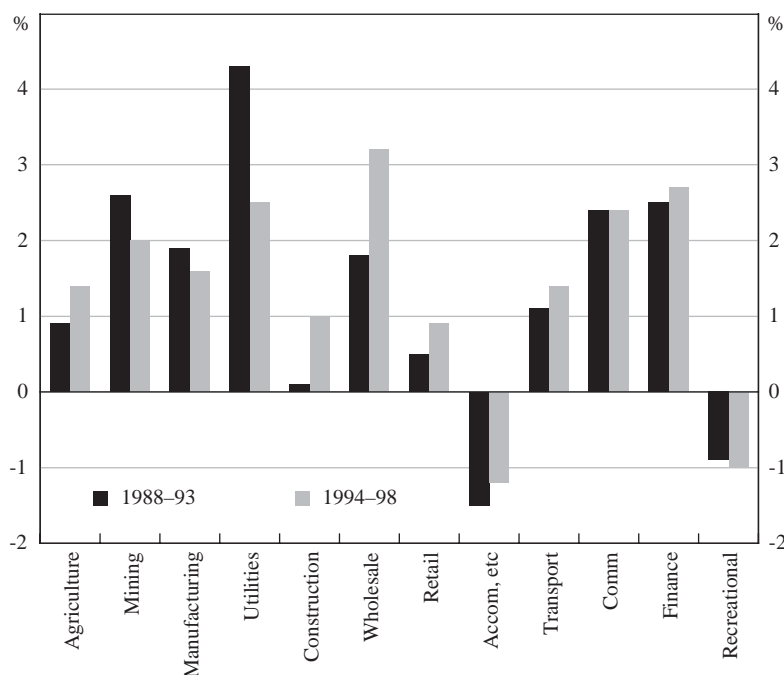
Source: Nicoletti *et al* (1999)

possibility frontier. So the explanatory variable one really wants is the change in product market regulation. Unfortunately the Nicoletti *et al* (1999) study only really provides a snapshot of the state of play in 1998, not how far the countries have progressed over the preceding period, and there is no earlier comparable study available to use to construct a measure of the change in regulations. Moreover, there is no particular reason to think the current level of regulation is necessarily strongly correlated with its past change: Australia and the UK have travelled a long way in recent years, but US product markets have always been fairly deregulated and competitive.¹²

The importance of structural reform is also highlighted in the recent report by the Productivity Commission (1999), which draws on a number of case studies as well as marshalling the macroeconomic evidence. It would, of course, be instructive to try to identify exactly which aspects of the reform process have been most significant. This is not an easy task, but a little evidence is provided by Figure 13 which gives a sectoral breakdown of TFP growth in the 1990s. To control for different cyclical behaviour across industries, the data refer to the growth of trend TFP (measured using a Hodrick-Prescott filter) rather than raw TFP growth. The

12. Moreover, competitive markets may not, on their own, be enough. Dowrick (1998) points out that the New Zealand productivity performance in recent years has been distinctly underwhelming, despite undergoing major pro-competitive reforms over the last decade or so.

Figure 13: Trend TFP Growth by Sector
Per cent per annum



Source: OECD (2000), from ABS data

data suggest that the level of trend TFP growth over the whole 1988–98 period has been highest in the utilities, communications and finance sectors. Utilities will have benefited particularly from increased commercialisation in the government enterprise sector, whilst communications and finance will have particularly benefited from the ICT revolution. If, however, we look at the change in TFP growth between the first and second quinquennia we see that it is construction and the wholesale trade that have experienced the largest acceleration, followed by agriculture, retail and transport. These are relatively labour-intensive sectors and which are therefore likely to have benefited particularly from the extension of management control associated with reforms to the industrial relations scene.

4.3 A cautionary tale

An important question is whether this good relative productivity performance can be expected to continue. To what extent is this the working out of a once-off level effect as Australia closes some of the gap with the US, and to what extent does it presage a higher rate of trend productivity growth for some years to come? To the extent that high recent productivity growth is a ‘new economy’ effect associated with ICT, the upturn in TFP growth may be relatively long-lived. On the other hand most

of the structural reforms should primarily have a once-off level effect, although it may take some years to work through fully. If increased competitive pressure also encourages firms to innovate more, then it is also possible that the reforms could lead to a sustained increase in the rate of trend TFP growth.

A comparison with the UK experience under Mrs Thatcher is instructive here. Prior to the start of Mrs Thatcher's premiership in 1979, British economic performance had been characterised by poor productivity performance which had seen the UK progressively falling behind relative to the other industrialised nations. Whereas per capita output in other countries, particularly in the rest of Western Europe, had been converging on that of the US, exactly in the manner predicted by models of classical growth, the UK seemed to be converging to a level some 25–30 per cent lower. Thus, whereas output per worker was 55 per cent of that of the US in 1951 compared to 39 per cent in France, 37 per cent in Germany and 16 per cent in Japan, by 1980 those figures had become 67 per cent, 81 per cent, 78 per cent and 63 per cent respectively. Economic policies to deal with this had included a repeated 'dash for growth' whereby expansionary demand policies were supposed to generate a concomitant expansion in supply and thus instigate a 'virtuous circle'. This was allied to the selective support of industries that were thought to play a key role in the growth process, particularly manufacturing. All these attempts had failed to close the productivity gap. By the late 1970s, after inflation had hit nearly 25 per cent in 1974 and the UK had been forced to turn for the IMF for assistance in 1976, Conservative politicians (and also some major Labour figures) began to recognise that the problem lay instead with excessive regulation and an antiquated industrial relations structure.

From 1979 onwards, the new Conservative Government under Mrs Thatcher pursued a steady programme of tax (and spending) cuts to reward enterprise; deregulation and privatisation to promote economic efficiency in product markets; and industrial relations reform to limit the power of unions. They also adopted a monetarist macroeconomic strategy that was intended to slow the rate of growth of nominal demand and thus reduce inflation. Although the policy of privatisation is now regarded as one of the most enduring legacies of Thatcherism, it is worth noting that the policy that did not figure at all in the original pre-election manifesto; rather it was a policy that evolved and grew in importance over time. Productivity growth surged; see Figure 9 (this surge is even more apparent if the break is placed at 1983 after the trough of the recession, rather than in 1980 as in the figure).

At the time five¹³ main hypotheses were advanced for the acceleration in TFP growth:

- A Schumpeterian 'gale of innovation' associated with computers and new technology.
- A 'batting average' effect whereby the deep recession of 1980–81 eliminated plants with low productivity, raising the average productivity of the remainder.

13. Two other explanations were also prevalent during the early stages of the productivity upturn, namely labour hoarding and mismeasurement of capital due to premature scrapping. Neither fitted the subsequent facts; see Bean and Symons (1989).

- A shift in the industrial relations climate as a result of legislation outlawing the closed shop and limiting the right to strike.
- A ‘kick-in-the-pants’ effect whereby a tightening of product market conditions and a sharpening of the takeover threat in the private sector, and the imposition of hard budget constraints for the nationalised industries¹⁴, led to an elimination of managerial slack.
- Increased effort and entrepreneurial activity due to income tax cuts.

The first and last of these hypotheses could imply an increase in the trend rate of growth, whilst the other three implied primarily once-off effects that would merely raise the level of TFP. Accumulating empirical evidence tended to favour the third and fourth hypotheses (see Bean and Symons (1989)). First, the extent of the acceleration in TFP growth appeared to have been strongest in those industries where the 1980–81 recession hit hardest. Second, the acceleration was greater where unionisation was high, and particularly in industries where the workforce tended to be represented by multiple craft-based unions rather than a single union. The econometric evidence also fitted with casual observation that suggested the key ingredient behind the surge in productivity was an end to overmanning, particularly in traditional manufacturing.

However, a mixture of wishful thinking and mistaking a long cyclical upswing from a deep recession for an increase in the underlying trend rate of productivity growth lulled policy-makers and consumers into believing that the robust non-inflationary growth experienced during 1983–88 would continue into the future. This optimistic atmosphere was neatly encapsulated in a 1988 edition of *Time* magazine with the cover ‘Britain is Back!’ and containing a lead article eulogizing Thatcher’s Britain. The robust growth led to burgeoning public sector surpluses, which the Government then chose in part to remit as lower taxes, offsetting the automatic stabilisers. It also kept interest rates low, in part to prevent the exchange rate from appreciating during the 1986–87 period when unofficial policy was to shadow the Deutsche Mark, and in part because of the political sensitivity of high interest rates with most mortgage debt being at flexible rates. Moreover, households faced with rapidly growing disposable incomes and with much greater access to easy credit as a result of reforms to the financial sector were spending as if there were no tomorrow. These optimistic expectations fuelled an extraordinary boom in house prices, increasing households’ collateral and permitting further borrowing for current consumption (so-called ‘housing equity withdrawal’). The counterpart to this was a marked deterioration in the current account of the balance of payments. For further discussion of this period see e.g. Muellbauer and Murphy (1990) and the attendant discussion by King (1990).

Eventually this domestically-driven boom (the ‘Lawson Boom’ after Chancellor Lawson) ran into the buffers as the supply limitations of the UK economy (low level

14. The privatisation program did not really get underway until the latter part of the Mrs Thatcher’s premiership and thus cannot be the explanation for the pick-up in productivity growth which began early in the decade.

of workforce skills, etc) once again became apparent and inflation started accelerating. Monetary policy was then tightened, first by talking up the exchange rate through dropping hints about future entry into the Exchange Rate Mechanism, and then ultimately locking it in 1990 at a rate that was widely seen as at least 10 per cent overvalued. This, of course, occurred at exactly the moment European interest rates started to rise as the Bundesbank fought to limit the inflationary pressures associated with German re-unification. At the same time as policy was tightened, households cut back severely on their spending as they realised that their income expectations had been overly optimistic and tried to reduce their indebtedness. The result was that boom turned to bust almost overnight as the economy slid into a recession as deep as that of 1980–81.

This experience is salutary as it points to the dangers when policy-makers and private agents erroneously mistake a once-off increase in the level of national or personal incomes for a permanent increase in its growth rate. The UK experience suggests that Australian policy-makers and households would be unwise to project the recent high rates of productivity growth into the future.

5. Savings and the Current Account

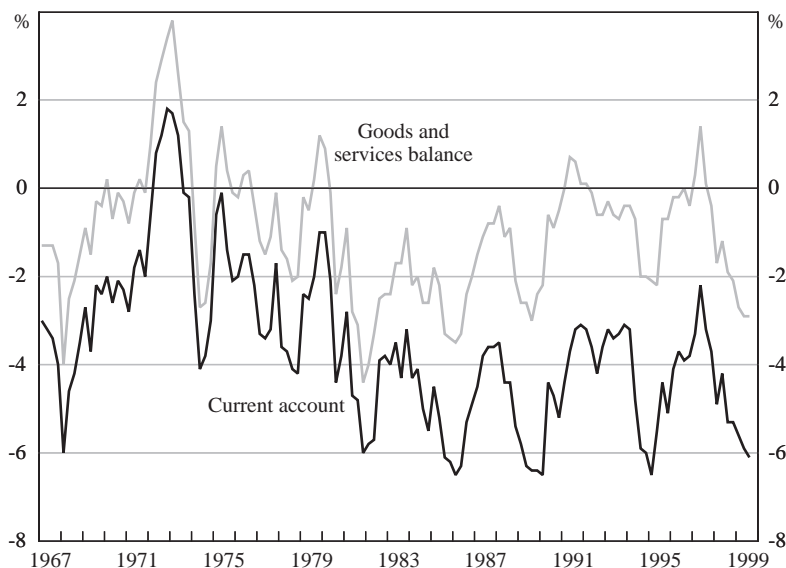
The likely future course of productivity growth is intimately connected to the question of whether the present and continuing current account deficit should be a cause for concern. Accordingly Figure 14 gives data on the Australian balance of payments and Figure 15 data for the external debt to GDP ratio.

5.1 Sustainability

As noted earlier, thinking in Australia about the current account deficit has moved from one of concern in the 1970s and 1980s to something closer to benign neglect in the 1990s. In a sense this is how it should be, for there is nothing necessarily unsustainable about such a deficit. Global capital market integration facilitates the separation of national savings decisions from national investment decisions, an idea that underlies the intertemporal approach to the current account (see Frenkel and Razin (1987)). If a country has excellent unexploited investment opportunities, it makes economic sense for those opportunities to be exploited through accessing foreign investment funds, rather than depressing domestic consumption to finance it through domestic savings. This would lead to a balance of trade deficit and capital inflows initially, followed by an improvement in the trade balance coupled with a deteriorating investment income component as the profits on the investment are remitted abroad.

Moreover, there is no reason why a current account deficit should ever need to disappear. If demographics, the structure of domestic and foreign pension schemes, etc, warrant it, then it may be optimal for foreigners always to have a net claim on part of the country's output. If nominal GDP is growing this requires an ongoing current account deficit (capital inflow) to maintain the share of net foreign liabilities relative to GDP. Thus if nominal GDP is growing at 5 per cent per annum (composed, say, of 2 per cent inflation and 3 per cent real growth) and net indebtedness to

Figure 14: Balance of Payments
Per cent of GDP



Source: Reserve Bank of Australia

foreigners (debt and equity) is 50 per cent, the country would need to maintain a current account deficit of $2\frac{1}{2}$ per cent of GDP indefinitely.

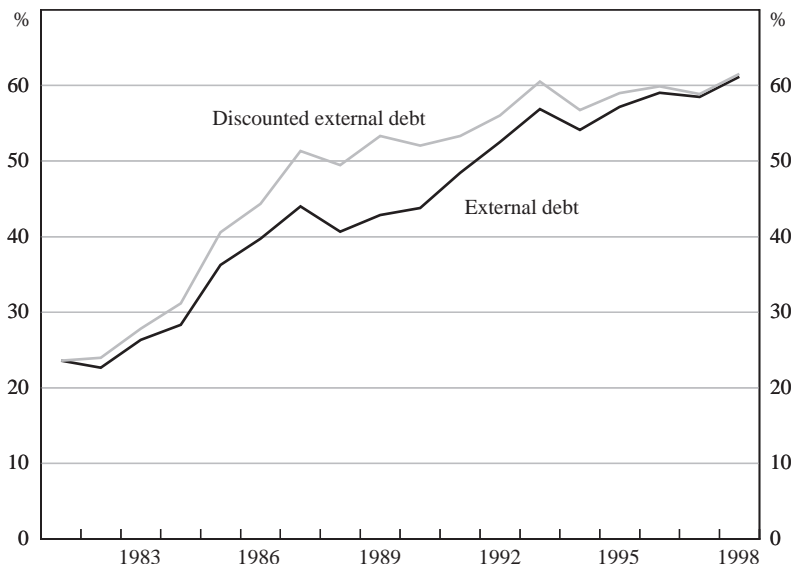
As evidence that there is nothing *per se* unusual about the Australian current account deficit, we might simply cite the experience over the years 1960–90 of: Denmark, with a current account deficit averaging 2.7 per cent of GDP and in surplus only in 1963 and 1990; Greece with a current account deficit averaging 2.6 per cent of GDP and in deficit every year; and Ireland with a current account deficit averaging 4.3 per cent of GDP and in surplus in only 1967. We might sensibly, though, ask whether the upward trend in the external debt to GDP ratio portrayed in Figure 15 indicates unsustainability in the external position. On the one hand the data could indicate explosive behaviour of this ratio, but is also consistent with both an asymptotic approach to a new higher steady-state or a temporary build-up that will subsequently be unwound.

The literature provides a number of formal tests for unsustainable debt dynamics. One such test is due to David Wilcox (1989) that is obtained as follows. First write the debt accumulation equation in intensive form as:

$$b_t = (1 + r_t^* - g_t) b_{t-1} - z_t \quad (4)$$

where b_t is the end of period debt to GDP ratio, r_t^* is the rate of interest on foreign borrowing in period t , g_t is the growth rate of GDP in period t and z_t is the surplus on

Figure 15: Gross External Debt
Per cent of GDP



Source: OECD, *Economic Outlook*, various issues

goods and services plus any transfer income such as foreign aid in period t , expressed as a fraction of GDP. Now define the discount factor, q_t , recursively by:

$$q_t = \frac{q_{t-1}}{(1 + r_t^* - g_t)} \tag{5}$$

with $q_0 = 1$ for some base period 0. Sustainability then requires that the transversality condition $\lim_{t \rightarrow \infty} E_0[q_t b_t] = 0$ is satisfied. Defining $f_t \equiv q_t b_t$ and $x_t \equiv q_t z_t$ we may then re-write the debt accumulation equation as:

$$\Delta f_t = -x_t \tag{6}$$

and the transversality condition becomes $\lim_{t \rightarrow \infty} E_0[f_t] = 0$. Thus a test of sustainability can be executed by examining the stochastic properties of the discounted debt to GDP ratio, f_t ; in particular it should be stationary with zero drift.

To apply this to the data in Figure 15, we calculate r_t^* as the ratio of net foreign investment payments in period t to the value of net liabilities at the beginning of the period, and then discount the debt to GDP ratio back to 1981, the earliest year for which we have data. The resulting series is also plotted in Figure 15. This discounted series rises above the actual series in the first part of the period because the growth-corrected interest rate is negative for the early years of the sample. A simple Dickey-Fuller test on the discounted debt series yields (t -statistics in parenthesis):

$$\Delta f_t = 7.54 - 0.113 f_{t-1}$$

(2.65) (1.94)

Sample: 1981–99; $R^2 = 0.31$; Box - Pierce $\chi^2(4) = 2.85$

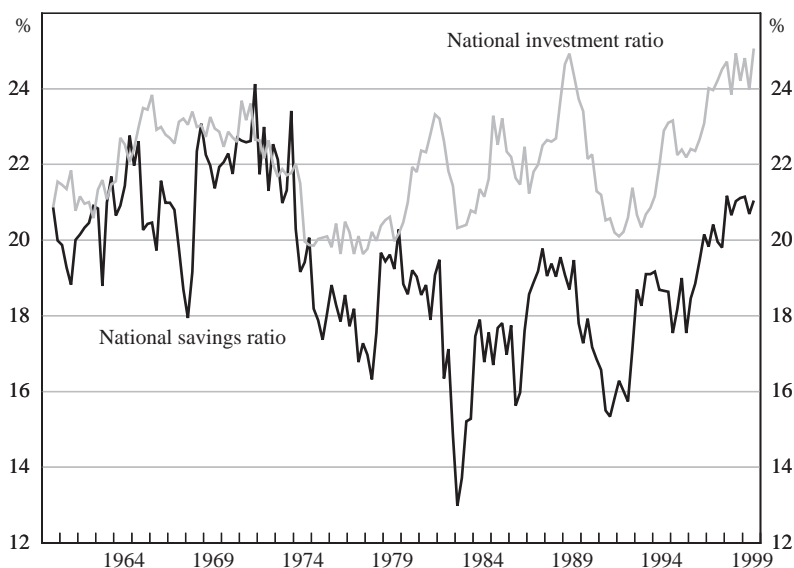
(7)

This gives only weak evidence that f_t might be stationary, and moreover the intercept is significant, suggesting unsustainability. Of course this result is not terribly surprising given the particular features of the (rather short) sample. Nevertheless it suggests that at some stage in the future a fundamental improvement in the balance of trade on goods and services is required. The interesting question is whether this will happen through an increase in future supply (which might well be the case if the productivity revival continues) or through a reduction in domestic demand.

5.2 National savings

In order to investigate this further we need to go behind the current account to see what has been happening to savings and investment. Figure 16 plots the ratio of national savings and national investment to gross national income (rather than gross domestic product as is usually the case, although the picture is similar) since the beginning of the 1960s. Averaged over the cycle, the investment ratio remains remarkably constant at around 22 per cent of GDP. All of the action in the balance

Figure 16: National Savings and Investment Ratios
Per cent of GNP



Source: Reserve Bank of Australia

of payments instead originates in the behaviour of the savings ratio, which falls in the mid 1970s, recovering only somewhat in the 1990s.

Viewed from the standpoint of optimal consumption theory this behaviour is hard to rationalise. Consider for the moment the standard benchmark one-good open economy subject to perfect international capital mobility and peopled by infinitely lived households (or equivalently Barroian dynasties) who can choose to either consume or save. The latter can be in the form of either fixed domestic capital which will be combined with labour to produce domestic output next period or invested in foreign assets which offer a given rate of return. For simplicity of exposition take this as a constant, r . Assume labour is supplied inelastically and markets clear. In this set-up the investment allocation decision (between domestic and foreign capital) can be separated from the overall savings decision. The optimal investment allocation decision obviously requires accumulating domestic fixed capital up to the point where the marginal product of capital net of depreciation equals the exogenously given interest rate. Assuming homothetic preferences the optimal savings plan then makes consumption (here identified with the sum of public and private consumption) proportional to the sum of human and non-human wealth as in the standard permanent income hypothesis:

$$C_t = \gamma r \left(W_t + \frac{1}{1+r} \sum_{i=0}^{i=\infty} \left(\frac{1}{1+r} \right)^i E_t(Y_{t,t+i}) \right) \quad (8)$$

where C_t is consumption in period t , W_t is the sum of holdings of domestic capital and foreign assets and $Y_{t,t}$ is labour income (with units of labour supplied valued at the prevailing marginal product of labour). Total national income is then $Y_t = rW_t + Y_{t,t}$. Define 'saving' as $S_t \equiv Y_t - C_t / \gamma$ (which equals conventional measures when $\gamma=1$). Then, as shown by Campbell (1987), Equation (8) can be re-written as a statement about saving:

$$S_t = - \sum_{i=1}^{i=\infty} \left(\frac{1}{1+r} \right)^i E_t(\Delta Y_{t,t+i}) \quad (9)$$

Hence savings should be a predictor of the present value of future expected declines in the human component of income. This is sometimes known as the 'saving for a rainy day' hypothesis.

Unlike Campbell we are not interested in testing the veracity or otherwise of the permanent income hypothesis, but rather in using it as a benchmark to evaluate Australian savings behaviour. In particular we want to see whether national savings behaviour can be justified by the subsequent evolution of labour income. To do this we estimate a bivariate vector autoregression in the change in labour income and savings, both of which should be stationary according to the model. Rather than work with the levels of savings and income, it is more natural for our purposes to work with the logarithms of consumption, labour income and national income. In the attendant table lower-case letters are used to denote logarithms of the respective variables.

Also, rather than use employee compensation as our measure of labour income, we choose instead to work with gross domestic product. We do this because the observed wage will differ from the marginal product of labour if wage contracts include an element of insurance as in implicit contract theory. However, if the production function is Cobb-Douglas, a natural benchmark, then labour income, correctly measured, will be a constant fraction of gross domestic product. This has the added advantage of giving us a slightly longer sample (1960:Q1–1999:Q3) to work with. Finally the model includes zero-one dummies for the periods 1974:Q1–1990:Q4 and 1991:Q1–1999:Q3 to control for the productivity slowdown of the 1970s and the productivity revival of the 1990s. These will be a key focus of interest in the analysis.

Preliminary analysis of the co-integration properties of y_t and c_t suggest they are indeed co-integrated with a co-integration vector (1,-1) so that $y_t - c_t$ is stationary. In fact only very limited dynamics are required in the model, the final version of which is given in Table 3, with lagged savings, $y_{t-1} - c_{t-1}$, being the only regression variable that is significant once the constants and dummies are included. The regression equation for the rate of growth of output has the ‘saving for a rainy day’ feature in that high levels of savings anticipate low levels of future output growth.

More interesting for our purposes are the constants in the respective equations. Solving the two equations for the implied steady-state values of savings and output growth gives:

Table 3: Savings Regressions

	Dependent variable	
	$\Delta y_{l,t}$	$y_t - c_t$
Constant	0.0375 (3.09)	0.0596 (5.00)
Dummy 1974:Q1–1990:Q4	-0.0091 (3.11)	-0.0114 (3.93)
Dummy 1991:Q1–1999:Q3	-0.0066 (2.17)	-0.0071 (2.33)
$y_{t-1} - c_{t-1}$	-0.106 (2.10)	0.751 (15.08)
Test on exclusion of $\Delta y_{l,t-1}$, $\Delta y_{l,t-2}$, $y_{t-2} - c_{t-2}$ (F(3,147))	0.50	1.01
Standard error	0.0088	0.0118
Box-Pierce ($\chi^2(36)$)	43.9	36.1

Note: t -statistics in parentheses.

$$\begin{aligned}\Delta y_t &= 0.0121 - 0.0042 \text{Dummy}_{74-90} - 0.0036 \text{Dummy}_{91-99} \\ y - c &= 0.2398 - 0.0459 \text{Dummy}_{74-90} - 0.0145 \text{Dummy}_{91-99}\end{aligned}\quad (10)$$

At low frequencies the savings rate thus moves *with*, rather than against, the rate of growth of trend output; i.e. rather than saving for a rainy day (or rather decade) Australians spend to cheer themselves up! In fact the parameter estimates of the constants and dummies suggest that the savings function can be more parsimoniously written as a function of just output growth rather than the constants and dummies. When we replace the dummies by current output growth and estimate by instrumental variables using the constant, dummies and lagged savings as instruments for output growth we get:

$$\begin{aligned}y_t - c_t &= 0.014 + 1.237 \Delta y_{t,t} + 0.88 (y_{t-1} - c_{t-1}) \\ &\quad (1.76) \quad (4.17) \quad (25.54)\end{aligned}$$

Sample: 1960Q2 – 1999Q3; Standard Error = 0.0111; (11)

Box - Pierce $\chi^2(36) = 38.2$; Sargan $\chi^2(1) = 0.33$

Importantly the Sargan test of the over-identifying restrictions is quite insignificant, indicating that this is a legitimate restriction. Hence the equilibrium national savings rate appears to be increasing, rather than decreasing in the growth rate.

Whilst the behaviour of the national savings rate departs from our optimal consumption benchmark, the fact that the savings rate appears to be increasing, rather than decreasing, in the growth rate suggests that *if* the recent high TFP growth rates are sustained, then the external debt to GNP ratio will tend to stabilise, not only because of higher output, but also because of higher savings. *Per contra* if the rate of TFP growth were to return to the rates seen in the 1970s and 1980s, one would expect the explosive growth of the external debt to GNP ratio to resume, absent deliberate policy intervention to correct the problem.

5.3 Household savings

Of course, looking at the national savings rate conceals what is going on beneath, within individual sectors. As noted in Section 2, the public sector deficit has generally been well behaved, so the current account deficit is not the counterpart of a profligate fiscal policy. Likewise the business sector savings rate shows a slight upward trend, and like the public sector savings rate is strongly pro-cyclical. Rather, most of the action occurs in the household sector, where there is a clear downward trend in both Australia and the US. Figure 17 plots the household savings rates for Australia, the UK and the US over the last two decades; the data for Australia and the US are net of capital consumption, whilst the figures for the UK refer to gross savings rates. This makes it clear that the deterioration of the current account in the 1980s was associated with a decline in household savings, but this has been offset by the increase in business and public sector savings during the 1990s. The sharp deterioration in the UK savings rate associated with the Lawson Boom is clearly visible, and comparable in absolute size to the fall in the Australian savings ratio over

Figure 17: Household Savings Ratio

Source: OECD, *Economic Outlook*, various issues

the last four years. Indeed both show sharper movements than are seen in the US during the long boom of the last decade.

An inverse relationship between household savings on the one hand and public and business savings on the other is natural and could arise in two ways. First, if Ricardian Equivalence holds (as is implicitly the case in the model of Section 5.2), then households realise that higher levels of public or business savings now will ultimately show up as higher disposable household income in the future. In this story it is public and business savings decisions that are driving the decline in household savings. Alternatively, household savings may instead be driving public and business savings. This will be the case, for instance, in standard Keynesian models where higher levels of consumer demand generate higher incomes, higher tax revenues for government, and higher profits for business. Under this explanation the low levels of savings by Australian households in recent years would then be due to a mix of optimistic expectations of future income growth, increasing financial and real wealth (also driven by optimism about the future), and an increased ability to borrow.

Now under the Ricardian Equivalence view the sectoral decomposition of savings is of little interest. However, under the alternative hypothesis that household savings decisions are the driver, there is potentially more at stake. My own view is that this alternative explanation is a more plausible explanation of the facts, and I shall therefore treat it as the maintained hypothesis in what follows. The question, then, is should policy-makers be worried about the present low level of household savings, and with it the current account deficit?

The idea that governments should adopt a policy of benign neglect to a current account deficit if it is the consequence of private sector decisions, rather than the consequence of unsustainable fiscal plans¹⁵, figured prominently in UK debates at the end of the 1980s where it was referred to as the 'Lawson Doctrine' after Nigel Lawson, the Chancellor of the Exchequer (sometimes also the 'Burns Doctrine' after the then Chief Economic Adviser, Sir Terry Burns). Gruen and Stevens (this volume) refer to this in the Australian context as the 'consenting adults' approach.

What are the limitations to the thesis? First, excessive borrowing may raise the risk premium on debt. To the extent that the risk premium reflects the indebtedness of the borrower and thus the riskiness of the loan, this is not a problem; only if there is an externality so that more borrowing by one individual raises the risk premium for other borrowers should the government be concerned. Moreover, as Gruen and Stevens argue, the evidence that high levels of Australian foreign borrowing have significantly affected risk premia is anyway relatively weak.

Second, if this borrowing is in foreign currency, it leaves the country vulnerable to a strongly contractionary wealth effect should the exchange rate depreciate sharply. This was, of course, an important factor in the Asian Crisis. However, most of the increase in Australian foreign indebtedness has been in the form of equity rather than debt, so it does not seem to be particularly vulnerable, and indeed has already weathered a 25 per cent depreciation against the US\$ during 1997/98 without mishap.

Third, if private savings behaviour is based on overly optimistic expectations of the future, then there must be a correction when households wake up to the fact that they are overly indebted. One potential indicator of optimistic household expectations is likely to be asset prices, particularly of houses, as the demand for housing is likely to be related to households' estimate of their permanent income. The fact that over the last four years real house prices in Australia have grown at an average annual rate of 6¹/₂ per cent per year is indicative in this regard.

Such a scenario does seem to be a possibility if TFP growth does indeed moderate in the future. In that case household savings could rise quite sharply. This would be desirable from a medium-term perspective as it would help to bring about the increase in national savings that Section 5.2 argued was necessary. However, such a correction does raise problems of macroeconomic management, as it will also tend to produce a fall in activity in the short run. The appropriate response is obviously to lower interest rates to stimulate investment and to raise competitiveness through a depreciation of the currency. The depth of any short-term recession can also be ameliorated provided the automatic fiscal stabilisers are free to operate.

Fortunately, the degree of (over-)optimism does not seem to be as pronounced as in the UK at the end of the 1980s. For instance the rise in Australian house prices is still quite mild compared to the explosion seen in the UK during the last four years of the Lawson Boom, when real house prices grew at an average annual rate of 14 per cent. Moreover, when the slowdown in UK consumption growth occurred in

15. In which case they need, of course, to address the underlying cause of the problem!

1990–91, the Government was unable to relax monetary policy to counteract it on account of membership of the Exchange Rate Mechanism and also felt constrained on fiscal policy because of the rising budget deficit. Australian policy makers, by contrast, seem well placed to respond to any slowdown in consumption by relaxing both monetary and fiscal policy. But it does suggest that the Australian government should resist the temptation to spend the current surpluses.

6. Conclusions

Australia's 'miraculous' performance in the last decade seems to be down to a serendipitous mix of good luck, judicious macroeconomic management and effective structural reforms. However, economic miracles have a tendency to turn sour just when everyone is celebrating them. Whilst the high recent rates of productivity growth may continue into the future, it would be unwise to bank on it. In that case Australia may experience something like the UK at the end of the 1980s, namely a downturn precipitated by a rise in savings. Fortunately, unlike the UK, Australian policy-makers seem to be in a good position to weather the storm.

Appendix A – Data

Unemployment regressions

Unemployment rates	Standardised unemployment rates. Source: OECD
Replacement ratio	Gross benefits for single person under 50 as per cent of relevant wage. Source: Layard <i>et al</i> (1991), Table 9, Chapter 9
Benefit duration	Duration of eligibility to some form of benefit (months). Source: Layard <i>et al</i> (1991), Table 9, Chapter 9
Labour market programmes	Spending on ALMPs as per cent of output/head. Source: Layard <i>et al</i> (1991), Table 9, Chapter 9
Union power	UNCD-EMCD ^(a) Source: Layard <i>et al</i> (1991), Table 9, Chapter 9
Union-employer coordination	UNCD+EMCD ^(a) Source: Layard <i>et al</i> (1991), Table 9, Chapter 9
Wage flexibility	LWC+IW+SWC ^(b) Source: Layard <i>et al</i> (1991), Table 11, Chapter 9
Employee protection	Overall summary indicator of strictness of employment protection legislation (Version 2). Source: OECD (1999), Table 2.5

(a) UNCD = Extent of inter-union co-ordination, both formal and informal, in the process of wage bargaining.

EMCD = Extent of inter-firm co-ordination, both formal and informal, in the process of wage bargaining.

(b) LWC = Length of wage contracts.

IW = Indexation in wage contracts.

SWC = Synchronisation of wage contracts.

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Discussion

1. Steve Dowrick

I focus these comments on an issue that is central to Charles Bean's paper and is accorded substantial weight in the paper by David Gruen and Glenn Stevens: the explanation for and the sustainability of the recent surge in Australian productivity growth. Whereas business sector MFP growth averaged only 0.6 per cent per year over the 1980s, it rose to 1.5 per cent over the period 1992–97 – according to Bean's figures. Gruen and Stevens compare the cyclical expansion of the 1990s with its counterpart in the 1980s and report an identical acceleration of 0.9 percentage points, from 0.9 per cent to 1.8 per cent per annum.

If we are concerned with medium-term productivity trends, it may not be so useful to look only at the expansion phase of the cycle. I have estimated a simple model where labour productivity in the market sector, Y/H , is related to capital intensity, K/H , to the growth rate of GDP relative to its average, $CYCLE$, and to a series of time trends starting in 1964, 1974 and 1990 respectively. The regression results are in Table 1 below, showing that when GDP growth is 1 percentage point above average, MFP in the market sector tends to be 0.45 percentage points above trend. Thus the above average growth rate of the economy in the long expansion since 1992 has helped to raise MFP growth, probably as a result of winding back the excess capacity generated by the depth of the preceding recession.

Table 1: Regression of Market Sector Output per Hour
1965/66–1998/99

	Coefficient	<i>t</i> -statistic
K/H	0.36	3.7
CYCLE	0.45	3.4
T64	0.023	5.3
T74	-0.018	-10.1
T90	0.010	5.2

Note: $R^2 = 0.996$; s.e.e. = 0.014; test for constant returns to scale: $t=1.70$; test for non-stationarity in error correction model: $t=-5.9$

Source: ABS Cat No 5204.0

The regression shows trend annual MFP growth declining from 2.3 per cent in the 1960s to 0.5 per cent after 1974, then recovering by a full 1 percentage point in the 1990s. Current trend MFP growth is 1.5 per cent per year. The observed rate of 1.8 per cent over the past seven years is attributable in part to the prolonged economic expansion and cannot be expected to continue indefinitely. Nevertheless, trend productivity growth of 1.5 per cent is a massive improvement over the 0.5 per cent trend growth of the previous sixteen years.

Bean canvasses two broad classes of explanations for the productivity resurgence:

- adoption of the new information technologies; and/or
- the program of economic reforms, moving towards less regulation and more market competition in the areas of trade, labour markets and domestic product markets.

He finds little evidence to support the first hypothesis in his cross-country analysis. Australian investment in Information and Computer Technology (ICT) over the last decade is barely above the OECD average. This conclusion appears to be supported by Gruen and Stevens who report that *all* of the rise in labour productivity since the 1980s can be attributed to just three sectors: wholesale trade, retail trade and construction – not the areas where they expect ICT to have had substantial impact on productivity.

Bean identifies construction and wholesale as the sectors where productivity has accelerated most, followed by agriculture, retail and transport. The inclusion of agriculture and transport is partly due to the periods being compared, Bean comparing 1994–98 with 1988–93, whereas Gruen and Stevens are comparing over decades. More importantly, the difference is due to the different measures of productivity – Gruen and Stevens are examining labour productivity whereas Bean is looking at MFP growth, which discounts the contribution of rising capital intensity.

Taking account of the relative size of sectors, my back-of-the-envelope calculations suggest that the acceleration of MFP growth in construction and in agriculture has contributed little to overall MFP growth. So the important sectors for explaining MFP acceleration are wholesale and retail. It is worth noting that finance, communications and mining have maintained high growth rates over both decades and that whilst utilities have had above average MFP growth, it has been decelerating. High productivity growth and accelerating growth are distributed across a wide range of sectors which are not, except for finance and communications, as obvious beneficiaries of the IT revolution as we might expect manufacturing to be.

Perhaps, though, we should be looking more closely at the interaction between ICT investment and the skills of the labour force, where the clever use of new computer and communications technology may produce efficiency gains in planning, design and organisation across a wide range of industries. Production delays due to co-ordination problems are endemic in the construction industry. The ubiquitous adoption of mobile phones by sub-contractors in the mid 1990s may well have improved efficiency. Similar organisational efficiency gains from ICT investment may have been found in wholesale and in retail. These are sectors with a multitude of idiosyncratically interacting suppliers and customers where organisational and network externalities are likely to be large if the workforce is sufficiently skilled and adaptable, hence areas where the industry return to ICT investment is likely to exceed the perceived individual return and the difference will be reflected in MFP measures.

This is similar to the argument of De Long and Summers (1991) explaining their finding of enhanced returns to investment in equipment rather than structures. If

correct, it suggests that it is not just the level of ICT investment that explains MFP growth, but also the level of investment in the skills of the workforce. As a matter of curiosity, in Table 2 I list the increase in adjusted MFP growth for OECD countries from the 1980s to the 1990s. Have the countries at the top of the list, including Australia, experienced both ICT and skills investment to explain their surging productivity?

Table 2: Change in Adjusted MFP Growth between 1980s and 1990s
Per cent

1	Ireland	2.9
2	Norway	2.0
3	Greece	1.8
4	Australia	1.6
5	Portugal	1.3
6	Denmark	1.2
7	Iceland	0.9
8	Netherlands	0.9
9	Turkey	0.7
10	Spain	0.5
11	United States	0.4
12	Sweden	0.4
13	United Kingdom	0.3
14	Finland	0.3
15	Luxembourg	0.2
16	Canada	0.0
17	Italy	-0.1
18	Austria	-0.1
19	France	-0.2
20	Belgium	-0.3
21	New Zealand	-0.3
22	Switzerland	-1.0
23	Japan	-1.7

Note: Derived from residuals to panel regression of OECD growth rates of GDP *per capita* on initial income levels, investment ratios and the growth of employment/population.

Gruen and Stevens suggest in the conclusion to their paper that the primary sources of productivity growth are ‘all the difficult microeconomic reforms, and perhaps (of) the more stable macroeconomy’ – though they provide little in the way of direct evidence. John Quiggin has argued, equally plausibly, that the productivity miracle is an illusion caused by unmeasured intensification of work and unmeasured extension of working hours.

Bean sounds a warning that any resurgence in productivity growth attributable to micro-reform may not be sustained through the coming decade as the benefits of structural reforms, working through both trade and competitive effects, are expected to have one-off level effects. This is an important point, though I find less than compelling his ‘instructive and salutary’ comparison with the UK in the 1980s. That story seems to be mostly to do with macroeconomic mis-management – problems that were clearly relevant to the Australian economy in the late 1980s, but less relevant in the 1990s.

A final salutary point comes from comparison of output gained through the productivity acceleration with output lost during the last recession. The consequences of the 1990/91 recession included a 2.5 per cent decline in GDP *per capita*. GDP per capita in 1992 was some 6 per cent below the level that would have been achieved if the modest average growth of the 1980s (1.8 per cent per year) had been maintained over the previous two years. The one percentage point productivity resurgence over the seven-year recovery in the 1990s has only just clawed back the output loss of the recession. Macroeconomic (mis-)management can be just as important as productivity reform in raising average living standards.

Reference

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2. John Edwards

Gruen and Stevens provide a very interesting analysis of the 1990s which manages to capture both the issues that appeared to be important when the decade began, and the issues that now seem to us to have been important as the decade ends. The current account, for example, proved to be no impediment to growth, though at the end of the decade the deficit was quite as wide as it had been at the beginning. Low inflation and high productivity, on the other hand, were not seriously expected to be the defining characteristics our experience of the decade shows them to be. Fiscal policy has been shown (once again) to depend on the state of the cycle – as indeed it should. It is also true, as they explain, that over the decade monetary policy targeting inflation replaced wages policy as the principal means of inflation control, and that we more readily accept the argument the current account should not be a target of monetary policy or perhaps of economic policy more generally.

Charles Bean’s paper by contrast takes an international view and judges Australian policy from an outsider’s perspective. He dwells on the successes of policy in the Asian crisis, during which Australian output growth actually increased while some of its major trading partners slipped into recession. He draws attention to the persistent current account deficit, and the parallels between the UK at the end of the 1980s and Australia at the end of the 1990s. I think it is quite important to ponder the

current account deficit, though it is also important to recognise that the blowout in the deficit at the end of the nineties was the direct result of policy adopted during the Asia crisis. And while the parallels with the UK at the end of the 1980s are troubling, Australia did of course have its own crisis at the end of the 1980s which had even closer parallels to the UK.

As Gruen and Stevens declare, decades are very arbitrary periods for economic analysis. I want to argue that the contrast between the 1980s and the 1990s does not answer one of the central questions of recent economic experience, which is how we achieved low inflation. I also want to argue, however, that the contrast between the two decades does contribute more to an explanation of high productivity in the 1990s than Gruen and Stevens suggest in their paper. Finally, I want to point out that despite the contrasts there are a great many similarities between the 1980s and 1990s in the persistent impact of globalisation on the Australian economy.

Gruen and Stevens are a little vague about the origins of low inflation but there is a sense in the paper, and I think more generally in Reserve Bank thinking, that inflation was very high in the 1980s, was busted by the monetary policy-induced recession of the early 1990s, and was subsequently kept low by monetary policy directed to an inflation target. The inflation figure provided in the paper (Figure 5, p 43), however, demonstrates that underlying inflation during the 1980s peaked in 1986 and thereafter fell. This is as one might expect, because we know that real wages were falling as a result of the Accord reached between the Hawke government and the Australian Council of Trade Unions. This allowed the profit share to recover in the 1980s, which may have been one of the causes of the investment boom at the end of the 1980s. But inflation was nonetheless coming down from nearly 10 per cent (underlying) in March 1986 to under 7 per cent (underlying) when the Reserve Bank began tightening monetary policy in April 1988.

I think we would all agree that the recession of the early 1990s drove inflation right down, partly because business lost pricing power and partly because the currency markedly appreciated. Recessions do not necessarily produce very low inflation, however. Australia emerged from the recession of the early 1980s with inflation at 10.5 per cent, which was higher than when the recession began. Very high nominal and real wage increases continued to provide a floor. The 1980s Accord, by contrast, capped nominal wage increases in the late 1980s and early 1990s – allowing inflation to fall as demand collapsed and import prices fell. The ‘resolute pursuit in Australia of a decline in inflation’ (p 45) which Gruen and Stevens refer to was not an event only of the 1990s but also of the 1980s. The Accord with the ACTU that saw real wages falling through the 1980s was about both employment growth *and* lower inflation, and was relentlessly explained and defended as such.

As Gruen and Stevens point out in quoting from the 1988 RBA *Annual Report* (p 58), the Reserve Bank itself believed the objective of the monetary tightening which began in 1988 was to reduce the growth of the current account deficit. I discovered in my own research (Edwards 1996) that this motive was also paramount with the political leadership. The magnitude of the subsequent recession was not expected (until it had already begun) and not planned, so it follows that the magnitude of the subsequent fall in inflation was not expected or intended.

We also know that the increasing independence of the Bank and its inflation-targeting procedure were not responsible either for the fall in inflation or the reason it remained low in the first few years of the decade. The authors date inflation-targeting to around 1993, when underlying inflation had already hit a low of around 2 per cent. Indeed, inflation-targeting was introduced then *because* inflation was so low.

These points are not really controversial but they do add up to a slightly different way of thinking about low inflation, which we recognise as one of the centrally important outcomes of the 1990s. What they suggest is that far from being the deliberate result of a ‘Volcker disinflation’ deliberately brought about by the central bank, inflation actually crested in the mid 1980s and then began to fall in response to nominal wage restraint and falling real wages. Monetary tightening beginning in early 1988 and directed at controlling the current account deficit then produced by the beginning of the 1990s an unexpected recession and a very high currency, which sent inflation tumbling. After several years’ experience of extremely low inflation, the Bank then announced it would pursue a defined inflation target. All the tightening episode of 1988–89 had in common with the Volcker disinflation of 1979–80 was the fact that neither central bank episode intended to achieve quite the fall in activity which subsequently occurred.

This slightly different way of looking at things reminds us of the importance of fortune in economic policy. It also reminds us of the costs of disinflation. Gruen and Stevens are certainly right to suggest that the decade definitively demonstrated that continuous low inflation does not preclude good output growth. But one might add that it also confirmed the output and employment costs of moving rapidly to low inflation through a recession induced by monetary policy were quite as high as widely expected.

The case of inflation is one where I think a focus on the 1990s as a decade obscures an understanding of what actually happened. It suggests 1980s bad, 1990s good, when the real story it seems to me is that what happened in the 1990s was the direct result of what was begun in the 1980s.

There is an instance, however, where I think a contrast between the 1980s and 1990s is quite relevant to the character of the 1990s – though Gruen and Stevens do not make much of this particular contrast. The wage determination system of the 1980s had the Industrial Relations Commission (IRC) as its centrepiece, but it was not at all similar to the wage determination system of the two earlier decades. Outside of arbitrated increases that were usually the result of earlier agreements between the government and the ACTU, there were very few claims and even fewer successful claims. Consequently there was little plant or industry-level bargaining. There were very few arbitrated increases sought or permitted for individual industries. The economy-wide arbitrated increases granted were designed to permit and succeeded in bringing about a gradual fall in real wages. While using the institutional forms of arbitration, it was in fact a radically new and quite successful way of slowing the growth of nominal wages through agreement between the government and the trade union leadership.

That was the system in place for around seven or eight years from 1983. Then at the end of the 1980s and the beginning of the 1990s the Hawke and Keating governments completely altered policy. The IRC was prevented from blocking enterprise agreements except in very few instances. At the same time the scope and size of arbitrated increases was confined, so that they applied only to the minority of employees receiving minimum award wages. Enterprise bargaining was not only permitted but also encouraged.

This truly was a change from night to day, from a system of highly centralised wage agreements implemented nationally through the procedures of the IRC to a system of enterprise bargaining more market driven than any Australia had experienced in the twentieth century. The 1980s system favoured employment gains over productivity gains, the 1990s productivity gains over employment gains. It was also a very rapid shift. By the middle of the 1990s the proportion of employees covered by enterprise bargains was not much lower than it was at the end of the 1990s.

Certainly a general wave of labour shedding at the beginning of the 1990s contributed to the acceleration of productivity growth apparent at the beginning of the upswing. But it seems to me if we are looking for the sources of Australia's extraordinary productivity growth during the decade, and particularly why it occurred in the 1990s and not the 1980s, and why it started earlier and maintained a higher average outcome than the US, we should look first to this abrupt shift in the industrial relations framework which corresponded almost exactly to the shift between the decades. The importance of the shift from the Accord to enterprise bargaining may also offer a way of explaining the very big contribution of the services industry to productivity growth.

The importance of the shift from the Accord to enterprise bargaining explains the difficulty Bean has in explaining the lower employment growth than predicted from an equation based on earlier data. Bean dates from 1996 the change in industrial relations which actually began in 1991. The transition also supports Bean's conclusion that a full explanation of Australia's stronger productivity performance in the 1990s cannot be found in investment in information and communications technology.

Finally, a few comments about Gruen and Stevens on the current account. The presentation of net debt/GDP as the key index of the issues posed by foreign liabilities seems to me to minimise the significance of the issue. Compared to the beginning of the 1990s net debt/GDP has increased less than net liabilities/GDP, which means equity investment has increased in importance. As the authors remark, equity rewards are more dependent on the performance of the economy. But it is important to be clear that this increased equity investment is predominantly in the form of increased portfolio investment rather than direct investment. This means the current account support provided by equity investment can be and in fact is much more volatile and market sensitive than direct investment. At the same time bank debt has largely replaced corporate bond borrowing and government borrowings, and bank debt generally has a shorter maturity than the debt it replaces.

In this respect Bean, while generally applauding economic management through the 1990s, raises some issues of concern. By the end of the 1990s Australia was

running a current account deficit around 6 per cent of GDP, and the net income deficit was around 4 per cent of GDP. Because so much of the capital inflow is portfolio or direct investment or hedged borrowing by banks, the exposure of Australian entities to the foreign exchange risk of borrowing has been minimised. The build-up of Australian liabilities offshore, however, may be the single most important reason the Australian dollar is now persistently trading well below its average value during the years since the float, well below the value suggested by 'fair value' models based on commodity prices, and not much higher than it was during the most alarming days of the Asian crisis. It is not a crisis, but Bean's point that 'at some stage in the future [some] fundamental improvement in the balance ... on goods and services is [going to be] required' is I think well taken.

A general point about the two decades: there is a good deal in common between them, as well as some interesting contrasts. Through both we observe the following: rapidly increasing foreign trade compared to GDP; more rapid growth of manufacturing and service exports than either mine or farm commodity exports; a vast increase in gross capital flows in and out of Australia; growing net liabilities flowing from continuous current account deficits; minimal industrial conflict compared to previous decades; continuous deregulation and privatisation; the further elimination of subsidies; tariff cuts beginning in 1988 and continuing today; declining manufacturing employment and increasing part-time and female employment; widening income and wealth differences; quite strong growth and increasing income per head (interrupted by recession); increasing independence of the central bank (from Treasury first, then from the Government) from the 1983 float onward; income tax reform from the mid 1980s; and indirect tax reform in the mid 1990s. Most of the important trends of the 1990s were also trends of the 1980s. Most resulted from the implementation of what was called an economic rationalist agenda and the greater impact of, and interaction with, the world economy which those reforms allow.

Reference

Edwards J (1996), *Keating: The Inside Story*, Viking Penguin, New York, pp 319–394.

3. General Discussion

Discussion of the papers by Gruen and Stevens and Bean centred primarily on three issues. Sources of productivity growth in Australia during the 1990s were discussed. An issue that sparked considerable debate was whether Australia's persistent and high current account deficit was a source of vulnerability. Finally there was some discussion of the role of policy, and in particular, of monetary policy in affecting Australia's macroeconomic performance in the last decade.

The discussion of the sources of productivity growth in the 1990s overlapped considerably with the discussion of DeLong's paper in the previous session.

Participants generally concurred with the view expressed in both papers that information technology had not to date been as important in generating productivity improvements in Australia as it had been in the US. They also discussed at length the effects of the structural reforms undertaken in the 1980s and the 1990s. In comparing the Australian macroeconomic environment in the two decades, a key observation was that both decades had been characterised by increased globalisation, moderate wage increases and falling inflation. The primary difference had been in the industrial-relations structure of the labour market. During the 1980s, Australia had a centrally administered system of wage determination. Some participants felt that the move toward enterprise bargaining and, therefore, a more decentralised system of wage determination, had played a key role in enhancing labour productivity, and suggested that the unemployment model developed by Bean in his paper should have allowed for this institutional change.

The nature of the current account debate in the last two decades outlined in the paper by Gruen and Stevens was also reflected in this discussion. Participants acknowledged that economic outcomes over the 1990s had been more favourable than anticipated by those most concerned about the current account deficit. At the same time, some cautioned against thinking that the current account does not pose a risk, saying that the positive outcomes had resulted from the relatively favourable external environment facing the Australian economy over most of the 1990s. Citing the recent Mexican and Asian crises as examples, one participant made the point that investor sentiment is not always based on fundamentals. The participant went on to argue that while the soundness of Australia's financial system and macroeconomic policy made a crisis of confidence very unlikely, it would be unwise to think that the current account deficit and external debt did not pose any risks at all.

Though the issue of income distribution was not addressed in the two papers in this session, it was raised by a few participants. While acknowledging that macroeconomic outcomes during the 1990s had been impressive on many fronts, they felt that in the area of income distribution the outcome had been rather disappointing. One remarked that the 'miracle' in the Australian macroeconomy had been undermined by the widening income inequality.

Another topic of discussion was the role of policy in contributing to Australia's macroeconomic performance in the last decade. Participants felt that the underlying quality of policy as well as the institutions had been crucial, and that the adoption of the inflation-targeting framework and greater central bank independence, in particular, had enhanced the credibility of monetary policy. One suggested that the paper by Gruen and Stevens should have conducted a more structured and quantitative analysis of the effect of monetary policy on the economic outcomes observed in the 1990s. One participant remarked that the policy challenge for the next decade was to avoid a severe recession. This participant argued that, provided any economic downturn could be kept moderate, prospects for macroeconomic performance remained positive.

Inflation, Disinflation and the Natural Rate of Unemployment: A Dynamic Framework for Policy Analysis

Robert Leeson¹

1. The Importance of Integrating Dynamics into Policy Analysis

Economists are accustomed to conceptualising the macroeconomy as a system (mechanical, electrical or silicon-based) which is affected by impulses, shocks or internal momentum. The science and art of policy-making involves the detailed consideration of the channels by which these impulses impact on the economy. Policy-makers must then form a judgement about the type and strength of policy impulses that need to be injected so as to neutralise or offset the original shock.

Sometimes, the policy response itself can be conceptualised as the original impulse, given the unsatisfactory state of the economy. Thus with unacceptably high levels of unemployment, an increase in government expenditure will initially generate a budget deficit, but will also, via the ‘Keynesian’ multiplier, increase aggregate demand and thus reduce unemployment. Or alternatively, given the same initial state, a ‘classical’ reduction in government expenditure will produce a budget surplus, tending to reduce the demands on the loanable funds market, tending to lower interest rates, thereby stimulating investment and reducing unemployment.

Clearly, these conflicting ideas lead policy-makers in conflicting directions. The same is true with respect to the macroeconomic implications of the underlying microeconomic structure. In the 1930s there was a commonly held view that the macroeconomic performance was unsatisfactory because there was too much competition. The policy response to this perception was that governments should encourage producers to restrict competition. In the 1970s and 1980s a widely held view was that there was too little competition. The optimal policy response was therefore perceived to be deregulation and denationalisation.

Since these different chains of thought lead to conflicting policy conclusions, policy-makers have to follow through the chains and form a judgement about the validity of the idea (the underlying model and the proffered response) as a representation of the actual economy. Thus dynamic analysis involves a calculation of the consequences, through time, of the initial impulse.

To simulate the various impacts on the economy, policy-makers need to know the strength, direction and momentum of the original impulse. Thus the ramifications of

1. I am grateful to Kathy Apenis, David Gruen, Kristy Smith and Richard Watson for comments and to Meredith Beechey for tracking down innumerable RBA documents.

a slight increase in the price of oil are different from the ramifications of a large increase. Again, the consequences associated with a slight change in the value of a relatively stable currency would be expected to have different domestic implications from the movement in the value of a currency that regularly exhibits a greater volatility. The strength and momentum of the initial impulse have to be specifically incorporated into the analysis.

So it is with policy ideas. As Milton Friedman (1981, p 1) put it during his second evangelical mission to Australia, while it is difficult to speak of a world business cycle ‘there is no difficulty whatsoever in talking about a world climate of opinion and ... a world-wide transmission of ideas’. Friedman (1975a, p 9) explained that his first visit to Australia illustrated the ‘freedom of trade in ideas’ which bound countries together ‘by common ideas’.² He appeared to mesmerise his audience, driving from Don Stammer’s (1975, p 18) mind, all his pre-planned questions. Thus when Friedman returned to Australia six years later, Stammer (Friedman 1981, p 21), who had been the Deputy Manager of the Reserve Bank of Australia (RBA) Research Department, ‘carefully prepared’ his questions the night before.

Yet economists tend not to incorporate this transmission mechanism into formal analysis. As a result, the analysis of policy ideas rarely involves an extensive consideration of the impulse or spin imparted to the ideas in dispute. But this information is required in order to gauge the expected longevity of ideas and to form a judgement about which ideas will retain their potency in subsequent time periods. Regrettably, this kind of dynamic analysis is rarely undertaken, and as a result policy is often analysed in a hermetically sealed vacuum. In Flatlandia (a mythical world inhabited by diminutive people who can only perceive two dimensions) a giant’s footprint would appear as a mysterious eruption, an Act of God or an Invisible Foot. So it is with intellectually diminutive policy analysis which neglects the fourth dimension: the dynamics associated with time. This paper argues that we economists have been negligent in our professional responsibilities by inadequately incorporating these dynamics into our policy analysis.

There is a rich oral tradition within the economics profession full of speculation and insights about these dynamics, but so far no substantial body of literature on the topic. We have simply failed to build on Harry Johnson’s (1971) pioneering work. As a consequence we have tended to display the tendencies of a bunch of Dynamically Alliterate Flatlandia Formalists (DAFF-O-DILS).

This paper provides some background dynamics to contemporary policy ideas and decision-making, in particular the Great Inflation of the 1970s and the subsequent disinflation. It is inspired by the Law of the Seminal Text (LOST), the belief that it is highly unlikely that an alert and well-trained economist would be able to adequately read a seminal text without finding something so surprising or insightful as to require at least a footnote if not a separate paper. Thus when seminal texts are referenced without comment we are entitled to suspect that they have not adequately been examined. Indeed, it is a disturbing aspect of too much policy analysis that

2. Friedman (1975a, p 16) mistakenly described the original Phillips curve as an Australian ‘export’.

references made to the earlier seminal literature often display little more erudition than an uncritical acceptance of the creation mythology associated respectively with Old Keynesian, Monetarist and New Classical perspectives.

An analogy to LOST wisdom is the Law of Inadequately Examined Statistics (LIES) or the Law of Inadequately Examined Data (LIED): the belief that the value of a piece of statistical analysis is proportionally related to the extent to which the underlying raw data has been adequately examined. The prejudice underpinning this paper is the belief that data and the dynamics of our profession (sometimes mistakenly dismissed as mere history) are one of our primary sources of empirical knowledge and should be interrogated as thoroughly as possible.

A general dynamic framework is proposed in Sections 2–5. Section 2 provides some preparatory remarks about policy ideas and their stages of development. Sections 3, 4 and 5 examine the three key markets that impact on policy in an intersecting way: the academic market place (Section 3), the political market place (Section 4) and the policy market place (Section 5). Within the academic market place, three types of scholars are identified: scholars (Section 3.1), campaigning scholars (Section 3.2) and revolutionary scholars (Section 3.3). The policy market place is illustrated by the dynamics behind the decline and fall of Bretton Woods.

Sections 6 and 7 focus on two dysfunctional episodes in our professional (and world) history. Section 6 examines the intellectual origins of the Great Inflation. Section 7 provides a dynamic analysis of the impact of the natural rate and monetarist disinflation proposals on Australia from the early 1970s. Section 8 argues that there is a clear continuity from Keynes' *reflationary* 'Phillips curve' through Phillips' low (below 3 per cent) inflation trade-off to the present day target of 2–3 per cent inflation over the course of the business cycle. Concluding comments are provided in Section 9.

Two clarifications. First, this paper attaches a low degree of reliability to conventional perspectives regarding the evolution of economics. Thus this paper does not pretend to provide a comprehensive summary of macroeconomic policy issues. Indeed, the thesis of the paper is that such shallow summaries are only obtainable by economising in a hazardous way with the analysis of the underlying dynamics. The paper summarises a decade's research and suffers from all the defects of a summary. Its conclusions are based on an in-depth and detailed interaction with the evidence and are presented in the spirit of Strong Opinions Weakly Held (SOWH) in the hope that some worthwhile conclusions and insights may be reaped.

Secondly, this paper is predicated on the assumption that macroeconomics does not really have a history, in the pejorative sense in which the term is used by many economists. Macroeconomic ideas are always resurfacing in a fresh disguise. Thus a supposedly 'past' policy idea should be treated as a current idea, with a latent energy. This paper therefore provides an account of internal professional dynamics or *contemporary* history: the subtle interaction between the present, the future and the immediate past. It concentrates on these 'internal' dynamics and only marginally addresses the 'external' forces that impact on policy-making.

2. Policy Ideas: A Systems Approach

Policy ideas are obviously endogenously determined within some system. As they proceed through the academic and policy nexus they can also mutate and develop. However, for the purposes of this paper, policy ideas will be primarily perceived as an injection into the policy system.

As a framework, an idea will be taken to have three stages of potential development. The first is the stage of genesis (real or imagined). Some ideas are the product of spontaneous combustion, others the social process of interaction and dispute. The most successful producers of post-war economic knowledge, the Chicago School, have, in the past, summoned to their conferences their most talented opponents to be enlisted in the production of ‘pearls’. Thus the first written exposition of the natural rate model came in Milton Friedman’s (1966) reply to Robert Solow (1966) at a Chicago conference, making Solow the midwife of monetarism. Likewise, Friedman’s (1968a) natural rate American Economic Association (AEA) Presidential Address may have been the midwife of an increased Keynesian tolerance of inflation.

The first stage in the process by which an idea impacts on the economy relates to this ‘irritant in the oyster’ phenomenon. The second stage relates to the ‘pearl’ that results. Some pearls sink to the bottom of the policy ocean and await rediscovery or oblivion. Others make it to the third stage: the market for policy ideas.

There are many reasons why a policy idea has an impact on the economy. The initial force contained ‘within’ an idea can be affected by three components. First its Mythological Potency (MYOP), second its Publication Potential (PP) and third its Ideological Content (IC). The first and third relate to group identity; the second primarily relates to the private self-interest of the individual researcher. This essay is predicated upon the assumption that it is myopic (MYOPPPIC) to ignore the force of such initial factors.

3. The Academic Market Place

Academic economists are taken in this essay to be historical agents who can be roughly divided into three groups: scholars, campaigning scholars and revolutionary scholars. Alternatively, these agents can be seen as displaying elements of these three characteristics in varying proportions at various times. All three groups (or characteristic holders) seek to persuade, but in markedly different ways. Within each group, there is a further division relating to optimism or cynicism.

The academic market place appears (especially in the United States) to be characterised by an ‘authority’ hierarchy. At the risk of appearing flippant (which I am not), the English Football League provides a potentially fruitful analogy. Highly influential economists who usually hold chairs in high-status universities inhabit the Premier Division. The First Division consists of economists with significant national and sometimes international status. The Second Division consists of relatively high-ranking economists with limited influence. Below these Divisions are economists who exert almost no perceptible impact on policy-making. There is some promotion and relegation between Divisions, but status appears to be largely allocated by early

institutional affiliation. There appear to be both deference and condescension between the Divisions. Hovering over all Divisions are the Gods of Nobel status.

3.1 Scholars

Scholars are those for whom the final envisaged consumer of their output is a journal or publishing house. Often their research projects are disconnected and have no recurrent theme. The persuasion content of their work consists primarily of the effort to persuade editors and referees to accept their output for publication. This market can be described as exhibiting consumer sovereignty. In other words the producers (the scholars) are content to see the consumers (the journals or publishing houses) consume their output and have little or no expectation that their output will become a major part of other production activities (as intermediate consumption). Some cynical scholars actively discourage others from too close an inspection of their work. Other scholars, such as most econometricians, appear to be unaware that they are followers of a revolution: the Formalist revolution that has swept through the economics profession from the 1930s.

3.2 Campaigning scholars

Campaigning scholars organise their produce in ‘bundles’ and seek to persuade identified communities of the merits of their ‘case’. Sometimes, their intended consumers are academic, sometimes they are policy-makers, sometimes a mixture of both. In this market the producer seeks to engage the envisaged consumer in an ongoing dialogue. Cynical campaigning scholars have little faith that their efforts will achieve their desired objective. AC Pigou, the author of the modern ‘market failure’ approach to economics, falls into this category. So too does the author of the original Phillips curve. Both had a low opinion of politicians and the political process, but nevertheless felt obliged to pursue their ‘mission’. In contrast, the campaign to de-couple monetary policy from current-account targeting appeared to display a more optimistic tendency.

3.3 Revolutionary scholars

Revolutionary scholars seek to enlist policy-makers in their endeavour to alter the course of ‘world history’. They also enlist the work of scholars and campaigning scholars for their own purposes. These producers seek to eliminate rivals, to dominate the market and to adapt their marketing techniques so as to bend the consumer to their will. Intentionally or otherwise, revolutionary scholars sometimes appear to be motivated by Lenin’s reputed dictum that ‘morality is pursued in the pursuit of the revolution’. For example, referring to the ‘classical’ caricature Joan Robinson (1962, 1964) reflected on the *tactics* employed in ‘the hard-fought victory of the theory of effective demand’ and concluded that ‘Keynes himself lacked the scruple of a scholar’.

A common perception underpinning the advocacy of Keynesism, Monetarism, New Classicalism, in addition to those who administrated the Bretton Woods

system, was the faith that they and they alone were ‘The Chosen Few’ elected to save civilisation. The Bretton Woods administrators believed that they and they alone could prevent the slide back to the protectionist darkness of the 1930s by outlawing competitive devaluation and by preserving the system of fixed exchange rates. The Keynesians believed they would prevent a return to the Great Depression through expanding government activities so as to correct for the imperfections of capitalism. The Monetarists believed that they would prevent the slide down *The Road to Serfdom* and that this would be achieved by finding stable money demand functions and thereby thwart the demand for wage and price controls. New Classicalists believed they would achieve the same desired end-state through the policy ineffectiveness proposition. It is unwise to consider policy options backed up by scientific evidence (chains of thought plus statistical associations) and ignore the fact that often these options are presented by Defenders of Civilisation (DOCTORS) or *The Economist as Preacher* (Stigler 1982).

In the prolific five-year period after returning to Chicago, Friedman imposed several specific restrictions on the discretionary policy implications derived from the Keynesian national income framework. Friedman argued that floating exchange rates would equilibrate the external sector (the fourth and fifth terms). The concept of permanent income was introduced to counter the Keynesian assertion that counter-cyclical manipulation of disposable income would set the multiplier in motion by influencing consumer expenditure (the first term). Of primary concern for libertarians was the potential for governments to direct civilisation down *The Road to Serfdom*. Thus government expenditure (‘G’), which is for Keynesians the third right-hand side term in their national income identity framework, was for libertarians a potentially malevolent force which must be restrained for inflation to be avoided and for civilisation to survive. Libertarians saw an inherent asymmetry with respect to ‘G’. It is easy to increase ‘G’ but difficult to reduce it, thus the share of ‘G’ was likely to creep towards totalitarian levels. In 1948 Friedman proposed to outlaw this creep by proposing a cycle-invariant rule for determining fiscal expenditures, thus fixing ‘G’ independently of the state of the business cycle. With tax revenues moving pro-cyclically, any government budget deficit would be met by counter-cyclical monetary expansion. Fiscal expenditures were to be determined by community preferences for public services relative to private consumption (the fiscal equivalent to his ‘x%’ money growth rule), but required monetary policy to be highly counter-cyclical. Thus with a real ‘x%’ fiscal rule ‘money expenditures would vary directly with prices’ while the supply of money would vary inversely (Friedman 1953, pp 204–234). In some important respects this ‘Framework’ appears to be inconsistent with the Quantity Theory which Friedman believed he had been taught in the 1930s.

Friedman’s version of the Quantity Theory becomes detectable in his writings in the year 1951. Part of Friedman’s philosophy is that ‘you can’t beat a candidate without a candidate’ (Leeson 1998a). Prior to the temporary victory of monetarism, he and AWH Phillips were the pre-eminent critics of simple Keynesian stabilisation optimism. Until he embedded his highly perceptive criticisms in the Quantity Theory ‘candidate’, his libertarian counter-revolution made little headway. His

criticism of the Old Keynesian tolerance of inflation was influential because it was embedded in the natural rate ‘candidate’ and appeared to be a vindication of his own methodology of positive economics. Friedman the methodologist conquered the profession long before Friedman the monetarist. The victory of Friedman the floater occupies an intermediate position.

In retrospect, revolutionary scholars such as Richard Kahn³ were often shocked at how deluded their revolutionary perceptions and memories were. For example, Friedman (Kitch 1983, p 178) was ‘astounded’ when he re-read Henry Simons’ *Positive Program for Laissez Faire*, ‘To think that I thought at the time that it was strongly pro free market in its orientation!’. In his *Memoirs*, Friedman has also reversed his judgement about his own personal immunity from Keynesianism. He was ‘shocked’ to re-read his wartime essays with their unmistakably Keynesian taint. In a statement in 1942 before the House Ways and Means Committee, Friedman declared that ‘inflation ... must be neutralised by measures that restrict consumer spending. Taxation is the most important of those measures’. Looking back Friedman was shocked, ‘The most striking feature of this statement is how thoroughly Keynesian it is. I did not even mention “money” or “monetary policy”! The only “methods of avoiding inflation” I mentioned in addition to taxation were “price control and rationing, control of consumers’ credit, reduction in government and war bond campaigns”. Until I reread my statement to Congress in preparing this account, I had completely forgotten how thoroughly Keynesian I was then... I was apparently cured, some would say corrupted shortly after the end of the war’ (Friedman and Friedman 1998). Thus with documentary evidence contradicting his memory, Friedman has reversed his position about ‘remaining largely unaffected and if anything somewhat hostile [to] ... the Keynesian revolution’ (Friedman 1974, p 162).

The New Classicalists have also reflected on the fruits of their counter-revolution. Robert Lucas recently reflected that ‘I write down a bunch of equations and I say this equation has to do with people’s preferences and this equation is a description of the technology. But this doesn’t make it so. Maybe I’m right, maybe I’m wrong. That has to be a matter of evidence’. With respect to a central policy implication of new classical macroeconomics, Lucas confessed that ‘Monetary shocks just aren’t that important. That’s the view I have been driven to. There’s no question that’s a retreat in my views’ (Cassidy 1996). Also, Sargent’s (1993) essays on *Bounded Rationality in Macroeconomics* involved a self-conscious ‘retreat from rational expectations’.

3. Kahn encouraged Keynes to attack Pigou, yet later reflected ‘to me it was a shock when, in the course of preparing this paper, I discovered the term “involuntary unemployment” was already in use in 1914, and that of all possible people it was used by Pigou [*Unemployment*, 1913], whom in 1936 Keynes was rightly going to denounce for publishing a book (in 1933) which was exclusively concerned with unemployment which was not involuntary. I suffered another shock when I reread the first few pages of Pigou’s 1933 book. Although Keynes was right in maintaining that the subject of Pigou’s book was “voluntary unemployment”, in these opening pages Pigou implicitly denies this’ (Kahn 1976, p 20).

With respect to the New Classical creation myth, Lucas (1976, 1980, 1981, 1984) explained that ‘one cannot find good, under-forty economists who identified themselves or their work as Keynesian ... I, along with many others, was in on the kill in an intellectual sense’. According to Lucas, the quarry subjected to the ‘kill’ was the proposition that ‘permanent inflation will ... induce a permanent economic high ... [the] shift of the “trade-off” relationship to centre stage in policy discussions appears primarily due to Phillips (1958) and Samuelson and Solow (1960)’; ‘We got the high-inflation decade, and with it as clear-cut an experimental discrimination as macroeconomics is ever likely to see, and Friedman and Phelps were right. It really is as simple as that’; ‘They went way out on a limb in the late ‘60s, saying that high inflation wasn’t going to give us anything by way of lower unemployment’.

Sargent and Wallace (1976) outlined their version of the ‘invariance’ critique (expressed in formal language) using Samuelson’s advocacy of ‘look at everything’ policy discretion as a whipping post. Thus Sargent and Wallace explained that it was common to find reduced-form equations which contained parameters ‘that depend partly on the way unobservable expectations of the public are correlated with the [other] variables on the right [hand] side of the equation, which in turn depends on the public’s perception of how policy-makers are behaving. If the public’s perceptions are accurate, then the way in which its expectations are formed will change whenever policy changes, which will lead to changes in the parameters ... of the reduced-form equation. It is consequently improper to manipulate that reduced form as if its parameters were invariant with respect to changes in [the parameters of the feedback rule]’. A specific reason ‘for employing the hypothesis of rational expectations is that in estimating econometric models it is a source of identifying restrictions’. With the ‘usual method of modelling expectations in macroeconomic models ... the coefficients on expectations are generally underidentified econometrically’.

Yet Robin Court (2000) and Peter Phillips (2000) have noted something that if noted earlier would have severely undermined the mythological potency of the New Classical counter-revolution. Years before Lucas and Sargent, AWH Phillips ([1968], p 473; [1972], chapter 52)⁴ highlighted ‘an important possibility, that when control is being applied ... the sub-system may no longer be identified. By this we mean that new observations generated by the operation of the complete system may give no further information by which to improve the estimates of the parameters of the sub-system’. Phillips then identified a ‘fundamental defect’, ‘The possibility that operation of the control may prevent re-estimation of the system should lead us to ask whether the decision analysis we have been considering does not have some fundamental deficiency. And indeed it has. The basic defect is simply that in deriving the decision rules no account was taken of the fact that the parameters of the system are not known exactly, and no consideration was given to ways in which we can improve our knowledge of the system while we are controlling it. In my view it

4. These, and all other references to Phillips relate to his *Collected Works* (Phillips and Leeson 2000). Dates in square brackets refer to the year of publication of the original work; page numbers and chapters refer to the Phillips and Leeson *Collected Works* volume.

cannot be too strongly stated that in attempting to control economic fluctuations we do not have the two separate problems of estimating the system and of controlling it, we have a single problem of jointly controlling and learning about the system, that is, a problem of learning control or adaptive control’.

These cautionary perceptions were not unique to Phillips. Samuelson and Solow’s (1960) famous Phillips curve paper came with a ‘caution. All of our discussion has been phrased in short-run terms ... What we do in a policy way during the next few years might cause [the curve] to shift in a definite way’. Specifically, picking a low inflation point on the Phillips curve might ‘so act upon wage and other expectations as to shift the curve downwards in the longer run’. Thus Samuelson and Solow identified the importance of what became known as the Lucas critique.

At various times what became known as the Lucas critique could have been fully integrated into the Keynesian Neoclassical Synthesis, and thus could have tempered Keynesian counter-cyclical optimism (Darity, Leeson and Young, forthcoming). The New Classical counter-revolutionaries would have been deprived of their Mythological Potency had they recognised that their whipping boys – Phillips and Samuelson – had developed these ideas years before.

4. The Political Market Place

The ideas that emerge in the popular market place are an intriguing interaction between advocates, journalists, politicians and that somewhat nebulous concept of the ‘spirit of the times’. Certain prominent individuals exert a significant impact here, including, of course, the press (Parsons 1989). Keynes, Friedman and Galbraith are the most prominent examples of producers and disseminators of economic policy ideas in the twentieth century political market place.

One direct channel by which ideas impact on the economy via this market is through politicians. The impact of ideas on the political process can be assessed by a subjective evaluation of the respective Zealot/Hotelling (Z/H) ratio. The denominator, named after Harold Hotelling, indicates the principle that the optimal political ‘location’ (in a two-party game) is the same as the optimal location for a duopolist who benefits from some degree of brand loyalty. Thus an ice cream vendor should set up shop close to the mid point of the sandy section of the beach alongside his rival.

The numerator reflects the influence of Zealots (Goodhart 1992).⁵ Zealots strike a posture at locations on the beach which have been suggested to them by public intellectuals. Politicians appear to be attracted by simple and energising ideas. Friedman (1974, p 16), for example, highlighted the potency of the Keynesian analytical system which ‘once mastered, appeared highly mechanical and capable of yielding far-reaching and important conclusions with a minimum of input’, especially when those conclusions were ‘highly congenial to opponents of the market system’.

5. Goodhart (1992) referred to Nigel Lawson and the British Treasury as ‘initial zealots’ with respect to monetary targeting.

Friedman was impressed with Mrs Thatcher's economic literacy, 'She recognised very clearly the relationship between monetary policy on the one hand and inflation on the other' (Smith 1987, p 74).⁶ Harold Wilson noted that 'I should imagine she [Mrs Thatcher] knows her Friedman very well' (Murray 1980, p 98). But Mrs Thatcher (1995) appeared to have learnt how to 'control the money supply through interest rates', and then proceeded to undertake a major social and economic experiment underpinned by monetary targeting. This was, in part, because monetarism yielded far-reaching and important conclusions with a minimum of input and its conclusions were highly congenial to supporters of the market system.

A high Z/H ratio can indicate the presence of a political bubble. After monetary targeting lost credibility, Mrs Thatcher appeared to run for cover: monetarism was 'not a doctrine to which I've subscribed. It's one that came in with Milton Friedman. I used to look at it, I used to look at it and not adopt it. It's a theory to which I've never subscribed. At the moment in spite of three and a quarter million unemployed, we have a current-account surplus – we've had a current-account surplus for five years in a row' (Smith 1987, p 122).

Ronald Reagan (1990) also had 'faith – faith in those tax cuts and faith in the American people'. His supply-side policies were based on his own homespun attitude ('you say "I'm not gonna work for six cents on the dollar"') with a lineage descending from 'that philosopher, Khaldoon' a fourteenth century Muslim writer on taxation. Reagan may have been a devoted scholar of fourteenth century Muslim philosophy or maybe he had consumed some contemporary libertarian popular literature and then wished to see this philosophy translated into policy. The latter seems more likely, and thus to assess the impact on policy of the ideas that we associate with Reagan requires an examination of the process by which these ideas came to be produced and consumed.

Sometimes the political tides erode the sandy area of the beach and shift the 'location' of the electorate and thereby shift the optimal political location. Ineptitude (or zealotry) on the part of the opposition also has an impact. Hence the overwhelming defeat of Barry Goldwater in 1964 and the overwhelming victory of Reagan in 1980, two Zealots with similar attitudes. Something similar was happening in Australia around the time of Friedman's two visits.

5. The Policy Market Place

The major DOCTRINAL conflict of the post-war period revolved around the competing claims of Full Employment, Free Trade and Fixed Exchange Rates (Leeson 2000a). The bankers who administered the Bretton Woods system held fast to Fixed Exchange Rates as the vehicle which would preserve civilisation. The primary Keynesian objective was the pursuit of Full Employment whereas Friedman etc elevated Free Trade to premier status. The Chicago view was that Free Trade was

6. Mrs Thatcher is one of the few politicians to have an econometric diagnostic statistic named after her (Leeson 1998e).

required to permanently shift the Phillips curve downwards (Shultz and Aliber 1966, pp 3–4, 13).

Friedman's advocacy of floating exchange rates first converted the academic community and then assaulted the policy market place. His opponents, the Bretton Woods 'founding fathers' were, like the Keynesians, revolutionaries. These 'zealots' had given institutional expression to the 'revolutionary ideas' of banishing the 'twin devils' of the 1930s: depression and beggar-thy-neighbour trade policy, involving competitive currency devaluation (Reisman 1996; de Vries 1996; Campos 1996). The public servants who policed the international economy believed that before 'us' lay the deluge of competitive devaluations. They also assumed that after 'us' lay a similar fate, 'a path leading into unknown darkness' (Caves 1963). In this sense, they came to display some of the characteristics of an *Ancien Régime*.

Fixed exchange rates and a fixed price of gold were the Newtonian certainties upon which the Bretton Woods system rested (Volcker and Gyohten 1992, p 7). The League of Nations (1944) outlined the 'proved disadvantages of freely fluctuating exchanges ... If there is anything that inter-war experience has clearly demonstrated, it is that paper currency exchanges cannot be left free to fluctuate'. This system 'would almost certainly result in chaos'. The actual system adopted in the thirties ('The Devaluation Cycle') was believed to be 'associated with disturbances not very different from those associated with freely fluctuating exchanges'. In addition to the 1930s analogy, apocryphal Swiss bankers were often conjured up to demonstrate the compelling nature of the case against floating rates. Galbraith's (1964, p 117) banker informed him that the Swiss response to a devaluation of the US dollar might be a competitive devaluation 'late the same afternoon'.

The 'art' of central banking was regarded as 'one of the keystones in the arch of our civilisation' (McChesney Martin 1970, p 11). This civilisation had been challenged in the 1930s by the 'economic barbarism' associated with floating exchange rates (Coombs 1976). The history of the IMF was 'the record of one of the ways in which that challenge was met' (Horsefield 1969). But the IMF historians who chronicled the response to that challenge barely mentioned the intellectual forces that would help to destroy the Bretton Woods system. Fixed exchange rates were the 'central core of the new international cooperation' and the IMF 'opposed all suggestions' which resembled the system that prevailed after 1973 (de Vries 1969). This was both 'the critical fact' and the critical weakness of the position taken by the international policemen (de Vries 1987). Those who supported par values were perceived to have been 'trapped in channels that were far too conventional' (Volcker and Gyohten 1992, p 115). Senator Paul Douglas, in 1963, complained that attempts to discuss flexible exchange rates with American IMF representatives or officials of the US Treasury elicited only a 'tropismatic response' (Yeager 1976, p 651). Numerous observers detected in the official world a 'theological aversion to exchange rate flexibility' (Williamson 1978).

The Bretton Woods policemen regarded themselves as pugilists going into combat against any undisciplined or self-interested national economic policy which might deliver a price of foreign currency different from that which the policemen had

decreed. They took their responsibilities very seriously and somberly. Nixon (1987) recalled that Arthur Burns launched a 'titanic' rearguard action to preserve the par value system. As their system entered the 'iceberg years', the official IMF historian recounts that they literally rearranged their chairs so as to pretend that it was not the Executive Directors who were discussing 'limited' flexibility of exchange rates. Moreover, 'there was stress on the word "limited" ... Pointedly, they did not discuss regimes which were inconsistent with the par value system'. These 'fourth floor' deliberations reinforced their view that they should maintain their course (de Vries 1976; McChesney Martin 1970). Within the first two months of the Second Nixon Administration these prizefighters were forced to 'throw in the towel' (Emminger 1978). They 'seemed to be more buffeted than in control of events' (de Vries 1985). Within a remarkably short period of time, speculation about a return to a par value system was regarded as a 'consolation for traditionalists sick with nostalgia' (Machlup 1976). As the IMF Deputy Managing Director reflected 'A policeman's lot is not a happy one' (Southard 1979).

Friedman made a concerted effort to engage his Bretton Woods opponents in debate. Robert Roosa, the 1967 President of the American Finance Association, was regarded as 'the foremost American expert on international monetary affairs' (Volcker and Gyohten 1992, p 21). Roosa was a partner of a leading Wall Street bank and had recently been Vice President of the Federal Reserve Bank of New York and Under Secretary of the Treasury of Monetary Affairs.⁷ He possessed a PhD, had been a Rhodes scholar and was highly regarded by Samuelson and Dillon. Jacobsson ranked Roosa second only to McChesney Martin 'in quality of judgement'. Jacobsson also repeatedly stated that those who advocated altering either the value of the dollar or the dollar price of gold 'knew nothing about exchange markets' (Jacobsson 1979, pp 320, 324).

Friedman, the current President of the AEA, continued to demonstrate to the satisfaction of increasing numbers of academic observers that his solution to the US balance of payments problem could achieve what all the king's men could not. A synopsis of their debate is provided in Appendix A. In summary, Friedman (Friedman and Roosa 1967, p 95) deferred to Roosa's superior knowledge about the day-to-day operations of the foreign exchange market but was incredulous when Roosa denied that a market in foreign exchange would actually exist without fixed rates, 'because there isn't a real going and lasting market, the relationships that will begin to develop will be the kinds which will lead to the creation of the bloc system ... fixed rates within each bloc, and barter among them' (Friedman and Roosa 1967, p 185).⁸ Roosa (Friedman and Roosa 1967, p 53) predicted that foreign exchange traders would not wish to be 'crushed between the pressures generated by central

7. Thomas Mayer (1999, p 111) formed the impression that until the mid 1960s, thinking at the upper levels of the Fed was 'often rigid, defensive and out of touch with developments in economics'.

8. *Friedman*: Do you deny that the market will set a price?
Roosa: I deny that an actual market will exist.
Friedman: You deny that a market will exist in exchange?
Roosa: I do, yes (Friedman and Roosa 1967, p 185).

bank giants in a free-for-all ... I am not trying to confront Professor Friedman with an organised strike of my fellow traders in the foreign exchange markets of the world ... [but] there would surely ... be no little recruiting problem in getting the trading desks capably manned for the launching of his system'.

Thus the central bankers appeared to be incapable of considering that anything other than competitive devaluation and autarchy was the alternative to their system. One of the lessons of Bretton Woods is that economists are influenced by the institutional market in which they operate. Pierre-Paul Schweitzer (1976) asserted that the IMF possessed 'intellectually, the best possible staff you could find ... they give their whole loyalty to the institution they are serving'. The Executive Directors had 'all evolved a kind of feeling of solidarity for the Fund'. He appeared to be especially impressed with the fact that the British contingent were a 'collection of lords and past and future knights!'.⁹ These trappings of institutional loyalty appeared to be a constraint on the ability of economists in the central banking sector to even comprehend how a system of floating exchange rates would work.

George Shultz, Friedman's Chicago colleague, acquired an important role within Nixon's White House. He also reflected about the 'self-deception' of some key players (Shultz and Dam 1977, p 130). Shultz was regarded as 'the creative synthesiser' (Safire 1975); but his post-Bretton Woods 'synthesis' was more conducive to floating rates than the fixed rate advocates would have wished. Between 1–9 February 1973, the Bundesbank spent almost US\$6 billion defending the Smithsonian re-alignment. But between the Treasury and the Fed there was a 'clear split' on the issue (Volcker and Gyohten 1992, p 130). The Federal Reserve sold \$320 million worth of marks, but the day after the defence began, newspapers reported that Shultz was sympathetic to the float of the mark, thus rendering the defence an expensive but pointless exercise (Friedman 1975b, p 181). On 12 February, Shultz announced a 10 per cent devaluation of the dollar, noting that the US had 'undertaken no obligation' to intervene in foreign exchange markets.

Of great symbolic importance was the fact that Shultz, the US Treasury Secretary, sent Volcker to Europe and Japan to discuss the impending changes, rather than negotiate via the IMF who, he believed, had a vested institutional interest in maintaining a par value system (Shultz and Dam 1977, p 121). When the agreement had been reached, the IMF were given a copy of Shultz's press statement, 'Perhaps for the first time in the Fund's history, the Executive Board did not have a paper prepared by the staff. In these circumstances there was little that the Executive Board could do ... Such a situation was far from welcome'. The IMF had been deliberately excluded from decision-making about the issue that they believed defined their existence (de Vries 1985).

The year before, Haldeman informed the President that the pound was floating, but Nixon replied 'I don't care about it'. Haldeman pressed him to take an interest

9. On these grounds, the RBA would have pleased him too: one-third of the Board members recorded by Schedvin (1992, pp 553–554) were knights.

in the international monetary crisis telling him that Arthur Burns, the Fed Chairman, was ‘concerned about speculation against the lira’. But Nixon retorted, ‘Well, I don’t give a [expletive deleted] about the lira’ (Williamson 1977, p 175).

With respect to the defenders of fixed exchange rates, Johnson (1969, 1970) complained that the obsession with the 1930s was based on a misconception about the realities of the world economy: they were ‘guarding the gates of hell rather than guarding legitimate business’. The ‘old central bank devil’ tended to ‘believe that they know better than the market does’. Academic economists, therefore, had to provide an ‘educational process’ for the bankers.

By March 1973, it must have been clear to the banking community that Friedman and his followers had won the debate over exchange rates at both an intellectual and a political level. Friedman (1968b) did not appear to have a high regard for central bankers. His view was it would be ‘politically intolerable’ to have independent central banks because ‘Money is too important to be left to central bankers’. Friedman approvingly noted that central bankers ‘tended to oppose many of the proposals for extending the scope of government’ which he regarded as a ‘requisite for a free society’. Yet when he read the memoirs of prominent central bankers he realised how ‘thoroughly dictatorial and totalitarian’ some of them tended to be. Yet, after 1973 central banks all over the world attempted to lead intellectual developments having so unsuccessfully lagged behind in their futile efforts to prop up the system of fixed exchange rates.

6. The Intellectual Origins of the Great Inflation

Like most economists in the 1930s, Keynes favoured the expansion of aggregate demand through government expenditure not financed through taxation. This is as true for Chicago economists as it was for the high priest of so-called ‘classical’ school supposedly located around Pigou, his Cambridge colleague (Leeson 1998b, 2000b).¹⁰ But contrary to Keynes’ caricature, Pigou calculated that increasing the plasticity of wages might reduce the amplitude of industrial fluctuations by about one-eighth.¹¹ For what appears to be tactical reasons Keynes set up a bogus but mythologically potent controversy between himself and the ‘Classics’ (or ‘Klassics’, with a ‘K’ after Keynes).

10. According to a dissenter (the co-author of the inter-war Treasury View) the idea that ‘public works themselves give additional employment is radically fallacious ... public works are merely a piece of ritual’. The case in favour of public works was ‘largely due to [Pigou’s] high authority’ (see Hawtrey (1925)).

11. The only modifications of existing wage-setting arrangements that were ‘practically worthwhile to study are modifications on a comparatively small scale’ (Pigou 1913, p 243; 1927, p 285; 1931, p 31). Pigou explained that ‘if we can bring ourselves to tolerate the conception of negative wages, it is possible to imagine a wage policy that would ensure full employment in all industries continuously, whatever changes [demand] might undergo. Even in pure theory, however, this state of affairs can only be admitted on the assumption that wage-earners possess stores of goods, out of which they can make payments to employers (negative wages) for the privilege of being allowed to work; and that assumption is inconsistent with the facts’ (Pigou 1927, pp 244, 284; 1930, p 49).

Multipliers play an important role in model evaluation (see, for example, Taylor (1979)). The so-called Kahnian or Keynesian fiscal policy multiplier (which had been derived unconsciously from Pigou or built on Pigouvian foundations¹²) played a pivotal role in the Keynesian revolution. Fear of inflation was part of the baggage of the ‘classical’ enemy. Kahn (1933), in his American multiplier article on ‘Public Works and Inflation’, noted that fear of inflation had to be overcome, ‘as soon as recourse to the banking system is alluded to, the cry of “inflation” is raised and fears are expressed as to the “safety of the currency”; and the policy is probably doomed’. Some Keynesians were determined not to be deflected from their social revolution. For example, Kalecki (1946) argued that it was pointless to worry about inflation since ‘this would depend on the institutional setup of full employment. It is no good to conjecture too much about all aspects of the future functioning of such a regime. Let us have it and try it out’. Tobin (1966, p viii) made a similar complaint about attempts to restrain the Keynesian Full Employment project.¹³

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12. In the version of *Can Lloyd George Do It?* that appeared in *Essays in Persuasion*, Keynes deleted the two paragraphs that referred to the multiplier. The deleted paragraphs included the statement the multiplier ‘has been carefully debated by economists in recent years. The result has been to establish the conclusion of this chapter as sound and orthodox and the Treasury’s dogma as fallacious. For example ... our preceding argument has closely followed Professor Pigou’s reasoning in his recent volume *Industrial Fluctuations* (part II, chapter X), where he quotes a statement of the Treasury dogma and expressly declares it to be fallacious’ (Keynes 1972, pp 120–121; Dimand 1988). Part II, chapter X, referred to by Keynes in the deleted paragraphs, is entitled ‘Attacks on Industrial Fluctuations’. It contains one of the clearest statements of the employment multiplier: ‘In this way secondary influences are set to work that further enlarge the aggregate real demand for labour. This is a very important matter’ (Pigou 1927, p 294). In Pigou’s analysis, ‘our artificially stimulated demand will also carry with it secondary effects of the same character as those carried by the primary part of the contraction’. Pigou neglected to expand on the relationship between x and the desired counter-cyclical target, simply saying that ‘unfortunately, we do not know at all how large x is’. But he concluded that ‘the presumption in favour of *some* creation or transfer [of demand] beyond what comes about “naturally” is very strong’ [emphasis in text] (1927, pp 294–296); ‘a small injection of money into the income-expenditure circuit ... *might* lead to a progressive and far reaching improvement in the employment situation’; ‘The process I have been describing is cumulative and progressive in character ... a spiral upwards movement ... Plainly, this cumulative process is of great importance’ [emphasis in text] (Pigou 1933, pp 242–243). In *Can Lloyd George Do It?* Keynes concluded his discussion of the (Pigouvian?) employment multiplier with the caution that ‘It is not possible to measure effects of this character with any sort of precision’ (Keynes 1972, p 107); a Pigouvian caution that few economists would now dissent from. Keynes (1936, pp 113, 121) attributed to Kahn the sole paternity of this ‘definite ratio ... a precise relationship’ which in a ‘typical modern community ... would not be much less than 5’. Keynes’ popular essay, ‘The Multiplier’ (the first use of the term) was published in *The New Statesmen and Nation* on April Fool’s Day, 1933.
13. Tobin argued that ‘It is amazing how many reasons can be found to justify ... waste: fears of inflation, balance-of-payments deficits, unbalanced budgets, excessive national debt, loss of confidence in the dollar, etc., etc. This catalogue of financial shibboleths and taboos scares the confused layman out of a commonsense, pragmatic approach to economic policy ... Perhaps price stability, fixed exchange rates, balanced budgets, and the like can be justified as means to achieving and sustaining high employment, production, and consumption. Too often the means are accorded precedence over the end, and I am led to take up my pen to defend the basic objective of economic policy against its spurious rivals’.

The typical Keynesian response was either to tolerate inflation or to suppress it through prices and incomes policies. Since the choice for many Keynesians lay between Full Employment plus some form of incomes policy (which displaced the economy in a downwards vertical direction away from a Phillips curve), or abandoning Full Employment (disinflation which shifted the economy downwards and outwards along a Phillips curve), the first alternative was regarded as a 'bargain' (Solow 1970). But it was essential to quantify precisely (if bogusly) the inflationary outcomes that would be associated with the pursuit of Full Employment and to reassure themselves and policy-makers that inflation was both containable and easily reversible. Hence the extraordinary enthusiasm with which the high-inflation misinterpretation of the Phillips curve was received (Leeson 1997a).

Keynes (1936, p 383) noted that 'At the present moment people are unusually expectant of a more fundamental diagnosis; more particularly ready to receive it; eager to try it out, if it should be even plausible'. This fundamentalist aspect of the Keynesian revolution tended to harden into dogma, hierarchy and contempt for opponents (Leeson 1998c). Those at the apex of the Keynesians' hierarchy continued the search for 'fundamental', that is epistemologically privileged, relationships. Thus in 'Full Employment after the War', Samuelson (1966) noted that with respect to the early budget studies, 'The consistency of the results is impressive, suggesting that we have a fairly stable and fundamental relationship'. Later, Samuelson and Solow (1960) introduced '*The Fundamental Phillips Schedule Relating Unemployment and Wage Changes*' [emphasis in original].

In 'The Threat of Inflation', Samuelson (1958, pp 63–64) thought it 'almost a play on words' to discuss that type of inflation in the same breath as other types of inflation. Samuelson acknowledged natural rate forces, 'after the inflation has been going on so long as to be obvious to everyone, many of its possibly beneficial effects – expansionary pressure on physical output and employment etc. – tend to disappear as people make adjustments to it'. He also highlighted what he regarded as the paradox of contemporary policy choice, 'to increase the now-negligible probability that American adults will within their lifetime experience hyper-inflation, you would have to preach extreme fiscal and economic orthodoxy – whose future consequences might then set the stage for a breakdown of American society and for an ensuing galloping inflation ... I fear inflation. And I fear the fear of inflation'.

Immediately after Friedman's AEA natural rate Presidential Address, a group of leading Keynesians reaffirmed their commitment to the idea that inflation would be associated with a reduction of unemployment. In the process they introduced the terminology of 'rational expectations' in the context of the natural rate model. Tobin (1968) noted that the natural rate proposition was 'an implication of simple rationality, absence of money illusion'. Solow (1968) was stimulated by Friedman to consider (but then dismiss) this idea of 'rational' expectations, 'It really doesn't matter from the practical point of view whether or not price expectations are ultimately rational. If the period of catch-up is very long, we still have the whole intervening period during which some sort of trade-off dilemma exists'. Johnson (1969, p ix) also dismissed the 'assumption of rational adjustment of

expectations to experience ... the empirical evidence is that lags in adjustment of expectations are sufficiently long for contemporary policy-makers safely to disregard them’.

Solow (1975) reflected that ‘inflation is a *substantial, sustained increase in the general level of prices* [emphasis in text]. The intrinsic vagueness of “substantial” is harmless. One would not want to use a heavyweight word to describe a trivial rise in the price level; granted, it will never be perfectly clear where to draw the line, but neither can it be important *since only a word is at stake* [emphasis added]’. The ‘trade-off school’ had a reply to the ‘monetary school ... Is there something qualitatively different about “double digit” inflation? By any algebraic standards, of course, the difference between nine and 10 is no larger than the difference between eight and nine ... There is no abyss, just potholes ... Inflation is their [the mixed capitalist economies] way of adapting to change. The unusually rapid rise in prices during the past year and a half may simply reflect the fact that the world has been called upon to absorb some unusually large changes. In that case, it will burn itself out’. Solow (1970) concluded that ‘the current inflation has been inflated as a social problem’. The momentum associated with the Keynesian creation myth contributed to ‘The Great Inflation’, the monetarist counter-revolution and the demise of Old Keynesian economics.

This Old Keynesian complacency prepared the way for monetarist solutions. The title of one of Friedman’s (1975a) Australian talks was ‘Can Inflation be Cured ... Before it Ends Free Society?’ In contrast, for Tobin it was a question of ‘Living with Inflation’ (Tobin and Ross 1971). As late as August 1972, Peter Jonson’s (1972) RBA paper reported a ‘growing consensus that the coefficient [on the price expectations term] is less than unity which implies some degree of money illusion in the wage market’. Thus the Australian Phillips curve was ‘just more complicated’. With respect to policy ‘the implication seems to be that we may have to live with a higher rate of inflation in the short run although to the extent that this generates expectations of further rises it is likely to be de-stabilising ... In any case, increased unemployment has high social costs, costs that may well be higher than those of a higher rate of inflation’.

Less than three years later, Stammer (1975, pp 18–19) noted that ‘we seem to have gone very quickly from the old Phillips curve to the new Phillips curve’. Jonson’s (1972, p 4) earlier paper displayed elements of this transitional thinking with the presentation of evidence that ‘price expectations are reduced by increased unemployment, although the important determinants are past price changes and the rate of growth of the money supply’. Thus these years are of great significance in terms of the evolution of Australian monetary policy.

The fifty-two year old Keynes (1936, p 384) implicitly instructed his followers not to trust economists over ‘twenty-five or thirty years of age’. This ‘year zero’ mentality imparted by the Keynesian creation myth generated a contempt for past wisdom. Hence, in part its appeal. For a young economist aspiring to a ‘front line’ position all that was required was a mastery of the post-1936 literature. The Chicago counter-revolution was designed and propagated by George Stigler and Friedman, whose understanding of the dynamics of the economics profession far exceeded that

of their opponents (Leeson 2000c). Friedman's AEA Presidential Address (he was fifty-five years old at the time) was rhetorically as potent as Keynes' *General Theory* had been. Keynes' opponents were ridiculed for supposedly believing in a crude version of Say's Law; Friedman's (1976, pp 217–219) opponents were ridiculed for believing in the 'utterly fallacious' and 'simple minded' Phillips curve. During 1973, the thirty-three year old Michael Parkin was a Visiting Research Economist at the RBA and provided a stimulus both to monetary research and to natural rate perceptions. His arrival corresponded with a pivotal moment in world history: 'The Transition from Fixed Exchange Rates to Money Supply Targets' (Parkin 1977).

7. Disinflation and the Natural Rate

7.1 Monetarism: A beguiling mixture of caution, optimism and high-tech econometrics

Monetarists were identifiable in seeing monetary discipline as the only method of reducing inflation and also in their opposition to prices and incomes policies. They offered a beguiling mixture of optimism and caution. For example, Friedman (1972, pp 34, 36) acknowledged that 'There is no way of stopping an inflation without a recession'; but the precise short-run consequences for output and employment of a monetary shock (and how long that monetary shock would last) still needed to be investigated, 'I have myself tended in the past few years to stress that one shouldn't overstate the case for monetarism'. Shortly before the start of the 'monetarist decade', Friedman (1974) presented his reformulation of the quantity theory as an empirical research agenda, appealing for a 'more subtle examination of the record' to illuminate the all-important question of what would happen to the economy following 'monetary disturbances'.

Perhaps there is something inherently optimistic at the heart of successful revolutions, but Friedman's natural rate (disinflation) prediction to the House of Commons Select Committee on Monetary Policy was less accurate than his natural rate (inflationary) prediction to the AEA. Unlike the inflationary prediction that elevated the natural rate model to centre stage, the disinflation prediction described the lower half of the \$ (the 'S' with a 'natural' spike): the *reduction* in unemployment that would (after a brief interval) follow from monetary targeting. From 'the best evidence', Friedman (1980, pp 56, 61) predicted that '(a) only a modest reduction in output and employment will be a side effect of reducing inflation to single figures by 1982 and (b) the effect on investment and the potential for future growth will be highly favourable'. Unemployment was 'an unfortunate side effect of reducing inflation'; only rigidities stood in the way of a rapid return to the natural rate of unemployment, 'The mechanism causing the contraction in output is the slowing of nominal spending in response to the slowing of monetary growth and the inevitable lags in the absorption of slower spending by wages and prices'. However, subsequent British unemployment experience was much worse than he predicted, 'a temporary retardation in economic growth'.

During Friedman's visit to Australia, Michael Porter (1981) noted the evidence suggested that with respect to increases in money and prices there was an 'elasticity of about one' and that 'persons in positions of power' within the RBA and the Treasury had been persuaded by Friedman's arguments. In a paper written in 1981, two RBA economists concluded that 'the evidence from the time-series data on the relation between demand and prices suggests that: the main link is from demand to prices; there is a lag of a year or two between a rise (decline) in the growth of money and an increase (fall) in the growth of prices; and that the relation from money to prices was stronger in the 1970s than in the previous decade' (Norton and McDonald 1983).

Porter (1981) also noted that there was not 'much evidence' relating to the relationship in the disinflationary direction. P. McGuinness (1975, p 29), Economics Editor of the *Australian Financial Review*, hinted to Friedman about this asymmetry. He accepted the relationship between monetary growth and inflation but concluded that the high interest rates and unemployment that would result from monetarist disinflation had been 'pretty clearly shown to be politically unacceptable'. Another solution was called for. Friedman (1975a, pp 29, 62–63) replied that McGuinness was looking for a way to make water 'run up hill. There is no other solution to the problem of inflation'. Two thousand years of history revealed that wage and price controls made inflation worse, because 'They are imposed whenever a Government wants to inflate ... I can assure you if you look at the record you will find that what I have said characterises essentially every period of imposition on price and wage controls'. Businessmen who agreed to price and wage controls had 'a suicidal impulse' and were 'asking for their own elimination and the socialisation of society.'

David Hendry (1980) had just demonstrated that cumulative rainfall outperformed the money stock in price equations, with R^2 approaching unity and Charles Goodhart (1982) noted that 'modern econometricians may well look askance at some of [Friedman's and Schwartz's] econometric methodology'. This was followed by an explosive report for the Bank of England by Hendry and Ericsson (1983, 1991) entitled 'Assertion Without Empirical Basis', in which it was claimed that the monetarism had been constructed through a process of 'measurement without measurement'. In December 1983, the *Guardian* reported the Bank of England study under the title 'Monetarism's guru 'distorts his evidence'' (Hammond 1996). In October 1985 the target for M3 was suspended, and this was reported in the *Financial Times* under the heading 'Monetarism is Dead – Official' (Smith 1987, p 125).

In 'Monetary Economic Myth and Econometric Reality', Hendry (1985) stressed the need to 'highlight unsubstantiated claims and poor models prior to their policy implementation'. But what about the econometric enthusiasm which underpinned the monetarist-Keynesian regression races? Friedman launched the monetarist counter-revolution by tacking to the prevailing Formalist wind. But Friedman was a leading opponent of that Formalist revolution. All a paradigmatic challenger requires is to earn a draw in order to undermine the hegemony of the dominant school. Econometrics was the perfect vehicle for such a challenge.

Friedman was heir of a long Chicago tradition of opposition to Formalism. Jacob Viner (1958) was a counter-revolutionary with respect to the 'quantitative' revolution

in economics. He expressed an aversion to a world of ‘nonsense correlations’ inhabited by ‘a plague of graduate students’ who correlate ‘furiously and indiscriminately and with an inverse correlation between zeal and discretion which seems closely to have approached, if not quite to have attained perfection’. Specifically, Viner (1962) opposed the method by which Friedman was conducting the Chicago counter-revolution. He objected to Friedman’s ‘faith’ in the statistical relationship between money and prices ‘on the basis of another article of faith which I hold, but which I concede is not fashionable today in the profession. I believe that the nature of the economic universe is such, and the degree of mutual interdependence of the money supply and the price level is so substantial as far as logic by itself can determine, that any empirical constancy of relations that is discovered must be suspected of being either fortuitous or the consequence of the particular selection of series, from among those available, subjected to comparison, and that routine extrapolation into the future of such constancy of relations is consequently a highly hazardous basis for prediction’.¹⁴

This aspect of the Chicago tradition managed to unite Viner, Simons and Frank Knight (1960, p 166; Stigler 1982, p 23). Simons (1938) warned that ‘one wisely may avoid promiscuous, casuistic tinkering with original data and then carefully explain the inevitable limitations of the statistical results’. Knight (1940) was outraged by ‘misleading and pernicious’ quantification, ‘To call averaging estimates, or guesses, measurement seems to be merely embezzling a word for its prestige value’. Forecasting was little better than ‘random guesses ... the correlation of and extrapolation from composite magnitudes or series never can be very reliable’.

As McGuinness (1975, p 36) noted to Friedman ‘the econometricians are winning at the universities’. But Friedman, with Keynes, was the co-author of a perceptive criticism of Formalism, ‘Tinbergen’s results are simple tautological reformulations of *selected* economic data ... The methods used by Tinbergen do not and cannot provide an empirically tested explanation of business cycle movements. As WC Mitchell put it some years ago “a competent statistician with sufficient clerical assistance and time at his command, can take almost any pair of time series for a given period and work them into a form which will yield coefficients of correlation exceeding $\pm .9$ ” [emphasis in text] (Friedman 1940). High *t* statistics and correlation coefficients are ‘a test primarily of the skill and patience of the analyst’ (Friedman 1951). Statistical evidence could be ‘extremely misleading’ (Friedman 1962, p 170), and was only available to confirm ‘general reasoning’ and to offer a guide to what is ‘reasonable’ (Friedman 1953, p 231, 312).

In 1946–48, Friedman was a frequent participator at the Cowles Commission seminars. His relentless criticism prompted Koopmans to ask ‘But what if the

14. Viner’s (1949, p 35) suspicions were reinforced by his experiences in Washington: ‘I have never seen, in what experience I have had in government service, any economic analysis having immediate and direct bearing on controversial policy that went out to the public as honest matter ... I have a profound skepticism of almost everything connected with the role of economic statistics in our modern society. Whenever I have had occasion to look under the covers of almost any important, major statistical series, I have seen horrors of promiscuity there’.

investigator is honest?' (Epstein 1987). Friedman predicted that the Cowles Commission macroeconomic models would be revealed to be unsuccessful, 'the construction of a model for the economy as a whole is bound to be almost a complete groping in the dark. The probability that such a process will yield a meaningful result seems to be almost negligible'. Structural estimation was a 'blind alley for empirical research'; 'Despairing of their abilities to reach quantitative answers by a direct analysis of these complex interrelationships, most investigators have sought refuge in empiricism and have based their estimations on historical relationships that have appeared fairly stable'. He argued that prejudices or the 'psychological needs of particular investigators' would tend to predetermine the outcome; 'the background of the scientist is not irrelevant to the judgements they reach'. Friedman drew an analogy with Heisenberg's indeterminacy principle and 'the interaction between the observer and the process observed that is so prominent a feature of the social sciences ... both have a counterpart in pure logic in Godel's theorem, asserting the impossibility of a comprehensive self-contained logic' (Friedman 1943, p 114; 1951, p 113; 1953).

Friedman concluded that 'I've been very sceptical of the economic forecasts that people like myself and others make by using multiple regression analysis' (Friedman 1988a); 'I have long been sceptical of placing major emphasis on purely statistical tests, whether t values, Durbin-Watson statistics, or any others. They are no doubt useful in guiding research, but they cannot be the major basis for judging the economic significance or reliability of the results and cannot be a substitute for a thorough examination of the quality of the data used' (1988b); 'low standard errors of estimates, high t values and the like are often attributes to the ingenuity and tenacity of the statistician rather than reliable evidence of the ability of the regression to predict data not used in constructing it ... In the course of decades [my] scepticism has been justified time and time again' (Friedman and Schwartz 1991).

7.2 The natural rate model

In the dominant version of the natural rate model, measured unemployment (U) can differ from its natural level (U^N) only because of expectational disequilibrium, (i.e. inflationary expectations, ΔP^e , are not equal to actual inflation ΔP). Thus, any unnatural (U^{UN}) divergence of U from U^N is a function of the speed of adjustment (α) of incorrect inflationary expectations.

Thus:

$$U = U^N + U^{UN} \quad (1)$$

$$U^{UN} = f[\alpha(\Delta P^e - \Delta P)] \quad (2)$$

Whilst U^N can be reduced by microeconomic manipulation (improving labour market flexibility etc), macroeconomic policy can effect disinflation only by temporarily increasing U above U^N ; the speed of reduction of ΔP and therefore U^{UN} depends on α – the delusion variable. But macroeconomic policy cannot sustainably reduce U below U^N , without incurring the cost of increasing inflation. Thus U^N can

also be described as the Non Increasing Inflation Rate of Unemployment (NIIRU) or the Non Accelerating Price Level Rate of Unemployment (NAPLRU) or for those who don't think it is important to distinguish between a first and a second derivative, the Non Accelerating Inflation Rate of Unemployment (NAIRU).

Friedman (1968a) stated that the natural rate of output and unemployment was determined by Walrasian equations which reflect the 'actual structural characteristics of the labor and commodity markets'. But there is a circularity in these conventional natural rate models. All points in Phillips curve space can be explained by the natural rate model: if inflation is stable at an unemployment rate different from the rate at which it was previously stable then by definition the natural rate has changed. A model that can superficially explain everything can also be accused of adequately explaining nothing. It is therefore important to identify the four possible relationships between this Walrasian World (WW) and the Actual World (AW). It is possible that WW exerts such an important influence on AW that as soon as delusion is recognised AW rapidly falls into line with WW. Alternatively, the state of AW might well rearrange those WW equations.

New Classical: $AW = WW$ (so that with credible policy, disinflation can be costless).

Monetarist: $AW \Rightarrow WW$ (AW is strongly gravitationally attracted to WW).

New Keynesian: $AW \rightarrow WW$ (AW is weakly gravitationally attracted to WW).

Hysteresis Keynesian: $WW \Rightarrow AW$ (WW is gravitationally attracted to AW).

The natural rate only has significance in so far as it affects the actual economy and any measure must be accompanied by some indication of which Phillips curve (the long-run or the-short run) is doing the pulling. With two Phillips curves in disequilibrium the crucial question is which moves first and fastest? This question must be addressed before any series graced with the epistemologically privileged title of 'natural' can be taken seriously.

Friedman (1968a, 1996) clearly stated that he was introducing an unobservable, almost metaphysical concept that was not designed to be measured at all because 'the monetary authorities ... cannot know what the "natural" rate is'. Thus natural rate estimates derived from unsubstantiated assertions that it has 'been recognised for at least two decades' that 'the economy will return to its natural unemployment rate which is determined by more fundamental factors than expectational errors' have an Aristotelian flavour.¹⁵ The earth-centred view of the universe was perfectly consistent; the alternative was logically unsatisfactory because it implied irrationality or illusion on the part of God. But measures of the Aristotelian Natural Rate of Unemployment (ANRU) have only an accidental relevance to macroeconomic policy debates.

15. The quote is from Ooi and Groenewold (1992, p 88) although others could have been used to illustrate the same tendency.

Friedman's (1968a) initial estimate was that full adjustment back to the natural rate of unemployment would take 'a couple of decades', thus potentially placing him in the New Keynesian camp. Indeed, Friedman was adding the equivalent of 'one wrinkle' to 'the celebrated Phillips Curve' which became virtually horizontal at higher levels of unemployment (Phillips and Leeson (2000) [1958], p 248; Lipsey 1960). Taking the slope of the short-run Phillips curve as an indication of wage change stickiness, this would imply a lengthy adjustment process because the divergence between actual wage inflation and expected wage inflation is very slight. Friedman (1976, p 218) visually defined the natural rate of unemployment in his representation of the original unaugmented Phillips curve as that rate at which wage inflation was zero. In Lipsey's post-1923 curve this does not correspond to any point since the curve becomes a horizontal line at about 4 per cent unemployment. Phillips' curve crosses the horizontal axis at about 6 per cent unemployment, but to the right of this 'natural rate' increasing unemployment to 11 per cent generates a rate of wage deflation of less than 1 per cent, revealing very little downward aggregate wage flexibility. Thus there is clear evidence of an 'Expectations Trap' which would tend to thwart the equilibrating mechanism of the natural rate model (Leeson 1997b). But in Friedman's (1976, p 218) version of the original Phillips curve there is a very pronounced degree of downward wage flexibility since beyond the natural rate (in the disinflationary direction) his 'original' curve becomes a 45 degree downward-sloping line.

During his visit to Australia, Friedman also indicated the likelihood of path dependency. In response to a question from Stammer (1975, p 22), Friedman (1975a, p 24) indicated that inflation adversely affected these Walrasian equations: 'Dr. Stammer has quite properly noted that ... in the modern day the effect of inflation particularly in Australia, has been to raise wages relative to prices, thus to destroy the sources of capital, to reduce the amount of capital investment and to hinder economic progress'.

In his Nobel Lecture, Friedman (1977) indicated that larger doses of inflation tended to increase the natural rate of unemployment. This could be interpreted either as a positively sloped long-run Phillips curve or a long-run Phillips curve that shifts adversely as inflation rises. There is no reason why the long-run Phillips curve should not also shift adversely as unemployment rises too. The destruction of human and physical capital that are associated with policy-induced increases in unemployment will also presumably reduce the productive capacity of the economy in the short and medium run. The evidence from Britain in the 1970s and 1980s and Australia in the 1990s suggests that it also had an impact in a longer period as well. Thus the long-run Phillips curve becomes positively sloped when inflation becomes non-trivial and becomes negatively sloped as increased unemployment becomes prolonged.

7.3 The monetarist experiment in Australia

In February 1975, the Liberal Party apparently embraced monetary targeting (Hughes 1980). In April 1975, stockbrokers Constable and Bain brought Friedman

to Australia, at the invitation of one of the partners, fellow Mont Pelerin libertarian, Maurice Newman (Friedman and Friedman 1998). According to the Preface to *Milton Friedman in Australia 1975*, the purpose of the Friedman visit was to ‘heighten public awareness of the dangers of inflation and to point to possible cures consistent with the maintenance of individual liberty and free enterprise ... By any standard, Professor Friedman’s visit captured the imagination of the Australian people, achieving beyond expectations the aims of the sponsors’.

Friedman lobbied all three intersecting markets discussed in this paper. At the time Australia was experiencing an inflation rate of 16 per cent (Friedman 1975a, p 35). Friedman visited the RBA (Schedvin 1992) and met all kinds of libertarians, economists, officials and journalists, but did not form a high impression of Australian politicians.¹⁶ David Love (1975, p 31), the publisher of *Syntec*, doubted that the RBA had the ‘political ability, the independence, or the guts’ to introduce a monetary target of 10 per cent per annum. Yet in March 1976, the newly elected Government announced an 11–13 per cent expected target for M3 growth. Thus began a decade of monetary targeting in Australia, which culminated in M3 growing at 17.5 per cent in the year to June 1985, almost double its target range. However, by early 1985, the targeting of M3 was abandoned (Argy, Brennan and Stevens 1990).¹⁷

Monetarism in Australia rose and fell in a remarkably short period. If the essays in the volume edited by Nevile and Stammer (1972) are an indication of prevailing attitudes of the very early 1970s, then monetarism had made little headway in Australia. Stephanie Edge (1972) concluded that Friedman and Meiselman were leading the profession into ‘an economic *cul-de-sac*’. The RBA may have felt that they were lagging behind other countries: there was ‘no published work on the demand for money in Australia’ (Cohen and Norton 1969). Two international visitors to the RBA sought to integrate Australia into the ‘Great Monetary-Fiscal Policy Debate’. But this research concluded that monetary policy mattered less than fiscal policy and that the Federal Reserve Bank of St Louis monetarist model was ‘strikingly disconfirmed’ (Dewald and Kennedy 1972). Donald Sanders (head of the Securities Markets Department (1970–72), Banking and Finance Department (1972–75) and then Deputy RBA Governor from July 1975) was according to Schedvin (1992) ‘the epitome of the new-style Australian central banker’ with a distinct preference for greater reliance on market mechanisms. In an essay with a postscript written in January 1971, Sanders (1972, pp 166–168) explained that monetarist ‘voices’ had been heard amid ‘theological contentions’. But despite a

16. Apparently, Gough Whitlam got wind that Friedman was a monetarist after he arrived in Australia (rather late one would have thought) and cancelled the planned meeting. In 1981, Friedman met Malcolm Fraser but did not form a high opinion of his intellect, ‘He was very cold, arrogant, quite uninterested in hearing anything other than an echo of what he himself had said’. Over dinner with some Labor opposition members, Bill Hayden hardly said a word, but Bob Hawke delivered ‘a long and involved statement out of which I could I could make neither hide nor hair’ (Friedman and Friedman 1998, pp 427–433).

17. According to Argy *et al* (1990, p 58), several facts suggested that monetary targeting was ‘at least from the practitioners’ point of view, an appropriate tactical response to a set of circumstances, and not a complete revolution in the execution in monetary policy’.

greater concentration on examining trends in money supply growth ‘we have not opted for steady growth in money supply as a wholly sufficient target’. Sanders added, ‘We are by no means complacent about our philosophy or our practice. We do not conform wholly to any one of the fashionable theologies although we do recognise elements in our own experience supporting particular dogmas. Perhaps this is the worst of all worlds. By refusing to be saved by cleaving to the tenets of one theology, we may go to perdition according to the tenets of them all!’.

Schedvin (1992) records an intellectual revolution within the RBA in the 1960s. The old-style distrust of markets and faith in direct intervention was being challenged. Harry Johnson, then at the University of Chicago and the LSE, played an important role in this process, exercised through his voluminous publications and correspondence, personal visits and through his influence on Austin Holmes, the Head of the Research Department (1966–73 and 1978–81).¹⁸ Holmes and his two successors, Bill Norton (1973–78) and Peter Jonson (1981–87), contributed towards this ‘unmistakable’ and ‘irreversible ... shift towards liberalism’. Stammer, Deputy Chief Manager of the Research Department until 1980, was presumably another contributor. These influences were reflected in the RBA macroeconomic models of the period: Norton led the team which constructed RBA 1, and Jonson and co-workers constructed RBA 76 (Gruen 1979).¹⁹

Yet liberalism did not initially imply monetarism. The quarterly model of the Australian economy that Norton was responsible for included some price equations. In a progress report on ‘Price Equations for Australia’, money was not mentioned and prices were ‘largely explained by unit labour costs and replacement costs, measures of the pressure of demand upon capacity and where relevant, indirect tax rates’ (Schott and Sweeny 1970).

In ‘The Strategy and Tactics of Stabilisation Policy: A Point of View’. Jonson (1973) made an implicit comparison between high-status econometric models and ‘less objective historical analyses’. Apparently this was a departure from existing RBA practice, as Jonson explained that this research strategy was ‘rather different than is generally proposed’. Methodologically, Jonson was advocating that the RBA follow a world-wide trend (Leeson 1996a, 1996b, 1996c). Robin Marris (1954) described the pre-econometric mode of discourse in the British bureaucracy as ‘making liberal use of one’s pre-conceived ideas, one writes one’s opinion in a few well-chosen words, illustrated by one or two well-chosen tables’. Attempts were made to produce a civil service where everyone was economically literate: ‘*Amateurs on the Retreat*’ as Samuel Brittan (1964, pp 28–30) described it. The economic ‘irregulars’, who steamed into Whitehall in the 1960s, brought with them both a faith in quantitative techniques, plus (what appears to have been) a thinly veiled contempt for public servants who were not as statistically literate – ‘a limited “absorptive

18. According to Charles Kindleberger (1976, p 29), flexible exchange rates were synonymous for Chicago economists with ‘God’, and Johnson, a Canadian, was the Archbishop of Canterbury.

19. Jonson and Trevor (1979) reported that ‘controlling the growth of money in RBA 79 substantially reduces the level and variability of inflation in the medium and long run’.

capacity” (Seers 1968; Opie 1968; Balogh 1959). This can only have profoundly changed the nature of discourse amongst policy-makers.

Michael Stewart (1967, pp 168, 198), described how econometric models were used to support various arguments, ‘a series of complicated econometric models was shoved under the noses of ministers and civil servants who, perhaps because they were unable to understand them, were visibly impressed’. In consequence, ‘statistical theology’ acquired the ability to out-trump other modes of persuasion (Brittan 1964). This multiplication of data, combined with the tendency to seek consensus, became part of the new tone of economic policy. According to Brittan (1964, p 46), ‘The differing “schools of thought”, which were such an exciting feature of the Treasury in the 1950s, are now strongly discouraged. Those sharp contrasts of opinion, top Treasury men now say, reflected mainly a lack of hard information’.

Under ‘Strategy: What we do know’, Jonson (1973) stated that Friedman and Schwartz (1963) had ‘clearly established’ that causality ran primarily from money to prices and that a constant monetary growth rule would have prevented the rise in the US money policy in the 1960s and would have prevented policy from exacerbating the Great Depression. The ‘major point’ that emerged from ‘our positive knowledge of the workings of the economic system’ was that to control inflation, it would be necessary to expand the rate of growth of the money stock at a rate ‘determined by the growth of “full employment” demand’ for money ‘at current inflation rates’.

Jonson’s reference to ‘positive knowledge’ presumably reflects, directly or indirectly, the hegemony of Friedman’s (1953, pp 157–203) methodology of positive economics. Later, in his *JPE* ‘standard monetarist model’ of British ‘Money and Economic Activity’, Jonson (1976) specifically invoked Friedman’s ‘*as if*’ methodology. Presumably impressed by the methodology reflected in the empirical evidence that he had been reviewing, Jonson called for the RBA to emulate this methodology, ‘What is required is more thorough and sophisticated studies of economic fluctuations, preferably in the relatively objective framework provided by a well specified econometric model’.

Keynes (1936) introduced some non-Euclidean arithmetic to explain the magic of the multiplier ($5.2 + 0.1 = 6.4$).²⁰ RBA economists added up the sum of the coefficients on their two price terms ($0.674 + 0.280 = 0.954$)²¹ to derive the conclusion that there was ‘no long run trade-off between the rate of inflation and the state of the labour market in Australia’ (Jonson, Mahar and Thompson 1974). Parkin was thanked for providing this conclusion which they regarded as ‘the most impressive feature of these results’, which, judging by the pre-Parkin draft, they had previously failed to derive (Gruen, Pagan and Thompson 1999). A contemporary paper on ‘Inflation: Prices and Earnings in Australia’ (which had been ‘originated’ by Parkin during his visit) also used the same adding-up technique to conclude that

20. Keynes argued that with employment at 5.2 million, if the government employed an additional 100 000 on public works, total employment would rise to 6.4 million.

21. That is, close to unity.

‘Australia does not have a long run trade-off between inflation and unemployment’ (Boxall and Carmichael 1974).

Jonson (1973, p 2) noted that ‘as recently as 1968, Friedman was still thinking in terms of relatively slow adaption of expectations, although recent work suggests that price expectations adjust much more rapidly’. Citing Parkin, Jonson concluded that there was ‘really striking empirical evidence’ which demonstrated that there was ‘no trade-off between wage inflation and unemployment in the relatively short run’. This influence was captured in RBA 76 in which ‘adjustment speeds, are in general faster than those usually obtained in the RBA 1 model ... These results imply that economic agents adjust more quickly than often believed ... the results indicate a larger short-run impact for monetary policy, and in particular the supply of money relative to demand, than is usually believed. While this result may be somewhat controversial, the various lags involved appear likely to give a time profile of price and output response to monetary disequilibrium consistent with that obtained by Friedman and others using more informal methods’ (Jonson, Moses and Wymer 1976).

Parkin provided the ‘first serious attempt to deal with the trade-off question in an Australian context’ (Challen and Hagger 1975; McDonald 1975). Parkin’s (1973) point estimates gave rise to a ‘meaningless value’ for the natural rate. Nevertheless, Parkin concluded that ‘the regression results tell us that it [the natural rate] could be as low as 1.5 per cent’. It also seemed ‘inconceivable that the natural unemployment rate could be as high as two per cent’. Thus the most precise estimate was that it lay between 1.5 per cent and 2 per cent.

Challen and Hagger (1975) noted that because of Parkin’s ‘distinguished’ status they thought it likely that his conclusions were ‘likely to be accepted somewhat uncritically’. However, although his study was ‘far in advance of all previous contributions’, Parkin had neglected to provide information about either his method of estimation or his method of correcting for first order autocorrelation. The results offered ‘no real support’ for Parkin’s argument about the absence of a long-run trade-off (see also Hagger (1978)). McDonald (1975) concluded that none of Parkin’s estimation procedures were valid.

In reply, Parkin (1976) felt that his no trade-off conclusion had emerged in a ‘strengthened’ position from the exchange. Parkin offered a ‘feel’ for the upper limit of the natural rate at 3.4 per cent for the 1973–75 period, with a more likely guess at around 2.5 per cent. The implication of Parkin’s analysis and his Phillips curve diagram was that between 1974:Q1–1975:Q3 the Australian economy was successfully undergoing disinflation at which point it had reached ‘a peak (?) unemployment rate’ at just below 5 per cent. Since 1973:Q3–1975:Q3 constituted ‘roughly an upper semi-circle ... half a cycle of post-1973 sample experience’ this implies another two years for a full cycle. Thus if disinflation were continued a rapid return to 2.5 per cent unemployment could, presumably, be expected by 1977.

As it turned out unemployment more than doubled over the following eight years (Borland and Kennedy 1998). During a second visit to the RBA in 1977, Parkin contributed to the ‘Unemployment: an Econometric Dissection’ project which was designed to be fed into RBA 76. The authors noted that the ‘deterioration in the

labour market since the middle of 1974 has been severe in comparison with previous post-war experience'. The 'main conclusion' was that 'the large wage rises of the 1970s have been a major cause of the present levels of unemployment The most notable of these changes was the explosion in average earnings in 1973 and 1974' (Jonson, Battellino and Campbell 1978). Parkin (1976) had noted these developments earlier and this led him to conclude (amid 'the most serious 'stagflation' in Australian history and one of the worst in the contemporary world') that the natural rate had increased.

Parkin (1976) emphasised that the 'lack of robustness' in his results 'will only be overcome when someone develops a model which explicitly handles *variability* in the natural rate' [emphasis in text]. Many such econometric exercises followed. One research project found that the natural rate averaged 0.62 per cent between 1968:Q1–1973:Q4, jumping almost tenfold to 5.68 per cent between 1974:Q1–1980:Q4. At that rate of increase the natural rate would have exceeded 100 per cent by the end of the 1980s. Fortunately, it only doubled (almost) to 9.52 per cent between 1981:Q1–1986:Q4, before rising to 12.5 per cent in December 1993 (Ooi and Groenewold 1992; Groenewold and Hagger 1998).

In the process, what was revealed was that econometrics offer innumerable methods of estimating a wide variety of labour market series and that attaching the term 'natural' is privately optimal for the researchers but potentially hazardous for policy-makers. The natural rate framework is an econometric gold-diggers' paradise, and some of these series appear to illustrate Hendry's (1980) reference to 'econometric fools-gold'. Some natural rate series also appear to illustrate Keynes' objections to econometrics: one of 'those puzzles for children where you write down your age, multiply, add this and that, subtract something else, and eventually end up with the number of the Beast in Revelation' (Keynes 1973, p 310). It was these kind of fears that led Keynes to oppose Formalism (Leeson 1998d).

One possible conclusion is that renewed econometric fundamentalism is required. Asymptotically, the truth will be reached by greater econometric sophistication. Alternatively, econometrics can be seen as *one method* of providing insights – along with many others, including the dynamic analysis suggested by this essay.

It may be that stable economic relationships are cursed by Goodhart's Law or that financial deregulation was largely responsible for the failure of monetary targeting (Jonson and Rankin 1986).²² An alternative conclusion is that faith in monetary

22. Jonson and Rankin (1986) concluded that 'monetary models based on simple aggregative relationships are not well-equipped to analyse issues of structural change. Monetary policy has been forced to rely more on "judgement" and less on the application of these models and their suggested policy rules. One obvious example of this is the demise, or at least downgrading, of monetary targets in major western economies'. They also argued 'that much of the policy prescription of monetary economics – especially reliance on monetary targeting – depends on simple "stylised facts" about the behaviour of regulated economies. These prescriptions cannot therefore be applied directly to economies where the regulatory structure is changing. Policy approaches such as Australia's current use of a "check list" of indicators are discretionary to the extent that they involve judgements about the relative importance of different indicators. But it is argued that this discretionary approach develops, rather than overthrows, the previous approach'.

targeting was derived from an unwarranted faith in the underlying statistical evidence. Laidler (1986), analysing the ‘popular disenchantment with “Monetarism”’, noted that ‘too many people forgot about the error term’ and that ‘economists overlooked the role played by institutional change in generating’ their results. Laidler also identified an econometrics-induced fundamental error in the ‘myopia’ associated with ‘going from the econometrics of the demand for money to its policy application’. It seems likely that there were other MYOPPPIC forces at work as well.

7.4 Monetarism dynamically analysed

According to Argy *et al* (1990) ‘The conceptual case for monetary targeting has its roots in the call for a monetary rule – low, stable growth of the money stock – made by Friedman (1960)’. Dynamic analysis reveals that this case was made in the 1930s by Friedman’s Columbia teacher, James Angell (1936, 1941). Angell (1936, pp 144–145) plotted ‘National Income and the Stock of Circulating Money, Annually: 1909–1932’, concluding that his chart ‘forcefully demonstrates the actual closeness of the statistical relation, on an annual basis, between national money income and the stock of circulating money’.²³

Before Friedman (1975a, pp 55–56) left Chicago for Sydney, he ‘rather hastily’ plotted the Australian CPI against M3 for June divided by GDP for the succeeding fiscal year, adding that he was sure that the RBA had better data and ‘will improve on the chart’. The purpose of the chart was ‘simply to drive home the point that the proximate cause of continued inflation is always, and everywhere, a more rapid increase in the quantity of money than in output’. Likewise, the clinching chart in Friedman and Schwartz’s (1963, p 678) *Monetary History* plotted ‘Money Stock, Income, Prices and Velocity 1867–1960’, which showed that ‘of relationships revealed by our evidence, the closest are between, on the one hand, secular and cyclical movements in the stock of money and, on the other hand, corresponding movements in money income and prices’. The essence of Friedman and Schwartz’s (1963) message was that ‘the velocity of money, which reflects the money-holding propensities of the community, offers another example of the stability of the basic monetary relation ... In response to cyclical fluctuations, velocity has shown a systematic and stable movement about its trend’.

In his contribution to *Taxing to Prevent Inflation*, Friedman (1943) began with the statement that inflation was not always and everywhere a monetary phenomena but that “‘Inflation’ has its genesis in an increased volume of spending by consumers, business, and government’. No attempt was made to ‘distinguish among different types of price rises’. Friedman discussed four approaches concluding that ‘none of the theoretical structures that implicitly or explicitly underlie these alternative approaches is entirely satisfactory or generally acceptable’. The first of these four approaches (to which Friedman devoted eleven pages) was based on the Quantity Theory. Friedman (1943) complained that Angell had plotted national income

23. I am grateful to David Laidler for alerting me to Friedman’s discussion of Angell’s work.

against the stock of money. This ‘seriously misrepresented the relationship between year-to-year changes in the two variables ... The long-time upward trend of both national income and the stock of money is bound to give a close correlation between the two totals, no matter how loose the relation between year-to-year changes in them’. Friedman (1943) also complained that Angell had made the basic assumption that ‘the marginal circular velocity of money may be considered as fairly stable’. Friedman complained that in reality the year-to-year changes between national income and the stock of money was ‘extremely unstable’.

An RBA empirical analysis of the weakness of the relationship between money and income referred to the ‘pedigree’ of such theories, ‘One of the most enduring analytical devices in macroeconomics has been the aggregate money demand function’ (de Brouwer, Ng and Subbaraman 1993). Friedman (1956) launched the monetarist counter-revolution accompanied by the assertion that ‘Chicago was one of the few academic centres at which the quantity theory continued to be a central and vigorous part of the oral tradition throughout the 1930’s and 1940’s’. Friedman sought to ‘nurture’ the revival of the quantity theory of money by linking it to this Chicago ‘oral tradition’. According to Friedman, the ‘flavor’ of this oral tradition was captured in a model in which the quantity theory was ‘in the first instance a theory of the demand for money’. Friedman added that to ‘the best of my knowledge no systematic statement of this theory as developed at Chicago exists, though much of it can be read between the lines of Simons’ and [Lloyd] Mints’s writings’. Knight and Viner were also commandeered ‘at one remove’ in support of Friedman’s Chicago lineage.

Don Patinkin (1969) and Stanley Fischer spent the best part of the year following Friedman’s AEA Presidential Address examining the assertion and revealed (to their own satisfaction) that it lacked factual foundation (Leeson 2000d). For example, Simons (1948, p 340) stated that ‘empirical evidence as to secular increases in the demand for money or liquidity is, however, a precarious basis for long term policy’. Knight (1964) explained that he specifically objected to the ‘whole project of making monetary theory the centre and starting point of systematic economics’. Knight’s chief grounds for disagreeing with the Keynesian theory of money was that ‘supply and demand curves for “liquidity” have no solid foundation and are not a solid basis for action but are “theoretical” in the bad and misleading sense’ (Knight 1964, p xlv). Knight (1941) objected ‘that a monetary theory of interest should be defended by economists of repute is especially mysterious in view of the facts, which are directly contrary to what the theory calls for’. Knight (1941) explained that ‘the monetary system can never be made automatic. An approximate constancy in general prices, or in the relation between product prices and wages, can in the nature of the case be achieved only by deliberate action, based on constant attention, correcting or offsetting incipient tendencies to expansion or contraction’.

Simons also argued that ‘the objective of monetary policy should now be conceived, we insist, in terms of the volume of employment’ (Phillips 1995, p 52). Simons (1948, p 117) maintained this position, ‘the main objective in national (and supranational) policy, of course, must be adequate and stable employment’. In contrast, the defining characteristic of Friedman’s (1968a) monetarism was that such

an objective was ‘like a space vehicle that has taken a fix on the wrong star’. Friedman also stated that attempts to ‘control directly the price level’ were ‘likely to make monetary policy itself a source of economic disturbance’. In contrast, Simons (1948) suggested that a ‘rule calling for stabilisation of some inclusive commodity-price index – and, I should urge, at its present level – offers the only possible escape from present chaos and the only promising basis for a real monetary system in the now significant future’. Friedman (1967, pp 3–4) ‘disagree[d] so completely with [Simons’] proposals for reform’ based as they were on a price-index rule.

In his contribution to the rules versus discretion debate Viner (1962) concluded that it was impractical to conduct monetary management ‘in conformity with a “rule”’, in part, because in the US ‘the degree of decentralisation of direct and indirect control over the quantity and velocity of money, as well as of official powers to influence the supply of near-moneys and their velocities, is nothing short of fantastic’. Viner followed Simons in preferring the ‘flexible rule’ and ‘judgement’ associated with a price-level goal, brought about by variations in the money supply. Indeed, the bulk of Viner’s paper was a highly critical commentary on Friedman’s $x\%$ money growth rule. Viner could not ‘exorcise’ from his mind Friedman’s ‘faith’ and ‘claims’. In Friedman’s analysis ‘an improbable constancy is being projected into the future ... Staking our future on present prophesising seems a high price to pay for escaping from the bondage of a discretionary authority’.

George Tavlas (1998a) believes that he has located decisive evidence in favour of Friedman’s position regarding the ‘immun[ity] from the Keynesian revolution’ which was provided by the ‘policy framework’ embodied in ‘a unique Chicago quantity-theory tradition in the early 1930s’. Thus according to Tavlas (1998b) ‘at a minimum, the Chicago faculty seemed to believe that these elements added up to a cohesive and unique oral tradition’. One of the elements of this ‘unique oral tradition’ was ‘support for 100 per cent reserve requirements for banks ... that was known as “The “Chicago Plan” of Banking Reform (Hart 1934–35)’.

Frederick Soddy was a Nobel laureate (in Chemistry) and the modern author of what became known as ‘The ‘Chicago Plan’ of Banking Reform’ (Leeson 2000e). An asymmetrical hysteresis explanation underpinned part of Soddy’s (1933, p 175) objection to the quantity theory which ‘works beautifully *one way* [emphasis in original]’. Increasing the quantity of money would in the short-run increase wealth but in the long-run increase prices alone. Reducing the quantity of money would permanently reduce ‘virtual wealth’. Thus Soddy (1934, p 100) explained that ‘it is not necessary to consider this old “quantity theory” of money farther than this, because enough has been said to show that it really is a fraud’. But regrettably, when contemporary economists place the Quantity Theory in an historical context, this typically involved a compulsory reference to David Hume, with Irving Fisher and Keynes’ *Treatise on Money* tacked on for the appearance of greater erudition.

Old Keynesians found that estimated Phillips curves were not as reversible as they had hoped. A profound asymmetry undermined the attractiveness of the high inflation Phillips curve trade-off: it is easy to travel a long way up the curve, it is not

so easy to travel down the same curve. A similar asymmetry undermines monetary targeting. The strength of the statistical relationship between increases in the money supply and increases in the price level reveals little or nothing about the strength of the relationship in reverse. Likewise, there is a major difference between monetary expansions, which can be met in the short run by firms increasing their capacity utilisation, and large reductions in the rate of growth of the money supply, which cause some firms to close down. Had policy-makers examined the dynamics of the literature on the Quantity Theory they would have found many references to this asymmetry. But typically they did not.

7.5 Why was monetarism always and everywhere controversial?

The MYOPPPIC content of Monetarism was enormous. For decades macroeconomists and econometricians made statistical comparisons between Keynesian and monetarist models without apparently being aware that Friedman had predicted that such regression races could only end inconclusively. As a paradigmatic challenger, all Friedman had to achieve was an honourable draw – this was sufficient to undermine faith in the existing hegemony. The perception that estimating money demand functions was keeping alive the interwar Chicago flame of liberty must have added enormous momentum to the post-war Chicago cause.²⁴

Although monetarists were not a completely homogenous group,²⁵ they typically sought the same objectives as most economists: low inflation, high productivity and low unemployment. However, they were perceived as pursuing a far wider agenda, which accounts in part for the animosity generated towards them. Since this agenda is unfinished it is worth examining the MYOPPPIC content of monetarism which still lurks behind current policy discussions and still generates, for some, a high Z/H ratio.

Faith in socially productive government expenditure, financed in part by taxes to eliminate privately frivolous expenditure, was an integral component of Keynesian paradigm. Thus Alvin Hansen (1960), the American Keynes, noted in ‘The Soviet Economic Challenge’ that ‘it must become clearer day by day to any reasonable observer of the American scene that the marginal tax dollar has currently a much

24. For example, Sargent and Wallace (1976) referred to the ‘monism of monetarists’ and Robert Barro (1998, p 6) explained that Friedman was transformed from ‘pariah to priest’. So potent was this tradition that many others ‘picked up the Chicago business by osmosis’ (comment by Robert H Bork (Kitch 1983, p 196)).

25. During his visit to Australia Friedman (1975a, p 32) reiterated that he was ‘strongly opposed to independent central banks’. In contrast, Parkin was strongly in favour (Leeson and Parkin 1993). Johnson was an international monetarist and when outside Chicago tended to be a domestic monetarist as well. Yet he was highly cynical about Friedman’s counter-revolution. Laidler and Johnson strongly dissented from Friedman’s assertions about the Chicago oral tradition; Parkin supported Friedman in this regard (Leeson 2000c). But those who opposed monetarism behaved like opponents and thus made Friedman and his followers more attractive to politicians such as Thatcher and Reagan.

higher social utility than the marginal pay-envelope dollar. The former goes into schools; the latter into tail fins'. DOCTOR Hansen wished to integrate trade unions into the decision-making process and this led some dominant American Keynesians to display a tolerance of inflation that was in direct contrast to their stated views of a few years previously (Leeson 1997c).

In contrast, monetarists typically sought also to undermine the monopoly power of producers and trade unions. Indeed, the abolition of trade unions was also implicitly required (Friedman 1951).²⁶ DOCTOR Simons (1948) was alarmed about the 'corruption and dishonesty' of 'bandit armies' led by labour leaders, 'Communists are out to destroy capitalism; unions are out to destroy competition in labor markets'. His primary concern was to seek to prevent 'other organisations from threatening or usurping [the state's] monopoly of violence ... Trade-unionism may be attacked as a threat to order under any system'. This was because they enjoyed 'an access to violence which is unparalleled in other monopolies'. This violence would culminate in 'the total reconstruction of the political system'. Unions rested 'basically on rejection of free pricing in labor markets'.

Thus we have an ongoing MYOPPPIC dispute pitting trade unions against central bankers: cloth caps versus top hats and tail fins. The RBA has been associated with the conclusion that the 'real wage gap' (a measure of the growth of real labour costs relative to product per employee) is inversely related to the profits ratio. Moreover, 'low (high) levels of profitability – whether measured by the profits ratio or the real wage gap – tends to be associated with slow (fast) increases in production'. Thus employment prospects were dependent on maintaining profitability. Equally, 'policies for major shifts in factor shares' were hazardous for employment. Mentioned in this context was the June 1975 boast made by Clyde Cameron, the Minister for Labour, about the 'massive redistribution of income in favour of labour' that had just been accomplished through government support for wage rises, equal pay for women, new benefits for employees, maternity leave and annual leave payments and the operation of the Prices Justification Tribunal (Norton and McDonald 1983). This litany of 'permissiveness' also figured in Jonson and Taylor's (1977) analysis and in their conclusion that 'it could be argued that considerable responsibility for increased inflation and economic instability be attributed to the failure of Australia's economic policy to sufficiently emphasise monetary growth rates as crucial indicators of the stance of policy'.

Three members of the RBA Research Department also concluded that the Arbitration Commission was largely passing on past or expected price changes and thus was not useful with respect to an incomes policy (Jonson, Mahar and Thompson 1974). In a critique McDonald (1976) detected Parkin's influence and complained that the research strategy followed 'tends to induce bias in favour of

26. In a conference on trade unions Haberler (1951, p 239) appeared to get to the heart of Friedman's paper by stating: 'if you say the union is not worth while because wages would rise anyway to the same level, then I say "Let's abolish them"'. To which Friedman (1951) replied: 'I don't disagree with that'.

prior beliefs ... Indeed, there is a danger that the method may merely reduce to a highly sophisticated procedure for 'confirming' our preconceived notions'.

When Friedman (1975a, pp 17, 34, 37) came to Australia he clearly outlined the fears which underpinned his objection to inflation, 'the more fundamental source of inflation in all our countries and of our economic difficulties has been the change in philosophy that occurred some time in the 1930's and earlier away from the belief in an individualistic society and toward a belief in the welfare state'. The electoral unpopularity associated with raising taxes made the 'hidden tax of inflation an ever more attractive strategy'. The subsequent attempts to repress inflation by price fixing 'produces a distortion in the price system' and destroys democracy: 'what really destroys the democracies ... are the controls and repressions that are introduced in the face of those high [above 25 per cent annual] inflation rates'. Increasing the share of 'G' in national income was 'what is really doing the harm. The inflation is only compounding the harm'.

According to a survey article co-written with two RBA economists, there was 'more than a hint of an implicit discipline on fiscal policy' involved in at least some countries (Argy *et al* 1990). There is also more than a hint of this in Friedman's work. During his second visit to Australia, Friedman (1981) explained that the counter-revolution which propelled monetary targeting into policy-making was 'fundamentally about the role of government and that has been reflected in turn in the extent of taxation and the emergence of inflation. The whole question has been: What is the appropriate role of government?'. Friedman favourably cited Colin Clark's estimate that when taxes exceeded 25 per cent of national income the process would tend inevitably to produce inflation. Thus inflation, unemployment and slow growth were the inevitable consequences of the expansion of government.

Friedman (1975a, pp 33, 60–61, 64, 79) quite properly described the social costs of anti-inflation as part of the social cost of the initial inflation. Trade unions, he argued, did 'a great deal of harm', but they could not cause inflation. The potency of the message was that 'The cure for inflation is very simple ... The problem is not how to stop inflation, the problem is to have the political will to stop inflation'. The origins of inflation lay in government attempts to spend their way to full employment. Continuing with the welfare state would push Australia further down the path to an Argentinian outcome. The choice lay between accepting inflation which would destroy democracy as it had in Chile and was 'on the verge' of doing in Britain. Either way unemployment would result: today or tomorrow. The sooner anti-inflation was initiated the smaller would be the associated unemployment. The unemployment cost would be temporary until delusion was dissipated, 'until people accept the fact that the rate of price rise has come down and adjust their expectations'. Underpinning his analysis was the belief that velocity was 'a reasonably stable magnitude'.

Thus a technical econometric debate about the relationship between money and prices became inextricably tangled up with a debate about the desirability of equal pay for women, the welfare state and the survival of democracy and civilisation. Opponents of monetarism saw Chicago influences at work in the Chilean dictatorship that had overthrown democracy and imprisoned and tortured trade unionists and

dissidents. They looked through the ‘veil of money’ and saw a determination to reduce wages, destroy trade unions and create a more unequal distribution of income. It was believed that a Reserve Army of unemployed was being created by a Reserve Bank.

One of the lessons of Bretton Woods is that the critical faculties of central bankers can become captive to their institutional affiliation. In the 1960s, if one wanted to guess the views about exchange rate systems held by identical twins (identically talented, identically trained as economists), one employed by the IMF, the other in the academic sector, the best predictor would be a dummy reflecting institutional employment.

From at least 1973, there has been a tradition of trade union involvement in RBA deliberations via membership of the Board. Bob Hawke (1994, p 81) found the experience most educational. One lesson that emerges from contemporary macroeconomics is that MYOPPPIC forces can gather momentum and that dissenting voices object to being excluded from the decision-making process. No institution has a monopoly of economic wisdom and no group of economists have an unblemished forecasting record. It would be unfortunate for macroeconomic stability if the end result of the experiment with RBA independence were undermined by a perversion of Friedman’s perception that monetary policy was ‘too important to be left to central bankers’ and that monetary policy should be governed by the dictates of the political business cycle.²⁷

8. Macroeconomic Continuity

It is possible to represent the model underlying the *General Theory* as a horizontal or very flat Phillips curve (in price level-unemployment space) up until the point of full employment (‘true inflation’) at which point the curve becomes vertical and the Quantity Theory of Money becomes valid (Keynes 1936, p 303). Keynes’ objective was to manipulate aggregate demand so as to reach the point of full employment through *reflation*. By definition there would be no benefit to be derived from traversing the vertical section of the curve since only *inflation* would result. In this sense there is a Phillips curve lurking in the *General Theory* but not the view that ongoing inflation or high levels of unemployment should be tolerated (Leeson 1999a).

In May 1952, Phillips provided Friedman with the adaptive inflationary expectations formula which was later used to undermine the theoretical validity of the high inflation Phillips Curve (Leeson 1997d, 1999b; Cagan 2000). In outlining the theoretical expectations-augmented Phillips Curve, Phillips ([1954], pp 153–156; see footnote 4 for an explanation of this notation) stated that flexible prices were integral-type forces and he demonstrated the alarming consequences of

27. One institutional solution to this potential MYOPPPIC dispute is for the RBA to play a role similar to that played by the Industrial Relations Commission. At regular intervals the RBA could invite submissions from interested parties (business sector economists, trade unions and the government) and solicit inputs from economists in the academic and financial sectors.

integral-type policies generating a ‘dynamically unstable’ system. The final and most crucial sub-sections of Phillips’ stabilisation model were ‘Inherent Regulations of the System’ and ‘Stabilisation of the System’ which began with, ‘some examples will be given below to illustrate the stability of this system under different conditions of price flexibility *and with different expectations concerning future price changes*’ [emphasis added]. The theoretical Phillips curve was then tested against a variety of scenarios: inflationary expectations being a crucial factor in determining whether the system has satisfactory outcomes or not, ‘demand is also likely to be influenced by the rate at which prices are changing, or have been changing in the recent past, as distinct from the amount by which they have changed, this influence on demand being greater, the greater the rate of change of prices ... The direction of this change in demand will depend on expectations about future price changes. If changing prices induce expectations of further changes in the same direction, as will probably be the case after fairly rapid and prolonged movements, demand will change in the same direction as the changing prices ... there will be a positive feed-back tending to intensify the error, the response of demand to changing prices thus acting as a perverse or destabilising mechanism of the proportional type’.

The conventional view is that Phillips offered the prospect of a permanent trade-off anywhere along his curve. But for this one-zone interpretation to hold, Phillips must have concluded that *any* configuration along his British curve (from 32 per cent wage inflation to 22 per cent unemployment) represented a permanent and stable trade-off. Since no economist would suggest that exchange rate fixity combined with an inflation rate twenty times higher than one’s trading partners would produce a stable policy environment or extraordinarily low rates of unemployment, this conclusion would have placed Phillips in a professional minority of one. By a continuity argument, if it is accepted that Phillips did not suggest that 32 per cent wage inflation was sustainable, there must be some limit to the amount of inflation that he did think was sustainable. According to his writings, that limit was about 2–3 per cent price inflation.

Phillips ([1962], pp 207–208) accompanied his analysis with the warning that post-war employment had been ‘extremely high’, with price inflation averaging 3.7 per cent.; ‘there would be fairly *general agreement* that this rate of inflation is undesirable. It has undoubtedly been a major cause of the general weakness of the balance of payments and the foreign reserves, and if continued it *would almost certainly make the present rate of exchange untenable* [emphases added]’.

Phillips ([1961], p201; [1962], pp 218, 220–221; [1958], pp 258–259) divided his curve into three zones and stated that he was only ‘interested’ in the low to zero inflation range: the ‘compromise solution’. In addition to the trade-off or ‘compromise’ (C) zone, which Phillips suggested was available to policy-makers, there were, in Phillips’ RI-C-CU curve, two other dysfunctional zones of runaway inflation (RI) and ‘catastrophic’ unemployment (CU), neither of which were on the contemporary policy agenda. Phillips ([1962], p 220; [1968], p 468) wrote almost nothing about ‘catastrophic’ unemployment, but it is implausible to suggest that he regarded 22 per cent unemployment as a sustainable equilibrium position. The same logic applies to the inflation-devaluation zone, described by James Meade as the ‘runaway

inflation' zone: 'I am quite certain that Bill was very conscious of the limitations to which you could reduce the level of unemployment without incurring a runaway inflation' (Leeson 1994).

Thus the section of his curve which was available for a policy trade-off was almost identical to the section of the Phillips curve that is now targeted in Australia: 2–3 per cent over the course of the business cycle. It is inconceivable that economists could have taken Phillips seriously if he had been advocating permanent non-trivial inflation differentials under a fixed exchange rate regime which allowed for very occasional adjustments. But Phillips' advice was taken seriously. In 1959, Phillips was a visiting adviser to (what became known as) the RBA (Schedvin 1992, p 206). His personal influence was regarded by the Governor of the Bank as 'especially important' (Coombs 1981, p 138). HC Coombs' commentary on economic policy was consistent with Phillips' stated position. The year before Phillips' visit, Coombs (1958) reflected that 'the task facing monetary policy was to determine at what point the rising levels of activity were becoming inflationary and to prevent inflationary conditions emerging'. Coombs defined those 'inflationary conditions' as 'a fall in industrial efficiency' plus 'the steady attrition of our international reserves'. Suggesting that 'we might borrow from the engineers the "feed-back" principle', Coombs indicated that one of the objectives was to 'guard against the slow depreciation of the value of the currency which comes from a persistent upward trend in prices'. In the year of Phillips' visit, Coombs devoted his ANZAAS Presidential Address to 'A Matter of Prices' (Coombs 1971). Coombs reminded his audience of his legal requirement to aim for stability in the value of the currency, 'if prices continue to rise – the trend is a serious and growing threat to the health of our economy'. He rejected the 'specious' argument that prices could steadily rise by about 3 per cent per year, 'the view that rising prices do not matter tends to ignore the international aspects of our economy'. In 'extreme cases of instability ... a variation of exchange rates themselves may occur'. The proposed remedies of 'this cumulative inflationary process ... by themselves will intensify the internal pressure and render internal instability more improbable'; 'a rise in domestic prices and costs ... could nullify to a large extent the advantages derived from the devaluation. The effects of devaluation on the inflow of capital are also uncertain, but they could be serious' (Coombs 1971, p 133).

The only solution lay in bringing 'under control a lack of balance in internal expenditure' (Coombs 1971, p 105). Coombs (1971, p 155) outlined the (accelerationist) expectations critique of inflation, 'to this process there seems no logical end short of complete destruction of the value of the currency'. But according to the one-zone interpretation of his curve, if the RBA Governor had asked how to achieve (under the Bretton Woods system) a permanent rate of unemployment of about 0.5 per cent, then, Phillips would have glanced down at his curve and replied that one of the primary responsibilities of the monetary authorities must be to guarantee a permanent rate of wage and price inflation of 10 per cent per year.

The post-war (left-of-centre) macroeconomic 'consensus' bears a familial resemblance to current (right-of-centre) inflation targeting regimes. The turmoil of the inflationary 1960s and 1970s and disinflationary 1980s impacted more on the

welfare state and the mixture of the mixed economy than on the role allocated to the low inflation Phillips curve. Economists now generally accept that if the inflationary cobra rears and spits then increased unemployment will result. Some, following Friedman, see the increase in unemployment as a temporary disequilibrium phenomenon. Others, following Phillips, have stronger objections to inflation and see the consequences as not so cosy, but as unleashing unpredictable forces. Either way, the current objective of macroeconomic policy is to 'charm' the Phillips curve towards 'full' employment while keeping the 'head' of the inflationary snake in a safe and deferential position. Thus in the 1990s policy-makers have returned to the low-inflation Phillips curve trade-off that Phillips described in the 1950s (see also Gruen *et al* (1999)).

9. Concluding Remarks

Four conclusions appear to be warranted. First, the more often an assertion is repeated about the evolution of macroeconomics the more likely it is to reflect conventional (i.e. unexamined) 'wisdom'. Given the sparse and meagre nature of the existing literature about the structure of dynamics in the economics profession, it is hardly surprising that the stories that circulate reflect the foundation myths of those who were responsible for forging the dynamics. When repeating these myths we are of course 'standing on the shoulders of giants'; but in this context most of our giants are DOCTORS.

Secondly, when central bankers and other policy-makers are confronted by apparently novel ideas, they should thoroughly examine the MYOPPPIC momentum that comes attached. The apparent force of the idea and the compelling nature of the evidence provided is often a testament to hidden momentum rather than the suitability of the ideas themselves.

By combining the Quantity Theory relationship between money and prices with the process of shifting a short-run Phillips curve downwards as job seekers became 'less choosy', Friedman found the framework that would undermine the macroeconomics that he feared would be so destructive of *Capitalism and Freedom*. Monetarism had an unparalleled impact, but prior to its era of influence its dynamics were far from adequately examined.

There is no reason to suspect conscious deception in Friedman's counter-revolution. But there was a hint about self-deception in his discussion about William Stanley Jevons' discovery (after a spell in Sydney) of the time lag between money and prices, 'I had thought that I was the discoverer' (Friedman 1975a, p 53). On the frontispiece of *Monetary History* is Alfred Marshall's almost Bayesian instruction that 'Experience in controversies ... brings out the impossibility of learning anything from facts till they are examined and interpreted by reason; and teaches that the most reckless and treacherous of all theorists is he who professes to let facts and figures speak for themselves, who keeps in the background the part he has played, perhaps unconsciously, in selecting and grouping them, and in suggesting the argument *post hoc ergo propter hoc*'. A similar caution may be called for with respect to the selection of theories as well.

Thirdly, econometrics and mathematical analysis as a subset of economics can be insightful; but Formalism can lead to arrogance and naivety. Intellectual high-status economics can be as deluding as the institutional high-status economics was for the Bretton Woods DOCTORS. An exclusive emphasis on model building can distract economists from examining chains of economic reasoning from first principles. Certainly, Tinbergen (1969) in receiving his Nobel Prize wondered whether he ‘should not repeat the famous words by Goethe’s Zauberlehrling ... “the ghosts I called I can’t get rid of now”’. Sometimes indeed some of our followers *overdo* model building’ [emphasis in original].

Finally, this essay has been inspired by Lionel Robbins’ (1976, p 39) reference to ‘the extraordinary provincialism in time of much contemporary professional literature’. This provincialism has not merely impoverished economic thought but has contributed to policy disasters. To avoid future policy disasters we must pay more attention to the dynamics of our own subject and the points of tangency with the policy process.

Appendix A: The 1967 Friedman–Roosa Debate

In the mid 1960s only the traditional solutions were canvassed in official circles; there was almost no discussion of the ‘distasteful’ subject of changing exchange rates (Williamson 1987, p 84). There was an awareness of the existence of a potential shortage of liquidity, ‘a crack in the structure that could require its abandonment’. But Roosa (Friedman and Roosa 1967, p 32) believed that the crack could be patched over not by Friedman’s solution of flexible exchange rates but by an international version of his domestic proposal to expand the supply of money by $x\%$ per year. IMF credit facilities had (in quantity theory terms) “‘added to the M and the V’ of the world’s monetary system’ (Roosa 1967, p 189). Thus the search for a stable volume of international liquidity was viewed as a desirable international form of the monetarism that Friedman was preaching at a domestic level. Roosa recalled that there was little sympathy for ‘supposed shortcuts to “balance of payments independence”’ (Roosa 1967, pp 26, 28–29; Friedman and Roosa 1967, pp 28, 46). The received view was that any suggestion of US willingness to ‘scrap important pieces of the existing system ... would have brought a deluge of new problems’ (Roosa 1967, p 8).

The central bankers and officials responsible for patching up the Bretton Woods system assumed, with their banker’s mentality, that confidence in the system would be best maintained through stability: that is, if changes in exchange rates were viewed as the ‘last resort’. They believed that they had considered the proposals of even the ‘most extreme critics’ of their evolutionary approach. But until just before the system collapsed they apparently excluded from serious discussion any detailed consideration of the system that ‘they’ would be replaced by, namely, flexible exchange rates (Roosa 1967, pp 4, 29, 261, 268; Friedman and Roosa 1967, pp 87, 90, 98). There was no reference to Friedman and only brief dismissive references to the case for flexible exchange rates in Roosa’s *The Dollar and World Liquidity*. Instead, Roosa wrote of his preference for the ‘secrecy and aloofness’ of the central banker and he disclosed that the White House bureaucrats sought to ‘establish a very tight control over matters that were being considered’.

According to Roosa (Friedman and Roosa 1967, pp 82, 85), if the Bretton Woods system was abandoned, the world would slide down into the abyss of bartering trading blocks. The high-employment domestic ‘truce’ required anti-inflationary guidelines for wages and prices; without the international guidelines of fixed exchange rates ‘the whole system ... would break down into a sequence of competitive devaluations which would create the conditions of bilateralism’. If the exchange rate was free to fall, this would increase import prices and ‘an all-round sequence of other internal cost and wage increases, and the initiation of internal inflationary pressures’ (Friedman and Roosa 1967, p 61). Roosa (Friedman and Roosa 1967, pp 83, 85–86) saw the conflict as a choice between stable or unstable exchange rates and feared that governments, if let loose, would not follow a consistent policy of internal stability.

Friedman had carefully considered both the strengths and weaknesses of his opponents’ arguments and the likely persuasiveness of his assault on orthodoxy. As

always, Friedman's analysis was mixed with perceptive sociological observations about the nature of knowledge construction and destruction in the market place for economic ideas and policy advice. Friedman (1953) noted that the case for flexible exchange rates had been dismissed 'partly because of a questionable interpretation of limited historical evidence'. Flexible exchange rates had been ruled out as a result of an intellectual agreement between 'a curious coalition of the most unreconstructed believers in the price system, in all its other roles, and its most extreme opponents': the 'traditionalists' for whom internal policy was determined by the discipline of the gold standard and 'the dominant strain of reformers, who distrusted the price mechanism in all its manifestations'. The 'political reluctance to use changes in exchange rates ... reflects a cultural lag ... it is a consequence of tradition and lack of understanding'.

Friedman jangled the nerves of those involved in patching up the Bretton Woods system at a time when the patching up was as unglamorous and as unsuccessful as attempts to control domestic wage and price increases. The orthodox pursuit of greater international liquidity was 'the standard answer of the man who cannot manage his affairs' (Friedman 1969, p 4). Friedman (Friedman and Roosa 1967 pp 14–16, 79) mocked the Bretton Woods 'veterans' who undertook the 'herculean' labour of restraining market forces, and sarcastically referred to the 'grave problems' and 'frantic scurrying of high government officials from capital to capital ... one of the major sources of the opposition to floating exchange rates [is that] the people engaged in these activities are important people and they are all persuaded that they are engaged in important activities'. With flexible exchange rates, the international jetsetters who 'man the emergency phones ... could be released to do some truly productive work'. Friedman (1967, p 22) taunted these jetsetters with the jibe that it was simply the 'tyranny of the status quo' and their emotional attachment to the Bretton Woods system which were the real reasons that it was 'very likely' that floating rates would be eschewed. Friedman (1967, pp 72–74) found in his opponents only 'bland faith' and a determination to avoid reality by discussing 'a glittering gold man with only an occasional side glance at reality it conceals ... I rubbed my eyes as I read all of this'. His opponents were setting up 'a straw man, a scarecrow of shreds and patches to frighten children with'.

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Discussion

1. Colin Rogers

In this paper Robert Leeson offers what he calls a ‘dynamic framework’ for policy analysis. He uses the term ‘dynamic’ not in any technical sense but, in a sense akin to what McCloskey (1994) called the ‘rhetoric of economics’ – the battle for the hearts and minds of fellow economists and policy-makers. We are introduced to a world of cynical, campaigning and revolutionary scholars, who study strategy and tactics in an effort to influence their peers. They also interact in a political market place with those most unstable of characters – politicians. Some of the ideas in the paper also intersect with the work by Boland (1979) and Hoover (1984) on monetarist methodology.

Hence, as I read it, the paper is mainly about the art of persuasion as it applied to monetarism and the natural rate hypothesis. It deals with the influence that these ideas had on macroeconomic policy in Australia, largely in the 1970s and 1980s. This is an important dimension to the policy debate and deserving of serious attention – particularly if it provides some insight of lasting value about potential pitfalls in debate about macroeconomic policy. The question I found myself asking then was this: does use of the ‘dynamic framework’ lead to durable and fruitful insights into the Australian policy debate? My answer on completion of the paper was ambivalent – maybe.

My assessment is ambivalent for two reasons. First, because the conclusions presented on the unreliability of ‘conventional wisdom’, the limitations of mathematical formalism and econometric analysis and the susceptibility of economists to self-deception are generally well-known. I don’t believe we need the ‘dynamic framework’ to reach them. Second, although I found many of the stories and insights interesting, the emphasis was a little too historical and not sufficiently analytical for my taste. From a topic such as this I would be looking for some basic principles that might be fruitfully applied to the 1990s and beyond. What lessons can we learn from these debates that will enable us to avoid sterile arguments in future?

In that respect, and despite my ambivalence, I think there is an important issue to which much of the discussion in this paper alludes but which it does not quite succeed in bringing into focus. That is the question of conceptual congruence between analytical concepts and their real world institutional counterparts. Academic input into policy debate is often plagued by this problem and that appears to be especially the case with the topics discussed in this paper. To make the point I will briefly provide two examples of what I mean from the recent literature:

- i. The question of inflation bias by governments and/or central banks and the associated issue of central bank independence.
- ii. The evolution of monetarism from academic monetarism, via pragmatic monetarism to inflation targeting. The latter was surely one of the most significant changes to Australian macroeconomic policy to occur in the 1990s.

Inflation bias

The question of supposed inflation bias by central banks is an issue of the 1990s that seems to me to be ideally suited to scrutiny from Robert's 'dynamic framework' perspective. I have in mind here McCallum's (1997) claim that this literature suffers from two fallacies that arise from conceptual rather than logical errors. McCallum's point is that these fallacies arise because of inappropriate mappings between analytical constructs and real world institutions. The message is obviously not new but it is a timely reminder that although academic economists are often strong on logic they can be rather vague on institutional detail. McCallum argues convincingly that central bankers will simply not behave as postulated in the model. In the opinion of McCallum (and others) inflation bias on the part of governments and/or central banks is a pseudo problem (at least in democratic societies). The empirical evidence on the relationship between central bank independence and macroeconomic performance can hardly be described as robust (see Fuhrer (1997)).

Evolution of monetarism

Another area where much the same concerns arise is the interaction between academic and pragmatic monetarism. It could be argued that the evolution of monetarism from academic (money base, fixed money growth rates), to pragmatic (monetary targets), and ultimately to inflation or price level targeting, also illustrates the problem of inappropriate mappings from analytical constructs to real world institutions identified by McCallum.

For example, in a recent manuscript, Pepper and Oliver (2000) define a 'pragmatic monetarist' as '... someone who, as time has passed and practical experience has been gained, whilst still accepting the theory of monetary control, has concluded that the theory cannot be turned into working practice'. This is tantamount to conceding that monetarism works in theory but not in practice – a concession that is usually regarded as the hallmark of a 'poor' theory. The qualifier 'poor' is attached precisely because the conceptual mapping from \bar{M} to monetary policy has always posed problems for central bankers who inhabit a world where interest rates are the instrument of policy. Fortunately it is now generally recognised that it is not operational (feasible given existing institutions) to ask central bankers to fix M or its growth rate, and most modern macroeconomic models have no role for \bar{M} (see for example, Romer (2000) and Henckel, Ize and Kovanen (1999)). Instead these models contain a simple monetary policy reaction function in which interest rates are adjusted to achieve some nominal target (inflation or nominal GDP).

The evolution of these ideas clearly raises interesting questions about the relationship between monetarism and inflation targeting. What is the relationship if any? Some would argue that the question of M control is the essence of monetarism and consequently it is not useful to describe either inflation-targeting or modern macroeconomics as monetarist. In that respect, DeLong (2000) recently suggested that the lasting analytical contribution of monetarism is not the proposal for monetary control but the natural rate doctrine and policy-makers' aversion to

old-style Keynesian fine-tuning. On this view monetarism lives on under another name – even in New Keynesian economics!

Whatever one's views on these matters, and I don't intend to adjudicate the debate here, I would have expected the 'dynamic framework' presented in the paper to focus attention on this type of issue. In my view both of these examples illustrate the importance of examining the conceptual mapping between theoretical constructs and real world institutions. (As a matter of interest Friedman's *as if* methodology probably made a negative contribution to debate on this issue.) These issues are important because they have implications for the way academics and policy-makers sell their policies to politicians and the public. Much frustration in debate between academics and policy-makers might thereby be avoided.

To sum up. In my view this paper has a lot in common with the literature on the rhetoric of economics and the methodology of monetarism. I think that the underlying idea behind the paper is interesting but the promise is largely unrealised. In particular I don't think the 'dynamic framework' does enough to highlight the type of important conceptual problem illustrated by the two examples provided above. After reading the introduction I expected the paper to have a comparative advantage in that area and I think much of the discussion would benefit if interpreted from this perspective. These sorts of conceptual problems are important because they have befuddled macroeconomic debate over the past few decades and will no doubt continue to do so. In a sense they are just as important as the technical theoretical and econometric issues so I think Robert is looking in the right place even if the paper doesn't take the line I was expecting.

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2. General Discussion

The general discussion of Leeson's paper centred mainly around two issues: the relevance of the 'dynamic analysis' framework for policy analysis, and the influence of monetarism on macroeconomic policy in Australia.

There was general agreement with Leeson's basic proposition that careful examination of the historical origin and evolution of ideas would enrich contemporary policy analysis. Many participants, for instance, noted that a better understanding of the nature of past intellectual debates did indeed provide valuable insights into new policy agendas. However, some felt that Leeson had unfairly underplayed the usefulness of formal analysis for policy. It was also noted that the limitations of formal and econometric models highlighted by Leeson are generally well understood and accepted in the profession, and that the dynamic analysis framework did not necessarily add value in this regard. One participant noted that since most economic relationships are complex, a lack of formal analysis could lead to incorrect policy inferences. Another agreed that formalist models might better explain economic relationships, but noted that these models nonetheless have limited impact on policy, especially microeconomic policy. It was suggested that one reason for this might be that academics are unable to effectively communicate abstract concepts to policy-makers. Taking issue with the implicit assumption in this discussion that all academics are interested in policy, one participant made the point that to some, research is an intellectual exercise which need not have direct policy application.

In discussing the influence of monetarism on Australia's monetary policy, one participant remarked that Australia's adoption of the monetarist framework in 1976 reflected a response to the perceived ineffectiveness of the earlier Keynesian approach. The monetarist approach appealed to the authorities at the time as it seemed well-suited to re-establishing price stability at as low cost as possible to economic activity. It was noted that monetary targeting was eventually abandoned in 1985 as increased instability of the velocity of money led to a breakdown of the relationship between money and nominal income. One participant made the observation that along with the floating of the dollar in 1983, the gradual transition from monetary targeting to inflation targeting had been one of the most significant developments in the Australian macroeconomy over the last few decades. Another noted that the shift to the inflation-targeting framework did not necessarily constitute a total departure from the monetarist approach, but what had changed was the articulation of the explicit objective of monetary policy. The question of whether the inflation-targeting framework was more robust than monetary targeting was also raised. Inflation targeting was seen by many as being more robust as it does not rely on the stability of a single simple relationship, and focuses directly on the final objective of monetary policy. A few participants argued that the answer to this question depended on the nature of the shocks, and that the inflation-targeting framework is relatively better at dealing with demand shocks.

The Australian Financial System in the 1990s

Marianne Gizycki and Philip Lowe¹

1. Introduction

This paper examines the major developments in the Australian financial system over the 1990s and discusses how these developments might affect the nature and transmission of financial disturbances.²

The paper focuses on the following five issues:

- the losses by financial institutions in the early 1990s and the general resilience of public confidence in the financial system despite these losses;
- the transformation of the household sector's balance sheet, and the consequences for the balance sheets of financial institutions and the composition of Australia's foreign debt;
- the high level of profitability in the financial services sector in the face of increased competition within particular markets, and consolidation across the industry;
- the shift away from traditional intermediation through balance sheets of financial institutions towards intermediation through markets; and
- the strengthening of prudential supervision and the overhauling of arrangements for the regulation of the financial system.

These issues are discussed in Sections 2 through 6 of the paper.

Two recurring themes arise from this discussion. The first is that financial liberalisation looks to have been much more successful than appeared to be the case a decade ago. In 1991, the Reserve Bank devoted its entire Annual Conference to a stocktake of the benefits and costs of financial deregulation (see Macfarlane (1991)). While the various papers were able to point to some benefits, including more effective instruments of macroeconomic policy, wider access to credit and greater financial innovation, they also observed that interest margins remained relatively high, record losses were being recorded by financial institutions, and the framework for prudential supervision and regulation had not kept pace with changes in the financial system. At the time, there was a sense that liberalisation had promised much, but delivered relatively little, other than a speculative property boom and a lot of wasted investment.

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1. The views expressed in this paper are our own and not necessarily those of the Reserve Bank of Australia. We would like to thank the following for comments and assistance in preparing this paper: Les Austin, Patrick D'Arcy, Guy Debelle, Chay Fisher, Bryan Fitz-Gibbon, David Gruen, Chris Kent, John Laker, Adrian McMachon, Ali Razzaghipour and Peter Stebbing.
 2. For reviews of developments in the Australian financial system over recent decades see Edey and Gray (1996), Financial System Inquiry (1997), and Grenville (1991).

Nearly ten years on, the scorecard is much more positive. Competition has increased (largely through pressure from new entrants), lending margins have fallen and the range of financial services has increased further. Financial institutions are stronger, risk is better managed, and the regulatory and supervisory frameworks have been overhauled. Financial markets have grown strongly, new forms of debt finance have emerged, and the range of risk-management products has increased. Notwithstanding this more favourable picture, public criticism of banks remains high, in large part due to increases in fees, the closure of branch networks, and continuing high levels of profitability.

The second recurring theme is that in contrast to the 1980s, it has been changes in the balance sheet of the household sector, rather than the corporate sector, that have altered the shape of the financial system. The increase in households' holdings of market-linked investments, and the declining share of wealth held in deposits, has prompted banks to focus their growth strategies on funds management. In turn, this is leading to a further blurring of the distinction between different types of financial institutions, and pressure for consolidation focused around the major banking groups. The increase in financial assets has also led to the development of markets in a wider range of debt securities, a proliferation of investment products, and a more important role for institutional investors. It has also helped prompt changes in the nature of financial regulation, with an increased focus on the arrangements for the protection of consumers of financial services, and a shift to a regulatory framework based on functions, rather than types of institutions.

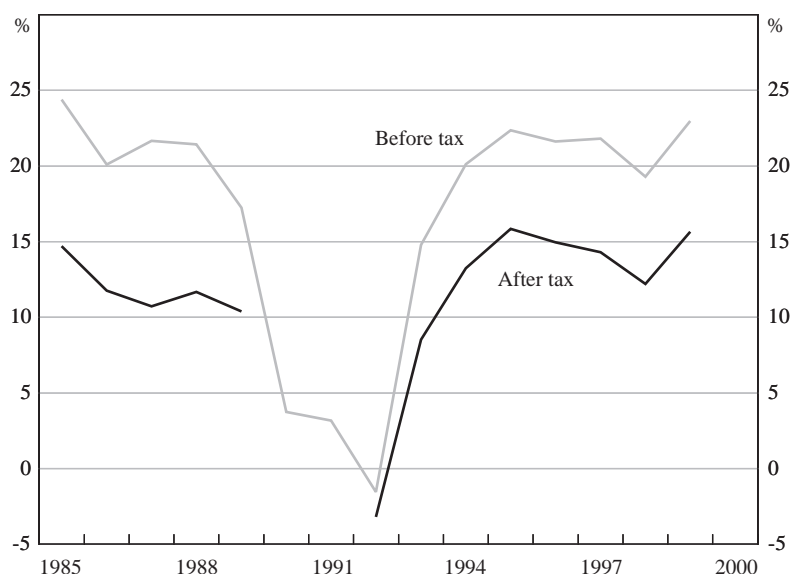
Among other things, the changes in the roles of financial institutions and markets, and in the balance sheets of the various sectors of the economy, have important implications for the nature and transmission of financial shocks. This issue is discussed in Section 7 of the paper. We argue that developments over the past decade have reduced the probability of serious financial headwinds being generated by problems in financial institutions, while at the same time, the probability of headwinds being created by developments in financial markets has increased. On balance though, we speculate that despite continued increases in the ratio of financial assets to GDP, the health of the macroeconomy is at less risk from developments in the financial sector than was the case a decade or so ago.

The paper concludes by raising some public policy issues that are likely to remain alive over the coming decade.

2. Losses Early in the Decade

The 1990s began with the banking industry experiencing its worst losses in almost a century. The sum of the individual losses (before tax) in 1990, 1991 and 1992 exceeded A\$9 billion – equivalent to over 2¹/₄ per cent of GDP in 1990, or over one-third of the aggregate level of shareholders' funds in the banking system in 1989 (see Figure 1 and Table 1).

Figure 1: Bank Profitability
Return on shareholders' funds



Note: Profit figures are adjusted to exclude the government assistance provided to the State Bank Victoria (SBV) and State Bank South Australia (SBSA). Adjusted after-tax figures for 1990 and 1991 are unavailable due to the large transfers between SBV, SBSA and their state government owners.

Source: Banks' financial statements

Table 1: Total of Individual Bank Losses Incurred in 1990, 1991 and 1992

Type of bank	Total of individual losses A\$ billion	Total of individual losses % of shareholders' funds in 1989
State government owned	5.0	187
Foreign subsidiary	1.5	64
Private domestically owned	2.7	16
Total for banking system	9.2	36

Note: The loss figures are before tax and exclude banks that reported profits. The figures for shareholders' funds include all banks in the relevant category. Figures for SBV and SBSA have been adjusted to exclude government assistance.

Sources: Banks' financial statements

The largest losses were recorded by the State Bank of Victoria (SBV) and the State Bank of South Australia (SBSA). Both banks were owned by state governments and experienced pre-tax losses exceeding three times the 1989 level of shareholders' funds. Large losses were also recorded by Westpac and ANZ (two of the four major banks³) in 1992, following comprehensive market-based revaluations of their property assets; in Westpac's case this process led to a reduction of almost 40 per cent in the value of its property assets and collateral. While the losses by these two banks were large, they were easily absorbed by the banks' capital. In contrast, like SBV and SBSA, a number of the foreign banks recorded losses in the late 1980s and early 1990s that exceeded their shareholders' funds.

The main reasons for the difficulties of the early 1990s are well understood. Deregulation in the mid 1980s intensified competition and the desire by institutions to grow their balance sheets rapidly. This took place in an environment in which asset prices, particularly commercial property prices, were increasing quickly, and credit assessment procedures in many financial institutions had not adjusted to the new liberalised environment. The result was extremely strong credit growth secured against increasingly overvalued commercial property. In 1989, the combination of high interest rates and a softening of the commercial property market exposed the poor credit quality of some of the most risky loans. Then, as the economy went into recession and the decline in property prices accelerated, more broadly based credit quality problems became evident; by mid 1992, the ratio of non-performing loans to total loans had increased to 6 per cent.

The concentration of losses in banks owned by state governments and foreign banks occurred mainly because these institutions were the most aggressive in chasing market share. Without strong customer bases, they relied on relatively risky borrowers for rapid balance-sheet growth. Additional factors in the cases of SBV and SBSA included a rapid shift in the nature of the banks' businesses and limited external scrutiny (arising from the fact that the banks were not listed on the stock exchange, and that the boards were appointed by state governments intent on fostering rapid regional growth). Supervision of these institutions was also complicated by the fact that the Reserve Bank of Australia did not have formal legal powers regarding licensing, even though the institutions had given voluntary undertakings to meet the Reserve Bank's prudential standards.

In the face of the large losses, public confidence did become more fragile in 1990 and 1991, although this did not lead to widespread concerns about the stability of the financial system as a whole. There were, however, a number of runs on relatively small institutions, including a couple of banks that were formerly building societies. In general, these runs were stopped by public sector intervention.

The most significant run on a deposit-taking institution was on the Pyramid Building Society. After runs in February–March 1990, and again in June 1990, Pyramid's operations were suspended by the Victorian State Government and all

3. The other two major banks are the National Australia Bank and the Commonwealth Bank of Australia.

accounts were frozen.⁴ Pyramid's problems caused some contagion, particularly for non-bank financial institutions in Victoria, with the highest profile case being the OST Friendly Society. Like Pyramid, OST was heavily exposed to the property market, and its problems were eventually resolved by a merger with IOOF (the largest friendly society). Pyramid's difficulties also contributed to runs on the Bank of Melbourne and Metway Bank (both previously building societies), with both banks experiencing a drop in deposits of more than 15 per cent over a couple of weeks. The runs stopped shortly after the Reserve Bank issued press releases stating that the banks continued to meet prudential standards and were soundly managed. The Reserve Bank did not provide emergency liquidity support in any of these cases.

Runs also occurred on a number of public trusts investing in either commercial property or commercial property mortgages.⁵ The first of these, in March–April 1990, was on a mortgage trust, Estate Mortgage. This run came to an end when, in the face of mounting liquidity problems, the National Companies and Securities Commission froze redemptions. There were also runs on unlisted property trusts in the second half of 1990, as investors attempted to withdraw their funds before the fall in property prices was reflected in unit prices. In response, a number of trusts (not operated by banks) suspended withdrawals and extended redemption periods. In 1991, runs also spread to the bank-owned trusts. This raised the possibility of a broader loss of confidence in the financial system, particularly if banks also suspended redemptions, or undertook a fire sale of their property assets. In response, the Commonwealth Government announced a 12-month freeze on all property trust redemptions.

Weakened public confidence also affected life insurance companies, particularly National Mutual (the second largest life company). During the late 1980s, National Mutual competed aggressively for retirement savings by offering capital-guaranteed investment products, underwritten by its substantial reserves. In the early 1990s, however, falls in property and equity prices led to a sharp drop in National Mutual's capital reserves, creating doubts about its solvency. As a result, the insurer experienced heavy policy redemptions and a large decline in funds under management in 1991 and 1992, with public concerns reaching a peak in February 1993 after extensive media coverage of the problems. In response, the Insurance and Superannuation Commission issued a public statement indicating that National Mutual's capital and reserves exceeded minimum regulatory requirements and that it had sufficient liquid assets. While outflows of managed funds continued, changes in the company's management and a return to profitability in 1993 saw confidence gradually restored.

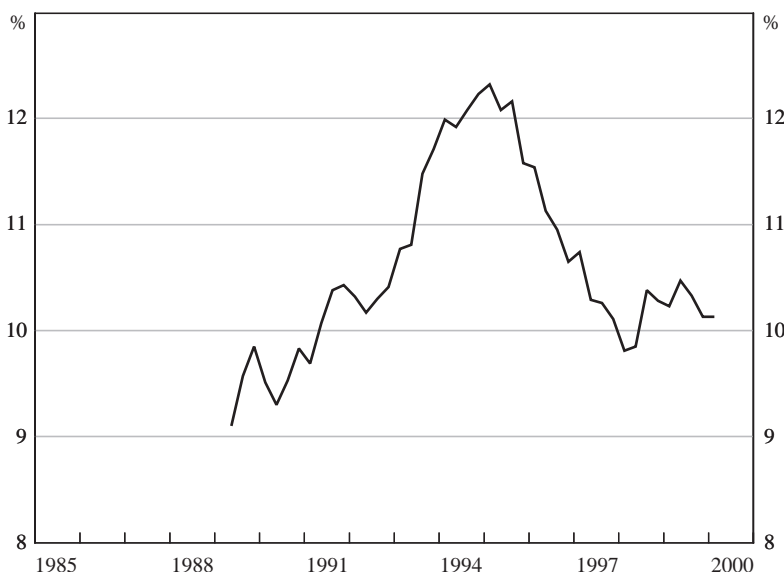
4. For comprehensive accounts of the Pyramid episode see Kane and Kaufman (1992) and Sykes (1994). Eastway (1993) provides a brief summary of the problems in non-bank financial institutions in the early 1990s.

5. There were also runs on a small number of financial institutions in the late 1980s, particularly following the share market crash in 1987. The highest profile cases were the runs in October 1987 on Rothwells and Spedley Securities (both merchant banks). Both institutions were eventually placed in liquidation.

In retrospect, given the various problems in 1990, 1991 and 1992, Australia was probably fortunate that it did not experience a more pronounced episode of financial instability. The various public sector actions were probably important in this regard. Also helpful was the fact that the institutions that experienced the largest losses (as a share of capital) were either owned by state governments (which *guaranteed* the repayment of deposits) or by foreign banks (which were prepared to recapitalise their Australian subsidiaries). Similarly, the domestic banks were not prepared to allow their loss-making non-bank subsidiaries to fail, for fear of reputational damage to themselves. Nor was the Government of Victoria prepared to allow the depositors in Pyramid to lose their deposits, ultimately guaranteeing the repayment of the nominal value of principal over a period of up to five years, although in present-value terms depositors did bear some loss.

At no time were there serious concerns about the safety of depositors' funds in the four large banks. Despite some large losses, the capital ratios of the major banks remained above regulatory minima, with the capital ratio for the system exceeding 9 per cent through the early 1990s (see Figure 2). A number of banks (most notably Westpac) did, however, make a concerted effort to increase their capital ratios immediately after the announcement of losses, so that by 1995, the system-wide ratio had increased to above 12 per cent. In part, this reflected new capital raisings, but at least 1 percentage point of the increase can be attributed to a change in the composition of banks' assets towards lower risk-weighted assets (i.e. housing loans).

Figure 2: Regulatory Capital Ratio for Banking System



Source: Reserve Bank of Australia *Bulletin* (Table B.6)

While the problems of the early 1990s did not undermine public confidence in the financial system, they did create strong ‘financial headwinds’ that retarded the economy’s recovery from recession. While balance-sheet restructuring by the corporate sector was an important source of these headwinds, credit supply constraints arising from the difficulties experienced by financial institutions also played a role, although it is difficult to disentangle the various effects.⁶ Many financial institutions significantly reduced their appetite for risk, with some announcing goals of large reductions in business loans. Consistent with a supply-side effect, the *share* of finance for the construction and purchase of commercial property provided by *banks* fell to historically low levels between 1991 and 1993. The financial headwinds were also evident in a substantial rise in interest-rate margins as banks attempted to restore strong profitability.

After the troubled years of the early 1990s, the Australian banking industry returned to strong profitability relatively quickly, largely thanks to the willingness of the household sector to significantly increase its borrowing, and by the banks’ ability to charge large interest-rate margins (see Sections 3 and 4). By 1995, the after-tax rate of return on shareholders’ funds had recovered to more than 15 per cent, and it remained around this level for the rest of the decade.

The only other sector of the financial system to experience serious difficulties over the decade was the reinsurance industry. In 1998 and 1999, losses by GIO, New Cap Re and Reinsurance Australia Corporation exceeded A\$1³/₄ billion. In part, these losses reflected a large number of natural catastrophes and significant downward pressure on operating margins. While the losses caused problems for the owners of these firms, they had no discernible effect on the public’s confidence in the insurance industry, or on the stability of the financial system more generally.

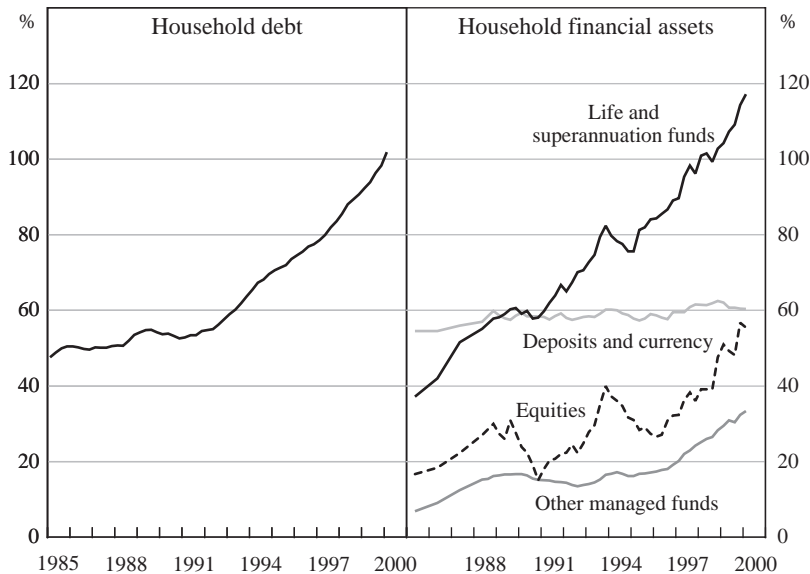
3. A Transformation of Balance Sheets

Arguably the most notable financial development of the 1990s was a deepening of the household sector’s financial balance sheet. In line with developments in many industrialised countries, Australian household indebtedness increased strongly over the decade, as did the household sector’s holdings of financial assets, particularly market-linked investments. A by-product of this financial deepening has been a marked change in the structure of the balance sheets of financial institutions, and, in turn, in the structure of Australia’s foreign debt.

From 1992 onwards, household debt increased by at least 10 per cent every year, with growth peaking at 17 per cent in 1994. As a result, the ratio of household debt to household disposable income almost doubled over the decade, rising from 54 per cent in 1990 to almost 100 per cent at the end of 1999 (see Figure 3). Most of the additional debt was used to purchase residential real estate (Stevens 1997).

6. See Kent and Lowe (1998) and Lowe and Rohling (1993) for econometric evidence of these ‘headwinds’.

Figure 3: Financial Liabilities and Assets of the Household Sector
Per cent of household disposable income



Sources: ABS Cat Nos 5206.0 and 5232.0; Reserve Bank calculations

The rise in indebtedness was, in part, made possible by the fall in nominal interest rates in the early 1990s. In the 1980s, high interest rates meant that loan servicing burdens were heavily skewed to the early years of the loan, restricting the size of borrowings and preventing some low-income households from obtaining a mortgage at all. Lower interest rates in the 1990s eased this constraint, and access to debt was also increased by a proliferation of new lending products. Particularly popular over the second half of the decade have been ‘home equity’ loans, which allow households to borrow against existing equity in their home, primarily by drawing against previous loan repayments. Household borrowing has also been supported by increases in the value of collateral arising from strong increases in house prices, particularly over the second half of the decade; for example, in both Sydney and Melbourne median residential property prices increased at an average annual rate of over 10 per cent over the years 1996 to 1999.

Relatively low nominal interest rates meant that interest-servicing burdens were low for much of the decade. However, recent rises in interest rates and the steady increase in indebtedness have brought the ratio of interest payments to household disposable income close to 8 per cent, which is only just below the peak recorded in 1990, and more than 1 percentage point above the average ratio during the 1980s.

On the other side of the household sector’s balance sheet, holdings of market-linked financial assets also increased rapidly. At the end of 1999, the household sector’s total holdings of financial assets were the equivalent of 245 per cent of household

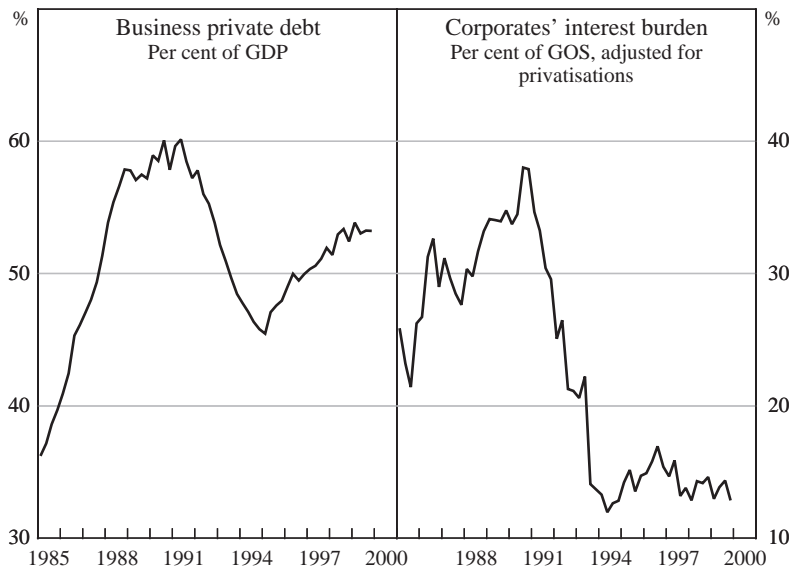
disposable income, up from 160 per cent in early 1990. Of these assets, the share held in life offices and pension (or superannuation) funds rose from 39 per cent to 47 per cent, while the share held in cash and deposits fell from 39 per cent to 25 per cent. The household sector also increased its direct holdings of equities, particularly over the second half of the 1990s. According to the Australian Stock Exchange, 41 per cent of Australian adults directly owned equities in 1999, up from 20 per cent in 1997, and 10 per cent in 1991.

Most of the increase in aggregate holdings of financial assets has been due to valuation effects, rather than to higher savings. In contrast, the change in the composition of financial assets reflects two important structural factors. The first is the privatisation of government-owned assets and the demutualisation of financial institutions; at the end of 1999, these privatised and demutualised companies accounted for around 18 per cent of the stock market capitalisation. The second, and ultimately more important factor, is the introduction in 1991 of compulsory retirement savings in the form of legally mandated minimum employer contribution rates to pension funds (Edey and Gower, this volume; Edey and Simon 1996; Johnson 1999). The contribution rate was initially set at 3 per cent, but will increase to 9 per cent by 2002. This scheme has helped fundamentally change the way people save for retirement and the type of financial assets they hold. Little more than a decade ago, the household sector's major financial assets were direct claims on institutions, either in the form of bank deposits, or defined benefit pension schemes. Households held considerable institutional risk, but little market risk. Today, market risk is much larger, with the return on the bulk of households' financial assets directly determined by the performance of financial markets, rather than by the performance of financial institutions.

The net effect of the changes in the structure of the household sector's assets and liabilities has been a modest increase in leverage over the decade, although since 1995 there has been little change. Over recent years, the solid increases in the price of residential property (which accounts for around 60 per cent of households' conventionally measured assets) and the strong gains in the equity market have kept pace with the increase in indebtedness. At the end of 1999, the ratio of household debt to household wealth stood at around 13 per cent, compared with 10 per cent in 1990.

In contrast to the household sector, the corporate sector spent the first half of the decade unwinding the borrowing excesses of the 1980s. Between 1991 and 1995, the ratio of business debt to GDP fell 15 percentage points to around 45 per cent (see Figure 4). Over the second half of the decade, business debt increased at a faster pace than nominal GDP, although the ratio of business debt to GDP still remains well below the peak reached in the late 1980s. Interest-servicing burdens over the second half of the decade have been low by historical standards, reflecting the decline in leverage and low nominal interest rates.

These patterns in business and household borrowing are clearly reflected in the balance sheets of financial institutions. In 1990, 1991 and 1992, the ratio of aggregate credit to GDP declined as the corporate sector repaid debt, but then increased at a solid pace over the remainder of the decade due to the strong growth

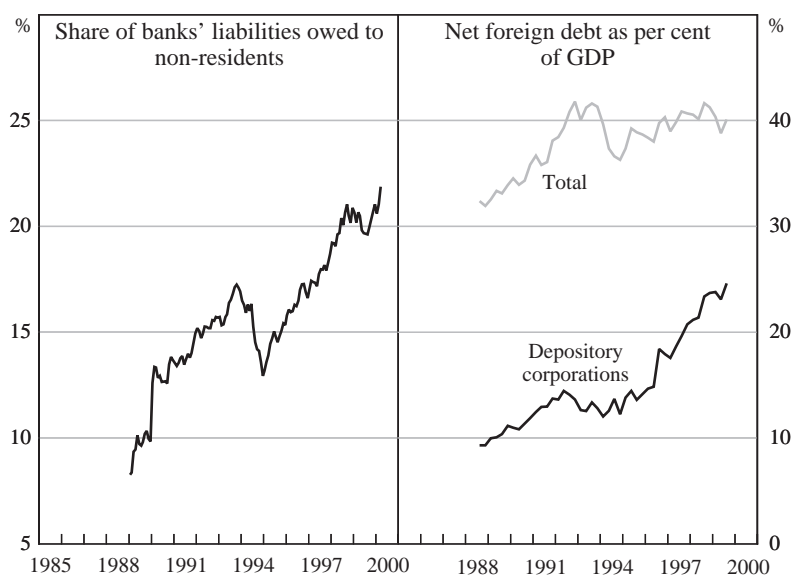
Figure 4: Corporate Debt

Sources: ABS Cat Nos 5204.0 and 5232.0; Reserve Bank calculations

in household borrowing. This strong growth has also meant that the share of mortgage loans in the total assets of the banking system reached a record high of nearly one-third in 1995, and despite some securitisation of housing loans by banks subsequently, this share has remained at historically high levels.

The combination of strong credit growth and subdued growth in domestic deposits has led financial institutions to rely increasingly on wholesale markets for funding, largely through issuing debt securities. Given the relative lack of domestic savings, many of these securities have been issued to non-residents. This has led to a rise in the share of the banking system's total liabilities owed to non-residents from less than 10 per cent in 1990 to over 20 per cent at present. At the same time, the corporate and public sectors have reduced their demand for foreign borrowing, so that now well over half of Australia's net foreign debt is now intermediated through financial institutions (see Figure 5).

While around 70 per cent of foreign borrowing by financial institutions is denominated in foreign currency, these institutions do not have large foreign currency risks, with the currency risk typically hedged through the swaps market. One indicator that the banks' foreign exchange risk is small is that the aggregate regulatory capital charge for the Australian banks' market risk (which includes foreign exchange risk) accounts for just 1 per cent of the total capital requirement, compared to over 5 per cent for the large Canadian and German banks, and over 10 per cent for the large Swiss banks.

Figure 5: Overseas Borrowings by Financial Institutions

Note: Depository corporations comprise banks, building societies, credit unions, money market corporations and finance companies.

Sources: ABS Cat Nos 5206.0 and 5302.0; Reserve Bank of Australia *Bulletin* (Table B.3)

4. Consolidation, Competition and Profitability

4.1 Financial conglomerates and consolidation

The increase in the household sector's holdings of financial assets is also creating significant pressure for change in the structure of financial institutions. In particular, it is forcing a convergence between types of institutions, with the main manifestation being a move by banks into funds management. This move is also being driven by a compression of lending margins and by the potential for banks to use their strong brand names and distribution networks to cross-sell financial products. The end result of these forces is greater pressure for consolidation, focused particularly around the existing major banking groups.

The first attempt to establish a truly diversified financial services firm occurred in 1990 with the proposed merger between the ANZ and National Mutual. The merger was, however, blocked by the Commonwealth Government on, amongst other things, the view that mergers between the four major banks and two largest life insurance companies were contrary to the national interest due to their likely effect in reducing competition (Keating 1990). This policy – which became known as the 'six-pillars' policy – remained in force until the Government's response to the Financial System Inquiry (widely known as the Wallis Inquiry) was announced in April 1997. While the Government accepted the Inquiry's recommendation that

mergers between the large banks and life offices be permitted, it announced that the prohibition on mergers amongst the four major banks would remain in force until there was evidence of increased competition, particularly in the area of small business lending (Costello 1997). This has been dubbed the 'four-pillars' policy.

Following the rejection of the ANZ/National Mutual merger, the two institutions formed a strategic alliance to cross-sell products. A similar alliance was established between Westpac and the AMP (the largest life insurer). Both banks, however, became increasingly dissatisfied with the arrangements, largely due to the constraints on their ability to develop their own funds management businesses, and both alliances were dissolved in the mid 1990s.

The first true financial conglomerate was formed in 1994 when the insurance group Colonial Mutual purchased the State Bank of New South Wales. A little over a year later, a second conglomerate was created with the merger of Metway Bank, Suncorp and the Queensland Industry Development Corporation. With the six-pillars policy in place, the major banks relied mainly on organic growth to build their funds management businesses. This strategy met with some success, although progress was relatively slow; over the decade the major banks were able to increase the share of total profits coming from their insurance and funds management arms from around 2–4 per cent to around 8–10 per cent. During the six-pillars period, the major banks' acquisitions strategies focused on the purchase of regional banks and, in a couple of cases, the extension of their overseas retail banking operations.

A bigger step in reshaping the future structure of the financial system took place in the first half of this year, with the Commonwealth Bank of Australia's (CBA) purchase of the Colonial Group (which has both banking and funds management activities) and the National Australia Bank's (NAB) purchase of MLC (a funds management group) from Lend Lease. These acquisitions will make the CBA and the NAB the two largest institutions in retail funds management, with a combined market share of over 30 per cent; collectively, the market share of the four large banking groups will be over 40 per cent, around double the level in the early 1990s. In terms of total funds under management (as opposed to retail funds), the CBA and NAB will rank one and three (with the AMP ranked two).

The four major banking groups have also increased their share of the total assets of deposit-taking institutions (see Table 2). The increase has been particularly noticeable in retail transaction deposits, with the majors' share rising from just less than 60 per cent in 1990 to over 66 per cent in 1999.⁷ This increase largely reflects the CBA's purchase of the State Bank of Victoria (in 1991) and Westpac's purchases of Challenge Bank (in 1995) and the Bank of Melbourne (in 1997). This share will rise further to around 70 per cent when the CBA's purchase of Colonial is completed, and could increase even further in the next few years, with the major banks holding strategic shareholdings in the small number of remaining retail banks.

7. Retail transaction deposits are calculated as deposits (excluding term deposits and certificates of deposit) held by the non-financial private sector with banks and 'borrowings' (excluding bills of exchange and promissory notes) by building societies and credit unions from the non-financial private sector.

Table 2: Assets of Financial Institutions

	Number of institutions		Per cent of total assets of deposit-taking institutions		Per cent of total assets of the financial system	
	1990	1999	1990	1999	1990	1999
Deposit-taking Institutions						
Major Australian-owned banks						
– privately owned	3	4	44.4	62.6	21.7	29.0
– government owned	1	0	14.9	–	7.3	–
Other Australian-owned banks						
– privately owned	9	8	5.7	17.1	2.8	8.0
– government owned	4	0	15.4	–	7.5	–
Foreign-owned banks						
– subsidiaries	15	11	9.5	6.1	4.6	2.8
– branches	3	25	1.3	9.5	0.6	4.4
Building societies	51	19	6.4	1.8	3.1	0.8
Credit unions	279	219	2.4	2.9	1.2	1.3
Total					48.8	46.3
Other Financial Institutions						
Reserve Bank of Australia	1	1			3.5	3.2
Money market corporations	158	73			7.3	4.1
Finance companies	191	114			7.6	4.3
Life insurance and superannuation funds	87 061	203 310			21.4	25.9
Other managed funds	551	740			6.1	8.9
General insurance companies	166	115			4.4	3.9
Securitisation vehicles	31	51			0.8	3.4

Note: Data are for June 1990 and December 1999.

Sources: ABS Cat No 5232.0; APRA; Reserve Bank of Australia *Bulletin* (Tables B.3, B.7 – B.15)

Consolidation within and across the banking and insurance sectors has been facilitated by the privatisation of government-owned financial institutions, and the demutualisation of building societies and insurers. In 1990, one-third of the domestic assets of the banking system was controlled by five majority-owned government banks, including the largest and fifth-largest banks. Over the course of the decade, all five banks were either sold to the public or purchased by other banks. In a similar vein, most state government-owned general insurers were privatised. At the same time, the freeing of capital resources by demutualisation allowed private institutions such as the Colonial Group and AMP to launch takeovers themselves.

The building society sector also contracted over the decade with some of the larger societies converting to banks, and mergers amongst the smaller societies. While the number of credit unions also declined, the industry as a whole performed reasonably well over the first half of the decade, attracting customers with offers of lower fees. However, over the second half of the decade the industry has struggled to maintain its share of financial system assets.

The decade also saw a decline in the number of finance companies and money market corporations (known as merchant banks). Many of these institutions were originally established by banks (both domestic and foreign) to circumvent regulations, but when the financial system was liberalised, they lost much of their competitive advantage. In 1992, foreign banks were given the choice of operating as branches or locally incorporated subsidiaries, with many electing to operate as branches, which by law are not allowed to accept deposits less than A\$250 000. This led a number of foreign-owned merchant banks to convert to a branch structure. The recent abolition of the non-callable deposit requirement on banks has further reduced the competitive position of the merchant banks, with taxation issues now being the main factor slowing their conversion to bank status. Most of the merchant banks are now operated by foreign-owned banks, sometimes alongside a licensed bank. There are relatively few remaining domestically owned merchant banks, with a number of the high-profile institutions closing after large losses in the late 1980s/early 1990s.

In contrast to the decline in government-owned banks and non-bank financial institutions, there has been a significant increase in the number of foreign-owned banks operating in Australia, as well as an increase in their share of total assets. However, with limited exceptions, these foreign banks have shown little interest in retail banking. Instead the focus has been on wholesale banking and funds management.

To date, there have been no purchases by foreign banks of large domestic banks. In contrast, a number of large insurance firms have been purchased by overseas institutions (e.g., AXA purchased National Mutual and ING purchased Mercantile Mutual). The different outcomes in banking and insurance largely reflect government policy, which for much of the 1990s prohibited a foreign bank purchasing any of the four major banks. This policy was relaxed following the Wallis Inquiry, although the Government has indicated that a large-scale transfer of ownership of the financial system to foreign hands remains contrary to the national interest. This new policy has not yet been tested, although continuing global consolidation of financial services firms may well see proposals for large cross-border mergers in the future.

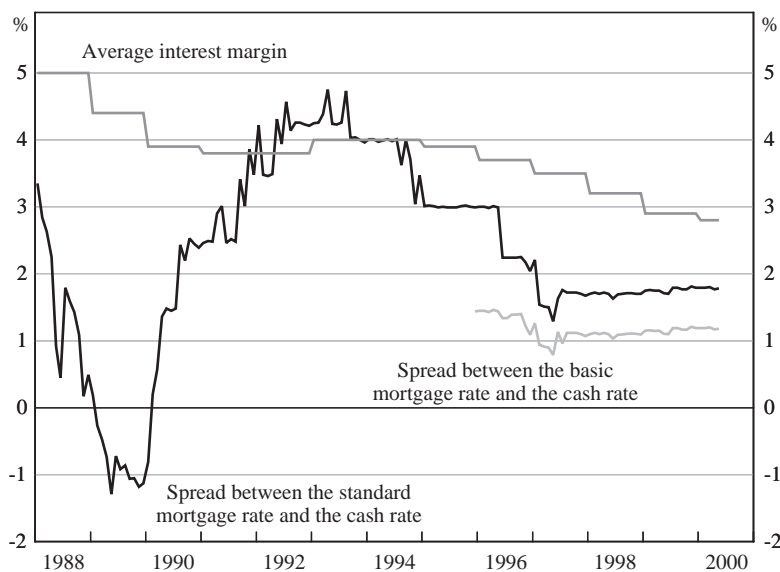
4.2 Competition and profitability

While the process of consolidation has probably not yet run its full course, there is little evidence to suggest that, to date, it has reduced competition. In large part, this is due to the entry of new firms in response to persistently high rates of return in specific markets, and incumbent firms responding with lower prices to maintain market shares.

The most compelling example is provided by the market for residential mortgages, where the margin between the standard mortgage rate and the cash rate fell from a historically high $4\frac{1}{4}$ percentage points in 1992/93 to be around $1\frac{3}{4}$ percentage points in 1999. The decline is even larger if one takes into account the introduction of ‘no-frills’ or ‘basic’ mortgages (see Figure 6).

The high margins in the first half of the decade generated extremely high rates of return on equity on housing loans, and were important in restoring the profitability of the banks. These high returns meant that the existing institutions were keen to attract new business. These institutions were, however, reluctant to chase market share by reducing their standard loan rates, as this would have reduced the profitability of the large stock of *existing* loans. The solution was to attempt to segment new and existing borrowers by offering discounted interest rates for the first year or so of a new loan (so-called ‘honeymoon loans’). While aggressive marketing of these loans gave the appearance of strong competition, and did lead to a significant increase in loan refinancing, many existing borrowers continued to pay high margins, as did new borrowers at the expiration of the ‘honeymoon’ period.

Figure 6: Interest-rate Margins



Note: The negative spreads in the late 1980s are partly explained by the fact that in 1988 the Commonwealth Government announced a phasing out of the statutory reserve requirements (SRDs) with the banks agreeing to the *quid pro quo* that the savings be translated into lower lending rates.

Sources: Reserve Bank of Australia *Bulletin* (Tables F.1 and F.4), Reserve Bank calculations

More effective competition took a relatively long time to occur, and did not eventuate until mortgage managers entered the market.⁸ The mortgage managers relied on a bank for their initial funding and for the development of the necessary securitisation procedures, although the bank concerned had essentially no existing mortgage portfolio. In contrast to established lenders, mortgage managers were able to offer lower margins without concern for the effect of this on the profitability of existing loans. During 1994, 1995 and 1996 they offered standard lending rates around 1 to 1½ percentage points below those charged by the existing lenders, and by late 1995, the mortgage managers accounted for almost 10 per cent of housing loans written. Faced with a declining market share, the established lenders introduced basic home loan products in 1995 to compete with the ‘no-frills’ products provided by the mortgage managers. Eventually, the established lenders also cut their margins on standard mortgages, dropping them by around ¾ of a percentage point in June 1996 and by ½ of a percentage point in the first half of 1997. Today, mortgage managers and banks charge similar rates, with the scope for mortgage managers to push margins lower constrained by the administrative cost of securitisation and the market premium on securitised assets. The effect of increased competition has been a significant narrowing in the margin between the average interest rate paid and received by banks, particularly over the past few years (see Figure 6).

Another market that has been transformed by the entry of new firms is retail stockbroking. In the early 1990s, it was not uncommon for retail investors to pay a 2 per cent commission on share purchases and sales. By mid decade this had halved to around 1 per cent. Today, commissions are as low as 0.1 per cent (a fall of 95 per cent over the decade!) and remain under downward pressure. As in the case of mortgages, new entrants were the driving force behind the price falls. A major catalyst for greater competition was the entry in 1996 of one of the large retail banks as a discount broker and its development of technology that allowed orders to be placed over the internet (introduced in March 1997). More recently, at least a dozen other firms, including specialist internet brokers, as well as all the major retail banks, have offered similar services. By the end of 1999 these discount internet brokers accounted for almost 15 per cent of all trades on the Australian Stock Exchange.

A third area that has been affected by stronger competition is the issuing of credit cards, although here competition has resulted in the proliferation of loyalty points schemes, rather than a decline in lending margins. In the early 1990s, lower nominal interest rates substantially reduced the cost to the banks of the interest-free period, whilst the introduction of annual fees (in 1993) provided a new income stream. In response, a foreign bank entered the market competing aggressively, partly through the introduction of a loyalty points scheme. Over the following few years, the incumbent issuers introduced similar schemes, with loyalty rewards equivalent to up to 1 per cent of the amount spent.

8. Mortgage managers originate home loans that are then pooled and on-sold to investors through the creation of asset-backed securities.

There are at least two possible explanations for why competition has taken this particular form. First, it is sometimes claimed that if a single financial institution were to unilaterally cut its credit card interest rates the average credit quality of its customers could deteriorate (due to adverse selection), and profitability could fall. Second, fees such as interchange fees are set by each credit card scheme, thus limiting the scope for individual banks within the scheme to adjust fees unilaterally.⁹ Scheme-wide rules notwithstanding, there is little incentive for a bank to unilaterally cut the interchange fee that it receives whenever its customers use a credit card, since a reduced interchange fee would most likely depress, rather than boost, its market share. The result has been a distorted form of competition centred on loyalty point schemes. At the same time, there has been a five-fold increase in the number of credit card transactions over the decade, and a trebling since 1995.

In contrast to the above examples, it is difficult to point to obvious areas of increased competition in deposit markets over the 1990s. By the end of the 1980s, deregulation of interest rates and the establishment of cash management trusts had already led to the narrowing of deposit spreads, other than on transaction accounts. Spreads on these transaction accounts did, however, fall in the early 1990s due to the large decline in nominal interest rates. Although these spreads have subsequently widened a little, many transaction accounts still do not generate sufficient revenue to cover the costs of providing them.

While, overall, competition has increased despite greater concentration, the rate of return on equity in the banking industry has remained essentially unchanged over the second half of the decade, averaging 22 per cent on a pre-tax basis, and 15 per cent after tax.

From an accounting perspective, the sustained high returns can be explained by reductions in operating costs and growth in non-interest income being offset by lower interest margins. This can be seen in the lower panel of Table 3 which decomposes changes in the aggregate rate of return on equity for the four major banking groups plus St. George. Between 1995 and 1999, net interest income for these five banks as a ratio to their total assets fell from 3 per cent to 2.5 per cent, the effect of which was to reduce the average return on equity by almost 7¹/₂ percentage points. This negative effect on profits was offset by an increase in the ratio of non-interest income to total assets and, more importantly, by a fall in operating costs to total assets. A slight increase in leverage also made a small positive contribution to sustaining the return on equity. The table also shows the significant effect on profitability of the bad debts problems in the early 1990s.

9. The interchange fee is paid by the merchant's bank to the bank that issues the credit card. The merchant's bank recoups the interchange fee and other costs from the merchant through a 'merchant service fee', which averages around 2 per cent of the amount spent (Reserve Bank of Australia 1999). If an issuing bank unilaterally cuts its interchange fee it would simply reduce its revenues, thereby reducing the scope for offering loyalty points, with the likely result that it would lose customers.

**Table 3: Explaining the Return on Equity
for the Major Banking Groups and St. George**

	1990	1995	1999
Rate of return on equity (after tax)	9.71	15.46	15.42
Leverage (ratio of assets to shareholders' funds)	16.33	14.67	15.27
Ratio of net interest income to assets	3.00	2.97	2.48
Ratio of non-interest income to assets	1.71	1.50	1.58
Ratio of operating costs to assets	2.91	2.74	2.32
Ratio of bad debts expense to assets	0.83	0.17	0.21
	Percentage point change from:		
	1990 to 1995	1995 to 1999	
Change in rate of return on equity	5.75	-0.04	
<i>Accounted for by change in:</i>			
Leverage	-1.37	0.62	
Ratio of net interest income to assets	-0.47	-7.38	
Ratio of non-interest income to assets	-3.31	1.27	
Ratio of operating costs to assets	2.65	6.30	
Ratio of bad and doubtful debts to assets	10.19	-0.57	
Other (including abnormals and taxation)	-1.94	-0.29	

Sources: Banks' financial statements and authors' calculations

The growth of non-interest income over the second half of the 1990s is largely explained by growth in fee income, particularly from services provided to the household sector.¹⁰ The most notable examples are the introduction of mortgage fees and account-servicing fees; for example, it is now common for banks to levy monthly servicing fees of \$4 on transaction accounts and \$8 on mortgage accounts, whereas in 1990 such fees rarely existed. The introduction of these fees is part of the unwinding of cross-subsidies that has followed the downward pressure on lending margins. While, in aggregate, consumers of financial services have benefited from this process, the benefits have not been evenly distributed, with some consumers of previously heavily subsidised services clearly worse off. This has led to heavy criticism of banks by particular groups.

Notwithstanding the often strong public reaction to higher fees and charges, it has been the reduction in operating costs that has been the more important factor in sustaining high rates of return. This reduction has been achieved through a variety of means including the rationalisation of branch networks, the migration of transactions

10. Comparisons between 1990 and 1995 are distorted by the fact that the non-interest income figures in the early 1990s include significant revenue from assets acquired through loan defaults, and by the treatment of surpluses in staff superannuation schemes. See Reserve Bank of Australia (1999) for a discussion of recent changes in bank fees.

out of branches to low-cost electronic delivery systems and the automation of back-office processing. The outsourcing of some information technology functions has also played a role. Overall, the number of bank branches fell by almost a quarter over the decade, while the number of full-time equivalent employees in banks fell by around 20 per cent.

While the trends in profitability can be easily explained from a simple accounting perspective, it is more difficult to explain the apparent paradox of increasing competition and sustained high rates of return. Significant reductions in operating costs should ultimately lead to further reductions in interest margins, rather than sustaining high rates of return for shareholders. An important lesson from the 1990s is that the competitive pressures needed to drive margins lower are more likely to come from new entrants, rather than from firms with large existing market shares. The lesson becomes even more relevant in the current environment in which there is strong pressure for further consolidation.

While the regulatory and technological barriers to entry have been substantially reduced, some impediments still remain. Foremost among these are the strong brand names enjoyed by existing banks. Also important are taxes on financial transactions, such as mortgage stamp duties and the bank debits tax, which reduce the incentive for consumers to change financial institutions. The proliferation of electronic banking links, including direct credit of salaries and the electronic payment of bills has had a similar effect, as has the practice of some institutions charging various forms of entry and exit fees. It is also possible that technological developments have increased returns to scale. Research and development and the construction of new network infrastructure involve substantial fixed costs and risks that may be more easily borne by larger institutions.

One factor that has the potential to ameliorate some of these effects is the internet. It offers the promise of making entry easier and lowering switching costs. The experience of retail stockbroking provides a good example of how powerful a force it can be. In Australia, however, it is the incumbent banks with their strong brand recognition and their established customer bases that are dominating internet banking. Whether the internet can deliver on its promise of promoting competition is likely to be an important issue in the years ahead.

5. The Growth of Markets and the Commoditisation of Risk

Another major development in the 1990s was the growth in direct financing through financial markets. This growth has not, however, reduced the overall importance of banks in the financial system. Instead, banks are providing an ever-expanding range of *risk intermediation* and other financial services. By bundling and unbundling risks, and by developing instruments that allow those risks to be traded, banks themselves have underpinned much of the tremendous growth in financial markets over the past decade or so.¹¹

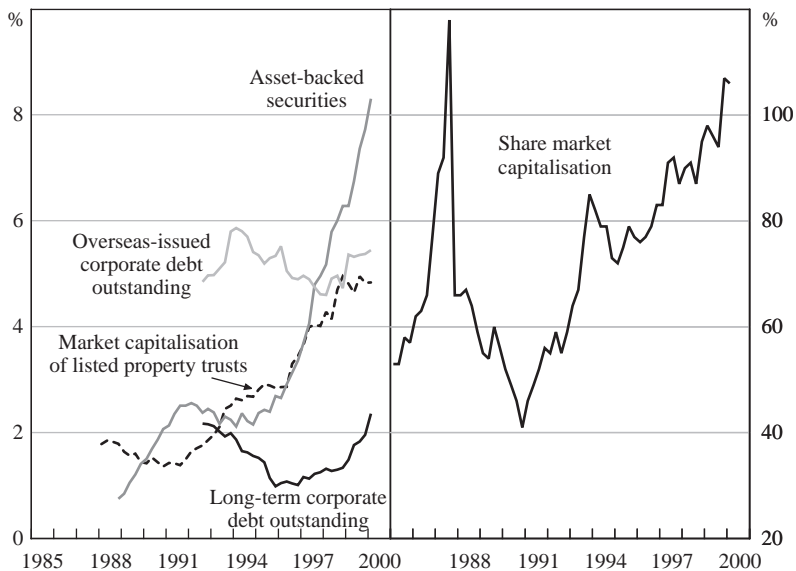
11. Allen and Santomero (1997) discuss how banks in the United States have recast their activities in the face of the growth of financial markets.

The clearest example of the greater role played by markets in financial intermediation is the emergence of a market in asset-backed securities, particularly mortgage-backed securities. The first securitisation programs were developed by state governments in the mid 1980s to finance loans to low-income households. When interest rates fell in 1990 and 1991, many of the fixed-rate loans made by these programs were refinanced causing the holders of the bonds to incur significant losses. After this troubled start, the market received a major boost with the development (by a bank) of a securitisation vehicle to finance lending by the mortgage managers. As discussed in Section 4.2, the high interest-rate margins of the early 1990s gave the mortgage managers the scope to undercut the established lenders, with the result being rapid growth in the issuance of mortgage-backed securities. Over recent years, banks have also begun to securitise their own mortgages as part of their capital-management strategies. The total value of asset-backed securities now outstanding exceeds A\$50 billion (equivalent to over 8 per cent of total credit; see Figure 7). Approximately two-thirds of these securities are backed exclusively by residential mortgages, with others backed by financial securities, credit card loans and auto loans. Around one-quarter of the outstanding securities have been issued offshore.

Financial markets (in particular, listed property trusts) are also playing a more important role in the financing of commercial property. Over the decade, the number of listed trusts more than doubled and their total assets quadrupled, reducing the

Figure 7: Financing through Markets

As a per cent to total credit extended by financial institutions



Sources: ABS Cat No 5232.0; Australian Stock Exchange *Monthly Index Analysis*; Reserve Bank of Australia *Bulletin* (Tables D.2 and D.4)

share of commercial property financing conducted through banks' balance sheets. While these trusts do borrow from banks, increasingly they are also issuing their own debt securities.

In line with the reduction in corporate debt, the domestic corporate bond market contracted over the first half of the decade. The market then recovered, particularly in the last few years, although the domestic market remains considerably smaller than the offshore market. Both markets are dominated by security issues by financial institutions, with banks continuing to be the main source of debt funding the vast majority of Australian firms.

The stock market has shown more consistent growth over the decade. Since 1990, the market capitalisation of the Australian Stock Exchange (ASX) as a ratio to GDP has more than doubled, to over 100 per cent, bringing the value of equity in listed companies to a level roughly equivalent to the value of credit extended by financial institutions (see Figure 7). While the bulk of this growth is due to valuation effects, there have also been substantial issues of new equity; over the decade as a whole new equity issues were the equivalent of 55 per cent of the increase in credit. Despite the growth of the Australian stock market, the value of listed equity relative to the size of the overall economy remains well below that in the United States and United Kingdom.

Growth in equity market turnover has also been rapid, with the ratio of annual turnover to market capitalisation increasing from around one-third in 1989/90 to more than half in 1998/99. Part of this increase can be attributed to changes in the infrastructure for trading and settlement. In 1990, the ASX moved all share trading from open-outcry floor trading to an electronic system. It also introduced an automated settlement system, so that by 1998, all shareholdings in domestic companies had been converted to electronic (uncertificated) form. In the past few years, the fall in retail brokerage charges, the introduction of internet-based brokers, and the strong performance of the stock market have also contributed to the strong growth in turnover.

More generally, much of the recent growth in financial markets, particularly in trading volumes, is not directly related to the increase in the value of securities outstanding, but rather to the increasing marketability of risk through financial instruments, particularly derivatives. Improvements in technology and data have allowed a wide range of previously unpriced risks to be priced. Banks have played a central role in this process, using financial markets to manage their own balance sheet risks and to provide risk-management services for their customers. For example, over the decade the banks' outstanding interest rate swaps increased around five-fold, while currency options outstanding increased around six-fold. Moreover, banks remain dominant in the foreign exchange market, accounting for more than 80 per cent of foreign exchange turnover in 1999 (see Table 4). Similarly, banks remain the main providers of underwriting and placement services for corporate debt issues and stock market capital raisings.

The trend towards the commoditisation and marketability of risk is exemplified in the emergence, late in the decade, of a market for credit derivatives. These

Table 4: Banks and Financial Markets

Instrument	Banks' share in annual turnover 1998/99, per cent	Percentage increase in banks' outstandings Dec 1989 – Dec 1999
Spot foreign exchange	89	–
Foreign exchange forwards	89	80
Foreign exchange options	84	512
Cross-currency swaps	59	156
Government debt securities	42	0
Forward rate agreements	78	17
Interest rate swaps	61	398
Interest rate options	37	316
Equity derivatives	14	117

Note: Banks' share in turnover excludes in-house transactions

Sources: AFMA-SIRCA (1999); APRA

derivatives essentially create a market in credit risk, allowing financial institutions to separate the businesses of originating and financing loans on the one hand, and the acceptance of credit risk on the other. The Australian Financial Markets Association (AFMA) estimates the size of the Australian credit derivative market at the end of 1999 at between A\$3 billion and A\$5 billion in gross contract value (AFMA 2000). To date, the market has primarily involved Australian banks buying credit risk protection from internationally active banks and securities houses. However, if developments abroad are any indication, the development of a two-way market in which the Australian banks both buy and sell credit risk is likely in the future.

An expansion of exchange-traded derivatives has also helped increase the marketability of risk. At the start of the decade, the Sydney Futures Exchange (SFE) offered just seven different contracts.¹² By the end of 1999, 25 contracts were traded, with new contracts including futures covering 12 individual shares, a variety of stock market indices, wheat, and electricity. The SFE also introduced several new types of derivatives including overnight options and serial options, as well as trading in contracts over oil, natural gas, coal and metals though a linkage with the New York Mercantile Exchange. Similarly, the ASX introduced more flexible options (allowing traders to customise some of the key features of the contracts such as expiration date) and share ratio contracts (which reflect a company's share price performance relative to the overall market). At the same time, turnover in traditional exchange-traded derivatives has grown enormously. For example, over the decade turnover in bank-bill and government-bond futures and options more than doubled

12. Three-year and ten-year government bonds, 90-day bank bills, the Australian dollar, the All Ordinaries Index, wool and live cattle.

as a ratio of GDP; by 1999, annual turnover in bank-bill derivatives amounted to more than twelve times annual GDP, while bond derivatives turnover was almost three times GDP.

The growth of financial markets has opened up new sources of finance and allowed new risks to be traded. Managed properly, this process can lead to better pricing and allocation of risk and more stable and efficient financial and non-financial institutions. However, it also opens up greater possibilities for institutions to purchase risk and to increase their leverage to changes in market prices. As the events surrounding the 1997 Asian crisis and the near-collapse of the US hedge fund Long-Term Capital Management demonstrated, the costs of mismanaging these risks can be high. Fortunately, Australia escaped this episode relatively lightly, with the main effects limited to a temporary increase in exchange rate volatility, a widening of credit spreads and a decline in new debt issuance (Grenville 1999).

6. Regulation of Financial Services

The difficulties experienced by financial institutions in the late 1980s – early 1990s highlighted shortcomings with risk-management practices within financial institutions and the arrangements for the prudential supervision of financial institutions. As a result, much of the first half of the 1990s was devoted to overhauling risk-management and supervisory processes to ensure a more stable and robust financial system. Over the second half of the decade, the focus turned to ensuring that the regulatory framework not only contributed to the stability of institutions, but also promoted competition, enhanced investor protection, and was sufficiently flexible to deal with continuing innovation in the financial services industry.

In terms of the supervision of deposit-taking institutions, the most important responses to the problems of the early 1990s included: the introduction of targeted, risk-based, on-site bank reviews by the Reserve Bank;¹³ moves to strengthen consolidated supervision (for example, the application of large-exposure limits to the bank in combination with its non-banking subsidiaries); the development, in conjunction with the accounting profession, of guidelines for the measurement and reporting of impaired assets; the passing to the Reserve Bank of formal responsibility for the supervision of banks owned by state governments; the clarification of the role of auditors and bank directors in the oversight of risk management; and the establishment (in 1992) of the Australian Financial Institutions Commission to set uniform, national prudential standards for building societies and credit unions.

The supervision of insurance was also substantially improved. An important step in this process was the passage of the *Life Insurance Act* in 1995, which upgraded solvency standards and financial reporting requirements, increased the responsibilities of the directors, auditors and actuaries of life companies, and strengthened the

13. In 1992 the Reserve Bank began on-site reviews of banks' credit risk management. On-site reviews of banks' market risk management commenced in 1994.

Insurance and Superannuation Commission's (ISC) regulatory and enforcement powers. In addition, the ISC commenced on-site reviews of life insurers in 1992, and expanded the scope and frequency of its inspections of general insurers and superannuation funds.

The shift to targeted on-site reviews by the Reserve Bank and the ISC reflected a broader shift away from rule-based supervision towards supervisory practices that focus on the way that institutions measure and manage their key risks. One example is the approach taken to market risk. Here, banks have been allowed to use their own risk-measurement models to determine capital requirements, provided that the models are technically sound and the broader risk-management environment in which they are used is robust. This same general approach has recently been applied to liquidity risk in deposit-taking institutions. Rather than imposing a minimum liquidity ratio, as had been the case in the past, the emphasis has moved to ensuring that institutions have a robust liquidity-management policy, including a demonstrated ability to meet a five-day 'name' crisis.¹⁴ Recent proposed changes to the Basel Capital Accord are likely to see this risk-based approach extended to include other risks, including credit risk and operational risk.

With the completion by mid decade of most of the reforms needed to correct the problems identified in the early 1990s, the Commonwealth Government established the Wallis Inquiry in 1996. The Inquiry, which submitted its final report in March 1997, recommended a major rearrangement of financial regulation, shifting from a regulatory structure based on institutions, to one based on functions (Financial System Inquiry 1997). In large part, this recommendation was prompted by the blurring of the distinctions between different types of financial institutions discussed above. The recommendation was accepted by the Commonwealth Government, and there are now separate regulatory agencies with responsibilities for prudential supervision, market conduct and the payments system.

Responsibility for the prudential supervision of banks, building societies, credit unions, insurance and superannuation funds was assigned to the Australian Prudential Regulation Authority (APRA), which commenced operations in July 1998. This brought to an end the Reserve Bank's role in bank supervision. Responsibility for market conduct and disclosure in the financial sector was assigned to the Australian Securities and Investments Commission (ASIC), which was also given responsibility for the enforcement and administration of the Corporations Law and consumer protection across the financial system. The Reserve Bank retained responsibility for monetary policy and the maintenance of financial system stability. In addition, a Payments System Board was established within the Reserve Bank with responsibility to promote safety, competition and efficiency within the payments system.

To date the new regulatory structure is working well, with effective co-ordination mechanisms having been established between the various regulatory authorities. Communication between the Reserve Bank, APRA and ASIC is facilitated through

14. A name crisis is one in which an individual institution has difficulty in retaining or replacing its liabilities due to events specific to that institution.

the Council of Financial Regulators, and by the Reserve Bank and ASIC both being represented on the board of APRA. APRA also has a seat on the Payments System Board. However, despite this promising start, the reality is that the ability of the new arrangements to deal with a financial crisis has not yet been tested. Indeed, the effectiveness of the co-ordination arrangements is likely to be an important factor in future assessments of the Wallis reforms.

One area where the benefits of regulatory reform are already apparent is in the harmonisation of prudential standards across financial institutions (Carmichael 1999). Most progress has been made in developing a set of consistent standards that apply to all deposit-taking institutions. Similarly, APRA is working towards greater consistency in the treatment of life and general insurance by strengthening the prudential supervision of general insurers. The process of harmonising supervisory arrangements across deposit-taking institutions and insurance companies is also underway, although progress here is slower, reflecting the complexity of the task. APRA has, however, already announced a liberalisation of the range of activities that can be carried out within a financial conglomerate containing an authorised deposit-taking institution, and expanded the range of organisational structures available to conglomerates.

Apart from changes in the structure of regulatory agencies, the second half of the 1990s saw increased attention being paid to the protection of retail investors and consumers of financial services. In part, this was a reaction to the rise in the household sector's holdings of financial assets and the introduction of mandatory retirement savings. A significant step in this direction was the implementation of the *Uniform Consumer Credit Code* and various industry codes of practice in 1996. More recently, the proposed *Financial Services Reform Bill* will subject organisations providing retail financial services to extensive disclosure requirements. It will also require these organisations to put in place arrangements for compensating people for losses resulting from the inadequate provision of promised services.

The increasing importance of markets and growing complexity of financial instruments has also spurred improved disclosure in wholesale markets. In 1991, the 'checklist' approach to prospectuses was replaced with a requirement that prospectuses include all information that a reasonable investor and his/her adviser need to make informed decisions. In 1994, the Australian Stock Exchange upgraded its continuous disclosure requirements, and in December 1996 Australian accounting standards were widened to include disclosure requirements for financial institutions. In many respects, the disclosure arrangements in Australia now compare favourably with those abroad, although the requirements that apply to deposit-taking institutions are less comprehensive than is the case in some other countries. One example of this is that deposit-taking institutions in Australia are not required to publish their regulatory capital ratios, while in a number of other countries the ratios are disclosed quarterly.

The Wallis Inquiry also recommended a number of reforms to promote competition in the financial services sector, particularly in the payments system. An early initiative of the Payments System Board was to widen access to Exchange Settlement Accounts at the Reserve Bank to institutions other than deposit takers. The Board is also undertaking a joint study with the Australian Competition and Consumer

Commission on interchange fees for credit and debit cards.

While the Wallis Inquiry recommended changes to many aspects of financial regulation, it endorsed the *status quo* in a couple of areas, despite the fact that current arrangements differ from accepted international practice. The first of these relates to the regulation of merchant banks. As mentioned in Section 4, most merchant banks operating in Australia are subsidiaries of foreign banks, and perform functions identical to those performed by authorised (investment) banks. However, unlike the licensed banks, the merchant banking operations of foreign banks are not subject to Australian prudential regulation, contrary to the Basel Committee's Core Principles for Effective Banking Supervision. The Wallis Inquiry supported this position largely on the grounds that merchant banks were not involved in retail business. This conclusion, however, sits oddly with the fact that banks conducting essentially identical business are subject to prudential regulation. In this light APRA is currently reviewing regulatory arrangements that apply to foreign banks' operations in Australia.

The second area is deposit protection arrangements. While Australia is unusual in not having an explicit deposit insurance scheme, the Wallis Inquiry concluded that the current arrangements, under which depositors receive preference over other liability holders in the liquidation of a deposit-taking institution, provide the best form of protection. In discussing the cases for and against deposit insurance, the Inquiry noted the possible adverse effect of deposit insurance on market discipline, and the difficulties that the high level of concentration in the Australian banking industry created for a self-funded scheme. Somewhat surprisingly, the issue generated little public discussion.

One important consideration not addressed by the Inquiry is whether governments would allow retail depositors in an authorised institution to suffer losses. The absence of failures of private banks in Australia for almost seventy years makes this difficult to judge. However, the experience in other countries suggests that governments find it extremely difficult to allow depositors to incur losses, even when they have no legal responsibility to protect, or guarantee, deposits. Arguably, the commitment not to bail out depositors is most credible in regimes in which there is a well-defined and widely understood deposit insurance scheme. While such a scheme does not preclude the government from extending broader protection, particularly in a systemic crisis, it does provide the realistic option of limiting protection to an amount that has been publicly announced in advance. Without such a publicly defensible limit, there is a risk that political pressure could lead to a guarantee of all deposits in a failed institution.

7. The Nature and Transmission of Financial Shocks

The various developments discussed in the preceding sections have altered the nature and allocation of financial risk within the economy and changed the way in which financial disturbances are likely to affect the normal processes of financial intermediation. This section of the paper discusses these changes, focussing on two issues in particular. The first of these is the impact of the changes in household

balance sheets on the nature of risks faced by the household sector. The second is the impact of developments over the 1990s on the robustness of financial institutions and markets to financial disturbances.

7.1 The household sector

Earlier we discussed three important changes in the structure of the household sector's balance sheet over the 1990s, namely:

- an increase in indebtedness;
- an increase in holdings of financial assets; and
- a switch away from deposits towards market-linked investments.

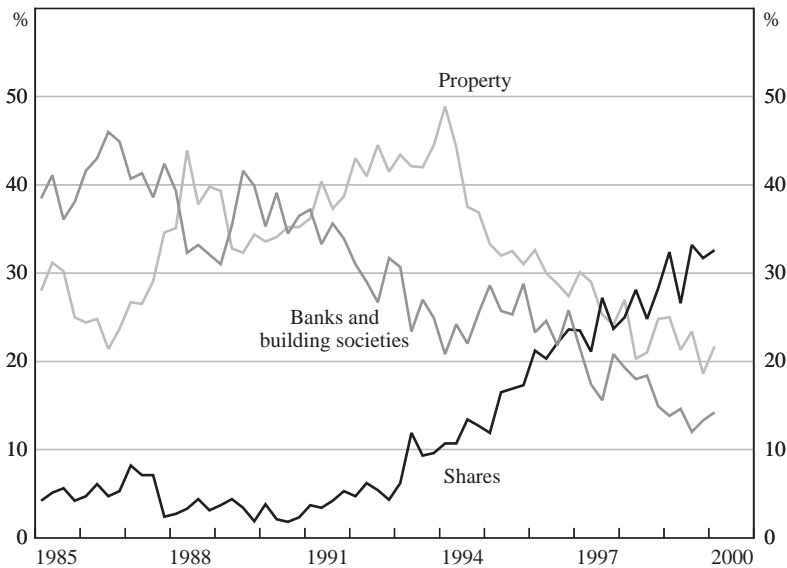
Taken in isolation, these changes have made the household sector, as a whole, more sensitive to changes in economic conditions and asset prices than was the case in previous decades. For example, the rise in indebtedness means that the effect of an increase in interest rates on aggregate interest payments by the household sector has almost doubled over the past ten years. Similarly, today, the additional wealth created through a 1 per cent rise in the value of households' financial assets is equivalent to 2¹/₂ per cent of annual household disposable income, compared with 1¹/₂ per cent a decade ago.

At the same time as balance sheets have become more exposed to a given change in interest rates and asset prices, economic and financial conditions seem to have become more stable. After the problems of the early 1990s, economic growth has been strong, inflation and interest rates have been low, and the stock market has performed well. Variability in growth, inflation and interest rates has also been low by historical standards (see Tables 1 and 2 in Gruen and Stevens (this volume)). Thus, while the sensitivity to economic and financial conditions may have risen, overall riskiness may not have increased.

Indeed, one broad interpretation of recent developments is that the changes in household balance sheets have, in part, been the result of a reassessment of the riskiness of debt and of holding equity investments. Some support for this interpretation can be seen in the responses to the Westpac-Melbourne Institute's *Survey of Consumer Sentiment*, which show that an increasing number of people view the stock market as the wisest place for their savings (see Figure 8). Certainly, the strong performance of the stock market has, in many people's eyes, increased its attractiveness as a place to invest. In addition, the absence of both large interest rate cycles and increases in unemployment have made people more confident in taking on debt. The increase in debt might then be interpreted as a sensible reaction to a more stable macroeconomy.

Whether or not this interpretation is correct depends in large part on an assessment of whether the relatively stable economic and financial conditions experienced in the 1990s are likely to continue. While judgements in this area are difficult, sustained low inflation and improvements in the monetary policy framework make a recurrence of the large interest rate cycles of the 1980s unlikely. So too does the increase in indebtedness itself, as it increases the impact on household consumption of a given

Figure 8: Wisest Place for New Savings
Per cent of survey respondents



Source: Melbourne Institute of Applied Economic and Social Research, Melbourne University, *Survey of Consumer Sentiment*

change in interest rates. On the other hand, the recent very strong performance of the stock market and the sustained strong output growth for much of the 1990s are certainly unusual by the experience of recent decades.

While overall assessments of risk are difficult, it is less ambiguous that the sensitivity of household consumption to movements in asset prices has increased as holdings of market-linked financial assets have risen. While, to date, there is scant empirical evidence of this effect, there are at least two reasons to suspect that it is indeed the case. First, changes in financial wealth, unlike changes in many other forms of wealth, are readily observable, making it easier for consumption to respond to a given change in wealth. Second, the larger holdings of financial assets have increased the potential for bubbles in asset markets to affect measured wealth, and thus consumption. Offsetting these factors, to some extent, are the diversification benefits that come from households holding a wider spread of assets.

Changes in wealth are easily observable when wealth is held in assets that are traded in markets. Changes in other forms of wealth, such as human capital, equity in unlisted companies, and public sector assets, are less easy to observe and measure. For example, while the value of human capital should rise in response to an expected improvement in future productivity (by increasing the flow of future wages), the increase is not directly observable and is difficult for individuals and potential lenders to recognise and measure. In contrast, the same expected improvement in

future productivity is reflected rapidly in the value of financial assets traded in markets. By telescoping all expected future returns into a current market price, financial assets provide an observable and readily verifiable way of measuring wealth. Thus, as the holdings of these assets increases, it becomes easier for households to observe changes in their wealth. This increase in 'observability' is likely to make consumption more sensitive to changes in wealth, and also allows households to use more of their wealth as collateral for borrowing.

The increased holdings of market-linked assets have also made a larger share of the household sector's wealth subject to the risk of price bubbles. In general, it is difficult for bubbles to occur in the value of non-traded assets, such as human capital or bank deposits. Similarly, bubbles are unlikely to occur in the value of wholly owned government assets, or in the household sector's valuation of its implicit claim on public sector pensions. In contrast, both equity and property markets have a long history of bubbles generated as the result of waves of excess optimism or pessimism about future economic conditions. If a bubble occurs and the inflated asset prices are viewed by the household sector as permanent, consumption is likely to increase. Conversely, when the bubble inevitably collapses, and asset values return to their true economic value, consumption may decline sharply. The potential for this type of reaction to affect aggregate consumption increases as the holdings of potentially 'bubbly assets' grows relative to current income.

While consumption is probably becoming more sensitive to changes in asset prices, the size of the change needs to be kept in perspective. Despite the increase in holdings of marketable financial assets, these assets still represent a relatively small share of the household sector's total wealth. Holdings of equities (both directly and indirectly) are equivalent to a little less than 1¹/₄ years' household disposable income. In contrast, the value of property assets is the equivalent of over four years' income, while the value of human capital, properly measured, would surely be much higher still. Thus, while changes in financial wealth are becoming larger relative to current income, the impact that these changes have on overall wealth is still relatively small. Furthermore, the effect of asset-price bubbles on consumption is likely to be diluted if households seek to smooth consumption and therefore respond to movements in wealth with less than proportionate, and lagged, changes in consumption. Lettau and Ludvigson (1999) present evidence for the United States to suggest that this is indeed the case. They show that when wealth is temporarily higher than its long-term trend with consumption and labour income, consumption is held temporarily below its trend relationship with wealth, in anticipation of lower future returns. Financial liberalisation, by opening up new sources of debt finance, has made it easier for households to smooth their consumption. Also, as households' holdings of financial assets have increased, portfolios have become more diversified, making overall wealth less sensitive to price changes in particular markets.

Changes in the structure of households' balance sheets have also affected the way that risk is allocated between households. Perhaps the best example is the privatisation of government-owned assets. Prior to privatisation, the entire community bore the financial risk associated with the performance of the assets, since poor performance implied a lower stream of dividends to government, and ultimately higher taxes or

lower spending. A good illustration of this is the Victorian experience in the early 1990s, where poorly performing state-owned assets, including the State Bank of Victoria, were partly responsible for significant increases in taxes and cuts in government services. While the incidence of higher taxes and lower government spending was not evenly spread, most of the community bore at least some of the burden. In contrast, once assets are privatised, the risk of under-performance is borne directly by the private owners, and this is a narrower group of people. For example, only 15 per cent of adult Australians directly own shares in Telstra, while less than 3 per cent own shares in the Commonwealth Bank and 1 per cent in Qantas, all of which were previously owned by the entire community.

This change in who holds the risk can alter the way that financial shocks play out. Again, a good example is the case of government-owned banks. As discussed in Section 2, the large losses by the State Bank of Victoria did not lead to a run by depositors, with deposits guaranteed by the Victorian Government. If instead, the losses had been concentrated in the hands of the depositors, the probability of a run on the bank would surely have been higher, as would a general loss of confidence in the banking system. This is not to say that the disappearance of government-owned banks has increased the risks to which the household sector is exposed; rather it has changed the nature of those risks, and the way that they are allocated.

7.2 Financial sector

Changes in the financial system have also affected the robustness of the normal processes of financial intermediation to various disturbances. The balance sheets of financial institutions appear safer and better managed than they were a decade ago.¹⁵ As a result, the risk of financial headwinds originating from large losses by financial institutions has probably fallen. On the other hand, the rise in the importance of financial markets has increased the probability of headwinds originating in market-related disturbances.

A reduction in financial institution risk is suggested by a number of factors, including the following:

- i. *a shift by banks into assets with relatively low credit risk.* As noted earlier, the strong growth in household sector borrowing has seen the share of housing loans to total banking system assets rise to historically high levels. While the average credit quality of residential mortgages may have declined a little over the decade, the shift into housing loans, and away from commercial property lending, has undoubtedly reduced the overall riskiness of banks.
- ii. *improved market scrutiny and discipline.* An important element here has been the demise of banks that operated with government guarantees or were not listed on the stock market. The increase in the reliance on debt securities, rather than deposits, has also prompted an increase in disclosure of information, and greater market scrutiny of that information. As part of this process, most banks

15. For evidence suggesting that the Australian share market views banks as having become less risky over the decade see Gizycki and Goldsworthy (1999).

now have credit ratings.

One area where clearer market signals and increased scrutiny have been particularly important is commercial property lending. Over the 1990s, an increasing share of commercial property investment has been financed by listed property trusts. This means that individual projects now receive greater market scrutiny, and movements in the price of property trusts provide a continuous and easily observable signal about the market's assessment of commercial property investments. It also means that a fall in commercial property prices is less likely to directly affect the health of financial institutions.

- iii. *greater diversification of profit sources.* The share of income earned abroad has increased, providing some protection from the domestic credit cycle; over the decade, the share of the profits of the four major banking groups earned overseas rose from 22 per cent to 33 per cent. The share of banks' income earned from non-interest revenue has also risen with the move into funds management, insurance and other fee-for-service activities. The shift away from corporate lending has also seen a decline in credit risk concentrations, with the number of large exposures falling considerably.
- iv. *an improvement in internal risk-measurement and management methodologies.* All banks now manage risk on a consolidated basis and most now use credit-grading systems that provide detailed information on changes in loan quality (Gray 1998). Other advances in risk-measurement techniques include the development of Value-at-Risk models of traded market risk and the use of more sophisticated scenario analysis in the assessment of liquidity risk. In turn, risk management has been strengthened through the use of derivatives to hedge banks' exposures to interest rate and exchange rate movements.
- v. *an improvement in financial system infrastructure.* The introduction of a real-time gross settlement system (RTGS) for high-value interbank payments in 1998 significantly reduced interbank settlement risk, as did changes in legislation that gave greater legal certainty to netting agreements. In addition, the Corporate Law Economic Reform Program has included initiatives to improve corporate governance and disclosure, update the way in which accounting standards are set and give greater legal certainty to the conduct of derivative markets.

While these factors have reduced risks, there are also some forces working in the opposite direction. One of these is the potential for problems in the funds management arm of a conglomerate to adversely affect the banking business of the conglomerate; perhaps the best Australian example of this is the problems in the unlisted property trust sector in 1991 (see Section 2). While financial regulators have gone to considerable lengths to ensure that businesses within a conglomerate deal with one another on an arm's length basis, and banks disclose that they do not guarantee the performance of funds management products, commercial pressures have the potential to force a bank to support its troubled funds management business.

The trend towards consolidation also raises the issue of whether the economy has become more exposed to the health of just a few large institutions (Harper 2000). The

fact that the four major banking groups have increased their market share suggests that the exposure to these groups has increased over the decade, although the effect is relatively small. More significant would be a round of mergers amongst the big four banking groups. This would see the Australian financial sector become highly concentrated by international standards. While a number of countries have banking groups with higher ratios of global assets to home country GDP than would be the case in Australia (most notably, Switzerland and the Netherlands), few countries would be more reliant on just two domestic financial services firms. This issue of concentration of exposure was important in rejecting recent proposals for bank mergers in Canada.

One factor that is probably helpful in reducing the economy's concentration of exposure to just a few institutions is the growth of financial markets. As Alan Greenspan (1999) recently noted, banking crises in countries that have active securities markets tend to be less painful than in countries without such markets. In his language, these markets provide a 'spare tire' that can be called upon if the primary forms of financial intermediation fail. By providing an alternative form of finance, they provide valuable macroeconomic insurance against some of the adverse effects of a banking crisis. In this respect, further development of these markets in Australia provides an important diversification benefit.

This diversification benefit is buttressed by improvements in financial market infrastructure. The legal reforms and improved disclosure practices that have reduced risk in financial institutions have also improved the functioning of financial markets. The unification of the state-based system of regulation of securities markets at the start of the decade, greater market liquidity and improvements in transaction and settlements technology have all been helpful in this regard. In addition, to the extent that growth in markets has extended the range of risks that are now tradeable, there is greater potential for risks to be transferred to those who are best able to bear them.

As usual though, there is a potential downside. Occasionally, markets malfunction and liquidity dries up. The events surrounding the near collapse of Long-Term Capital Management provide the most recent high-profile example (McDonough 1998). In that episode, not even investment-grade bond issuers in the United States could find reasonable buyers for their securities due to an abrupt reassessment of the riskiness of corporate debt and a rise in risk aversion. In Australia too, credit spreads increased and new debt issues by Australian companies fell significantly. At one point there were grave concerns about the potential for a costly 'credit crunch' in the United States, but in the final result this did not materialise, and there was little, if any, effect on the health of the macroeconomy. Nonetheless, as the role of markets continues to grow, and the products traded become more complex, the potential for sudden shifts in risk premia to generate macroeconomic effects must surely increase. Perhaps the best insurance against this is a strong banking system that is ready and able to provide liquidity in periods of market stress.

Determining the net effect of the various developments in the financial system on the robustness of the process of financial intermediation is a difficult task. Nevertheless,

our judgement is that, on balance, the financial system is probably sounder than it was a decade or so ago. This judgement is partly conditioned on the observation that problems in financial markets can often be resolved relatively quickly, provided that policy responds promptly and appropriately and that the overall financial system is robust. Thus, while the range of risks has increased, policy is better able to deal with these new risks than it is with threats to the stability of the financial system caused by the failure of institutions. On balance then, we judge that there has been a decline in the likelihood of serious financial headwinds originating from a breakdown in the process of financial intermediation. On the other hand, the deepening of household sector balance sheets has probably increased the likelihood of financial headwinds originating in the household sector's response to changes in financial and economic conditions.

8. Policy Issues

While the developments of the past ten years have raised many policy issues, three in particular are likely to remain current over the next ten years. These relate to competition, investor protection, and the management of system-wide risk.

The first issue is how to ensure robust competition in the provision of financial services, especially in the face of increasing pressures for consolidation, both domestically and across national boundaries. The Government has made it clear that an increase in competition is a prerequisite for a relaxation of the 'four-pillars' policy. An important lesson from the 1990s is that strong competition is more likely to come from institutions without substantial market shares, rather than from well-established firms. While the internet holds out the promise of lower entry barriers and the formation of a strong competitive fringe, the impact to date has been relatively small. Another potential source of new competition is non-financial firms moving into the provision of financial services. Again, to date, this has not occurred to any significant extent, however continuing changes in regulation, information technology, and the nature of banking make such a move more likely. A major policy challenge will be to harness the competitive benefits of both the internet and the entry of non-financial firms, without exposing investors, and the financial system more generally, to significant increases in risk.

The second issue is investor protection arrangements. Continued growth in households' holdings of financial assets is likely to lead to greater interest in the arrangements for the protection of retail consumers of financial services. In particular, compulsory retirement savings will increase pressures for improved disclosure and, probably, for greater investor choice. The rise in financial assets is also likely to focus greater attention on the level of management fees, and the value-added provided by the funds management industry. The arrangements for the protection of depositors are another area that may attract more attention. Given that the Wallis Inquiry rejected deposit insurance, the challenge for government when faced with the failure of a deposit-taking institution, will be to allow the current protection arrangements to play out, even if this means that small depositors suffer losses. The risk is that such an outcome is not palatable, for either political or systemic reasons,

and that repayment of deposits is guaranteed, despite the lack of a formal guarantee scheme. If such an outcome is likely, there is an argument that it is better to have an explicit deposit insurance scheme in place before problems develop. Doing so would provide the government with a realistic option of limiting the call on the public purse.

The third issue is the interaction between macroeconomic and prudential policy in the management of system-wide risk. Over recent decades, financial systems in many countries have experienced significant stresses, partly as a result of the build-up of risks across the entire financial system. The policy challenge is to identify and measure these risks, and to determine how monetary and prudential policies should best respond. Recent improvements in risk management and supervisory processes are helpful in this regard, although in a number of areas there remains considerable scope to more accurately measure movements in risk through time. Doing so would reduce the procyclicality of the financial system, and would lessen the probability of system-wide financial imbalances developing.

Overall, the challenge facing policy-makers over the next decade is to manage institutional consolidation and financial market growth in a way that both protects investors and strengthens the broader stability and efficiency of the financial system.

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Discussion

1. Thomas M Hoenig

Introduction

It is a pleasure to be here today and I would like to thank the Reserve Bank for the kind invitation to participate in this conference. The paper in this session is a descriptive account of the evolution of the Australian financial system over the past decade. I enjoyed reading the paper and congratulate Marianne and Philip for preparing an extremely informative account of these important developments. As an outsider, there is obviously little that I can add to the institutional discussion of Australian financial markets. I was struck, however, by the parallels between developments in Australia and the United States. Thus, I would like to provide a US perspective on these trends and highlight some of the important similarities and differences in the US and Australian experiences. In addition, I would like to offer some thoughts on the important policy issues raised in the paper and some of the key questions that are likely to influence policy discussions over the next decade. Let me begin with a comparison of financial developments in Australia and the United States over the 1990s.

A comparison of the US and Australian experiences

A common thread throughout many countries over the last few decades is a rapidly evolving financial system, driven by technological changes, global competition, and financial innovation. Underpinning this system is a supervisory framework that has struggled to provide the flexibility to accommodate such changes while maintaining appropriate levels of discipline and financial stability. The most poignant reminder of this struggle is the increased incidence of financial crises in many countries. These crises have often followed similar patterns: a rapid expansion in credit availability following efforts to liberalise the financial system, subsequent increases in debt levels, emergence of speculative attitudes and asset bubbles, and the presence of inadequate or misdirected supervision.

Several aspects of this pattern appear to characterise the Australian financial problems of the early 1990s, which included several financial institution failures, the worst losses in bank income in almost a century, and a rapid rise and collapse in commercial property values. According to the authors, factors such as deregulation in the mid 1980s, a desire by banks to expand their balance sheets, and weak bank credit assessment procedures all played a role in these banking problems.

In the United States, over 1 500 banks failed during the 1980s and early 1990s, which was more than 10 per cent of all banks. Also, a significant portion of the thrift industry became insolvent and had to be resolved at a taxpayer cost of US\$125 billion. With some striking similarities to your experience in Australia, the US problems can be attributed to financial deregulation, a combination of expanded powers and weak

supervision for thrift institutions, and boom-bust cycles in real estate, energy, agriculture, and commercial and LDC lending.

I would also note that much of this pattern fits the real estate and banking crises in Japan and Scandinavian countries and the banking and currency crises in South-East Asia and Central and Latin America.

Fortunately, the recoveries in both Australia and the United States have been strong and long-lasting, with dramatic improvements in bank profitability. In fact, US banking profits have been at or near record levels for the last few years and bank capital is now at its highest level since 1941. This improved performance can be attributed to many of the same factors mentioned in this paper for the Australian turnaround: greatly improved bank asset quality, better control of expenses, increases in non-interest income, and – the dream and goal of central bankers – greater economic and monetary stability.

Other recent changes in Australia have also mirrored those in the United States. Several Federal Reserve studies have found nearly identical trends in rising consumer debt levels, a shift in household balance sheets toward stocks and other market instruments, a retreat from the corporate borrowing excesses of the 1980s, and a continued shift toward securitisation, direct financial intermediation through markets, and the use of derivatives to parcel out and manage financial risk. Thus, access to credit by different groups has continued to increase in both countries, while capital markets and market discipline play ever larger roles in allocating credit and capital and influencing risk-taking.

One other common trend in Australia and the United States is consolidation and convergence across different types of financial institutions. This has been an ongoing trend in the United States for several decades. It began with a breakdown in the barriers between various types of depository institutions and then spread into greater competition among banks, securities firms, and insurance companies. The most recent step in this direction is our *Gramm-Leach-Bliley Act of 1999* (GLB), which allows banking organisations to merge with other types of financial institutions under a financial holding company structure.

I should also mention that the US banking industry itself has undergone considerable consolidation as a result of industry competitive pressures and the removal of various legal barriers which had previously limited bank branching, bank holding company expansion, and interstate banking. While we still have nearly 8 500 banks – which is much different than here in Australia – we have had a significant consolidation among larger banking organisations and the number of banks has declined by more than 6 000 since the early 1980s.

A final point of comparison between Australia and the United States is that both countries have made extensive changes in their supervisory systems in response to banking problems and the evolutionary changes that I just summarised. Although the approaches our countries have taken differ somewhat, the basic themes are much the same: risk-focused supervision and harmonised, functional regulation across different financial institutions.

In the United States, for example, we have focused our examination procedures toward the most significant risk exposures at individual banks and have given increased attention to bank risk-management controls and policies. We also allow well-capitalised and well-managed banks and banking organisations to take on greater activities and operate under fewer restrictions. However, because of the larger number of banks in the United States compared with Australia, much of this framework is implemented through banking laws and regulations rather than individual bank suasion.

In our recent legislation to merge banking, securities, and insurance, we have followed, in part, the Australian pattern of functional regulation with each of these activities to be supervised by separate industry authorities. However, we still maintain an active supervisory role for the Federal Reserve through its oversight of state member banks and as umbrella supervisor for both bank and financial holding companies. We continue to believe this ‘hands-on’ experience provides invaluable insights for our monetary policy, financial stability, and lender of last resort responsibilities, particularly given the diversity and size of the US financial system.

I think these comparisons between our countries help show that financial regulators throughout the world are grappling with many of the same trends and policy concerns. Next, I would like to discuss what I believe are some of the most important supervisory concerns we all face.

Some regulatory challenges

Besides a comprehensive discussion of the evolution of the Australian financial system during the 1990s, the paper by Marianne and Philip highlights a number of important challenges facing policy-makers in adapting to ongoing changes in financial markets. I would like to focus in somewhat more detail on two issues that I believe are critically important in maintaining financial stability in the years ahead. One issue is how to protect the safety net and prevent its extension to a broader class of financial institutions and activities. A second issue is how to strike a better balance between regulation, prudential supervision and market discipline in light of the changing financial landscape.

Protecting the safety net

An important element in maintaining financial stability is the existence of a government safety net: explicit or implicit guarantees that promote systemic stability by protecting depositors and creditors of financial institutions. (Australia does not have a formal deposit insurance system.)

Two developments identified by the authors threaten to extend the safety net beyond its historical scope: consolidation within the banking industry and the breakdown of barriers between banking and other financial services.

The creation of large banking organisations raises the ‘too-big-to-fail’ (TBTF) problem: government reluctance to close large institutions for fear of systemic consequences to deposit-taking, lending, or payments systems. TBTF, whether

explicit or implicit, tends to blunt market discipline leading to the distortion of risk/return trade-offs, inefficiencies in resource allocation, increased taxpayer exposure to losses from bank failures, and the creation of competitive inequalities between large and small banking organisations.

The merging of the provision of banking and other financial services also threatens to extend the safety net beyond its original intent, which was to promote financial stability by protecting bank depositors and the banking system.

Unless we can prevent the extension of the safety net by insulating it from risks of new activities, prudential supervision may need to be extended to a larger part of the financial system with attendant costs and potential inefficiency. Moreover, the extension of both the safety net and prudential supervision to a broader range of institutions and activities is likely to introduce new distortions and competitive inequalities between financial service providers. (Under GLB, we attempt to limit the extension of the safety net by limiting activities of banks but allowing parent organisations to participate in other financial activities that are insulated from the subsidiary banks.)

Striking a new balance

A second important challenge is how to modify the regulatory framework in light of the changing structure of financial markets and institutions. As noted by the authors, policy-makers are in the process of rebalancing the regulatory mix by placing less emphasis on tight regulatory restrictions on the permissible scope of bank activities and more emphasis on risk-focused prudential supervision and on market discipline.

However, there is still considerable difference of opinion among policy-makers about the right balance among these three tools. In the United States in particular, there is ongoing debate over the relative importance of prudential supervision and market discipline.

My own view is that while there is certainly greater scope for the use of market discipline in containing risk-taking by financial institutions, there are important practical and conceptual limitations. Some of the practical limitations can be overcome through improved disclosure of risk exposures, risk-management practices, and the financial condition of institutions. However, since the underlying basis of systemic risk is an externality, markets are unlikely to correctly price this risk either with or without a safety net.

Consequently, we are likely to be forced to continue to rely heavily on prudential supervision. Our task is complicated by the continuing need to adapt supervisory practices to changes in financial markets. At the same time, we need to ensure that supervisory practices do not become overly costly or intrusive to financial institutions.

Key questions for the future

In their paper, Marianne and Philip also discuss how the changing financial structure will influence the nature and transmission of financial disturbances. I want

to conclude my remarks by highlighting some key questions that may serve as a basis for a more general discussion of their paper.

Marianne and Philip suggest that the financial system of the future is likely to be more stable and to pose less risk to the macroeconomy. In addition, they indicate that future financial disturbances will tend to come from financial markets rather than financial institutions.

While I find these conclusions to be both sensible and appealing, I think they deserve more discussion and so I will recast them as questions deserving of additional study.

First, will banks and other financial institutions be a less important source of financial disturbances in the future? In part, the answer to this question depends on the answer to two other questions. How confident are we that financial institutions can measure and control risk in this new environment? And, have we fixed the moral hazard and incentive problems caused by safety nets that contributed to past financial crises?

Second, will financial markets be a more important source of disturbances in the future? If so, are there policies that can minimise the impact of financial market disturbances and, in particular, what role can the central bank play in maintaining financial stability in this new environment?

Third, will the financial system pose less risk to the macroeconomy in the future? To answer this question, we need to know how robust the financial system is likely to be in a less benign macroeconomic environment. While we have stress-tested individual financial institutions, how will the financial system as a whole respond to a less favourable economic environment?

Finally, let me raise two questions about the relationship of financial market changes to monetary policy. One question concerns the role of asset prices in the formulation of monetary policy. If asset prices become a more important source of financial market disturbances, should asset price developments play a larger role in monetary policy? A second question is how the evolution of financial markets is likely to affect the monetary transmission process. Does monetary policy still work through the same channels when intermediation moves from the banking system to capital markets and are changes necessary in our operating procedures to ensure the effectiveness of monetary policy in this new environment?

2. General Discussion

The discussion of the paper by Gizycki and Lowe covered depositor protection arrangements in Australia, the recent rise in household debt, and the role of asset prices in the formulation of monetary policy.

Observing that Australia and New Zealand are the only OECD countries without a formal deposit insurance system, some suggested that this might be a matter of

concern. Under the present system, if a deposit-taking institution were to fail, depositors could incur losses. Some questioned the government's commitment not to bail out depositors in the event of a crisis; they argued that it would be very difficult for a government to resist political pressure to provide financial support for depositors of a failed bank, who would otherwise lose their savings. Given this, it was argued that a system of deposit insurance could help by defining and limiting the government's obligations.

One participant noted that it was not clear why the Wallis Inquiry had rejected the proposal for deposit insurance for Australia, and said that this was especially puzzling given considerable interest within the private sector for deposit insurance. Another wondered whether a privately funded deposit insurance scheme was a plausible alternative for Australia, since such a system had been successful in Germany. Others felt, however, that the Australian financial market was too small for such an arrangement to be viable.

The recent changes in the structure of the household sector's assets and liabilities documented in the paper by Gizycki and Lowe also drew considerable interest. Participants generally agreed with the authors' view that lower interest rates in the 1990s and a proliferation of new lending products had been the primary reasons for the rise in household debt. The implications of rising household debt for the balance sheets of lending institutions and Australia's foreign debt were also discussed. Some were concerned by the fact that a substantial portion of household debt was intermediated by banks, and wondered about banks' ability to manage this risk. A few participants also expressed concern about the foreign-currency denomination of a substantial fraction of Australia's foreign debt. It was pointed out, however, that this should not be a cause for concern since financial institutions use the swap market to hedge this currency exposure.

The role of asset prices in the formulation of monetary policy was also discussed. In particular, the question was posed: should central banks be concerned about asset prices above and beyond their implication for inflation and growth over the forecast horizon of the next couple of years? One participant pointed out that the difficulties associated with identifying asset market bubbles make it extremely unclear how such factors should be incorporated into monetary policy. Others, however, felt that there are some warning signs that fairly reliably signal the presence of an asset-price bubble, and that monetary policy has a role responding to the emergence of such bubbles.

The Politics of Economic Change in Australia in the 1980s and 1990s

After-dinner address by Paul Kelly¹

In December 1993 the Federal treasurer, John Dawkins, announced he was leaving politics after his budget received a tough public reception and a mauling in the Senate. At his farewell drinks, as described by journalist, Laura Tingle, Dawkins called himself a politician of the 1980s ‘when you acted first and explained yourself later’. It was a melodramatic view. Yet Dawkins had a point. The power of the 1980s story gains fresh lustre from the progress of the 1990s and its contribution to this success.

The conference proceedings today were arduous so let me begin this address with the sort of grand simplifications appropriate for a journalist. The 1980s saw the globalisation of the Australian economy; the 1990s saw this globalisation being contested in a new political struggle between globalists and anti-globalists; and the coming decade will determine which side wins the ascendancy in this struggle. An assumption running through my comments is that political and economic cycles are just as likely to be in conflict as they are in harmony.

I want to put three main propositions in these remarks. First, that a series of unique events no longer in place, made possible the 1980s reforms and triggered a transformation in Australia’s economy. Second, that the domestic keys to our 1990s success are because economic decision-makers managed to retain the best from the 1980s policy but also discard the worst. Third, that a new political framework to underwrite a more neo-liberal and open economy has not been constructed in the 1990s, leaving the prospect of an uncertain future for Australia’s economy in a globalised world.

1. The Foundations of the 1980s Reforms

With the benefit of a decade’s hindsight, what was that remarkable combination of factors that made possible the 1980s reforms? Let me try to identify what could be called the foundations of the 1980s reformism.

First, there was a fairly pervasive sense of national stagnation and decline symbolised by the early 1980s recession. Australia’s annual average GDP growth during the Fraser era was 2 per cent – disappointing in terms of both our historical performance and international comparisons. Our high unemployment level, which hovered around 9 per cent in the recession, was seen as evidence of failure within the

1. I would like to thank those people with whom I spoke in preparing these remarks, none of whom are responsible for the content of the speech. There are two people I want to thank in particular, whose assistance and ideas I have drawn upon, HSBC Chief Economist, Dr John Edwards and Director of Access Economics, Dr Ed Shann.

economic system and a defect that had to be fixed. The notion that Australia had to engage in a global catch-up was a useful driver for new policy.

Second, there was a new Labor Government determined to bring a new approach. The Hawke-Keating Government was free from both party dogma which had ruined the Whitlam Government and the old-fashioned economic orthodoxy which had destroyed the Fraser Government. Hawke and Keating were not just interested in finding a new approach; they believed that a new approach was essential.

Third, there was a set of economic ideas waiting for Labor to seize upon. These ideas, which had currency in agencies such as the Treasury, the Reserve Bank and the Industries Assistance Commission, had won some support in Federal parliament and more in the quality media – freer trade, smaller government, deregulation of markets, lower tax rates within a fairer system, a more flexible labour market, low inflation, an attack on economic rent seekers and a more market-orientated economy. The components of this new direction evolved at different times for different reasons but it was increasingly seen, overall, as essential for Australia's adaptation to a more integrated global economy. These policies needed a fresh government prepared to defy vested economic interests. Such a government would win much support for its boldness.

These ideas came from the top down. The public wanted change – but it was not protesting in the streets for a floating dollar, free trade and low inflation. The intellectual momentum for the 1980s reforms was elite-driven.

Fourth, the Hawke and Keating Governments had a formal social contract with the trade union movement. The Accord represented a choice by the union movement to switch from an industrial to a political strategy; to give priority to an economic growth strategy with the ALP rather than to achieve a lift in the wages share by industrial might. The Accord conceded one of Treasury's own convictions – that wage restraint was central to job creation. For the Accord partners, wage restraint would make a credit squeeze unnecessary. It was an anti-inflation instrument to deliver a growth cycle and it achieved this purpose for most of the 1980s. It meant that the unions and the industrial left, potential critics of the market reforms of the Hawke and Keating Governments, had been converted instead into stakeholders in their policies. But it had other effects as well.

Fifth, the Accord meant Labor's reformism would be based upon gradualism and a search for consensus. The 1983 National Economic Summit was a remarkable and successful effort to engender a new chemistry. The unilateral nature of the float tended to disguise Labor's support for outcomes that were more negotiated than imposed. This was clearly reflected in its macroeconomic policy of fighting inflation and unemployment simultaneously.

There are many cynics about Hawke's consensus but my own judgement is that this wasn't an empty slogan, but reflected much of the policy formulation approach, though it was often a point of tension between Hawke and Keating given their temperamental differences. The float, by definition, was a 'big bang' reform yet Hawke-Keating reformism overall shunned the 'big bang' technique. The tax debate of 1985 and the incremental approach to labour market changes are classic proofs of

search for consent in preference to ‘big bang’ reformism. This meant that reform was multi-faceted, that it didn’t depend on one ‘all or nothing’ policy and that the government had the political insurance of fighting with policies on a wide front.

Sixth, for the Hawke Government, social and economic equity was vital in the transition to economic liberalism. Equity was integral to the Accord, to Labor’s own constituency and as a tactic in selling a market-based economic agenda. But equity was vital in another sense – it was part of the reform agenda itself, an aim in its own right. That real wages were being cut in the cause of job creation only reinforced this element. Labor introduced a more targeted welfare system, an assets test on the pension, arbitrated superannuation, a family allowance supplement for poor families, a restoration of Medicare, a loan scheme for tertiary education and tax changes where lower marginal rates were traded-off against an extension of the direct tax base to include capital gains and fringe benefits. Research by Professor Ann Harding suggests that government policy in terms of the tax-transfer system during this period was highly effective in nullifying most of the income inequity arising from a more market-orientated economic system. The Hawke Government had to prove to its cabinet, caucus, factions and trade union partners that equity was a real concern. It was a function of the social contract.

Seven, John Howard is right to argue that in the 1980s the Opposition supported many of the Government’s reform directions. In fact, the Opposition often attacked the Government for not advancing further and faster. This was a remarkable and unusual advantage for a reforming government. For example, the Coalition supported financial deregulation, low tariffs, a broadly based indirect tax (most of the time) and microeconomic reform. It attacked the Government at various points for its failure to be bolder and for buckling before the vested interests on its own side, notably the trade unions who, via the Accord, had a unique access to decision-making. The Coalition criticised the Government for its failure to free-up the labour market, its reluctance to privatise more quickly and for too lax a fiscal policy. Far from complaining that Labor was engaged in rip and tear reformism – the classic 1990s oppositionist perspective – the Coalition’s typical claim was that Labor was too timid. This gave Hawke and Keating great political flexibility and the chance to occupy the middle ground. It also helped to entrench the reform policies.

Eight, the Government had only minor troubles in winning Senate support for its reform agenda despite the 1987 double dissolution over the Australia card. The Senate balance of power was held by the ALP and the Democrats. But Labor was able to prevail either because of Coalition support or by winning Democrat backing. The Senate never became a major threat to the reform agenda.

Nine, a more subjective and contentious judgement is that the Hawke Government was effective in putting and winning the intellectual case for new economic ideas and in selling the new economic direction as part of a national vision. These judgements are subjective but I would nominate the quality of political salesmanship as an element in the carriage of 1980s reformism. For a considerable time Treasurer Keating was highly successful in winning intellectual backing for his approach from the media, the markets and opinion-makers.

There are, no doubt, other underlying factors which I have overlooked but I suggest that these nine points capture most of the principal forces at work. After I wrote them down, however, I reached an interesting conclusion – that virtually none of them obtains in the 1990s. There are elements that flow from one decade to another but the core political qualities that distinguished the 1980s have been supplanted in the 1990s. These decades are very different in their political character.

For example, in the 1990s there is probably not an urgent sense of the need for national catch-up; after the cathartic 1990s recession there was, surprisingly, no new economic model; the ideas of the 1980s have been refined but they have clearly been retained. In the 1990s there is no formal social contract; equity is less important as a reform goal and, despite the rhetoric, does not seem to be a priority policy goal in its own right; the major government-sponsored change is a ‘big bang’ tax reform on which the life of the government depends rather than a more broadly based reformism; the Opposition has vigorously opposed much of the Government’s agenda; the Senate has been a far more significant obstacle than in the previous decade; and, finally, my own assessment is that John Howard has not won the intellectual case in the 1990s for economic liberalism and, in respect of some of his interventionist and more populist policies, he has weakened that case.

I would now like to make a tenth and final point about the 1980s, which is very much a judgement in retrospect. It is also self-evident – at the time the people didn’t comprehend the full consequences, positive and negative, of the reform agenda. This sense of public discovery hit home only in the 1990s.

2. The Impact of the 1990s Recession

For all its glories the 1980s ended in failure, a monetary policy failure – a deep recession provoked by interest rates of 18 per cent resulting in unemployment above 11 per cent. Once again, the character of the coming decade was forged by recession. This time the legacy of the recession was ambivalent, complex and apparent only in retrospect.

First, the reform policies of the 1980s were not lost or abandoned. Given the depth of the downturn this was remarkable. One reason is that the Labor Government surmounted its historic nemesis – facing a severe recession it didn’t fall apart like the Scullin Government or crumble with the initial recessionary impact as did the Whitlam Government. Taking a long view of Australian history, this is a significant event which has been underestimated. The 1990s Labor Government refused to repudiate its own past and Prime Minister Keating refused to apologise for the recession. The Prime Minister declined the invitation to reverse the protection reductions of the 1980s, despite pressure from senior ministers and the ACTU. Keating, therefore, was locked into a strange hybrid position as PM – he campaigned as the leader best able to lead the nation out of recession yet he refused to abandon his ownership claims on the 1980s reform structure. He went to the 1993 election as a counter-cyclical activist who upheld the 1980s status quo. Hardly a winning position.

The 1993 election is the pivotal point of the decade. The choice was quite stark. This is when the Australian people signalled their preferences. They rejected the position of ‘big bang’ reformism proposed by Dr John Hewson, former economics professor and former Reserve Bank official. Hewson saw the recession as the chance to win on a radical mandate and take the policies of the 1980s to a rapid conclusion. Hewson had declared: ‘If we can’t win with the GST then we don’t deserve to govern’. An unconventional approach.

Hewson’s rapid conclusion was called *Fightback!* – a GST, a major cut in the size of government, amendment of the *Reserve Bank Act* to strengthen independence and introduce a 0–2 per cent exclusive inflation objective, faster cuts in protection, a devolution of wage fixation to an enterprise level and large-scale privatisation. Hewson called his program ‘a generational change in politics and attitudes’. It was truly courageous but very dogmatic. In the hands of a skilled practitioner it could have been marketed but Hewson was more economist than politician. It is important to note that *Fightback* was not geared to beating the recession; it was strictly a structural reform agenda to increase the speed of economic change. But Australians were not prepared to issue such a high-speed political licence.

The 1993 election was a vote against another bout of economic reform. It terminated this position in federal politics. It was a vote for economic progress to be coupled with more stability. It signalled a break from the 1980s. The GST was the issue but there were many messages – the people began to re-claim the economic agenda and to terminate the imposition of ‘top-down’ economic reformism. The election meant that any economic change in the 1990s would be contested and that gradualism would be the likely path.

The defeat of Hewson reflected other sentiments – that people were wary of elites purporting to have the answers and that public opinion might have turned against certain types of economic change.

There was another bigger message implicit in the 1993 result – that economics wasn’t enough to sustain political success. In later years this would translate into the need to explain how economic reform would lead to a better society and a better life. The politician who best grasped this new mood was John Howard. After the 1993 election the Coalition marched back to the middle ground. The radical Dr Hewson surrendered to the safer Mr Howard. Howard re-invented his political persona for the 1990s just as Keating had earlier re-invented himself. Howard declared that leadership was about ‘listening’ to the people. He rejected a GST, accepted Medicare, became a ‘greenie’ with a strong pro-environment stance, pledged that nobody would have their wages cut in his IR reforms and boosted middle class welfare. Howard’s 1996 election success was not based on any substantive economic reform agenda. Howard’s proposals were very modest. After his 1996 defeat, Keating correctly said that Howard had won ‘a big majority on a narrow mandate’.

While the recession had tamed political reformism it had also delivered a decisive policy plus – a low-inflation economy. It was monetary policy that caused the recession and it was monetary policy that was transformed by the recession. There were several steps in that story which unfolded within the Bank – the conclusion that

monetary policy should target inflation not the balance of payments; that this should be done without legislative amendment; the announcement by Bernie Fraser in 1993 of the 2–3 per cent target; the gradual acceptance of the Bank's position by both sides of politics; and the formalisation of the policy in 1996. This meant that the RBA conducted monetary policy on an independent basis. It is a remarkable story in economic policy construction matched only by the success of the policy over the next seven years.

It meant the 1990s expansion was different from the 1980s expansion. It was based upon low inflation which offered the potential for greater longevity than the 1980s growth phase.

The monetary policy model devised within the Reserve Bank and embraced by the politicians was far more moderate than the option offered by Dr Hewson in 1993. It was the defeat of the Coalition in 1993 that allowed the present policy to evolve and to be accepted by a Coalition Government in 1996. It should be noted, however, that the model has not really been tested because the economic results have been satisfactory. The truth about this model is that it rests, not in law, but in a political compact.

It is a shared agreement between the politicians and the Bank. How did the RBA win its practical independence? Because it seized an opportunity and the politicians saw advantages in condoning such a system. Its permanence should not be assumed.

The second feature of the 1990s expansion was high productivity, a function of the 1980s pro-market reforms and the modest labour market changes introduced by the ALP and Coalition Governments, culminating in the formal acceptance of enterprise bargaining by the Accord partners and the extension of enterprise bargaining under Peter Reith. One of the deceptive issues for analysts is how much the shift to enterprise bargaining contributed to the 1990s productivity performance and how great the potential remains for further labour market deregulation to generate more productivity benefits. The outlook in year 2000 for more labour market reform was somewhat pessimistic because of ALP-Democrat resistance.

3. The Howard Government

I want to consider the Howard Government under four headings – economic strategy, tax policy, management of the anti-change backlash and salesmanship.

The primary economic strength of the Howard Government resides in the 1990s reappraisal of fiscal and monetary policy. In its first budget the Government put in place a fiscal consolidation with the aim of achieving an underlying balance on average over the economic cycle. The budget was returned to surplus in 1997/98. This set up the medium-term economic strategy – a fiscal policy to boost national savings and combat the current account deficit and a monetary policy to target inflation. This is a significant departure from the 1980s construct. As Treasury Secretary Ted Evans has explained, these approaches reinforce each other but 'a breakdown in the performance of one policy inevitably compromises the other'.

The Howard Government has also signalled the political limitations to fiscal consolidation – it does not intend to accumulate surpluses but to utilise them. The first drawdown from the projected surplus was devoted to the 1998 taxation package and the selling of the GST; the second drawdown will be announced next year in the context of the Coalition's 2001 re-election campaign. Australian politics has entered a new phase – the debate about how to spend the surpluses. The politicians enjoy this process very much. The economic question is whether this is premature given the size of the current account deficit and need for fiscal insurance against a future downturn. Significantly, the new 'surplus politics' seems to be enthusiastically bipartisan although the 2001 election will be the test of this.

Howard's economic reform agenda has been modest with one major exception – the tax package. How should this package be seen? I believe there are several answers to this question. I think it should be seen as representing the major commitment of Howard's career going back to his time as Treasurer. His initial submission for tax reform was defeated by the Fraser cabinet in early 1981. It has been a personal and career-long crusade.

Second, it should be seen as an objective deep within the psyche of the Liberal Party. Of the six elections between 1984 and 1998 the Liberals ran on major tax reform on four occasions; 1984, 1987, 1993 and 1998, with three of these four packages involving a new indirect tax and three of these four election platforms being dominated by the tax issue. When John Howard got into trouble in his first term he reached instinctively for his top drawer and another tax package.

Third, the design of Howard's package – notably the huge drawdown from the surplus to make nearly everybody a winner – reveals how the cost of reform has risen between the 1980s and 1990s. The political reality is that Howard felt that a 1980s type tax debate involving winners and losers was untenable; he felt that everybody (excluding the tax cheats) had to be made a winner and he tried to do this. Given Howard's narrow re-election in 1998 it is hard to argue with his assessment.

Fourth, although he won the 1998 election on tax, Howard was almost undone in the Senate. It was only the decision taken by new Democrats leader, Meg Lees, to strike a deal that saved Howard from the humiliation of not just losing his tax package but having his prime ministership seriously undermined.

Fifth, given this issue was always going to put the Government's survival on the line, the question is whether the economic benefit justified the political price. My colleague Alan Wood has argued that in Howard's first term there would have been a greater economic dividend from making IR reform, not tax, the central issue. That is, if you are going to risk survival then fight on the right grounds. But Howard had no interest in such a notion. Howard made it clear to Peter Reith at the time that he wanted a negotiated settlement on the Coalition's industrial reforms, not a double dissolution bill. He chose to make tax, not the labour market, the issue of his prime ministership. Why?

I believe the real answer to this question is that John Howard has never seen tax reform in narrow economic terms. He has always been interested both in its appeal

as an election winner and in lower marginal rates for the middle class as an ideological re-positioning of Australian society.

The next feature I want to assess in Howard's approach, overall, is his effort to ameliorate the backlash against economic change and globalisation driven typically by the notion that its dividends have been unfairly distributed.

Howard has relied on three techniques here. First, keeping a social safety net in place for the underprivileged. He has declared the social safety net to be sacrosanct. Second, by vetoing or limiting a range of economic reforms in the cause of championing the 'battler', for example, quarantining competition policy, preventing bank mergers, freezing protection cuts in manufacturing industry, seeking tax and industrial reforms in which there are 'no losers', pledging special deals for groups of displaced workers such as at National Textiles, cutting immigration and giving the program a sharper focus. Howard's initial instinct to appease the One Nation party reflected a populist strand within his political character and a political calculation. Third, Howard has retained key elements of the Labor social policy orthodoxy – Medicare being the prime example.

My interpretation of Howard's real position on equity is that he accepts that a market economy means there will be a greater spread of income and a greater concentration of wealth and that the key to sustaining support for this outcome is a combination of a firm social safety net and a more aspirational political culture. While Howard stresses fairness in his rhetoric many of his policies, notably his tax cuts, are pitched towards rewarding and encouraging middle-class effort and achievement. The Prime Minister, using the cover of egalitarian rhetoric, seems to be moving Australia's political culture more towards the aspirational end of the spectrum to complement the market-based economy.

My final point about Howard is implicit in this analysis. It relates to the realm of ideas and it is highly subjective – that Howard has not sold the intellectual case for economic liberalism and that support for this philosophy has waned during his prime ministership.

4. The Future

Let me offer some speculations about the future.

First, both sides of Australian politics, having been involved in the introduction of economic liberalism, now have a stake in its future. Australia seems to have struck a bipartisan deal across the two major parties on the open economy.

This is the message repeatedly conveyed by Opposition Leader, Kim Beazley, in his recent speeches: 'We all now largely agree on the "old" agenda: the need for fiscal discipline, an independent monetary policy, deregulation of financial markets, the floating of the dollar, low inflation and a more open economy'.

It would be easy and a mistake to take such assurances for granted. In fact, this is a very substantial cross-party agreement. It is noteworthy that Beazley opposes the decision of the trade union movement to shift from a free to a fair trade position. The

bipartisanship does not extend to all institutions in our political life with much of the media and the trade unions strongly critical of the open economy. This puts very real pressure on the political class.

Second, there remains, however, an intense party conflict over the microeconomic reform agenda. This has plagued the Howard Government, it will continue into the future, and its resolution can be expected to influence Australia's economic performance. There will be a litany of issues, small and large, the sale of Telstra, competition policy, reform of major utilities, transport, telecommunications and media policy. The most important area devoid of consensus remains the labour market. The best chance for worthwhile labour market reform is under a Coalition Government. But this has been undermined by the Senate, by falling unemployment (which removes the pressure for further action) and by public fear that a more flexible system might only intensify job insecurity. It is hard to see how these roadblocks will be surmounted. It needs a change of heart by the Senate, or a successful double dissolution on industrial reform, or a downturn to act as a circuit-breaker – and none of these looks imminent. The likely future is for a 'muddle through' scenario on industrial reform. It is hard to see what other option is available for Peter Reith. If the Howard Government cannot make further progress the likely judgement will be that the nation missed a chance to capture another wave of productivity gains.

There are two important tests here. Can the trade unions engineer a reversal from enterprise to industry bargaining? Probably not. And, to what extent would a new ALP Government try to re-regulate the industrial system? This would represent a new and retrograde step. The answer is not clear – though Kim Beazley intends to strengthen the IRC, bolster the legal position of the trade unions, undermine workplace agreements and negate much of the secondary boycott law. Enterprise bargaining would be retained. The message, overall, is that Australia's gradual reform of the labour market is likely to remain gradual at best or be partially reversed at worst. The current declared intention of the Clark Government in New Zealand to re-regulate the labour market is relevant here.

The issue today is not radical versus gradual change; it is gradual change against drift.

Third, a great dilemma for the future is that the new economic model is seen to have delivered more prosperity and greater inequality. How will this conundrum be resolved in the political system? Can it be modified or will this tension prove to be too great? I have argued strongly elsewhere that economic and social policy need to be better integrated in order to sustain electoral support for market-based economics.

But the evidence from the late 1990s is that the test humans apply to determine their happiness is not whether they are better-off but how they compare with others. Relativities, not absolutes, are what counts in a period when everyone is prospering. This reflects a facet of human nature and it is a warning sign. *The Australian's* recent Newspan recorded an overwhelming preference 70 to 28 per cent for reducing inequality by lowering economic growth. I think that most people would not want to see their own standards lowered. But the point remains – our political culture

displays signs of deep hostility towards the current economic model on distribution of benefit grounds. This is concerning when the tax-transfer system, according to Ann Harding's analysis, actually worked well for the period from the early 1980s to the mid 1990s. What happens when it doesn't work well?

There is a literature in the US about the consequences of these new divisions – it is about not just an underclass but an overclass. What happens to a society when its decision-makers live a totally separate existence to the majority typified by protected suburbs, private transport, private schools, private health cover, domestic staff, unlimited travel, exclusive networks and inter-generational wealth transfers? It is a new feudalism.

In a deregulated economy, the old Australian equity mechanisms of protection, centralised wage fixation and supply-side controls don't apply any more. Access to health and education will be crucial for equity. But new policy responses will be needed to give people a sense of ownership in their new economic system. That is what the emerging literature about stakeholding is all about.

The basic issue here is what do people mean by the term equity? Do they mean more equal outcomes and denying incentive to achievers? Do they merely mean equality of opportunity? Do they oppose a society with a firm social safety net that rewards merit and work? Are they seeking a return to government intervention unaware that it was government intervention in the name of equity that failed Australia before? Does the ALP suffer the misapprehension that a responsible macro-policy and a freeze on micro-reform can ever work?

Fourth, there are powerful limits to the future of economic reform. The first obvious limit arises from the completion of much of the agenda – the float, free trade, and deregulation. The macroeconomy can only be opened to the world once. But there are also limits which arise from within Australia's political system.

No future government is likely to control the Senate under our current arrangements. That means the balance of power will rest with minor parties or independents. There is a fair chance these groups will represent anti-globalisation agendas which span both the right and left of politics. The Senate may emerge with a new historic role: the parliamentary check on globalisation. The Senate was designed explicitly to defend special interests (those of the smaller states) and that design can be utilised to protect vested interests against deregulation, competition and globalisation.

There is evidence that the public is keen to have a strong house of review. This is the persuasive interpretation from the striking Senate vote at the 1998 election. The Howard Coalition which won the election polled only 37.7 per cent in the Senate, the Coalition's worst result ever. It suggests a deliberate choice by many voters to ensure a different political balance in the Senate.

The limits to economic reform are also generated by the scientific poll-driven approach to decisions. The scientific method helps politicians to win votes but doesn't help good policy. Polling is used to identify, target and exploit groups resistant to change. It creates more timid politicians and lifts the hurdle for reformers. The effect can be insidious: the creation of new but phoney poll-driven policy

options. I agree that polls can help reformers but they are typically used to exploit the downside of change. The polls are linked to a deeper change in recent political culture – the victory of tactics over strategy. This is seen more clearly in political reporting which is now overwhelming about tactics. It is not unusual to see a major issue reported from Canberra totally in terms of tactics without any reference to whether it is good or bad policy.

There are other subtle but influential forces that limit reform which warrant mention. One is the culture of prosperity. The longer the 1990s expansion has run the more support for economic reform has declined. This relationship, unfortunately, is an inverse one. I believe that John Howard and Kim Beazley have both put far more emphasis than is necessary on winning votes via the downside of globalisation. Of course, the story is not all bad and the comparison with New Zealand is useful here. New Zealand has now retreated into political gridlock, so shocked by the scope of its economic reforms that it changed its political system, embraced a new voting system and guaranteed weak coalition governments as far into the future as anybody can see.

It seems to me, however, that support for economic liberalism is eroding at both the intellectual and moral level. The media is far more sceptical than it was in the 1980s, the climate of opinion within the universities is hostile, the churches are critical and the artistic community is antagonistic. Both the left and right wings of the political spectrum have turned against economic reform such that the best way to envisage our political spectrum is as a straight line that has been bent and turned into a circle where both arms are resisting the centre.

I know that vision is not a popular word with Liberal politicians but vision is essential in explaining how the liberal economy is beneficial. Jeff Kennett, an aggressive reformer, was often applauded yet the final judgement upon him will probably be that he failed to persuade.

If there was one book I would have liked John Howard to have read it is Michael Novak's *The Spirit of Democratic Capitalism*, the moral case for capitalism and the market economy. This idea is virtually non-existent in our political culture and discourse. The notion that there is a moral case for a market economy sounds like a joke in this country. And this is the problem. There are signs of a new anti-globalisation momentum resting upon the premise that it has a moral authority. There are some developing country leaders now angry at the rise of so-called 'fair' trade – being pushed in the streets of the first world by disaffected rich kids – the effect of which is to keep the poor in their place and ensure that they stay poor. Yet this hypocrisy now parades as morality in sections of our society. I suspect there is much support in Australia for the view that a market-based economy is a necessary evil and not a net social gain.

The natural question people now ask is: how does a more efficient economy benefit my life and our society. To misquote Bill Clinton from the 1992 campaign, 'It's the society, stupid'. The Newspoll I reported earlier showed that only 31 per cent of people think that life is getting better. Now, this is not just an economic question, particularly if you're getting a divorce or your kids are taking drugs. The point

though, is that once a degree of prosperity is achieved, quality of life becomes decoupled from economic growth. The task for economic reformers is to explain how their policies will lead to a better society, not just a better economy. If they can't, they will lose the struggle.

My fifth point about the future is more optimistic. It concerns the forces that will keep driving economic reform. This lies in the irresistible self-reinforcing nature of the reforms. Each change has a ripple effect in the economy promoting even more change. This has been the story ever since the float. The supply-side consequence of low inflation operates on each firm. It means that business is forced to focus on costs, productivity and supply-side efficiencies – it can't just jack up prices to hold profit. This suggests that, providing the political system can avoid any formal retreat, the economic model has its own momentum for change.

This is sound as far as it goes – but the political system needs to do more than just avoid a retreat. It needs to keep moving forward. The chief ground for optimism here is that politicians have an overwhelming interest in an economy that works, that generates activity, investment, growth and jobs. This is the best guarantee there is that, while the reform pendulum will move back and forwards, over the long haul the politicians will stick with the job of economic change. The liberal economy will have support while it delivers and while it appears to be the best way. That will also be the best way for politicians to win elections.

Sixth, a future dilemma is how far the neo-liberal economy takes government out of the equation. There is no danger of this happening yet but it is a question for the future. How many policy levers are left? There was a time 20 years ago when treasurers could adjust the exchange rate, shift protection levels, manipulate interest rates, change fiscal policy to control demand and influence the Full Bench on wage outcomes. What can they do now? I vividly remember Treasurer Keating's deep pre-occupation with the levers of economic policy, a word rarely used these days.

This reflects the transfer of power from the Treasury to the Reserve Bank. It is explicit in the inflation-targeting policy and implicit in a medium-term fiscal policy with balance over the cycle. The surrender of policy arms to the market or independent institutions such as the Reserve Bank is the great feature of the current economic model. It also represents in the transition from the 1980s to the 1990s a shift to a supply-side strategy from a demand-side strategy.

It is important to remember, however, that it is only governments that have democratic legitimacy and that governments live or die according to their economic results. The issue is whether a contradiction will emerge between the market-based economic model and the expectations invested in elected governments. The Australian economic model at year 2000 is an impressive instrument during a growth cycle. But how will it handle substantial economic fluctuations that demand a response from government? When an embattled future treasurer asks 'what can I do?' an answer will need to be found to the question.

Seventh, it is imperative in every sense that the current growth cycle run as long as possible. The great test will be the unpredictable impact of the next recession. The danger is that it will mobilise the pervasive backlash against globalisation and the

open economy into a more formidable political force. If every recession creates a new political momentum from the ashes of its failure, then what will be the legacy of the next recession? This question cannot be answered but the substantial gulf between the elites and the majority of the community on the merits of the current economic model constitute a warning sign. Our integration into the global economy has a long way to run and so does the potential for its political rejection.

Eighth and last, an unanswered question is how well has Australia really done and whether or not we have misjudged our strength. This requires distinguishing between our own efforts and our good fortune. Our economy is chained to the US economy via financial markets. We have gained from US growth, good management by the US Federal Reserve, the US sharemarket and our local depreciation. This is not to argue that Australia's own efforts have not been important. Our success during the Asian financial crisis has been a turning point. But a potentially bigger test is what happens to Australia when it is exposed to some new external shocks. What happens when the US downturn finally arrives? What happens if Chairman Greenspan makes a mistake? Or if the multilateral trade system gets into serious trouble? Or if we face a serious regional crisis that runs for years?

The immediate issue is whether the Coalition's re-election strategy which involves a further rundown of the surplus is consistent with external pressures on Australia such as a slowdown in US growth. I suspect that at the end of the 1990s our leaders suffer a touch of hubris and our public a sense of complacency. The single greatest lesson today is that the margin for error is reduced – the consequences for a nation of economic mistakes are greater than ever (witness Asia) just as the benefits from getting the economy right are greater.

Microeconomic Policies and Structural Change

Peter Forsyth

1. Introduction

From about the mid 1980s, Australia has sought to improve the performance of its markets and industries by actively implementing a program of microeconomic reform. It was recognised that there was a plethora of distortions which had the effect of promoting inefficient performance, and the reform program was directed towards removing these distortions. These reforms held the promise of significantly increasing real GDP per capita. Financial deregulation and reductions in protection came first in the early to mid 1980s. After this, governments turned their attention to improving the performance of public enterprises and regulated industries. Government services were subjected to competitive tendering. In the 1990s governments turned their attention to more difficult sectors, such as the natural monopoly utility industries, which they have been attempting to open up to more competition. Reform is still ongoing, though much of the effort is being directed towards completing and redesigning reforms already started, and extending the scope of competition policy. There remain some areas, such as health and education, which are regarded, rightly, as difficult, and in which there has been limited progress.

Now is a good time to review progress, since sufficient time has elapsed for many of the reforms to produce measurable outcomes. In this paper, a start is made by looking briefly at the overall productivity picture. Reforms are not directed solely at productivity, and their possible other consequences are examined in Section 3. Reform brings costs, some of which may be taken account of in productivity measures, and some of which may not; these are considered in Section 4. Next the winners and losers from reform are identified. In Section 6 the problem areas of reform are examined, since not all reforms seem to have delivered what they promised. The difficult further areas for reform are considered in Section 7. In the final section, some conclusions are drawn.

2. Microeconomic Reform and Economic Performance

2.1 The productivity boom

The broad picture is that microeconomic reform seems to be delivering what was expected of it. The most measurable consequence of reform is that on productivity, and in this respect, expectations have been confirmed. During the 1990s there has been a sustained productivity boom in Australia (see Dowrick (1998); Dawkins and Rogers (1998); Productivity Commission (1999b); Gruen and Stevens (this volume)). While other countries have also experienced high productivity growth (and also have

been undertaking reforms), Australia's productivity growth has been amongst the most rapid in recent years. The pattern has been very consistent with what could have been expected. It is comparatively rare that empirical outcomes conform so well to prior expectations. It should be remembered that consistency is not the same as causality, and there is always the problem of specifying the counterfactual, i.e. what would have happened in the absence of reform.

Both the magnitude and timing are consistent with the view that microeconomic reform has been a primary contributor to the productivity boom. Microeconomic reform was expected to add some 5 per cent to 10 per cent to measured GDP (some reforms will not add to the measured GDP) (Industries Assistance Commission 1989). Over the past decade, Australia's productivity growth has been something like $\frac{1}{2}$ per cent higher than that of other OECD countries – this would have added about 5 per cent to GDP over the period. Not all the gains have been achieved, as there are still several industries undergoing reform. The timing is about right as well; the improved productivity growth starts to become evident a little while after reforms had been effected. The initial phase in reform, mainly in trade-related industries, was in the mid 1980s, and the reforms to utilities and transport began in the late 1980s. The productivity boom is evident from the early 1990s, especially as the economy began to recover from the recession. If the recession had not occurred, the impact would probably have been evident earlier.

2.2 Specific reforms and performance

The microeconomic evidence, on particular reforms in particular industries, is consistent with the overall story. In a number of industries where reforms have been undertaken, productivity has grown more rapidly than before. There were several types of reforms, which have impacted on different sectors of the economy. These include:

- Trade reforms – these consisted of reductions in protection, and impacted mainly on the manufacturing sector since the mid 1980s.
- Deregulation of markets – these took place from about the middle of the 1980s, and have particularly affected service industries, such as banking, transport and telecommunications.
- Reforms to natural monopolies – structural reforms and implementation of incentive regulation, mainly from about the early 1990s onwards.
- Public-sector reforms – these have included competitive tendering and contracting out, and have been extended in scope over the 1990s.

The impact of reform is particularly evident with the utility and transport industries. Growth in total factor productivity (TFP) and multifactor productivity (MFP) have been rapid. TFP is a productivity measure that accounts for all factors of production (including, for example, intermediate inputs), while MFP accounts for the main factors of production (which would normally include capital and labour). This suggests that productivity performance in the Australian industries has been catching up, to an extent, with best practice overseas (see Table 1). Those industries

Table 1: Productivity Growth and Productivity Gap
Selected industries

Measure	Industry	Productivity Growth		Productivity Gap	
		Period	Growth %	Period	Australia as per cent of best practice
TFP	Rail freight ^(a)	89/90–97/98	8.3	1998	64
TFP	Airlines ^(b)	88/89–98/99	7.1	1993	62
TFP	Electricity ^(c)	84/85–93/94	3.4	92/93	68
TFP/MFP	Telecommunications ^(d)	85–94	8.0	1992	51
MFP	Electricity, gas, water ^(e)	88/89–97/98	3.4		
MFP	Manufacturing ^(e)	88/89–97/98	1.7		
MFP	Transport storage ^(e)	88/89–97/98	1.1		
MFP	Communications ^(e)	88/89–97/98	2.8		
MFP	Finance and insurance ^(e)	88/89–97/98	2.5		
MFP	Market sector ^(e)	88/89–97/98	1.7		

Sources: (a) Productivity Commission (1999a)

(b) Forsyth (2000)

(c) Bureau of Industry Economics (1996)

(d) Bureau of Industry Economics (1995)

(e) Productivity Commission (1998b)

which were diagnosed as particularly poor performers, such as rail and electricity, have experienced very high productivity growth (Productivity Commission 1999a, 1999b; Table 1). The performance of the Australian industries, compared with performance in other countries, has also been good (see Table 2). In some industries, such as banking, there have been substantial reforms though it is difficult to obtain measures of productivity (Oster and Antioch 1995). This also applies to reforms in the public sector, where contributions to GDP are measured in terms of inputs. Reforms such as contracting out will result in lower measured output of the sector, even though the actual output in terms of real government services may not have changed.

The contribution of the trade-related reforms is also not easy to measure. It is not enough to look at individual affected industries and observe whether their productivity has increased. This is because part of the impact of trade liberalisation is through the substitution of one industry for another. An import-competing industry contracts or is eliminated, and other, more productive industries elsewhere in the tradeables sector expand. However, there would normally be some productivity effect on the industries affected by liberalisation. This would come about, firstly, through

Table 2: Productivity Growth, Selected Industries and Countries
1989–94, per cent per annum

Country	Multifactor Productivity Growth				
	Manufacturing	Electricity, gas, water	Transport, storage, communication	Finance	Total
Australia	3.3	3.0	5.2	-1.5	0.9
US	1.5	0.3	3.9	-0.7	0.8
Canada	1.6	-1.6	2.3	-1.5	0.2
Belgium	-0.8	3.4	2.2	2.8	1.0
Netherlands	0.7	1.4	3.5	-	0.8
OECD	0.4	0.3	2.5	-1.0	0.6

Source: Industry Commission (1997), *Assessing Australia's Productivity Performance*, Research Paper, Table D4

contraction of the industry leaving the more efficient firms and weeding out the less efficient firms, and secondly through firms faced with more import competition increasing their productive efficiency in order to survive.

The evidence is that the trade-related reforms have contributed to productivity improvement. The manufacturing industry has increased its productivity growth somewhat. Also, studies of the response of economies to trade liberalisation, including Australia, have found evidence of direct links between liberalisation and performance (Dowrick 1994; Chand, McCalman and Gretton 1998; Productivity Commission 1999b).

2.3 Reform and transaction costs

One way through which microeconomic reform may be contributing to improved performance may be through its effects on transaction costs. Transaction costs have been falling, and this has made possible more efficient production in those industries which must pay those costs. When transaction costs fall, it is possible for industries to achieve greater scale economies, for example, by centralising production. Greater specialisation and gains from trade become feasible; for example when firms contract out services which others have a comparative advantage in producing.

In Australia, as in other countries, costs have been falling in a range of service industries, and this has reduced the costs of doing business facing firms in other industries. Improved telecommunications and data transfer are facilitating decentralisation of production, and enabling production to take place at the lowest-cost locations. Faster and cheaper aviation is facilitating the movement of people. Lower shipping and freight costs are enabling changes in production technology, such as just-in-time production. All of these are having an impact on productivity growth,

though not in any clearly measurable manner. The gains, which could be substantial in aggregate, are spread across industries throughout the whole economy.

Microeconomic reform is only part of the explanation of reduced transaction costs; much of the reduction would have taken place regardless. However, there is a distinct contribution. Improved productive efficiency of service industries, such as transport and telecommunications, has led to reductions in prices and facilitated more specialisation and trade. More open markets, in communications and banking, have meant that new competitors can enter, and this has added pressure for greater product innovation. Less protection of incumbent producers has resulted in more niche production based on comparative advantage in manufacturing.

In some sectors there have been substantial changes in the ways of doing business. This is evident in the provision of government services, which are now much more likely than before to be contracted out to private operators. The typical industrial firm relies much more on specialist firms for accounting, legal and information technology services. Manufacturers are less likely to have fully integrated production of the whole product, and are more likely to source components elsewhere. Industries in Australia, which were not able to compete on world markets, such as tourism and software development, are now trading internationally.

It is difficult to evaluate the contribution of reform to growth through this mechanism. The role of falling transaction costs could be moderately important for a country like Australia, which is a long way from its markets. In several service industries, reform is a substantial part of the explanation of price reductions over the last decade, and the opening up of markets has helped the provision of new services in such industries as telecommunications, aviation and banking.

2.4 The productivity boom – is it all due to microeconomic reform?

While a boom in productivity was to be hoped to be a consequence of reform, it would be rash to attribute all the increase in productivity growth to this reform. As in other countries, other factors have been at work.

One explanation, which has attracted considerable interest elsewhere, is that of technological improvement. There is evidence that in the past decade, the pace of technological improvement has stepped up. In particular, the information technology revolution, coupled with the pervasive use of computers, may well have resulted in a boost to productivity growth. The contribution of this source of growth has attracted a good deal of attention in the US, and its full significance is still being debated (see Gruen and Stevens (this volume)). It is plausible that technological improvements, and especially those in information technology, have been a major reason for the high productivity growth. At the micro level, improved information technology has resulted in substantial reductions in staffing in banks, transport and telecommunications. This is a process that has been going on for some time, not just since 1990, but it is possible that the pace has increased, and that the productivity dividends are now being reaped.

Another force has been globalisation. Australia, like other countries, has been relying more heavily on trade, and taking more advantage of the gains from trade. Some of this can be attributed to reforms such as the reductions in protection, but this is clearly a process which would have been going on even if Australia had maintained protection. Distance has limited Australia's participation in global markets, but the barrier created by distance is being reduced, as freight and passenger costs fall, and communications are improved. If Australia had not been undertaking reform, this would have been a positive influence on productivity growth.

Finally, the nature of the inputs, especially labour inputs, has been changing. Productivity is usually measured using a simple indicator of labour input, such as employees, or hours worked. There are likely to be problems with this measure, and they are likely to result in an overestimate of the true productivity gain. With more extensive education, the quality of labour, and the amount of human capital, will have been increasing; hence the labour input will be understated by employees or hours worked. It is also possible that those who are working are being expected to work harder (see Section 4) and that the real labour input is being understated. All productivity measures encounter these types of problems. As against this, it should be noted that the quality of output may also be increasing, and this would lead to an understatement of productivity growth.

2.5 Reform in perspective: comparative performance

Australia is not the only country which has been undertaking microeconomic reform; others such as the UK and New Zealand have had extensive programs of reform, while others, including the European countries, Japan and the US have been implementing reforms on a perhaps more gradual basis. In some of these countries such as the UK, there has been a productivity boom following on from a period of reform, while in others, such as New Zealand, performance has been disappointingly modest. The US has been implementing reforms over a long period, and it has had very good growth performance over the recent period. Thus working out the exact contribution of reform to productivity growth is no simple matter.

The case for reform, in any specific industry, is usually made by making comparisons of performance with comparable industries in other jurisdictions. Thus comparisons are made between airlines, rail systems and electricity industries in different states or countries. Where the performance of one is not as good as those of others, the difference is attributed to the different institutional environment. Reforms which make the institutional environment of the poorly performing industry closer to those of the better performing industries are suggested as likely to improve performance. Ideally, by duplicating the institutional environment it should be possible to duplicate performance, allowing for other factors that may affect performance, such as scale factors. Typically, in comparisons, it is often found that industries, which are privately operated, or subject to more competition or which are less subject to inefficient cost-plus types of regulation, perform better. Both theoretical presumptions and empirical observations contribute to the design of reforms.

Australia, along with other countries such as the UK, has been actively trying to set in place ‘best practice’ microeconomic policies. It has opened up many markets to competition, has lowered most of its tariffs to modest levels, it has restructured its natural monopoly transport and utility industries, and it has privatised or at least corporatised most of its publicly owned industrial firms. Granted this, it could be expected to be achieving economic performance, in terms of GDP per capita, which is comparable to the best, if not now, at least in the foreseeable future.

Since Australia has been enjoying a higher productivity growth rate than most other industrial countries, it has been catching up somewhat on other countries with which it might be compared. To some extent it can be compared to European countries such as Belgium, Sweden and the Netherlands which have comparable populations. These countries have the advantage of being within the large European market. It can also be compared to the larger European countries such as the UK, France and Germany. Another natural comparator is Canada, which has a similar structure and is of similar size, though it has the advantage of proximity to the US market. Finally Australia can be compared to the US. Achieving a GDP per capita at a level typical of the more comparable countries, such as the medium-sized European countries or Canada, was a realistic expectation of the possible gain from microeconomic reform.

Estimates of real output per capita are presented in Table 3. International comparisons of real output per capita are, invariably, not very accurate, though the broad patterns are instructive. Comparisons with the European countries and Canada

Table 3: Real Output per Capita
Selected countries, 1990 and 1998

	Real GDP per capita 1990 ^(a) US\$	Real GNP per capita 1998 ^(b) US\$
Australia	18 172	20 130
Belgium	18 572	23 480
Canada	21 793	24 050
France	19 737	22 320
Germany	20 689	20 810
Japan	20 069	23 180
Netherlands	17 846	21 620
New Zealand	15 405	15 840
Sweden	19 353	19 480
United Kingdom	18 041	20 640
United States	24 363	29 340

Note: These international comparisons have been made using different methodologies.

Sources: (a) OECD (1990), *Purchasing Power Parities and Real Expenditures*, Paris
(b) World Bank, *World Development Report 1999/2000*, Washington DC

suggest that Australia is still a little behind, though too much should not be read into modest differences given the difficulties of obtaining comparable data. One thing which emerges is that there is still a large productivity gap between the US and Australia (and between the US and the other countries). This prompts the question of why this should be so. It could be partly a matter of scale economies and scope for specialisation. This may be so, but Europe is large also, and is now closely integrated economically, and Canada is very close to the US and should be able to take advantage of the latter's size. It is the size of the market, not the country, that matters.

Australia has the most isolated market of the countries considered, though it makes up for this partly through its proximity to the rapidly growing countries of Asia. The US–Australia performance gap is mirrored when productivity comparisons of individual industries are made. Very often, the US industry has significantly higher total factor productivity than its Australian counterpart. This is true, for example, of domestic airlines, rail and electricity (Forsyth 2000; Productivity Commission 1999a, 1999b; Bureau of Industry Economics 1996; Table 1). All these industries have been experiencing good or very good productivity growth, and they have narrowed the productivity gap during the 1990s. A substantial gap remains even when measures are adjusted to allow for scale effects.

This is an interesting observation given the nature of the institutional changes which have constituted microeconomic reform. In Australia as elsewhere, reform has, to a large extent, had the effect of making the institutional environment much closer to that of the US. In this respect it has been aligning itself with the 'Washington Consensus', concerning factors (such as free trade and capital movements, deregulated markets and private operation of industry) which are regarded as conducive to good economic performance. The US itself has been changing somewhat, by deregulating some industries and by reforming regulation in others. Whereas once before, institutions were quite different, they are now quite similar. The same industries have been opened up to competition in each country. Both have low tariff protection. Natural monopolies are mainly privatised or corporatised, and they are subject to the same types of regulation. There is now more private involvement in health and community services in Australia, as there is in the US. With very similar microeconomic institutions, creating similar pressures and incentives for performance, the results in terms of performance are still very different.

This poses the question of what it is that creates the difference in performance. Size and scale factors can explain some, though not all, of the difference. It is unlikely that much of the difference can be explained by the quality of the factors. It may well be that some key markets, such as the labour market, are not as well performing as the comparable US market. Another possibility is that there may be problems of measurement. For example, US labour may be more productive than Australian labour because it puts in greater effort (one possible consequence of reform in Australia has been a greater demand for effort on the part of the workforce). One possibility is that it takes a long time for industries to achieve comparable performance to the US performance, and that further substantial gains in productivity are in the pipeline.

3. Non-productivity Aspects of Performance

3.1 Allocative efficiency

Many microeconomic reforms are directed to achieving improved allocative efficiency rather than productive efficiency. While it is generally agreed that the gains from increased productive efficiency are likely to be much greater than those from improved allocative efficiency, the gains from the latter could still be large. Gains in allocative efficiency mean that deadweight losses will be reduced. This may happen through bringing prices closer to marginal costs (important in the telecommunications and water industries, for example), allowing the products that consumers want to buy to be sold (relevant in banking and airlines), and improving the allocation of investment (important in rail, airports, roads and electricity).

Productive efficiency gains show up as improvements in total factor productivity, and in increased GDP per capita. Allocative efficiency gains may or may not show up as productivity gains. An improvement in water pricing, which results in farms paying prices which reflect the opportunity costs of the water, will result in measured productivity gains, as farms reduce their use of water to the extent that it is not producing outputs equal to its opportunity cost. When road funds are better allocated, this will have a greater impact on reducing the costs of the road freight industry; the measured productivity of this industry will increase.

When final consumers are the purchasers of the output, for example with water or airline services, some of the gains will be recorded as increases in consumer surplus. This will not necessarily show up as an increase in productivity or in GDP. In some cases, allocative efficiency gains may be measured as productivity increases. For example, if the airline industry makes more discount fares available, and the increase in measured output of the industry is equated to the increase in person trips or passenger kilometres, with no adjustment for the lower average quality of the service, there will be a recorded productivity increase, which could overstate the actual gain.

The allocative efficiency effects of reform have been substantial in a number of industries. Telecommunications pricing has been made much more reflective of costs, with consequent reductions in deadweight losses (Industry Commission 1997). Water pricing is potentially important in irrigation and for urban use. Airfare structures have been improved. Electricity investment patterns are much less wasteful. Airport and rail investments are less subject now to political imperatives, and fewer white elephants are being constructed. There is less cross-subsidisation of one service by another in the financial sector. Some of these are having an impact on measured productivity, though there are gains which do not show up as productivity increases.

3.2 Macroeconomic impacts

Microeconomic reform is primarily directed towards improving living standards through increasing productive and allocative efficiency, but might also have some

macroeconomic impacts. It has been suggested that it will affect both the external balance and inflation.

In the late 1980s and early 1990s, Australia's current account deficit, and growing debt, were attracting attention (see Pitchford (1990)). It was believed by many that microeconomic reform would be a means of reducing the deficit. Reform would make Australian tradeable industries more competitive, by reducing their costs, and they would be able to increase exports and be more effective in competing with imports. As a result, it was held, the current account deficit could be reduced. To a considerable extent, reform was sold on its supposed effects on competitiveness and the deficit.

This view was based on an excessively partial analysis of the external account (Forsyth 1990). Ultimately, the deficit on current account is determined by the balance of spending and production or between savings and investment. Competitiveness, as affected by goods and services prices and the exchange rate, is a mechanism by which the external balance is brought into line with the domestic balance. If domestic prices fall, as a result of microeconomic reform, the exchange rate will rise, to enable the current account balance to be restored. Microeconomic reform is unlikely to have any major impact on the balance between savings and investment, and thus it is not likely to have any major impact on the current account.

In retrospect, it does not seem that there is much evidence in support of the popular view that reform would affect the deficit. Reform has been extensive and real prices of the industries which have been subjected to reforms have declined. However, over the period, there does not seem to have been any significant movements in the deficit which cannot be explained by other factors. The deficit did decline in the recession, and it has increased since.

Reform may have had a more distinct effect on inflation. Microeconomic reforms will, on average, lead to once-off reductions in the prices of goods and services. These effects will be experienced gradually over the period during which the reforms are undertaken. During the 1990s, reforms were resulting in downward pressure on prices.

It is recognised that once-off changes in prices can have an impact on inflation; witness the recent discussion of the effects of the introduction of the GST on inflation. A once-off reduction in prices can be a useful break in the inflationary process, and it may result in lower price increases in future, as agents in the economy moderate price increases that they are seeking. The 1990s was a period of low inflation. Some of this can be explained by weak demand pressures, for example the weak state of the labour market as a result of the recession. Reform may also have had some impact on inflation through its impact on the labour market. Labour saving reforms can have impacted, at least temporarily, on the overall pressure in the labour market. Overall, the evidence seems consistent with reform making some contribution to the low inflation of the 1990s, though its exact contribution would be difficult to assess.

3.3 The adaptiveness of the economy

Microeconomic reform may not just lead to a more efficient economy, but it may also lead to an economy which is more adaptive and responsive to external shocks, as market mechanisms are allowed to work more effectively. There is some evidence that Australia now has a more responsive economy.

Not all reforms need have this effect. Consider lowering protection. This will lead to contractions in some industries and expansions in others. There is no particular reason to expect any of these to become more adaptive. However, if the approach to protection has changed, industries may behave in a more responsive manner. In earlier times, protection was responsive to external shocks; thus, if protected industries were finding it more difficult to compete because of external circumstances such as higher exchange rates, governments would increase protection. This happened when the motor vehicle and textile and clothing industries were experiencing difficulties in the 1970s, and the government brought in quotas to assist them. Nowadays, industries realise that if external circumstances adversely affect them, they are much less likely to obtain compensating assistance from the government. They are forced to adapt more than in the past.

There are several ways in which reform has meant that industries are more subject to market swings. For example, utility industries are no longer able to increase prices when demand slumps (thereby increasing excess capacity). Public (e.g. electricity) and regulated (e.g. airlines) industries were allowed or required to cover costs, on a year-by-year basis, and price increases were permitted if they were finding it difficult to do this. Such industries have now been forced to adapt to shocks, and this would have increased their adaptability to shocks in general.

Reform has also meant that industries have been subject to more competition. In the past, the few firms in regulated or publicly owned industries did not have to deal with much competition. Now they have to, and competition forces them to be more adaptable to change, such as that coming from new entry or price wars. As a result, they may have become more adaptable in general. For example, Qantas has become much more familiar with addressing competition in its markets. After the Asian financial crisis impacted heavily on several of its markets, it responded very quickly, shifting capacity from one market to another, and purchasing equipment from airlines in distress. It survived the shock and managed to increase its profitability.

Overall the response of Australian industry to the crisis was quick and effective. Faced with the decline of their markets, exporters shifted to other markets. Exports were responsive to falls in the real exchange rate, and new firms came into the export market. Generally, industries which have experienced increases in competition, such as banks and telecommunications, appear to be adept at dealing with shocks.

Australia weathered the Asian financial crisis very well, and reform in the past has been credited with its success. To an extent, this credit may be due to reform, though the claim should not be exaggerated. For example, unlike other countries, Australia did not have a financial crisis. When the crisis impacted, Australian financial institutions did not have a massive overhang of non-performing loans. This could

have been because they have become much more efficient in evaluating proposals for finance, and better at screening out the bad risks. It could also be that prudential regulation was more effective than in the past. It could also be, however, that Australia experienced a financial crisis in the late 1980s and early 1990s, and it was still recovering from this during the late 1990s. Over the post-crisis period, institutions have been particularly cautious, and this paid dividends when the Asian financial crisis occurred. It is possible that there has been a sustained improvement in the efficiency of banks as lenders, and in prudential regulation.

We should not be too optimistic, however. Consider the property development industry. This industry has been exposed to strong competition for many decades, if not centuries. Investors have a strong incentive to be careful in evaluating their investments; institutions and incentives are right. Nevertheless, booms and slumps continue to prevail, and during the booms, there is excessive and expensive overbuilding. Lessons are learnt, after slumps, but these lessons are only remembered for short periods. The financial sector may be more efficient in evaluating investment proposals, but this may not eliminate systematic mistakes in the future. The good position the sector found itself in at the time of the Asian financial crisis may have been partly fortuitous.

There were other changes which can be regarded as partly micro and partly macro, and which affected Australia's ability to weather the crisis. The most important of these concerned exchange markets, especially the floating of the exchange rate and the ending of exchange controls. The exchange rate was free to adjust quickly when the crisis hit, and this facilitated a quick response by the affected industries. The counterfactual is not obvious. If Australia still had had a fixed exchange rate, it would have devalued, as the crisis economies did. However, it may not have altered the exchange rate soon enough, or to the right extent. Australia probably would have avoided the worst of the crisis, though its adjustment may not have been as quick and effective.

4. The Costs of Reform

4.1 Uncertainty and search costs

One of the consequences of reform has been that agents in the economy are faced with more choice and uncertainty than before. To the extent that they are risk averse, this creates a cost, and to the extent that they need to search for the best deal, search costs are involved. The increase in uncertainty is to be expected, since increased risk is the price of improved incentives. However, this increased uncertainty imposes a cost, and only some of this will be incorporated in GDP measures.

We are seeing risk increase in a whole range of activities. When choosing airline tickets, travellers have the option of low-risk fares, such as full-economy fares, with which the airline absorbs all the risks associated with the travellers' scheduling plans, or discount fares, which involve non-refundable payments if the travellers plans change. Instead of a nation-wide Medicare health system, families have to choose what health insurance to take out, and this involves choices between low risk

and high cost, or high risk, with high excesses, and low cost. One thing which is changing as a result of utility reform is the margin for risk. In previous years, electricity generators invested in large amounts of capacity to minimise the risk of blackouts; now they are lowering their capacity margins, at a consequent cost in terms of greater likelihood of shortfalls from time to time. Employment contracts now give less tenure to the employee, resulting in greater flexibility for the employer.

The problem with the previous way of operating was that it destroyed incentives to seek efficient solutions. Patients had incentives to overutilise health facilities, since they were not faced with the costs of supplying the services. Travellers had no incentive to plan their transport requirements carefully, since the airline bore the cost of them changing their minds. Electricity generators would not be rewarded for economising on the use of capacity. Regulated firms are no longer able to simply pass on cost increases; now they are subject to price-caps, which give them an incentive to keep costs at a minimum. In many contexts of reform, there has been a conscious decision to move towards solutions which create stronger incentives for efficient decision-making, but with the effect of placing more risk on the decision-maker.

Buyers are now confronted with a greater array of options as a result of reform of industries such as banking, telecommunications, transport and utilities. Instead of one electricity supplier, they must choose from several. Travellers face a wide range of fare types for domestic, and especially international travel. To make good use of the options they face, they must spend time and money investigating the possibilities. While there are benefits from increased variety, these are offset partly by greater search costs.

Often, agents do not necessarily have to face increased risk, since they may have the option of paying to avoid it. Thus people who are risk averse in health matters can choose to take out extensive insurance, at a cost. Travellers who do not wish to face the risk of losing a non-refundable fare can either take out insurance or pay more for a low-risk ticket. Sometimes, the ending of cross-subsidisation has meant that the price of the low-risk option has increased; for example, full-economy air tickets are more expensive than before, partly because those travellers who prefer not to pay for flexibility are no longer forced to do so. It is not always easy to pay to avoid risk either. With electricity, if the system as a whole has less spare capacity, this increases the chance of blackouts for all users. To a limited extent risk averse users can lessen risks by purchasing generators, but this is an expensive and often impractical option.

The fact that most agents do not choose to pay top prices for the lowest risk services suggests that the savings from the extra risk are, overall, worthwhile. However there is a cost to the increased risk, which sometimes must be offset against the measured gains from reform. When firms are buying intermediate goods and services, they will weigh the costs of risk and choose the most efficient option. They may instruct staff to purchase non-refundable tickets when travelling. They will gain from the lower price, and this is recorded as a productivity increase in the economy. The costs the firm faces when staff cannot meet conditions and the tickets are forfeited are recorded as a cost of the firm, and this results in a reduction in measured productivity growth. To the extent that the costs of uncertainty or search are borne by firms, they show up as an offset to the productivity gain.

When final consumers face extra risks to themselves, this cost is not recorded in GDP measures. The lower price of the electricity they buy will be reflected in a measured productivity gain, but the risk and search costs to the consumer will not be recorded. To this extent, there is an additional cost of reform which should be offset against the gains.

4.2 The costs of structural adjustment

Microeconomic reform has hastened structural adjustment, and this adjustment has its costs. Reform has resulted in some industries contracting, workforces being reduced, and some regions losing economic activity. Reform has hastened the process of shifting production and inputs from one industry or place to another. There are several costs which are associated with achieving change, and these costs are typically borne by individuals or governments, as well as the industries themselves. These costs need to be recognised when evaluating the success of reform. From a measurement point of view, there is a difficult question to answer – to what extent have these costs already been taken into account when output and productivity growth are calculated, and to what extent do they represent additional costs, which should be taken into account as an offset against output increases, leading to a downward adjustment of productivity growth estimates?

Many, though not all, will not be faced by the affected firms, and will not show up as reduced output, increased inputs, and thus a reduction in measured productivity. If a firm pays redundancy benefits when it is reducing its workforce, these payments will be recorded as a productive input, and their presence will reduce measured productivity. If the government compensates workers who lose their jobs, these payments will not be recorded as a productive input. The same is true when the redundant workers bear the costs themselves. To this extent, measured productivity gains will overstate the real income gains from reform.

There are several types of adjustment costs (Productivity Commission 1998b). One of these is a temporary increase in unemployment; it is unlikely that structural change can be effected with no period of unemployment for workers who leave the firm or industry which is shedding labour. There is also a cost of retraining and labour market programs. When governments fund transfers or programs, there will be an additional deadweight loss from increased taxation. Structural change may mean that particular regions are given assistance by the central government, to promote the development of alternative industries. Finally, particular industries may be given assistance to adjust; for example, the dairy industry is being given assistance to facilitate the transition to a new deregulated environment.

Unemployment, albeit temporary, will lead to several adjustment costs (for a discussion, see Borland (1998)). Firstly, and most obviously, there is the lost output which the displaced workers could have produced. There could be some degradation of their skills and future productivity. The workers will face cash costs, such as transport and communications costs in searching for work. They will also face additional personal and social costs. Some of these costs will be recorded as an offset to productivity growth, while some will not.

In particular, lost output means lower aggregate productivity, as long as the latter is measured using the available workforce as the input, not the actually employed workforce. There will be no deduction from the measured productivity of the industry which has reduced its workforce however. To this extent it is inappropriate to look at the sum of productivity performances in individual industries to measure productivity performance overall (there can be productivity growth in every industry in the economy, but no productivity growth in the economy as a whole, if the released factors are not employed elsewhere).

Other costs of unemployment need not be recorded as a deduction from productivity growth. For example, search costs paid by workers looking for new jobs will be counted in the accounts as personal expenditure, not as inputs into a productive process. Thus they do not reduce measured output or productivity growth. The same will be true of the personal and social costs the displaced workers encounter.

Microeconomic reform will involve costs of structural adjustment, and these could well be significant. Hence there has been attention given to ways of minimising these. These costs need to be taken into account when evaluating reform. However it does not follow that all of these costs have been ignored in measures of overall productivity growth, and that they should be deducted from output to obtain corrected measures of net output. Rather, some of these costs have been taken into account granted the way overall productivity growth is measured – however, not all of them have. Ideally, we need to estimate those adjustment costs which have not been taken into account, and subtract them from output and correct productivity growth estimates accordingly.

4.3 Additional demands on the workforce

Reform often leads to fewer people producing the same output. To an extent this might be being achieved by those people who are still employed working harder. If this is so, there is a cost which must be deducted from the gains from reform to estimate the net gains from reform.

Prior to reform, there was the scope in many industries for slack staffing arrangements. There were monopoly rents, and employers may have been prepared to share these with their workforces. It may have been easier to share these rents through offering easy working conditions than by higher pay – furthermore, it may have been the preference of workers to enjoy easy working conditions rather than higher pay (for some discussion, see Forsyth (1998)). Several public enterprises were characterised by low pay, low effort and low productivity.

Reform has resulted in this option ceasing to be feasible. It eliminates rents, and forces firms to eliminate slack, if need be, by getting their workforces to put greater effort into their jobs. Fewer people will be allocated to a specific task, requiring them to concentrate more, to be active on productive tasks longer and to complete specific tasks more quickly. This also may have some implications for the quality of the service – fewer people serving customers will lead to longer queues, thus passing some of the costs onto the customers. It has been argued that some of the savings being achieved through competitive tendering have been achieved by forcing the

employees to work faster and harder (Quiggin 1996, pp 173–183). This focus on effort and its cost is reflected in the theoretical literature on regulation and incentives. Good regulation will encourage the right level of effort to be provided, recognising that greater effort improves performance but has a cost to those who provide it. Typically in theoretical models of regulation, effort is a critical variable, though it is not measurable (see Laffont and Tirole (1993)).

To the extent that this is happening, it will still be the case that reform will lead to an outcome which is more efficient overall. However the gains from reform will tend to be overstated. Productivity will increase, but there will be an additional cost of greater effort on the part of the workforce. This cost should be deducted from the measured gains from reform to obtain an estimate of the net gains. In the absence of empirical work on effort and its costs, it is difficult to determine how significant an adjustment this would be in the Australian context. It is something worth exploring further.

4.4 The costs of unemployment

Microeconomic reform may have increased unemployment in the longer term. Whether it has done this depends on how reform initially impacts on the labour market, and on how the labour market works (see Freebairn (1993) for some discussion).

Reform may result in a shift in demand for labour overall. Many reforms at the industry level have been targeted at reducing excessively large workforces. Costs have been high partly because workforces have been too large; this was true in telecommunications, railways and electricity, and reform has meant considerable shedding of labour. The initial impact on industry employment will not be the same as the ultimate impact, since reform will normally result in lower prices, and an increase in demand. This in turn leads to increased employment. Reform in the telecommunications industry, for example, has been accompanied by an increase in overall employment in the industry. It is conceivable that reform may lead to an overall reduction in demand for labour, along with a shift towards other factors such as capital. There can also be a shift in demand from unskilled towards skilled labour.

Even if there is a reduction in the aggregate demand for labour, or in the aggregate demand for a particular class of labour, such as unskilled labour, this need not translate into an increase in unemployment. It depends on how flexible the labour market is. It is possible that wages will adjust so as to absorb any increases in available labour as a result of reform. This could come about if wages were sensitive to unemployment levels, for example when unemployment exists and is not eliminated by wage reductions, but when it is taken into account during wage bargaining. It is also possible that an alternative scenario may apply under which wages are inflexible. If so, additions to available labour will lead to increased unemployment.

In short, reform may result in some reductions in the demand for labour, especially for unskilled labour, and if it does, this puts pressure on the labour market. Whether there is any net increase in unemployment depends on how flexible the labour market

is. There is no consensus on how the Australian labour market works, and thus it is not possible to be definitive on whether reform may have contributed to longer-term unemployment.

The experience of the 1990s is consistent with the view that reform may have contributed to increasing unemployment. This has been a period of rapid productivity growth, but rather less rapid growth in employment. In spite of high overall growth, unemployment has been slow to fall. This could have several explanations, not just reform. Furthermore, it is possible that reform has a short-term impact on unemployment, during the structural adjustment process, though not a long-term one. Thus, during the 1990s, as a series of reforms were implemented in different industries, there could have been a series of shifts in the patterns of demand for labour, which are taking some time to work out. When the reforms tail off, this temporary source of unemployment will be removed, and overall unemployment will fall to more traditional levels.

If increased unemployment is a consequence of reform, then it has a cost. The costs are similar to those of temporary unemployment; lost output, cash costs to the unemployed, deadweight losses from funding assistance, and personal and social costs. When productivity is measured in terms of aggregate output using available labour supply as an input, the cost of reduced output will be taken account of in the measurement of productivity and thus the gains from reform. Other costs of unemployment will, however, not be taken into account, and any measure of the net gains from reform must subtract these costs from the measured productivity gains.

4.5 Quality

A possible cost of reform is a decline in the average quality of goods and services produced. It is worth exploring this possibility for two reasons; firstly, because there is a public perception that the quality of many services such as telecommunications has declined in recent years, and secondly, because reforms do alter the incentives faced by firms when choosing the quality levels to supply.

Certainly, it is possible to identify some systematic changes in quality. Consider the domestic airline industry; reform has meant a proliferation of discount airfares. These fares are offered subject to conditions, such as early booking or non-refundability. Even though the actual service quality once the passenger is in the aircraft is the same as that for the full-fare passenger, the additional conditions imply a lower-quality product. There have been some quality improvements, as well. Since average load factors have changed little over the last two decades, the quality level of the full-fare product would have increased, since with more passengers being on conditional fares, the probability of obtaining a flight at the time of one's choice would have increased. While there has been this increase in the quality of business-oriented fare types, this probably does not completely counter the effect of more discount fares. Thus, other things equal, airline deregulation in Australia has led to a reduction in the average quality level. Any measure of productivity should take this into account; for example, a measure based on revenue passenger kilometres, tonne kilometres or trips would result in an overestimate of output and productivity.

It is important to stress that lowering of quality is not necessarily undesirable. The problem with the regulated airline system was that it provided too high a quality at too high a cost. Deregulation resulted in more discount fares being available, which is what the consumer wanted. Overall there has been a gain, though not one as great as might be inferred from simple productivity measures which do not correct for quality.

Changes in the way utility and transport industries are owned and regulated are likely to have implications for quality of output. Prior to reform, these industries were typically owned by governments, or if they were owned by the private sector they were subjected to ad hoc forms of rate of return or cost-plus regulation. Reform has meant that industries which are still regulated are now subject to price regulation which at least has the form of price-cap regulation. These different systems have quite different implications for the incentives to provide quality.

Cost-plus regulation gives the enterprise an incentive to provide excessive quality – the ‘gold plating’ by regulated firms is well known (Armstrong, Cowan and Vickers 1994). In some respects, public enterprises also supply excessive quality, at least in some dimensions. For example, electricity authorities may invest in excessive capacity, thus lessening the risks of supply interruptions, though at a cost to the user. However, regulated and government enterprises in Australia did not always supply high quality in the forms desired by the users; rather they supplied quality in the forms the managers were interested in. Thus railways invested in expensive trains, but there were hardly noted for being responsive to consumer interests.

Those industries which still possess market power, such as electricity, gas, water and telecommunications (local loop) are now subject to price-cap regulation. This regulation gives an incentive to the firm to reduce costs, since it will be permitted to keep the cost savings it achieves. However, costs can be reduced if quality is reduced, and so these firms have an incentive to reduce quality. This is only true to the extent that the regulation they face is indeed price-cap regulation; with regular reviews of price-caps, the Australian approach to regulation is moving closer to cost-plus than price-cap regulation, even though it takes the form of the latter. Hence the incentives to degrade quality are less pronounced.

The reform of utility regulation has recognised this point, and it has been accompanied by extensive quality monitoring. Regulated firms are required to maintain quality of service. The evidence is that while different indicators of quality have gone up and down, there has been no systematic decline in quality overall. There is some cost to monitoring quality, though it is probably preferable to pay this cost and keep pressure on enterprises to perform.

Reform has led to a lessening of cross-subsidisation in a number of industries. This has particularly affected rural areas. Services which were provided below cost, subsidised by profitable city services, have been eliminated or cut back. Thus rail services to the rural areas have been reduced and bank branches have been closed. This has led to a reduction in the quality of these services as perceived by the rural users. However the quality level that was previously maintained was not one which the users were willing to pay for, and losses on the part of rural users have been made up for by less obvious gains for urban users, who now pay prices closer to costs.

While there have been quality changes in some industries as a consequence of reform, it is difficult to detect any systematic degradation of product quality. It should be remembered that there were some major quality problems in some industries before reform – some public enterprises such as the railways were a byword for poor service.

4.6 The costs in perspective

It is clear that microeconomic reform does involve some costs as well as benefits. Some of these are well-known and understood; for example, it is recognised that structural changes do create adjustment costs. Several of the costs of reform are taken into account when overall productivity measures are used to estimate the gains from reform. However, not all costs are, and this is especially true when costs are borne directly by individuals or when individuals are compensated for losses by tax-funded transfers. Thus reform may mean that individuals bear the costs of greater risks and greater work effort.

Some costs are likely to be greater than others. There has been a change in the levels of risk faced by residents over the past two decades, and to the extent that residents are risk averse, this implies a cost. Increased risk has been the price of sharpening incentives; poor performance was encouraged by insulating individuals and firms from risks and from the rewards for good performance. Some productivity improvements in hitherto labour-intensive industries have been achieved at the cost of greater work effort. The issue of whether reform has impacted on overall unemployment remains open, but if it has, there would be a significant cost. Structural change is recognised as imposing costs. There does not seem to be much evidence of systematic degradation of quality of service as a result of reform.

5. The Winners and Losers

5.1 The overall patterns of gain and loss

Microeconomic reform has resulted in increases in productivity growth in a range of industries. There are overall gains to be distributed, though not all parties do gain. The typical pattern is as follows (Productivity Commission 1999a, 1999b; BTCE 1995; Forsyth 2000). Much of the productivity gain is passed on to customers through lower output prices. Some of the gain has been applied to increasing the rate of return of the owners, who often have been governments. Labour forces have usually not been major beneficiaries of reform. Employment in affected firms has fallen, and overall employment in some industries has fallen. Wages for those workers who retain their jobs have not shown any particular pattern; in some cases they have lagged behind national wages, though in others they have risen more rapidly. Obtaining information on the sharing of productivity gains is not an easy task granted that there have been few detailed productivity studies published recently. Table 4 presents a summary for some industries.

Table 4: Sharing the Productivity Growth
Selected industries

Industry	Period	TFP	Real price	Real wage		Capital return	
				Industry	Australia-wide	Begin	End
				Growth, per cent per annum			
Airlines ^(a)	87/88–98/99	7.1	-6.5	4.1	0.0	100.0	97.8
Rail ^(b)	89–97	8.3	-2.9	3.5	0.0	-0.7	5.7
Electricity, gas, water ^(c)	90/91–98/99	3.4	-2.1	-1.8	0.7		
Telecommunications ^(d)	85–94	8.0	-4.2	2.4	-1.0	-4.7	17.5

Note: Capital return – Airlines, index of sales margin; Rail, return on assets; Telecommunications, sales margin

Sources: (a) Forsyth (2000)

(b) Productivity Commission (1999a)

(c) Productivity Commission (1998b); ABS Cat No 5204.0

(d) BIE (1995)

This broad pattern is to be expected. Many of the reforms, such as deregulation or opening up parts of vertically integrated enterprises to competition, are such as to put pressure on firms to keep their output prices low. Reforms such as corporatisation of government-owned enterprises put emphasis on lowering costs and achieving more commercial rates of return in enterprises which have operated at low or negative rates of return in the past. Privatisation enhances the incentives to keep costs down and profits up, but most cases of privatisation have been of firms in competitive industries or have been accompanied by price regulation. Increased competition and emphasis on cost reduction is likely to mean that enterprises will seek to reduce their labour forces, to expect more effort from the remaining workforce and to take a tougher stance in wage negotiations.

While customers as a whole have gained, not all have shared equally. In some industries there has been significant rebalancing of prices. In the electricity industry, the primary beneficiary of lower prices has been industrial users; residential users, previously the recipients of cross-subsidies, have gained rather less. By contrast, leisure travellers have gained more than business travellers from aviation reform. Cross-subsidies have been reduced also in telecommunications, though this would have less obvious distributional consequences.

Taxpayers have also gained from their role as owners of government business enterprises. The profitability of these enterprises has increased, and they have ceased to be the drain on budgets which they were in the 1980s and before (Productivity Commission 1998a). Some of these enterprises have been privatised – when they

were sold off at prices which were high relative to their previous profitability, as happened with Qantas, taxpayers gained. On the other hand, where governments have been so keen to privatise that they have accepted what were (at least in retrospect) poor prices for their assets, taxpayers have not been so fortunate.

5.2 The labour force

Microeconomic reform usually involves more competitive pressure at the product market level. This in turn translates into more pressure at the factor market level, and in particular at the labour market level. Non competition-based reforms, such as corporatisation and privatisation also add to pressure on labour markets. Prior to reform, rents may be earned in enterprises, and the labour force of the enterprise may share in these rents, especially when owners are not forced to minimise costs. These rents may be enjoyed as higher-than-market pay, or through a larger workforce and lower work intensity. These rents tend to be lessened or eliminated by reform.

Reform seems to have had a clear impact on employment in enterprises directly affected, though no clear effect on wages. Greater pressure on costs will often lead a firm to reduce its workforce. Lower output prices will lead to greater demand, which will tend to counteract the initial impact. Even if the firm reduces its employment, overall employment in the industry could increase. Thus in rapidly growing industries such as telecommunications and aviation, there has been an increase in industry employment, even though at particular times individual enterprises such as Telstra have been reducing their workforces. In other industries such as electricity and rail, there has been an overall reduction in employment during the reform period. The primary losers from reform are those who lose their jobs with their original employer; their loss will be moderated if they are able to pick up a job in the same industry, as many former Telstra employees have been able to do. Employees in regionally based industries, such as electricity, which have reduced their overall workforces have been the biggest losers from reform.

We would expect that reform would put pressure on wage growth, and that growth in the industries affected by reform would be less than elsewhere. There does not seem to be much evidence of this happening (see Table 4). Average rates of pay in industries such as telecommunications and rail seem to have risen as fast as, or faster than, elsewhere (BIE 1995; Productivity Commission 1999a). Pay in the aviation industry has risen quite rapidly (as has employment overall). It is possible that averages may be masking shifts in pay structure; for example, aviation and telecommunications industries may be employing, on average, more highly-skilled personnel, as information technology specialists replace clerks.

5.3 The regions

It is unlikely that regional and rural Australia as a whole has lost out because of reform, though it is possible to identify particular reforms which have been to the detriment of the regions. It is also the case that some regions have lost out because of specific reforms; for example, Victoria's Latrobe valley, with its concentration on electricity generation, has lost out because of electricity reform. Individual towns or

cities could have lost out as a result of declining protection of goods they produced. Microeconomic reform has resulted in many changes which are to the advantage of regional Australia, such as lower electricity, freight and telecommunications charges (Productivity Commission 1999c).

There have been reductions in several types of services in rural areas, but it is difficult to determine to what extent reform has been responsible for this. Towns have lost bank branches and direct rail services, services have been moved from smaller towns and concentrated in regional cities, some charges (for example, for water) have been increased. Many of the changes taking place would have occurred regardless of reform, with the low population densities making it uneconomic to supply some services as before, and with technology changing the nature of the services provided.

Some systematic effects have been taking place. With privatisation, corporatisation and deregulation, cross-subsidisation has been reduced in many industries. Regional and rural residents were often the beneficiaries of such cross-subsidisation, which affected rail fares and charges, electricity, roads and other services. To an extent, this subsidisation may have been in compensation for the tariffs which rural residents paid on their manufactured goods. The winding-back of cross-subsidisation would have impacted negatively on rural residents, but against this must be set the gains they have made from reforms in general (for example, through reductions in protection).

6. Problem Areas of Reform

6.1 Unfulfilled expectations?

In any process of reform, it is likely that there will be some reforms which deliver less than was promised, along with other reforms which deliver more. In Australia, it is difficult to find examples of major failures in reform, though there are some cases where the gains from reform are difficult to measure, and others where the gains have been less than hoped for. In a number of cases, the intensity of competition in the market after deregulation has not been as great as anticipated, though the industries in question have nonetheless performed well.

In industries such as banking and finance, and telecommunications, it is difficult to make any precise measures of the benefits from reform. Both these industries have been extensively deregulated, and have changed markedly over the last two decades. It is difficult to measure banking output, and hence banking productivity, though such measures as exist suggest good productivity growth. It is easier to measure telecommunications output, and there is evidence of strong productivity growth. However, technological progress in both these industries has been very rapid, so strong productivity growth would have been expected, regardless of whether they had been subjected to reform. International comparisons are not much help, because most comparable countries have been reforming their banking and telecommunications industries.

There have been problems in each of these industries which may have come about because of the more liberal operating environment. In the banking and finance industry, the freer environment in the 1980s may have contributed to the overexpansion in lending, and the consequent problems of the early 1990s. Deregulation gave banks and their customers more scope to make mistakes, and banks showed that they were not efficient at evaluating lending opportunities, and customers showed that they were not good at evaluating the risks when they borrowed. These problems were not new, and have occurred in previous booms, but the more liberal environment could have exacerbated them. The new prudential arrangements which came into operation in the late 1990s may have corrected for these problems, though it is too early to tell. In the telecommunications industry, the most obvious downside of liberalisation was the duplication of cable networks – something which would not have occurred if a monopoly provider had remained. This duplication has been halted before it has been completed, and thus the losses have been limited.

In other respects both these industries have performed well. In both there has been a proliferation of new products, and the implementation of a wide range of innovations. There has also been the winding-back of extensive patterns of cross-subsidies. One may question whether this level of innovation would have been possible in the absence of reform, in an environment in which telecommunications were solely the preserve of one enterprise which was subject to no competition in any of its markets, and banking was dominated by an oligopoly which was protected from competition from any other suppliers of financial products.

Another way in which reform may seem to have disappointed is in terms of the strength of competition in several industries. Deregulation opens up markets to more competitors, and in most industries it was expected that it would lead to an increase in the actual number of firms competing actively. This has sometimes happened, for example in telecommunications. In other industries, there was a period of new entry, after which there was a period of consolidation. This was true in banking, airlines and interurban buses. It is too early to tell whether opening up of other industries, such as rail and electricity, will lead to substantially more competition. In the 1980s there were many new entrants into banking, but most of these failed or were absorbed, leaving the same four banks dominating the scene (there is however more competition from the regional banks and other providers of financial services). While competition may not have been as intense as had been hoped for, the real test is in terms of performance, which has been good.

The domestic aviation industry provides a good example of how deregulation has worked in the economy, and in it, the results have been controversial. Prior to deregulation in 1990, it was dominated by two tightly regulated airlines. After deregulation there was a period of intense competition, accompanied by a price war. The two entrants did not last long, and once they had exited, fares rose again. Until 2000, there were no new entrants. It seemed as if the industry might be a natural duopoly, and that deregulation had not made much impact.

Examination of the productivity performance of the industry reveals that deregulation has led to substantial gains (Forsyth 2000). Total factor productivity, measured using physical measures of output such as revenue passenger kilometres,

has grown rapidly since deregulation, though growth may be tailing off now. This measure slightly overstates productivity growth, since the average quality of product has declined a little (tickets are on average more restricted, though other factors which affect measured productivity such as load factors and stage lengths have changed little). Average fares have fallen sharply, through the proliferation of discount fares, and the number of passengers has grown very rapidly in the post-deregulation period. The claim that airfares have changed little (Quiggin 1996) is incorrect, since it is based on flawed use of index number methods – such methods can only be used if all fare types are freely available, which they were not in the pre-deregulation period (even now they are somewhat restricted).

Even though the outcomes in terms of actual competition in the market were not as good as expected, there have been substantial gains as a result of deregulation. The intensity of competition is likely to change with the entry of two new airlines, though it is not possible to predict whether they will make a large difference to costs and prices, and whether they will succeed in the market. There still exists something of a productivity gap between the Australian domestic airlines and that achieved by airlines overseas, even after adjusting for factors which influence measured productivity such as stage lengths and scale (Forsyth 2000). A new, more competitive environment, may reduce this gap.

In a number of industries, there still remains a productivity gap between the Australian industry and best-practice industries overseas (see Table 1). This is in spite of good or very good productivity growth in the post-reform period. Thus in the rail, electricity and airline industries, there is still some scope for further productivity improvement. It could be that it takes time for the local industry to catch up with its overseas counterparts. It is also possible that the pressure to perform in Australia is less than that overseas, and the enterprises which constitute the industry have not been forced to achieve maximum feasible productivity; this could be the case if the number of competitors is less than what overseas counterparts face. Finally, there remains the possibility that factors in Australia are not as productive as those overseas; labour may not be as efficient or may not work as hard.

6.2 Designing the new regulatory environment

The regulatory environment under which the natural monopoly utility and transport industries operate has been radically changed over the past decade. There has been an extensive move to regulation which pays direct attention to incentives for good performance. Most firms have been corporatised or privatised. Accompanying this has been, in some cases, an extensive alteration in industry structure, with vertical separation of hitherto vertically integrated industries, as exemplified by the privatisation and vertical separation of the electricity industry in Victoria. It is yet to be determined how well this new environment will work.

Whether or not the new environment is ideal, it is likely to be a major improvement on what went before. Most of the firms in these industries were public enterprises, with little guidance as to objectives and no pressure to perform. Sometimes private firms were subjected to cost-plus regulation, which gives little incentive to perform

efficiently. The reforms have resulted in those parts of these industries which can sustain competition being opened up, as far as is possible, to actual competition, partly through access regulation or vertical separation from natural monopoly parts. Those parts which remain natural monopolies are subject to incentive regulation, such as price-caps, at least in form if not in substance. These changes have had a major impact on the nature of the industries in some cases. Telecommunications has been transformed from a monopoly provider into an industry with a large number of providers, rapid entry and innovation, and greatly increased variety in those areas where competition is feasible. Its improved performance has reflected this transformation.

The industries which have been subjected to the greatest change in regulatory environment, such as the utilities, have improved their performance significantly over the past decade or so. This has been in response to less radical reforms, such as efficiency drives and managerial changes, along with the absorption of excess capacity (important in the case of electricity). The thoroughgoing regulatory reforms have come fairly recently, and it is yet to be determined how large a contribution to improved performance they will make. If nothing else, they should lock-in the efficiency gains, and prevent reversions in performance which could take place when reform activity turns elsewhere.

There remain some areas of doubt (see King and Maddock (1996)). Vertical separation could have been pursued too far, at a loss of economies of integrated firms. These latter effects are very difficult to measure. The new system of regulating monopoly may fail to maintain effective pressure on firms to perform, especially if it reverts to a covert form of cost-plus regulation (there is some evidence that this could be happening, with some regulatory authorities giving enormous attention to asset values and rates of return when reviewing price-caps). Some state-level access arrangements appear to be giving incumbent infrastructure owners the advantage over potential entrants. We may have seen a temporary shakeout, with regulatory changes leading to better performance, followed by a relapse to lacklustre performance.

It is very difficult to design ideal regulation, since getting the balance right involves making judgements about non-measurable parameters such as firms' risk aversion or their willingness to pursue cost reductions, the benefits of which they must share with others. In the longer term, regulators have a difficult task getting the incentives for investment in additional capacity right. It is easy to be tough, and keep prices low in the short term, while at the same time creating problems for the future through inadequate investment. This is especially true for industries which are characterised by high-risk, innovative investments, as telecommunications is.

The Australian approach in regulatory design is close to world best practice, at least in form if not in substance. US regulated firms have been, in earlier decades, the best performing ones in the world, in spite of poor regulation. The US is reforming its regulation, in the direction of incentive regulation similar to that in place in Australia, and though these are early days, this move seems to be resulting in some improvements in performance (Sappington and Weisman 1996). This suggests that the current Australian approach is a good one, and that it is likely to be consistent with efficient performance from the regulated industries.

7. Ongoing and Future Challenges for Microeconomic Reform

While many of the high-profile reforms have been set in place, other reforms are still ongoing. In particular, competition policy is being extended to new areas, including agricultural marketing bodies, the professions, environmental and safety regulation and government purchasing. The complex system of access regulation of natural monopolies is taking time to implement. The agricultural sector is currently being subjected to some changes which are relatively radical, such as deregulation of the dairy industry, and the implementation of new structures of irrigation water prices. Several of the areas which have not been subjected to extensive change are those which pose particular difficulties for the design of reform.

7.1 Small business and the professions

As part of the microeconomic reform process, competition policy is gradually being applied to the professions and small business. Professions are often associated with restrictive practices, such as limits on who can practise and on advertising. In a number of industries characterised by small business, there are government-sanctioned entry limitations. For example, there are limits on taxi licences in most Australian cities, and limits on where pharmacies can be established. Many of the restrictive practices in the professions are being submitted to scrutiny, and several are being abandoned. For example, property conveyancing has been liberalised in recent years, leading to substantial price falls. However there has been little progress in removing government-regulated entry barriers.

Reform in small business and the professions has been slower to come about, partly because each of these industries is relatively small, and thus they do not attract the attention which larger industries, such as energy or telecommunications, attract. It is worth asking how large the gains from reform are likely to be, both in aggregate, and relative to the size of these industries.

With most of the reforms in Australia, the major gains come about because of improvements in productive efficiency. While there are improvements in allocative efficiency, these will only be large if prices are extremely out of line, or investment patterns are highly inefficient. Large gains are achieved by reform when firms are forced to reduce their production costs by large margins, such as 20 or 30 per cent. Large gains are likely to result from the reform of small business only if these are productively inefficient. This is often not the case.

Consider the taxi industry, for example. Entry restrictions result in the prices being paid for taxi licences being very high – in many cities, a taxi licence costs more than the price of an average home (Industry Commission 1994). This level of restriction gives rise to profits which are high relative to costs, and to deadweight losses which are not trivial – they could be 5 or 10 per cent of costs. However, the industry is likely to be quite productively efficient; the licence holders have a very strong incentive to keep costs at the minimum. Taxi deregulation will result in reductions in prices and the elimination of economic profits, and a removal of the

deadweight loss. However, there are unlikely to be any increases in productive efficiency. Overall, deregulation will produce gains though they will not be large (their size also depends on the tax system – to an extent, the taxi regulation system has operated as a roundabout means of state taxation).

Where restrictions are in place, it is possible that there may be additional losses from rent seeking. Where scarce licences can be obtained by expending real resources, for example through making appearances before licensing commissions (as has been the case in media industries), the excess profits created by the entry restrictions can be dissipated in rent seeking. Deregulation in this situation will produce efficiency gains as rent seeking is eliminated.

Over the years, there has been a move away from discretionary allocation of licences by commissions towards auctions and open trading. In the taxi industry licences are freely traded, and there is little scope for rent seeking. Media licences tend now to be auctioned. Entry to some industries is limited by control of qualifications (for example, pharmacies); such controls do have a rationale in terms of safety and quality control, though they can be abused. There are also other controls which limit where firms can establish; for example pharmacies cannot establish in particular locations. Such regulations result in welfare losses from location patterns being different from those which consumers desire. The restrictions need not give rise to much rent seeking however.

Opportunities for rent seeking still do exist in the Australian economy; they come about when there are restrictions on supply, but when access to supply is not through open trading. The restrictions may be quite justified, as are slots to use a congested airport such as Sydney's, or limits on use of broadcast spectrum. The allocation of this limited supply can be quite inefficient. Recent government decisions to protect the free-to-air television networks, in the new digital environment, are creating opportunities for rent seeking. How large the gains from eliminating inefficient allocation methods might be is difficult to determine, and the prevalence of rent seeking in Australia is an issue which has not been explored very much.

7.2 Health education and welfare

A challenging area for microeconomic reform involves those industries which are not straightforward producers of private goods and services. These are those industries which produce outputs which are, at least in part, public rather than private goods, or which entail significant externalities. There may be elements of merit goods, and consumers may be imperfectly informed about the options. Distributional considerations, and questions of access to services by disadvantaged groups loom large. The enterprises which produce these outputs will typically not be profit maximisers, whose response to market signals can be easily predicted. Rather they may be government or not-for-profit firms, which have broad, and poorly specified objectives. 'Industries' which have these characteristics will include education (schools and universities), health (health insurance, hospitals and medical practitioners) and the provision of social security. The media industries also have some of these characteristics.

Measuring performance in these industries is not easy, and thus it is not easy to tell how well they are performing. However there are several indicators which will give a clue if there is inadequate performance. Low productivity in administrative functions, lack of choice on the part of buyers, inefficient location decisions, and buyers not being aware of the cost of the services they are consuming will all be associated with poor performance.

The presence of these will suggest that there will be substantial gains from reform. However, the task of designing reforms which both promote efficient performance while at the same time taking into account the particular characteristics noted above is a distinctly complex one. Reform is not just a matter of adopting a simple policy such as 'deregulation' or 'privatisation'. Obtaining good performance can only be achieved if a good balance between the conflicting considerations is achieved. Though there have been some changes, described as 'reforms', which have been made to these industries in Australia, there has yet to have been a well thought out, and comprehensive package of reforms implemented.

The reform of higher education is a good example of this. There are good reasons for being dissatisfied with the performance of the industry in Australia (West 1998, Ch 3). The wide variation in administrative costs across institutions suggests that not all are productively efficient. Location of university places has been centrally and historically determined, and does not conform to where students wish to study. Students do not face much by way of signals about the costs of the courses they are undertaking, and the available places in different courses has little to do with the demand for those courses. Universities gain little from offering higher quality of teaching. Student funding is mixed in with the funding of research, an output which has strong public good characteristics. Universities are confused about their objectives and managements are often not accountable to the community in any sense.

Designing reforms for universities is a complicated task. Students need to be given more choice, but merit good aspects remain (for example, they may not be able to tell between good and bad courses until they do them). There are interactions between teaching and research, but students should not, and will not, subsidise research to any great extent. Issues of access by disadvantaged students need to be addressed. Universities need to be given incentives to minimise administrative costs. In particular, universities as institutions need to be reformed, with clearer objectives and better governance.

Given the complexities and the subjective nature of the balances between different aspects, there is no single model for reform. There have been suggested approaches towards reform, particularly for such aspects as funding (e.g. see Miller and Pincus (1997)). These may form part of an overall package of reforms. Governments in Australia have, from time to time, made changes to the environments in which the education, health and social security industries operate, usually in response to some crisis. However these industries hold out the promise of delivering much better performance if coherent microeconomic reforms can be designed for them.

7.3 Urban and transport infrastructure

Along with other countries, Australia has not been able to develop an institutional structure which promotes efficient provision of urban transport infrastructure, including roads, rail track, ports and airports. With several of these, externalities are important, and private enterprises will not take account of these. Roads are very difficult to price, and so government provision is the norm. Allocation of road funding is not particularly efficient. Major rail investments attract political attention, and high-profile projects such as new rail links or types of trains are given priority over better though less newsworthy investments, such as track upgrading. It remains difficult to get an efficient balance between road and rail. Airport investments, such as those in Sydney, create well-known externalities, and the location of additional capacity is an emotive issue.

There have been changes to the ways infrastructure is provided. For example, there has been a move towards greater private involvement in provision, in such areas such as major urban roads suitable for tolls, and rail track. Some of these changes have created new problems. It is difficult to reconcile road use efficiency with the revenue requirements of private toll roads. New roads tend to be much less congested than the existing city roads, and it would be desirable to encourage traffic on to them. However, the tolls they must charge induce traffic to use the old, congested road. In order to provide a low-risk environment for the private investors and to enhance their revenues, governments have restricted development of potentially useful projects which would compete with the private roads. It is difficult to achieve efficiency when some though not all roads in an integrated urban network are priced.

There have also been reforms in the ways rail track is provided (Productivity Commission 1999a). Rail track authorities have been corporatised or privatised, rail track has been separated from operations, and an access regulation of the track is being put into place. Some new track is being privately developed. This does not remove the political dimension entirely, as the Darwin–Alice Springs Railway shows. Application of access regulation will facilitate the development of competition at the rail operations level. However, designing efficient access regulation is difficult, because the rail track owner needs to be given the incentive to invest to provide more capacity and to improve quality; otherwise it may cut costs by underinvesting. Vertical separation into track and operations creates a problem by weakening the incentive to the track owner to invest efficiently in capacity and quality. Access arrangements need to put the incumbent and entrants on, as far as possible, an equal footing; something which has yet to be achieved in some states.

Pricing of road infrastructure, except for major roads which can be subjected to tolls, remains a problem around the world. Road pricing is still in its infancy. This makes it difficult to obtain an efficient balance between road and rail, since road taxes are poor substitutes for prices which reflect the cost of road use. Urban road congestion is difficult to optimise without road pricing.

Efficient investment in transport infrastructure, especially roads, is feasible, but it is difficult to develop an institutional environment under which it comes about. With cost-benefit analysis and the specification of externalities, it is possible to

evaluate the options, and determine efficient patterns of investment. The difficulty lies in creating institutions which make the investment decisions which promote efficiency. Road authorities like building roads, and their managers are not rewarded if they choose efficient patterns of investments. Some countries, like New Zealand and the United Kingdom are grappling with these issues (see Newbery and Santos (1999)), and Australia may be able to learn from their experiences. The gains from better provision of urban and transport infrastructure are well worth having.

8. Conclusions

The 1990s represented an intensification of microeconomic reform, with reform being extended across more sectors of the economy and affecting the more complex industries, such as the natural monopoly utilities. There had been significant reform during the 1980s, affecting tradeable manufactures, the financial sector and government business enterprises. The 1990s were a decade when the results from reform could be expected to become evident.

Reform does seem to have delivered in productivity terms. Measurements of productivity in individual industries usually indicate a pick-up in growth soon after the reforms have impacted. In some cases, such as telecommunications and banking, it is difficult to unscramble the contributions of reform and other factors, though it is difficult to imagine that these industries would have been as dynamic in the absence of reform. There has been an increase in overall productivity growth in the Australian economy, which is consistent with microeconomic reform making an impact.

How much more of an impact reform at the microeconomic level is likely to have on aggregate productivity is an open question. There still remain significant productivity gaps between many Australian industries and their best practice counterparts overseas, and there is still a large gap in aggregate productivity between Australia and the US. Australia's institutions at the micro level are now similar to those of the US, and it is yet to be seen if its industries can match the performances of their US counterparts. It is possible that there are lags in improving performance, and that there are further productivity gains to come from earlier reforms. Future reforms will be another source of enhanced performance. It is also possible that the catch-up will peter out, leaving a remaining productivity gap. This in turn poses the question of whether there are other considerations, such as superior or better-trained factor inputs, which explain the better performances of industries overseas.

The effects of reform are not confined to productivity. Some gains, such as those which come about through improved price structures, will not show up as productivity improvements. Reform has resulted in a more adaptable economy which can accommodate external shocks more effectively. It has also possibly contributed to growth through the reduction in transaction costs. By lowering output prices, it may have contributed towards lowering inflation during the 1990s.

There are costs from reform as well as benefits. In addition to structural adjustment costs (some but not all of which are taken into account when productivity is measured), it is possible that there has been a longer-term cost from higher

unemployment. Whether this is or is not the case, it is consistent with the overall pattern of higher productivity growth coupled with a slower than normal reduction in unemployment during the long boom of the 1990s. Reforms have also contributed to the risk patterns which agents – firms and individuals – face in their dealings. These risks are the price of stronger incentives to perform and to choose between options carefully. Reforms have removed the various forms of insurance and left firms and individuals to choose between risky options.

There have been winners and losers from reform. Typically, most of the gains from reform have been passed on to consumers. Taxpayers have benefited as part of the productivity increase in public enterprises has been applied to improving their financial performance. The workforces, particularly those in affected firms or industries, have often lost out, through loss of jobs and more demanding working conditions. Pay, however, in these industries does not seem to have been affected much. Some regions have lost out as a result of specific reforms which have impacted on them directly, though regional and rural Australia has enjoyed benefits as well as costs.

There have been no major failures of reform. In several industries, less competition than had been hoped for eventuated. These industries were still able to record good productivity growth, though this has not been sufficient yet to eliminate the gap between their productivity and that of the best performers overseas. This raises the questions of whether best practice is feasible in Australia, and whether further regulatory changes are needed. Regulatory structures for the more complex industries, such as the natural monopoly utilities, are evolving. And there may still be scope for improvement.

While reform has been extensive, there are still some significant industries which are yet to be much affected. Typically these industries pose particular difficulties in the design of reforms because of public good, informational and distributional aspects. Examples of these industries include education, health and infrastructure, both urban and transport. It is not possible to suggest simple but effective reforms for these industries, and getting the right balance between conflicting aspects requires careful attention to design of reform. However, since their performance is inadequate, there are gains to be made from extending reform to them. There is scope for the process of microeconomic reform to continue, albeit at a slower pace than in the 1990s, and some further gains, though of a smaller order of magnitude than before, can be expected.

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Discussion

1. John Quiggin

Peter Forsyth has presented an excellent summary of the main developments in microeconomic reform and the costs and benefits of the process. In these comments, I want to focus on one aspect of the costs identified in Forsyth's paper – the increase in work intensity associated with microeconomic reform.

My comments may be summarised by an inversion of Solow's famous comment that the information technology productivity miracle can be seen everywhere but in the productivity statistics. By contrast, the Australian productivity miracle can be seen *only* in the productivity statistics. The lesson of everyday life is that people are running harder to stay in the same place. More formally, an increase in the intensity of work has only partially offset a continued decline in the underlying rate of productivity growth.

Bean (this volume) observes the similarities between the Australian productivity 'miracle' of the 1990s and the Thatcher 'miracle' of the 1980s. It is therefore useful to refer to the literature on bargaining and work effort which arose in an attempt to explain rapid productivity growth in the United Kingdom during the 1980s. In this literature, the underlying technology was assumed unchanged, so that output per worker could increase only through increases in work effort. The analysis was motivated by the observation of 'concession bargaining', in which wage increases were granted only in return for abolition of work practices that constrained work effort. The key theoretical prediction of the literature was that a reduction in union bargaining power or in union control over work effort would result in a reduction in the wage per unit of effort. Under plausible conditions, the effort per hour demanded would increase sufficiently that the hourly wage would rise.

Australian experience in the 1990s fits these models perfectly. Most obviously, enterprise bargaining in Australia closely matches the pattern of 'concession bargaining' observed in the United Kingdom. As noted by the Australian Centre for Industrial Relations Research and Training (ACIRRT 1999), the great majority of enterprise bargaining agreements have involved changes in conditions designed to increase the flexibility of working hours. Although the term 'flexibility' is appealing, flexibility is, in large measure, a zero-sum game. Increased flexibility for employers reduces the capacity of employees to manage their own lives. Conversely, increased flexibility for employees, in the form of 'family-friendly' conditions creates difficulties for managers seeking to maximise output per worker. The ACIRRT data show that the flexibility generated by the enterprise bargaining process has been flexibility for employers, and that rhetoric about family-friendly workplaces has not been translated into reality.

In addition, most of the major policies of microeconomic reform have tended to increase work intensity. Reform in the public sector has typically involved labour shedding on a significant scale. The expansion of competitive tendering and

contracting has opened up work previously undertaken within organisations to outside competition. The resulting increase in work intensity has been widely recognised. For example, the Industry Commission (1996) conceded that as much as 10 percentage points of an estimated 20 per cent reduction in costs, associated with competitive tendering and contracting, could arise from reductions in the effective wage per unit of effort. Product market reforms have also been seen as increasing work intensity through a ‘cold shower effect’.

Even given the well-known scepticism of economists in relation to self-reports and anecdotal evidence, it would be absurd to reject the universal perception that the intensity of work has increased over the period of microeconomic reform. The critical question is how the increase in work intensity should be measured, and how measures of productivity growth should be adjusted to take account of increased work intensity. The central contention of this comment is that the increase in work intensity is equivalent to an unmeasured increase in working hours of at least 10 per cent – more than enough to wipe out the productivity ‘miracle’ apparent in the official statistics.

Work intensity can be increased on a number of margins. First, the number of officially measured hours at work can be increased. The Australian Bureau of Statistics (ABS) measure of working hours per full-time worker shows an increase from 39 hours per week to 41 hours per week, an increase of around 5 per cent. (The ABS measures are derived from employee reports in the Labour Force Survey and are therefore more satisfactory than the corresponding US measures produced by the Bureau of Labour Statistics.)

The second margin by which work intensity can be raised is an unmeasured increase in working hours. It is unclear precisely how respondents interpret the ABS question about the number of hours worked, but it seems unlikely that they would take account of breaks and ‘dead time’ on the job. Hence an unmeasured increase in hours can arise from reductions in tea and lunch breaks, replacement of continuous shifts with split shifts, pressure to forgo leave entitlements and so on. Detailed time use studies could be used to measure work time more accurately. Some work along these lines has been undertaken, but longer-term panel studies are needed. In the absence of such evidence, I suggest that the unmeasured increase in working time is around 5 per cent. This is equivalent to the elimination of two 15-minute breaks per day.

The third margin, and the most difficult to measure, is increases in the pace of work. Such increases have been a standard feature of ‘scientific’ management of blue-collar work since the ‘time-and-motion’ studies of the early 20th century that gave rise to Taylorism in the United States and the parallel movement of Stakhanovism in the Soviet Union. More recently, such management has been extended to white collar workers and, particularly, to predominantly female ‘pink collar’ workers, such as those working in call centres.

In modern terms, the basic approach of Taylorism was to define a best practice benchmark under ideal conditions, then demand that all workers achieve the benchmark under conditions that are not necessarily ideal. In large measure, microeconomic reform has followed the same procedure.

It is not surprising then, that most employees report increases in work intensity and stress. The Australian Workplace Industrial Relations Survey undertaken in 1995 found that a majority of employees reported increases in stress, work effort and the pace of work over the previous year, while less than 10 per cent reported reductions in any of these variables (Morehead *et al* 1997). These self-reports could be checked in a number of ways. First, the methods of time and motion themselves could be used to test whether the pace of work is increasing. Second, a more detailed analysis of enterprise bargaining agreements and work norms might give evidence of changes in the pace of work.

The evidence of increasing work intensity resolves a number of puzzles that arise from the standard interpretation of the 1990s experience as an increase in both labour productivity and total factor productivity. The first puzzle is why real wages have increased so much in the 1990s, by contrast with the experience of the 1980s and the late 1970s. The average rate of unemployment during the 1990s was over 8 per cent, the highest since World War II. The proportion of workers belonging to trade unions declined steadily and labour market reforms reduced the bargaining power of workers. In these circumstances, it would have been expected that wages would decline and employment would increase fairly rapidly, as occurred in New Zealand after the passage of the *Employment Contracts Act* in 1991.

Once the increase in work intensity is taken into account, it can be seen that this is exactly what happened. The increase in earnings for full-time workers (between 5 and 10 per cent) was smaller than the increase in measured and unmeasured work effort. Hence, from the perspective of employers, the cost of work effort declined, and the amount of effort employed increased. Assuming that effort per measured hour of work has increased by 10 per cent, the total input of labour effort has probably increased during the 1990s at a rate similar to that of the 1980s.

The second puzzle is why the aggregate rate of GDP growth has been no larger in the 1990s than in the 1980s. The average rate of GDP growth has been about 3½ per cent in both decades. Per capita growth was higher in the 1990s, but the rate of population growth should not have been an important constraint on growth in view of the sustained high unemployment that characterised the entire decade.

A sustained increase in multifactor productivity should imply an increase in the demand for labour and capital. In the presence of high unemployment and free international capital markets there is an excess supply of both inputs that could be drawn upon. If the increase in productivity is accompanied by an increase in real wages, it should call forth an increase in labour supply. Hence, in the absence of restrictive macroeconomic policy, it would be expected that the rate of input growth would increase when productivity growth increased, whereas by standard measures, the rate of input growth has fallen.

The absence of either a supply response or a demand response to the increase in measured productivity is consistent with the hypothesis of increased work effort. There is mixed evidence on whether the move towards bargains involving higher wages and higher effort accords with the preferences of those who have remained in the full-time labour force. However, it seems likely that the slowdown in female

participation and the withdrawal of many older workers from the labour force is due, at least in part, to unwillingness or inability to supply the effort levels now required from full-time employees. On the demand side, the hypothesis of increased work effort implies that the demand for effort has increased in response to a decline in the real cost of effort.

The final puzzle, referred to by a number of speakers at this conference, is the conjunction between an economic performance widely referred to as ‘miraculous’ and the high levels of popular discontent and rejection of reform. Most explanations have been based on some form of illusion or irrationality. It has been argued that reports of increased work intensity are the product of interviewer bias, that the perception of declining returns to effort is driven by money illusion, and that general opposition to microeconomic reform results from asymmetry in the evaluation of costs and benefits. The alternative, and simpler, explanation is that members of the general public correctly perceive a decline in real wages per unit of effort and the absence of positive net benefits from reform.

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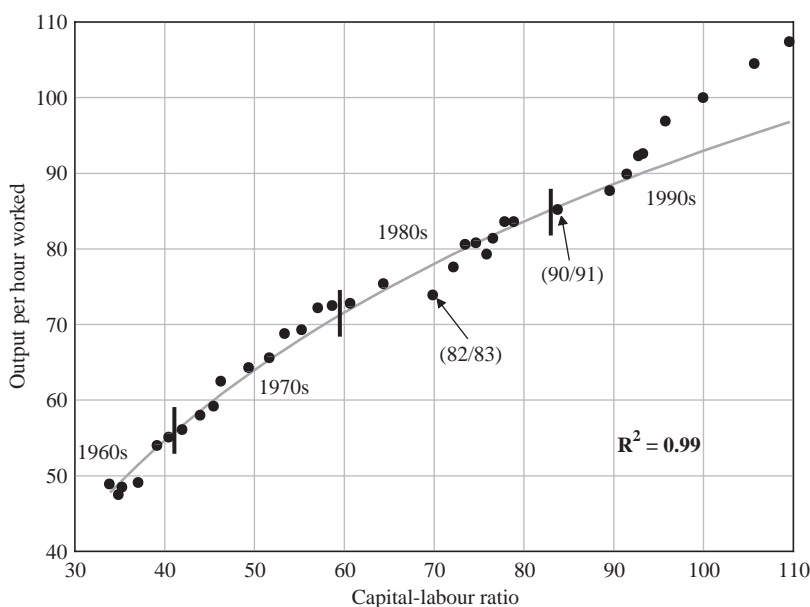
2. Richard Snape

This paper presents an excellent survey of Australia’s microeconomic reforms and of the sources of possible gains and costs from these reforms. I first supplement the information on productivity growth with some recent data prepared within the Productivity Commission.

Figure 1 shows output per hour plotted against the capital-labour ratio for the Australian economy as a whole. Improvements in multifactor productivity (MFP) appear as vertical shifts upward in observations. A trend line for the data up to 1990/91 is fitted. The figure shows the strong upwards deviation of the 1990s data from the trend due to faster MFP growth.

In Figure 2 the growth in output for the market sector of the economy is apportioned into that which can be attributed to increased factor inputs and that attributable to MFP growth. It shows the increase in MFP in the 1990s to be greater than in any of the other periods. The increase in factor inputs, on the other hand, is in line with the average of the other periods. (The division into time periods is

Figure 1: Australia's Growth Path, 1964/65 to 1998/99
Index, 1996/97 = 100



Note: An exponential trend line is fitted for observations up to 1990/91 (end of second development phase) and projected from there. $R^2 = 0.99$ for the fitted line to 1990/91.

Source: Parham (2000)

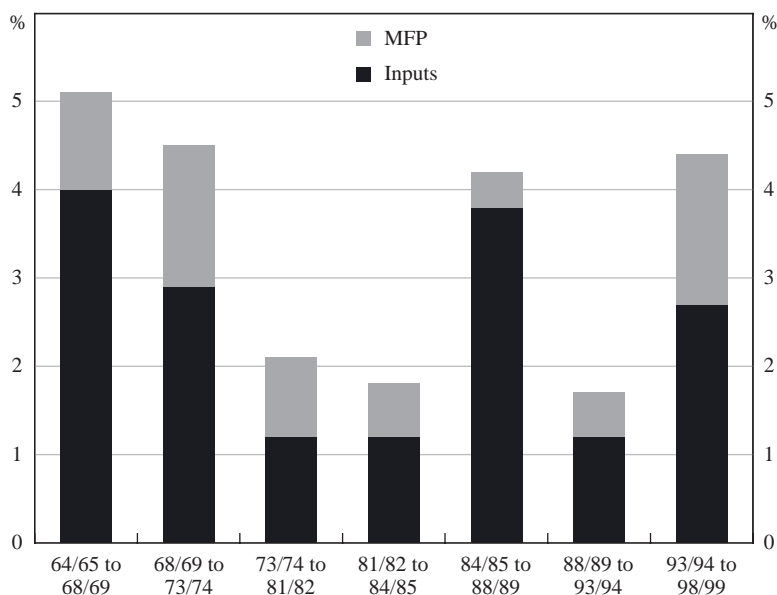
according to peak-to-peak productivity cycles, as determined by the Australian Bureau of Statistics.)

Figure 3 shows, for the major industrial classifications of the market sector, the growth of labour productivity, capital deepening (increases in the capital-labour ratio), and MFP growth. Wholesale trade, communication, finance and insurance, construction, and transport and storage are above average for the 1990s for growth in MFP. Although not shown, it might be noted that of these above average sectors, wholesale trade, transport and storage, and finance and insurance were below average for MFP growth in the period 1988/89 to 1993/94.

To what extent is this growth due to microeconomic reform? When one examines the various feasible reasons for the growth, and holding one's breath with respect to possible revisions of the statistics, it is difficult to reject the hypothesis that at least some of the productivity burst is due to the reforms.

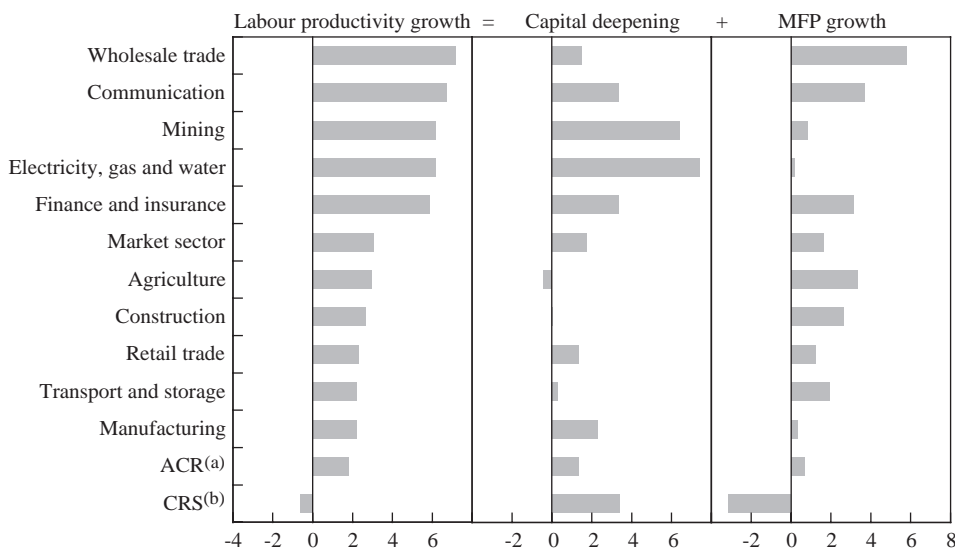
It is to be noted that the spurt in productivity growth commenced before that in the United States, and that on an industry basis, the growth is more widespread than in the US. On a more cautious note, that many of the industries showing the most rapid growth were those in which there was previously a decline in multifactor (and labour) productivity needs further investigation, and is being investigated. On the

Figure 2: Output Growth in the Market Sector
Annual average, per cent per annum



Source: ABS Cat No 5204.0

Figure 3: Labour Productivity Growth, Capital Deepening and MFP, 1993/94 – 1998/99
Annual average, per cent per annum



- (a) Accommodation, cafes and restaurants
- (b) Cultural and recreational services

Source: Productivity Commission

other side, however, it should be noted that industry protection has fallen considerably over the last fifteen years for tradeable manufactures. Productivity for these industries would be best measured in terms of international, not domestic, prices and this correction would raise measured productivity growth for these industries and for the economy as a whole.

I now turn to Peter's comments on the costs of reform.

Risk and uncertainty

Have risk and uncertainty increased as a consequence of reform? In some ways the answer is yes, and Peter has focused on these. But in some other ways risk and uncertainty have been reduced. For example, there are now more ways available to diversify risk, particularly but not only in financial markets. For many firms there are now more potential sources of supply, domestically and from abroad, and this makes firms less at risk from interruptions to supply. Also, with the outsourcing of many activities (sometimes due to policy reforms) risk is spread for the suppliers of services. For example, accountants working for a manufacturing enterprise have their immediate fortunes dependent on that enterprise. Working for an accounting firm, their fortunes will depend on a range of clients: risk will be spread.

Search costs

Peter suggests that if the net benefits of greater choice are being counted, so should the costs of additional choice. This is so, though it is important to note that additional choice as such does not incur a cost. Search costs do not necessarily have to be incurred: I can still purchase the first variety of a product I see on offer, and probably be no worse off (at least on average) than I was when there was no, or less, choice.

Adjustment costs

There is no doubt that those who are displaced from an industry for any reason, reform or other, experience adjustment costs. Reform generally will make some industries contract (as compared with no reform – which in some cases may simply mean slower expansion) and others expand. Is there more adjustment going on with reform? Aggregate data on industry adjustment do not appear to support the view that there is now more adjustment. Nor has the overall unemployment rate risen over the reform period. (Of course, what matters is the counterfactual, which formal modelling of the period may help us to identify better.) Further, and perhaps rather surprisingly, the duration of employment of those who are employed has increased, not decreased, if we compare 1988 and 1998: that is the percentage of employed people who have been employed for more than a year has risen. On the other hand there has been a rise in the proportion of men over 45 who have dropped out of the labour force, and this could in part be due to displacement as a consequence of the reform process. Nevertheless it is difficult to find in aggregate statistics evidence for greater employment insecurity, despite widespread perception of such insecurity.

Some may argue that the increased share of employment which is casual is an indication of increased insecurity in the labour market, and that this change is the product of microeconomic reform. While the share of casual employment has increased, recent work in the Productivity Commission (Murtough and Waite 2000) shows that the ABS measure of casual employees overstates those who are genuinely casual by at least a third, a result that leads to caution in intertemporal interpretations.

Finally, Peter states that labour forces have usually not been major beneficiaries of reform. I would rather express this as incumbents generally not being major beneficiaries of reforms that affect them directly. The effect of the reforms as a whole on various groups in Australian society is another story.

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3. General Discussion

Participants generally agreed with Forsyth's hypothesis that microeconomic reforms undertaken during the past two decades had contributed to productivity growth during the 1990s. However, there was considerable discussion about the costs associated with structural reform. One aspect that was discussed at length was the impact that reforms have had on the Australian workforce. Participants also discussed some measurement issues, and in particular, the difficulty of relating macroeconomic outcomes to specific reform measures. Some raised the issue of whether the reform process had been largely completed, or alternatively, whether there was room for significant further reform.

The overall issue of whether Australian workers had been made better or worse off generated considerable debate. A few noted that productivity gains from reform tend to be overstated if some of the gains result from greater effort on the part of the workforce. They argued that this cost or 'disutility' should be deducted from the measured gains from reforms to obtain an estimate of the net gains.

However, many argued against the position put by John Quiggin in his discussants' comments, that most of the reform measures implemented in Australia during the last two decades had substantially increased demands on the labour force, both in terms of working hours and work intensity, and that as a consequence growth in real wages per unit of effort had not accelerated during the 1990s. One participant pointed out that while work intensity may have increased as a result of microeconomic

reform, workers had also reported increased job satisfaction over the last decade. Data on job absenteeism is often used as a proxy for job satisfaction, and the participant pointed out that absenteeism had declined over the 1990s. Another cautioned against drawing strong conclusions from the types of surveys cited by Quiggin in his discussion of Forsyth's paper, saying that workers often tend to overstate work effort. The participant further pointed out that there had been no evidence of increased job insecurity and that some surveys indicated that workers' confidence about future job prospects had in fact increased during the 1990s.

In addition to highlighting some of the drawbacks to the ways in which labour market surveys are conducted, participants also discussed the difficulty of quantifying the effects of microeconomic reform. One participant, for example, pointed out that the very definition of microeconomic reform is problematic. The participant argued that any reform measure that does not constitute fiscal or monetary policy reform is treated as microeconomic reform, and that this way of looking at microeconomic reforms as a 'residual' makes the discussion of the effect of reforms meaningless. Many also agreed that a more fruitful discussion would involve linking microeconomic reforms to specific outcomes. It was also noted that a critical question is whether productivity gains would have been realised in the absence of microeconomic reform. Some participants felt that the discussion had focused primarily on the productivity gains associated with reforms, and that a more complete analysis should also consider gains in allocative efficiency that result from improved pricing mechanisms, better allocation of investment funds etc. These benefits have a positive impact on welfare, but may not necessarily translate into productivity growth.

On the issue of whether the reform agenda is complete, many argued that it is not. A few participants pointed out that some state-run enterprises remain heavily regulated, and that further deregulation would be necessary to increase their efficiency. The transportation industry was another area where some felt that more reforms were needed. One participant observed that the government had avoided the more difficult reforms, including education and health-care reforms, and argued that reforms in these areas are essential in order to sustain the productivity boom.

National Saving: Trends and Policy

Malcolm Edey and Luke Gower¹

1. Introduction

Throughout the 1990s, concerns about the adequacy of saving in Australia remained close to the forefront of national policy debate. The general view prevailed that saving rates in Australia were too low, and hence there was broad consensus at the political level on the desirability of implementing pro-saving policies.

While this basic premise has remained intact, the debate has undergone some significant evolution. Much of the initial impetus for the view that Australia under-saves came from concerns in the late 1980s about the size and sustainability of the current account deficit. More recently, while the concern with external balance has still been present, there has been a greater focus on issues related to population ageing and the implications this will have for the retirement saving system, and for government expenditures, in the decades ahead. In this respect, the debate in Australia has become more like those occurring in other advanced countries, where these issues have also attracted increasing attention in the past decade.²

The nature of the debate in Australia has necessarily been shaped by the elevation of superannuation policy as the primary vehicle for dealing with concerns about the adequacy of private saving. The process had begun in the mid 1980s, with the advent of award-based superannuation, and received its major boost with the commencement of the Superannuation Guarantee in 1992. This policy development raised a number of issues that remain alive almost a decade later – for example, the role of compulsion rather than incentives in promoting private saving, the appropriate level of compulsory saving, the need to address leakages from the system, and the effectiveness of the system in generating an overall lift in national saving. These and other issues associated with the design of the superannuation system have become central to the debate on saving in a way not foreseeable a decade ago.

This paper aims to provide a broad overview of developments in saving, and in policies related to saving, in Australia during the past decade. The main part of the paper is in four sections, looking at trends in the broad saving aggregates, the key policy developments, the impact of compulsory superannuation, and the basis for claims that Australia's saving rates are inadequate. A final section discusses some policy issues likely to require attention in the years ahead.

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1. We thank Jonathan Kearns and Jeremy Nguyen for research assistance, and we are grateful to the Department of the Treasury for having supplied some of the data.
 2. See for example OECD (1998), World Bank (1994) and Feldstein (1998).

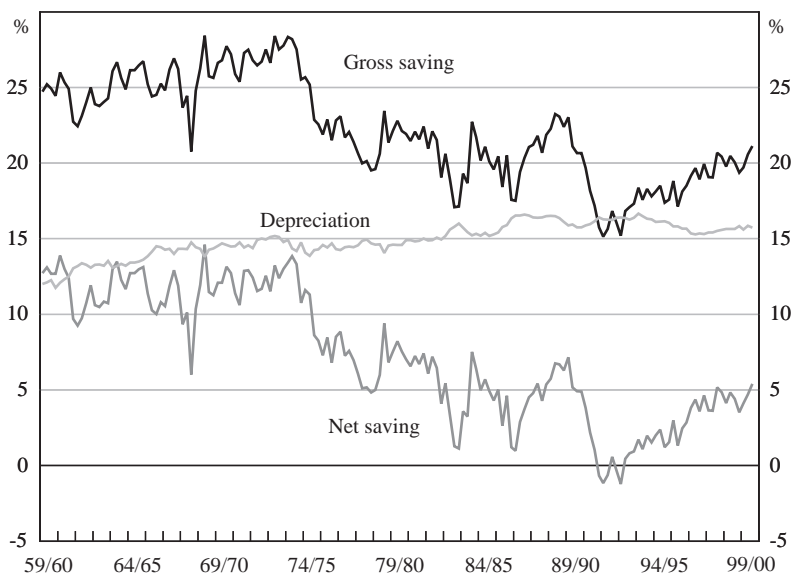
2. Trends in Saving

2.1 National saving

A long-term decline in Australia's aggregate level of saving has been well documented and forms an important part of the backdrop to the economic policy debate. The broadest measure of aggregate saving, the gross national saving rate, averaged around 18 per cent of GDP in the 1990s, well down from the levels of around 25 per cent that prevailed in the 1960s and early 1970s (Figure 1). In decade-average terms, this measure of saving has been lower in each successive decade since the 1960s.

It is less clear whether the trend decline in saving is still continuing. The level of saving has been subject to strong cyclical variations that can dominate the longer-term trend for significant periods of time. As theory would predict, saving has generally declined in recessions and picked up in recoveries, reflecting a tendency for consumption to move by less, relative to trend, than the movement in incomes. This pattern was particularly pronounced in the early 1990s recession, when the national saving rate fell by several percentage points, to reach its lowest level in the post-war period.³ Given this background, it is reasonable to conclude that cyclical factors have also made a substantial contribution to the subsequent recovery in saving, although it is difficult to disentangle the structural and cyclical components with any

Figure 1: Gross and Net National Saving
Per cent of GDP



Source: ABS Cat No 5206.0

3. This is apparent from longer-run data presented by FitzGerald (1993, p 2).

precision. By the end of the decade, the national saving rate had climbed back to around 21 per cent of GDP, which was close to its average of the 1980s. Whether national saving is still declining in a structural sense is not yet clear, but the fact that saving is still well below its most recent cyclical peak, notwithstanding the strength of the economic expansion in recent years, might give some grounds for thinking that the longer-term decline has not yet been arrested.

For those concerned about the adequacy of saving, the picture is slightly more disturbing if we focus on net rather than gross measures (that is, after deducting capital depreciation from the measure of national income). Since depreciation has gradually increased as a proportion of GDP, net national saving has declined by more than the gross measure, although the difference is not large. In decade-average terms, net national saving fell from 11 per cent of GDP in the 1960s to 2 per cent in the 1990s, including a brief period of negative net saving in the early part of the decade. Conceptually, it is the net measure that better represents the economic concept of saving as an accumulation of wealth. Nonetheless, uncertainties in the estimation of depreciation are such that gross measures have generally been preferred as a basis for broader sectoral analysis and in international comparisons. Hence, the remainder of this section focuses mainly on further details of the components of Australia's gross saving performance.

2.2 Public saving

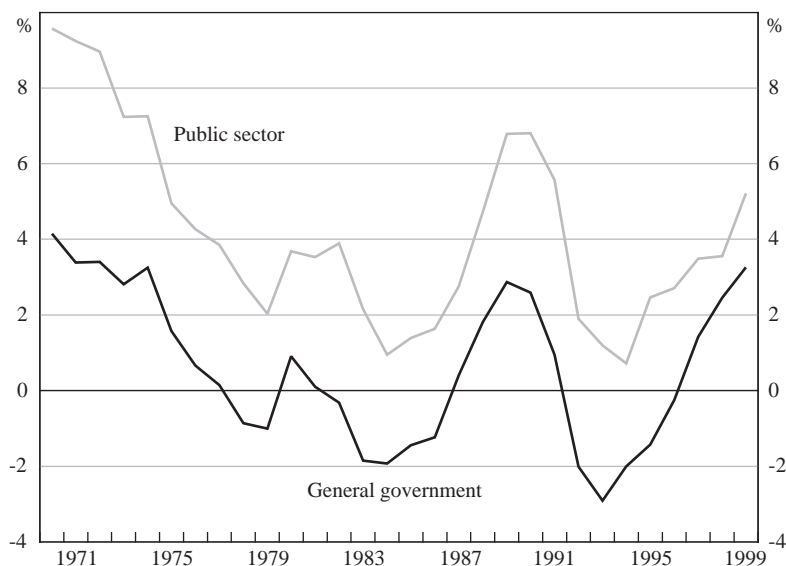
It is useful to decompose national saving into public and private-sector components, since the forces driving the behaviour of the two sectors are likely to be quite different. On the face of it, much of the fall in national saving during the 1970s – which looks to have been the period of sharpest structural decline in the overall saving performance – was accounted for by the public-sector component (Figure 2). Prior to the mid 1970s, saving by the *general government* sector had been fairly stable, at around 3 per cent of GDP, but it fell sharply to be at a negative level for most of the decade from 1975 to 1985.

The picture becomes more difficult to evaluate in the subsequent period, because the cyclical fluctuations in government saving appear to have become much larger than had previously been evident. General government saving has exhibited two periods of strong growth, coinciding with the economic expansions of the 1980s and 1990s. In the intervening period, reflecting the impact of the early 1990s recession, it fell to record lows. It remains to be seen how far the latest recovery in government saving represents a structural shift and, given the apparent importance of cyclical factors, it will be difficult to assess the extent of such a shift without considerable hindsight. At this stage, the recent increases in general government saving have brought that sector's saving rate back to around 3 per cent of GDP, which is roughly the level prevailing before the sharp decline recorded in the mid 1970s.

A broader measure of public-sector saving, which includes the saving of public corporations, shows a clearer long-term decline.⁴ While it could not be claimed that

4. For a discussion of the sources of these data, see Treasury (1999).

Figure 2: Public Sector and General Government Saving
Per cent of GDP



Sources: ABS Cat No 5204.0; Treasury

government corporations are driven by the same behavioural forces as the general government sector, it makes some sense to consolidate the two sectors on the basis of their ownership structure: public-sector corporations are owned by the government, and hence the retained profits of those corporations form part of the government's net assets. This broader measure of public saving fell from an average of just under 10 per cent of GDP in the 1960s and early 1970s to be fluctuating mainly in a range of 0–5 per cent of GDP in the subsequent period, partly reflecting a substantial decline in the saving of the public corporate sector. Some of that fall will have reflected the general shrinkage of the public corporate sector due to privatisations, although it should be noted that a significant decline in public-enterprise saving had already occurred in the 1970s, well before widespread privatisations had commenced.

It should be noted in passing that this discussion of trends in government saving does not have any direct bearing on the question of how much saving is enough. While the policy debate often presumes that more government saving is always better, the public finance literature does not support such a simplistic presumption. A detailed consideration of optimal public saving cannot be undertaken here, but two points seem worth making in this context. The first is that, along with the declines in public saving noted above, there has been a long-term decline in public investment over the past few decades. Since the 1960s, the average ratio of general government investment to GDP has declined by around 2 percentage points. If government policy were aiming to maintain a roughly stable financing requirement, that would

imply a similar decline in government saving. Hence, the appropriate level of government saving cannot be considered in isolation from public investment requirements.

A second, and related, point is that the categorisation of expenditures as current or capital is to some extent debatable. Governments have been spending less in recent decades on physical capital, but have spent more in fields like education and health, which many would argue are also partly capital in nature. If some part of these expenditures were reclassified as capital, it would strengthen the recorded levels of both saving and investment in the recent past, relative to earlier years.⁵ This would potentially have a significant impact on conclusions about the longer-run trends. For example, government spending on education increased between 1970 and 1999 by 2 per cent of GDP, about the same as the decline in government spending on fixed capital, and hence a broader investment aggregate encompassing education expenditure would have been roughly stable over the period. Of course, the same point is also applicable to the economy as a whole: the longer-term decline in recorded saving and investment levels might be argued to be partly a reflection of spending being switched from physical to non-physical forms of capital expenditure.

2.3 Private saving

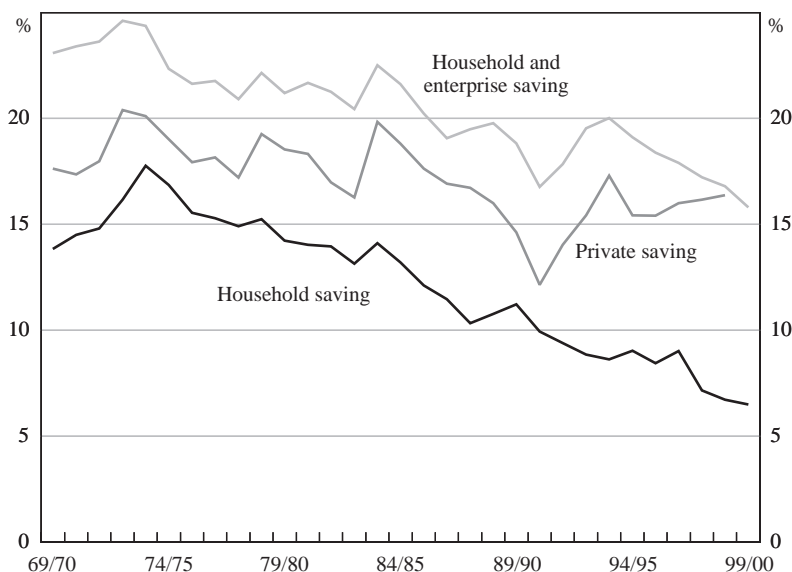
The preferred measure of private saving discussed by Edey and Britten-Jones (1990) used a definition which aggregated the saving of the household sector with that of the private corporate sector. The rationale for this approach is analogous to that already noted in relation to public saving: the household sector owns the private corporate sector, and hence the net income of the household sector includes the profits of businesses, whether they are retained within the company or paid out as dividends. In the discussion below, we broadly maintain that approach, although the analysis is hampered by recent changes to the national accounts which prevent a consistent historical series for private corporate saving from being compiled.⁶ To address this problem, we also consider a broader aggregate, 'household and enterprise saving', which includes the saving of both public and private corporations, and which can be compiled on a consistent basis. These data, along with data for the household sector, and available figures for the preferred private-sector definition, are presented in Figure 3.

In general terms, the most stable of the three aggregates, over a period of decades, has been that for the private sector. (The 'household and enterprise' aggregate has shown a greater long-run tendency to decline, reflecting the reductions in public corporate saving noted above.) At least until around 1990, private saving was considerably more stable than its public-sector counterpart, fluctuating mainly in a range of 17-20 per cent of GDP. In the early 1990s, private saving fell much more sharply than it had done in previous recessions, reaching a post-war low, but it has since recovered much of that fall.

5. This point has been made by Depta, Ravalli and Harding (1994).

6. See Treasury (1999).

Figure 3: Private Saving
Gross, per cent of GDP



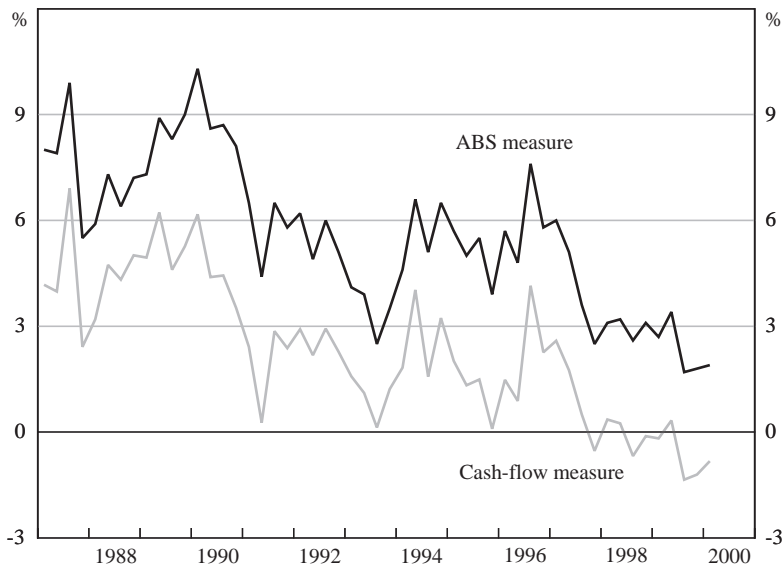
Sources: ABS Cat No 5204.0; Treasury

At the same time, the composition of private saving has continued to shift, with the level of private corporate saving tending to increase over the past two decades while household saving has been falling. The decline in household saving is even more pronounced in terms of the more familiar net measure relative to disposable income (i.e. the household saving ratio published in the quarterly national accounts) (Figure 4). This measure has declined dramatically from a peak of 15 per cent in the mid 1970s to levels of around 1–2 per cent, according to the latest quarterly figures.

Falling household saving over the past two decades has been associated with an increasing household appetite for debt. One indicator of this is an adjusted ‘cash-flow’ measure of the household saving rate. This is calculated by removing from estimates of household income and expenditure those items which are either imputed (depreciation and imputed rent) or are illiquid (employer contributions to superannuation, and earnings on superannuation assets). This produces a measure of saving consistently below the conventional household saving rate, and which has turned negative during the past two years.⁷ More broadly, the household sector has greatly expanded its borrowing during the past two decades: since 1980, household

7. Since this is still a measure of income minus consumption, it does not purport to measure households’ total net cash flow. Specifically, household investment expenditure is excluded from the calculation.

Figure 4: Household Saving Ratio
Net, per cent of disposable income



Sources: ABS Cat No 5206.0; RBA estimates

debt to financial institutions has roughly doubled in relation to income, from around 45 per cent of income to more than 90 per cent. A number of reasons have been cited for this trend increase in household borrowing. These include increased competition and innovation in the financial sector, which has reduced the cost of financial intermediation, increases in household wealth, which have increased the capacity to borrow, and the shift to a low-inflation and low interest-rate environment in the 1990s.⁸

Commentators on the decline in household saving and the shift in the composition of private saving have noted that the dividing lines between the household and private corporate sectors are to some extent arbitrary. For example, unincorporated businesses are included in the household sector, and hence the split between household and corporate saving is likely to have been influenced by a trend towards increasing corporatisation of businesses. Also, since households own the private corporate sector, they have indirect ownership of corporate retained earnings, which would therefore be a factor in their spending and saving decisions. While this does not amount to a full explanation for the relative decline in household saving, it does suggest that there is some sense in aggregating the two components for analytical

8. For a discussion of wealth effects on household consumption, see Tan and Voss (2000).

purposes. The relative stability of the private saving aggregate, and the strong inverse correlation between household and corporate saving, give some credence to this view.

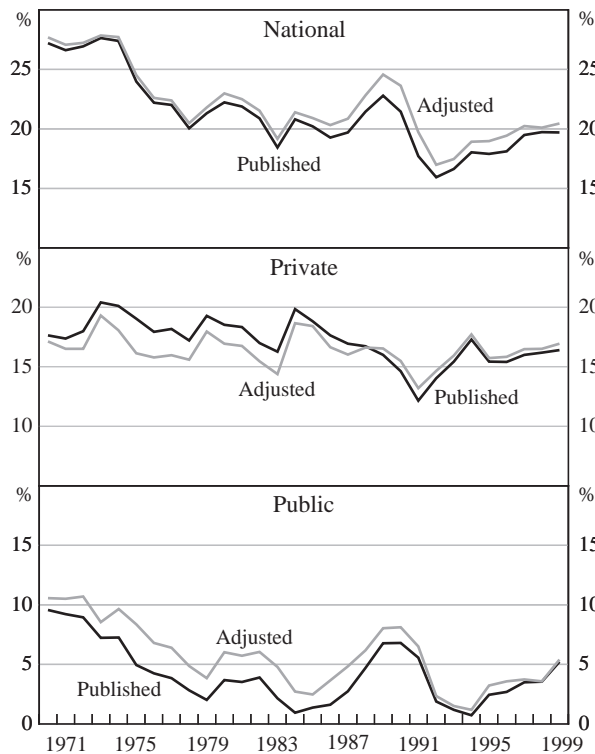
2.4 Inflation adjustment

It has been noted in a number of studies that inflation significantly distorts the measurement of saving since, in effect, the national accounting aggregates count interest payments and receipts on a nominal rather than a real basis. In other words, the accounts do not record the capital transfers from lenders to borrowers effected by inflation. Anstie and Pagan (1983) and a number of subsequent studies have adjusted standard saving measures to account for this effect. The adjustment generally boosts public saving, since the public sector has usually been a large net borrower in recent decades. In some periods, this effect is quite large, particularly in the mid 1970s when both government debt and inflation were relatively high. As pointed out by O'Mara and Walshaw (1992), there is also, for a country with a net foreign debt, an inflation transfer from the foreign to the domestic sectors, and hence a comprehensive set of inflation adjustments should also take that effect into account. Inflation-adjusted estimates of public, private and national saving on this more comprehensive basis are presented in Figure 5.⁹

As might be expected, the inflation adjustment to total national saving is generally quite small (of the order of 1 per cent of GDP). This is because, apart from a brief period in the second half of the 1980s, there has been no period when inflation and net external debt were simultaneously high enough to generate a large interaction between the two. In contrast, the inflation adjustments to domestic public and private saving rates are much larger in some periods, particularly in the 1970s, for the reasons noted above. The additional income to governments imputed from the inflation adjustment adds substantially to the estimated level of public saving in the 1970s and early 1980s, amplifying its apparent long-run decline in the subsequent period. Inflation adjustment has the reverse impact on private saving, reducing the level of saving in earlier periods and flattening out the longer-run trend. The estimates imply an adjusted private saving rate of 16 per cent of GDP in the second half of the 1990s, not far below the average of the 1970s. Hence the conclusion of Edey and Britten-Jones (1990), that this measure of saving had fluctuated around a fairly stable average, looks to have been broadly maintained in the 1990s.

Two important qualifications to this observation should be made. The first is that judgements about the long-run trends in saving can be obscured for quite long periods of time by the influence of cyclical factors. If it is true that the private saving

9. The inflation adjustments here are as calculated by Commonwealth Treasury. The method uses estimates of the net debts of the public and private sectors, separated into domestic and foreign-currency components. Inflation adjustments are calculated by applying the CPI inflation rate to domestic-currency debt, and a 'world' inflation rate to the foreign-currency debt (see Treasury (1999)). It is possible that this method overstates the foreign-currency component of foreign debt (and correspondingly understates the domestic-currency component) to the extent that there is unrecorded hedging of foreign-currency debt exposures.

Figure 5: Published and Inflation-adjusted Saving Rates

Source: Treasury

rate has a stable average, it might be expected that in the late 1990s, after a long period of economic expansion, the saving rate would have been above that average. The fact that this was not the case might therefore be consistent with a conclusion that the average, in a cyclically-adjusted sense, has in fact been declining. A second point concerns the sectoral definition of saving. As noted above, private saving is likely to have been boosted during the past decade by the transfer of public corporations to the private sector. However, the trend toward privatisation and partial privatisation of government businesses makes less clear the distinction between the public and private corporate sectors for the purpose of this analysis. As noted above, the broader aggregate of household and enterprise saving, which includes the saving of public corporations, shows a much clearer downward trend.

2.5 Saving, investment and the current account

Since much of the concern about Australia's level of saving has been motivated by the current account deficit, it is of some interest to break down movements in the current account into its component saving and investment balances. This exercise is

difficult to do on a year-to-year basis because short-term movements in these variables tend to be dominated by temporary factors and by movements in the statistical discrepancy. Over longer periods, however, some useful comparisons can be made. Decade averages of the sectoral saving and investment balances (shown on both an unadjusted and inflation-adjusted basis) are presented in Table 1.¹⁰ In terms of decade averages, Australia's current account deficit widened by about 2½ per cent of GDP between the 1970s and the 1990s. The counterpart of this in terms of saving and investment at a national level was a decline in investment by just over 3 per cent of GDP and a decline in national saving of nearly 6 per cent of GDP.¹¹

This movement in the current account position can, in principle, be allocated between public and private-sector contributions. However, divergent conclusions are implied by the adjusted and unadjusted sets of estimates. In unadjusted terms, saving and investment declined in both the public and private sectors over the period from the 1970s to the 1990s. The magnitudes calculated on this basis are such that the public sector's average net financial balance was roughly unchanged over the

Table 1: Saving, Investment and the Current Account
Per cent of GDP, decade averages

	As published			Inflation-adjusted		
	Saving	Investment	Balance	Saving	Investment	Balance
<i>Household and enterprise</i>						
1970s	22.8	22.1	0.7	21.2	22.1	-0.9
1980s	20.7	22.7	-2.0	19.7	22.7	-3.0
1990s	18.2	20.6	-2.4	18.8	20.6	-1.8
<i>General government</i>						
1970s	1.7	3.9	-2.2	3.7	3.9	-0.2
1980s	-0.1	2.9	-3.0	1.8	2.9	-1.1
1990s	0.2	2.5	-2.3	0.8	2.5	-1.7
<i>National</i>						
1970s	24.5	26.1	-1.8	24.9	26.1	-1.4
1980s	20.6	25.6	-4.7	21.5	25.6	-3.8
1990s	18.5	23.0	-4.4	19.7	23.0	-3.2

Sources: ABS Cat No 5206.0; RBA estimates and Treasury. The published national saving-investment balance reported in the table is the actual current account deficit. Figures do not add exactly to this amount due to the statistical discrepancy in the national accounts.

10. The table applies the inflation adjustments described above to a sectoral decomposition into 'general government' and 'household and enterprise' sectors.

11. The addition is not exact due to the existence of the statistical discrepancy between income and expenditure measures of GDP in the national accounts.

period, while the private sector shifted into financial deficit by around 3 per cent of GDP. Hence, on that basis, the overall movement in the current account deficit is approximately accounted for by the private-sector contribution.

However, a different conclusion is reached if the inflation-adjusted estimates are used. The decline in public saving on an inflation-adjusted basis is significantly increased, implying a substantial widening of the public-sector deficit in inflation-adjusted terms. On this basis, a large part of the change in the current account position between the 1970s and the 1990s would be accounted for by the public-sector component. Hence, the attribution of the widening current account to movements in private or public-sector financial balances largely depends on whether or not the inflation-adjusted saving estimates are accepted as the appropriate basis for analysis.

3. Policy Developments

As noted at the outset, there has been wide support, at the level of economic policy-making, for the proposition that Australia's saving rate is too low. The economic basis for this proposition is reviewed in Section 5. For the present, it can be noted that this consensus has supported two broad focuses of policy, aimed respectively at boosting the public and private components of national saving.

3.1 Public saving and fiscal policy

An emphasis on the importance of public saving can be seen in the rhetoric of governments throughout the decade, and in the public debate more widely. In his Report to the Treasurer on National Saving, FitzGerald (1993) argued that the strategy for raising national saving should focus primarily on the public saving component, a view also reflected in numerous fiscal policy statements during the course of the decade.¹² This emphasis partly reflected the observation, already described in Section 2, that much of the deterioration in national saving since the 1960s had been accounted for by the public-sector component, particularly in the 1970s. There was also a view that an improved fiscal balance could reliably and directly contribute to national saving, whereas policies to promote private saving would be uncertain in their effect.

The focus on fiscal policy was given added impetus by the sharp fiscal deterioration associated with the early 1990s recession. FitzGerald's report was written at around the time of the peak in the public-sector deficit, and there has been considerable success in shifting the fiscal position in subsequent years. Given the interdependency between Commonwealth and State budgets, these developments can best be gauged by looking at the government sector as a whole. The general government deficit on a consolidated basis peaked at 4.7 per cent of GDP in 1992/93 and was subsequently turned around to an estimated surplus of 1.5 per cent of GDP in 1999/2000 – a movement of more than 6 percentage points, no doubt due to a combination of

12. For further discussion, see Gruen and Stevens (this volume).

structural and cyclical factors.¹³ The movement in the fiscal position since 1993 largely reversed the change over the previous three years, bringing the general government surplus by the end of the 1990s back to around the peak reached a decade earlier.

3.2 Mandatory superannuation

The thrust of policies aimed at promoting *private* saving since the mid 1980s has been directed primarily, although not exclusively, at mandatory superannuation. The original vehicle for this was a push for award-based superannuation in the mid 1980s, which took place under the overall framework of the Accord. As part of the 1985 Accord negotiations, it was agreed that a 3 per cent wage increase that would have been due on productivity grounds should be paid as a superannuation benefit. This position was accepted by the Industrial Relations Commission in 1986, and individual unions were then able to have the superannuation benefit incorporated in awards, although the process of extending coverage was relatively slow, particularly in the private sector.

Statements by the Government at the time point to a mixture of short-term considerations and broader strategic goals driving this process. An immediate issue was that there had been a substantial decline in the terms of trade and a widening of the current account deficit in 1984 and 1985, prompting considerable concern about macroeconomic performance. In these circumstances, it was argued that a wage increase paid in the form of superannuation would be more responsible than a cash increase, because it would have less short-run impact on demand and inflation. At the same time, the longer-term goal of seeking to boost domestic saving was clearly stated. Another factor cited was that too much of Australia's saving was being absorbed by housing – superannuation was seen as a vehicle for channelling savings into more productive forms of investment.¹⁴ The Government clearly viewed the introduction of award superannuation as part of a longer-term strategy, and signalled its intention at the time to develop standards for vesting, preservation and portability which would give superannuation a central role in private saving.

By the time of the 1991 Budget, dissatisfaction at the lack of progress in extending award superannuation led to the announcement of the 'superannuation guarantee levy'¹⁵ – a federally mandated increase in employer-funded superannuation contributions with penalties for non-compliance. This was enacted to commence on

13. While it is difficult to disentangle structural and cyclical components of this movement with any precision, estimates produced by the IMF and OECD imply that roughly 5 percentage points of the total fiscal consolidation over that period was structural, although it may be that such estimates understate the cyclical sensitivity of budget positions. Sources: OECD (1999a), Annex Table 30; IMF (1999), Tables 15 and 16; and Budget Statements (2000).

14. See for example, the address by the Minister for Finance, Senator Walsh to the Association of Superannuation Funds of Australia, 24 June 1986; and the statement by the Minister for Employment and Industrial Relations, Mr Willis, *Hansard*, 25 November 1985.

15. The system became later referred to as the Superannuation Guarantee Charge, or just Superannuation Guarantee (SG).

1 July 1992, with a target contribution rate of 9 per cent by 2002/03.¹⁶ In announcing the policy, the Treasurer noted simply that the award superannuation requirement 'had not been complied with in full'.¹⁷ In shifting from reliance on the award system to the use of federal legislation to enforce contribution rates, the new policy thus established the basic shape of the mandatory saving system that remains in place. As had been foreshadowed, standards for vesting, preservation and portability were enacted in 1992, and a strengthened supervisory regime for the industry was put in place the following year.

3.3 Compulsion and incentives

From the start, the question of compulsion versus incentives, as alternative strategies for promoting private saving, attracted attention. This was among the issues addressed in a Senate inquiry into superannuation policy in 1991 and 1992, at the time the superannuation guarantee policy was being put in place. The issue was also debated in the economics literature more widely. Some key aspects of this debate are considered further below.

At the policy-making level, there were some significant differences concerning the role of a compulsory saving system, although these differences tended to narrow as the decade progressed. In its 1991 *Fightback!* policy document, the federal coalition favoured an emphasis on promoting voluntary saving, and undertook only to maintain the mandatory contribution rate at the level in place at the time of the next election. At the same time, the Labor Government sought to increase the target for mandatory contributions further by supplementing the system with contributions from employees. This policy was foreshadowed in 1992 and was further developed in 1995 into a proposal to raise the target contribution rate to an eventual 15 per cent.¹⁸ The mechanism for achieving this was to be a 3 per cent employee contribution mandated in industrial agreements and awards, matched by a means-tested government contribution, financed by previously legislated tax cuts. In the event, the new Coalition Government after 1996 kept the Superannuation Guarantee in place under its original timetable (that is, with an eventual contributions target of 9 per cent), but did not proceed with the additional tranche of employee and government contributions.¹⁹

16. The target announced in the 1991/92 Budget was for the 9 per cent contributions rate to be reached in 2000/01; this was relaxed to a 2002/03 target date by the time the system was enacted.

17. Budget Statements (1991), p 11.

18. *Security in Retirement*, Statement by the Treasurer, Mr Dawkins, 30 June 1992; and *Saving for our Future*, Statement by the Treasurer, Mr Willis, 9 May 1995.

19. A further development was the adoption of a (capped) savings rebate in the 1997/98 Budget. This was dropped (effective from 1999/2000) as part of the government's tax reform package, on the basis that the new tax system would provide a broader pro-saving environment and hence the rebate would no longer be needed (Commonwealth of Australia 1998, p 48).

3.4 Taxation of superannuation

Another important aspect of policy development has been in the taxation of superannuation. The general thrust of policies in this area has been to make the tax treatment less concessionary. Major changes in this direction began in 1983 with a significant reduction in tax concessions for lump sums, and continued in 1988 with the introduction of a 15 per cent tax on fund earnings and on employer contributions (partly offset by a rebate on final benefits). Prior to 1983, contributions by employers had been tax-deductible and lump-sum withdrawals subject only to a tax on 5 per cent of the amount withdrawn. The changes represented a substantial curtailment of the tax benefits associated with employer-funded contributions. Changes in the 1990s were less dramatic but, by and large, continued to reduce the tax concessions available. Important changes were the introduction of flat-rate reasonable benefit limits (RBLs) in 1994²⁰ and the introduction, in the 1996/97 Budget, of a 15 per cent surcharge on employer-funded contributions above a stipulated income level. These two changes were directed specifically at reducing tax concessions to high-income earners.

In its broad structure, the tax system for superannuation post-1988 can be described as a hybrid between expenditure-tax and income-tax principles.²¹ Under a pure expenditure-tax treatment, saved income (that is, contributions and fund earnings) would be tax-free while post-retirement expenditure would be taxed at standard rates. The various remaining concessionary elements in the tax treatment of superannuation go part of the way toward approximating such an outcome, since fund earnings are only lightly taxed during the accumulation phase and employer contributions, although taxed, give rise to a roughly offsetting rebate at the benefit stage. Employee contributions are less favourably treated, because they are made from after-tax income but still give rise to taxable earnings during the accumulation period and in retirement. Again, however, the taxation of earnings on these savings is lower than would be the case outside the superannuation system.

The appropriate tax regime for superannuation has been the subject of extensive debate, which can be only briefly reviewed here. One view is that tax concessions on mandatory superannuation are essentially wasted, in the sense that there is no need to provide an incentive to do what is already compulsory. The FitzGerald Report gave some consideration to this argument and, while not entirely accepting it, argued for some re-allocation of tax concessions away from compulsory and towards voluntary components of saving. Piggott (1998) on the other hand argues that the tax regime for superannuation is not as concessionary as it seems; he calculates that, after allowing for the impact of compulsory superannuation on pension entitlements, the government's 'tax expenditure' on superannuation is actually negative in net present-value terms. Another relevant point here is that the tax treatment of compulsory contributions can still affect behaviour through its

20. RBLs, which define the maximum lifetime amount of concessionally taxed benefits available to an individual, were previously expressed as multiples of income.

21. The following discussion draws on Edey and Simon (1998).

impact on labour supply – heavier taxation of compulsory superannuation may discourage labour supply, particularly in the years close to normal retiring age, and hence by that channel may reduce the level of saving. In an environment where the overall policy objective is to encourage saving, this suggests that the argument for further removing tax concessions from compulsory superannuation is not straightforward.

3.5 Tightening the system

A third broad area of policy development can be placed under the general heading of ‘tightening the system’. It has been widely agreed that the compulsory system is vulnerable to leakages, particularly through early retirement and dissipation of accumulated funds. The problem arises essentially from the adverse incentives created by the interaction of compulsory saving with a means-tested government retirement pension. For many low and middle-income earners who cannot expect to accumulate sufficient funds to generate an income much above the government pension, there is a strong incentive to avoid accumulating ‘too much’: in effect, the prospective withdrawal of the government pension creates very high effective marginal tax rates on saved income. This incentive structure is generally argued to encourage early retirement, financed by running down accumulated superannuation, with the pension subsequently available as a safety net, a practice widely referred to as ‘double-dipping’.

Given the policy objectives of maintaining a safety net while promoting self-provision for retirement, two broad strategies would seem to be available to mitigate this incentive problem. One would be to make the government pension universal, as is the case in New Zealand. This would obviously remove the adverse incentive generated by the means test, although with significant drawbacks in terms of the equity of the system and its overall cost. The other approach, broadly the strategy that has been followed in Australia during the past decade or so, is to tighten the enforcement of compulsory self-provision for retirement and to modify tax incentives so as to make double-dipping less attractive.

Policy decisions in this direction have included measures to increase the attractiveness of annuity benefits relative to lump sums, and a gradual increase in the compulsory preservation age for superannuation benefits, announced in 1992.²² In the 1997/98 Budget, the Government tightened preservation rules and introduced a financial incentive to delay receipt of the government pension. The common objective in these decisions has been to reduce leakages of savings from the compulsory system. Nonetheless, changes in this direction have proved hard to bring about quickly because of a strong presumption that existing accumulated entitlements should be protected from significant rule changes.

22. The compulsory preservation age (the minimum age of access to accumulated superannuation benefits) is to be raised from 55 to 60 by 2025.

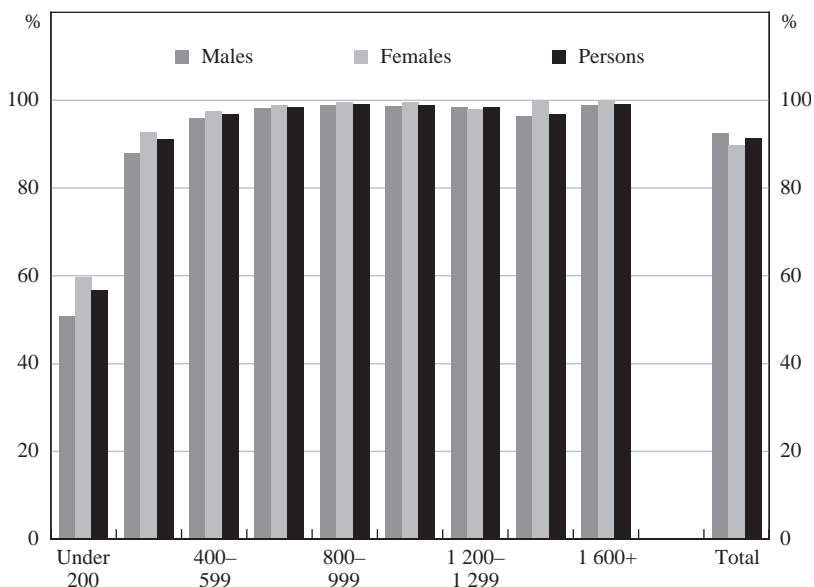
4. Private Saving and Superannuation

Given the importance of compulsory superannuation in the overall policy strategy over the past 15 years, it is of some interest to look at the impact this has had on private saving behaviour. An obvious question that arises, given the trends outlined in Section 2, is why the expansion of compulsory superannuation has not resulted in a discernible lift in aggregate private saving.

It is certainly the case that the policy has had a substantial impact on *employee coverage*. Prior to the introduction of award superannuation, around one-third of employees in the private sector, and around 60 per cent in the public sector, were receiving employer-funded superannuation benefits. These ratios have now risen to over 90 per cent, with the only significant areas of lower coverage being for workers earning less than the exemption threshold of \$450 a week. Even at very low levels of weekly income, coverage is now quite high, suggesting that in many cases superannuation has become a standard employment condition even where there is no legal requirement to provide it (Figure 6).

The expansion of coverage under award-based superannuation in the mid 1980s was initially most rapid in the public sector, where a 90 per cent coverage ratio was reached within two to three years of the original IRC decision (Table 2). As was remarked earlier, the slower progress in the private sector was a source of dissatisfaction on the Government's part and helped to motivate the introduction of the SG

Figure 6: Superannuation Coverage, August 1998
By weekly income, \$, per cent of total employed



Source: ABS Cat No 6310.0

Table 2: Superannuation Coverage
Per cent of employees

	Public sector	Private sector	Total
1985/86	na	32.3	na
1986/87	63.4	31.8	41.6
1987/88	68.0	34.1	44.0
1988/89	90.4	40.7	54.8
1989/90	91.7	56.9	66.9
1990/91	93.9	67.5	75.3
1991/92	94.6	70.7	77.6
1993/94	97.1	89.2	91.3
1995/96	96.8	90.0	91.4

Source: ABS Cat No 6348.0

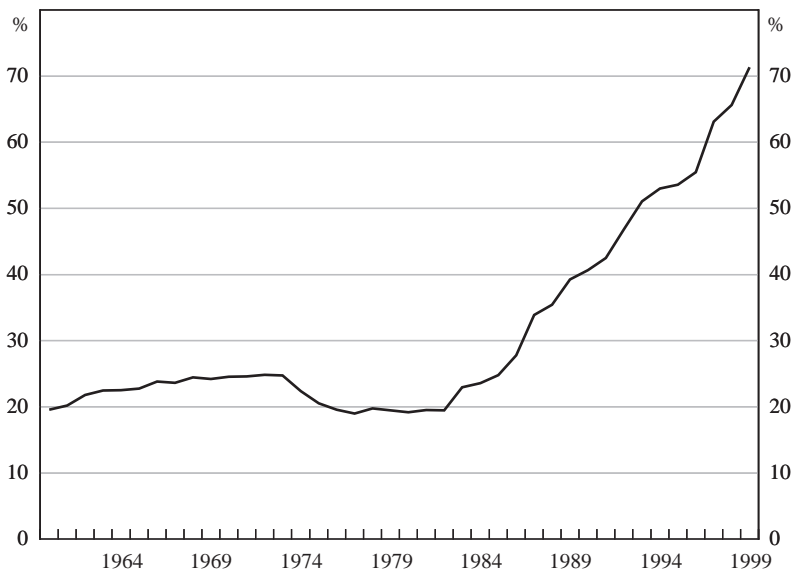
arrangements in 1992. Within a year of the adoption of those arrangements, private sector coverage had also quickly surpassed the 90 per cent mark. The expansion of superannuation has brought about a substantial convergence of male and female coverage rates, and, closely related to that, a significant lift in coverage of part-time workers. Tinnion (1998) notes, however, that females still lag significantly in terms of accumulated entitlements.

As well as an expansion of coverage, the extension of compulsory superannuation in the past 15 years has been accompanied by rapid growth in assets (Figure 7). Since 1985, superannuation assets have grown at a compound annual rate of 15 per cent, and the ratio of these assets to GDP has increased from just over 20 per cent to over 70 per cent. They have also formed an increasingly important part of household wealth. Estimates compiled by Bacon (1998) indicate that life insurance and superannuation assets constituted only 7 per cent of household wealth in 1960, compared with 22 per cent in 1997. Another important development has been a shift in the type of funds, with a long-term decline in the proportion of defined-benefit funds. While, historically, this type of fund was more common, nearly all new funds are now defined contribution funds. In 1999, only 15 per cent of all superannuation accounts were defined-benefit, although schemes with at least some defined-benefit component still accounted for 41 per cent of assets.

In principle the sources of superannuation asset growth can be divided into three components: net contributions, interest and dividend income on assets (net of fund administration costs), and capital gains. Available data on these concepts are presented in Figures 8 and 9. Some caution is required in interpreting these data, as they are not compiled on a mutually consistent basis²² but, nonetheless, a number of

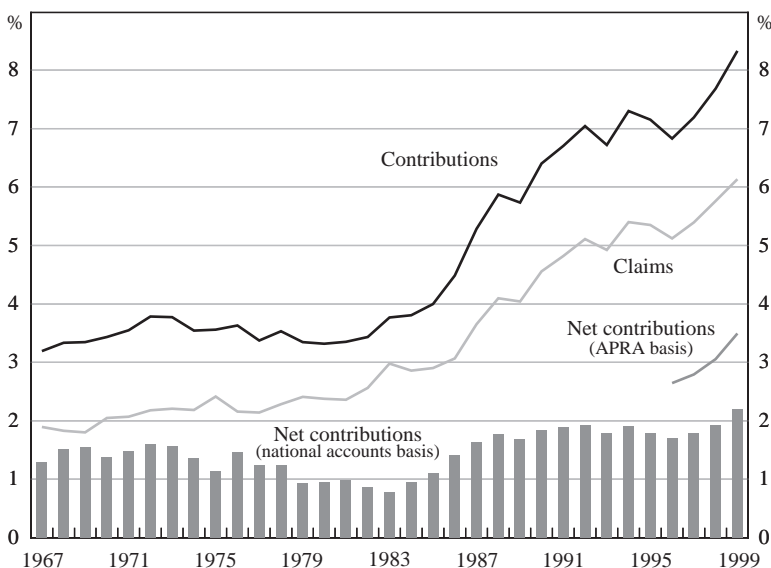
22. Asset growth is based on stock data reported in the financial accounts, while contributions and earnings data are separately reported.

Figure 7: Superannuation Assets
Per cent of GDP



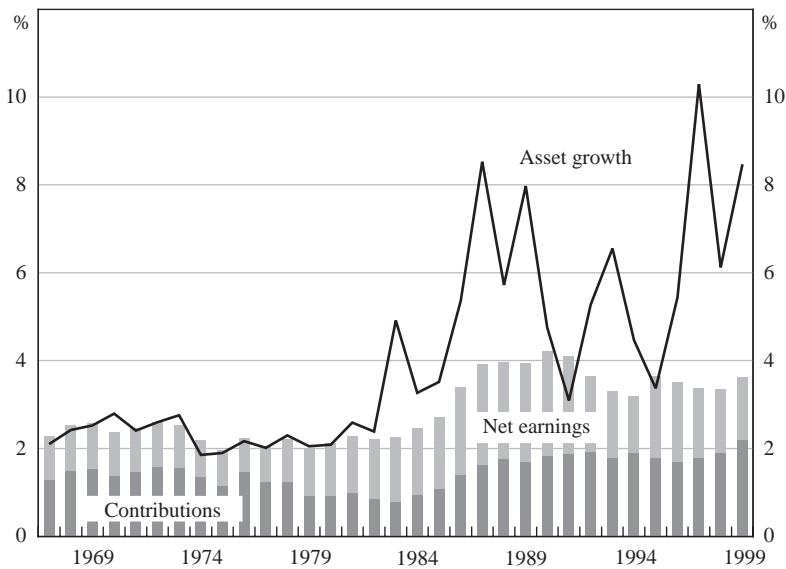
Source: ABS Cat No 5232.0

Figure 8: Superannuation Contributions
Per cent of GDP



Sources: ABS Cat No 5204.0, APRA (1999)

Figure 9: Components of Superannuation Growth
Per cent of GDP



Sources: ABS Cat Nos 5204.0 and 5232.0 (Table 12); RBA estimates

stylised facts seem reasonably clear. Since the mid 1980s, there has been a strong increase in both contributions and claims. This is likely to have reflected both the growth of coverage and the increasing liquidity of superannuation funds, with much of the growth in contributions and claims representing transfers within the system. There has also been a smaller but significant increase in *net* contributions (the difference between the two). According to the national accounts, net contributions have roughly doubled since 1985, from around 1 to around 2 per cent of GDP. Alternative APRA data, available only since the mid 1990s, suggest a higher level of net contributions (around 3 per cent of GDP).²⁴

The other sources of asset growth are depicted in Figure 9. Not surprisingly, the data indicate that net earnings were on average higher in the 1980s and 1990s than in earlier decades, reflecting a combination of higher levels of assets and relatively high rates of return, partly offset in recent years by higher administration costs. The sum of net contributions and net earnings represents the contribution of superannuation to conventional measures of household saving. This has gradually increased over the past two decades from around 2 to around 4 per cent of GDP. *Total* asset growth has on average been greater than that amount (and also more volatile), implicitly reflecting the additional contribution of capital gains.

24. Comparable ABS and APRA data on net contributions can be constructed by including claims on separately constituted superannuation funds in the latter. The discrepancy between the two resulting series appears to suggest an ABS over-estimate of claims on the separately constituted funds.

With this background, we can return to the question posed at the beginning of the section: why has there been no discernible increase in private saving arising from the expansion of compulsory superannuation? Part of the answer would seem to lie in the definition of saving. As indicated above, a significant part of the asset growth in superannuation funds in the past two decades has come from capital gains, which are not included in conventional income and saving aggregates. This provides a partial explanation for the co-existence of rapid asset growth in the superannuation sector with only fairly gradual increases in net contributions.

Another potential explanation for the lack of impact on aggregate saving is that leakages from compulsory superannuation may have increased, hence explaining the relatively small run-up in net contributions. This explanation features prominently in policy debate, but is difficult to evaluate, since there are no comprehensive data on the reasons for withdrawal of superannuation assets or the uses made of withdrawn funds. Nonetheless, it is widely argued that the incentive structure encourages leakages from the system through early retirement and double-dipping.

One trend that might be regarded as symptomatic of the problem is the long-term decline in labour force participation by over-55 males, the group for whom the interaction between accumulated superannuation and the means-tested pension is likely to be most significant. While this is a trend that has been common to most advanced countries, and likely therefore to have wider causes, the incentive structure in Australia can hardly have helped. Moreover, Bacon (1999) points out that the decline in the employment rate in Australia for males aged 55–59, in the period since 1975, has been the largest in the OECD area. It has also been pointed out that data on the distribution of income and wealth among people of pension age is highly suggestive of households tailoring their affairs to qualify for the pension.²⁵

Evidence on the nature of withdrawals from superannuation is suggestive of a significant leakage problem, but does not provide a comprehensive picture of the final uses of the funds withdrawn. Piggott (1997b) notes a preference for lump sum withdrawals, and reports that lump sums account for about 45 per cent of total superannuation benefits paid. Moreover, a surprisingly high proportion of funds withdrawn from superannuation is accounted for by people of less than normal retiring age. In a detailed analysis of data on eligible termination payments (ETPs) from superannuation funds, Tinnion (1998) reports that about 40 per cent of the total value of ETPs in 1995/96 (and more than 70 per cent of the number of such payments) were made to fund members aged less than 55. This is consistent with the high level of access to funds that exists on change of employment and on grounds of hardship.²⁶

These facts, however, do not constitute direct evidence of the extent of double-dipping, since it is likely that a significant proportion of lump sums and early withdrawals are re-invested in the system, and the extent to which they give rise to

25. See for example Freebairn, Porter and Walsh (1989).

26. Rothman (1997) estimates that about 65 per cent of superannuation assets are not subject to compulsory preservation.

'excessive' consumption is hard to judge. Also difficult to judge is the extent to which such behaviour may be changing over time. If early retirement is regarded as a key indicator of the problem, it would not appear to be getting any worse. Much of the decline in male employment in the 55-59 age group took place in the 1970s and 1980s, and in the past decade the situation has broadly stabilised. Moreover, the total employment ratio in that age group has been steadily increasing in recent years, reflecting rising female employment. Over time, it might be expected that these trends will be reinforced by the prospective increases in the preservation age and the tightening of preservation rules already announced.

Another aspect of the original question concerning the impact of superannuation on private saving concerns the potential for compulsory superannuation to displace other forms of saving. It is generally agreed that some offsetting reduction in non-superannuation saving is likely, although the degree of offset is likely to be incomplete. Although econometric estimates of the degree of offset vary, they generally bear out this view. They range as high as 0.75 (Morling and Subbaraman 1995), although there seems to be a loose consensus in the range of the 0.37 and 0.5 parameter estimates of Covick and Higgs (1995) and FitzGerald and Harper (1992). Certainly, the estimates of around a third accord with calculations using cross-sectional data for tax-preferred retirement savings vehicles in the United States (Hubbard and Skinner 1996). More recent consumer survey evidence by Loundes (1999) however suggests that the extent of reduction in voluntary saving due to compulsory superannuation may be quite large.

Some perspective on these issues can be gained by considering official projections of the impact of compulsory superannuation. Projections reported in conjunction with the Government's 1995 superannuation policy statement²⁷ assumed an offset coefficient of a third, and incorporated the additional tranche of employee and government co-contributions which was then scheduled to commence in 1997/98. Subsequently Gallagher (1997) produced revised estimates reflecting policy changes in the intervening period, including the dropping of the second tranche of contributions, adoption of the government's savings rebate, introduction of the superannuation surcharge and changes to preservation rules.²⁸ These projections, including the estimated effects of the SG since its introduction in 1992, are summarised in Figure 10. They point to a fairly gradual increase in private and national saving as the target contribution rate is increased and the system matures. The system was expected to have increased national saving by around 1 per cent of GDP by the end of the 1990s, gradually rising to almost 4 per cent of GDP by 2020.²⁹

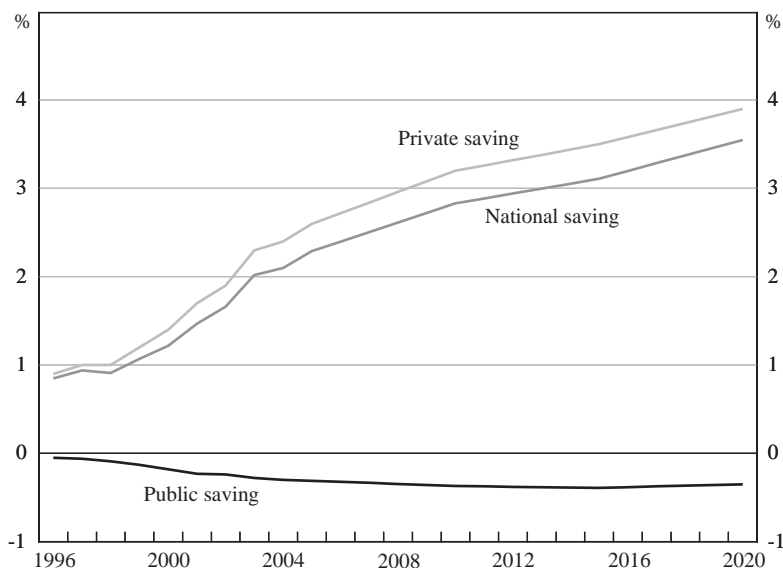
It is interesting to line up these expectations against what has actually happened. The key stylised facts outlined above can be summarised as encompassing a flat or falling private saving ratio over the past two decades, combined with a modest

27. Willis (1995), Chart 2.

28. Obviously this will not take account of any effects from the subsequent discontinuation of the savings rebate and broader changes to the tax system.

29. These projected effects are much larger than earlier estimates of the impact of the original SG framework reported by Gallagher and Preston (1993).

Figure 10: Projected Impact of Compulsory Superannuation
Per cent of GDP



Source: Gallagher (1997)

increase in net superannuation contributions. As noted, compulsory superannuation was expected to have added a net 1 per cent of GDP to national saving, principally via its effect on private saving, during the same period. There would seem to be two possible interpretations of this combination of facts. One is that the system is having something like its expected effect, but that other factors have been acting to hold down voluntary saving to an extent that has offset the increase in compulsory contributions. On this view, the projected increases in private saving should eventually become clear, assuming voluntary saving in a cyclically adjusted sense were to remain broadly stable in the longer run. The other interpretation is that the extent to which compulsory superannuation generates offsetting reductions in voluntary saving is much larger than has been assumed, rendering the system unlikely to produce significant increases in private saving even in the longer run. Which of these views is more correct should become clearer in the next few years as the timetable for increases in compulsory contributions moves to completion.

5. Does Australia Save Too Little?

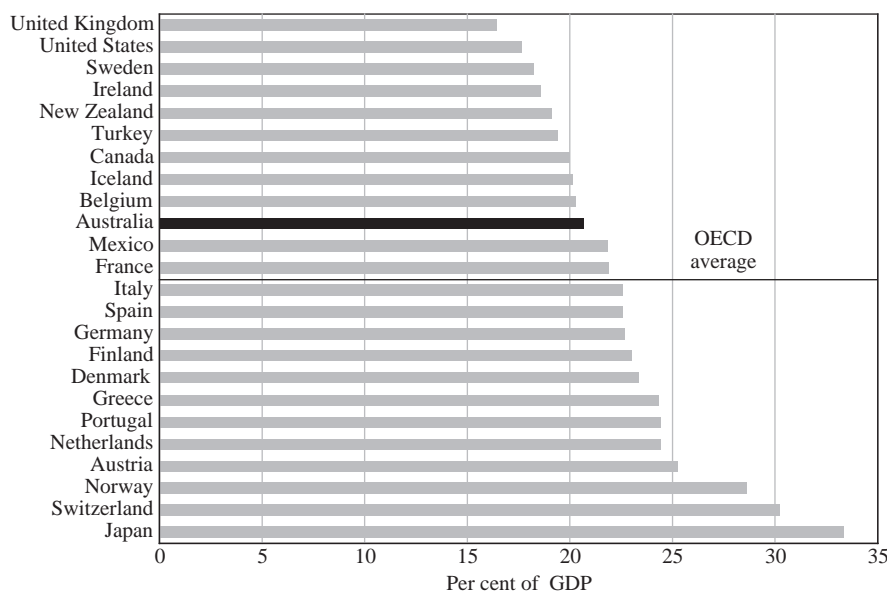
The proposition that saving in Australia is less than its optimum has been taken as a given in much of the policy debate during the past decade. Proponents of this proposition have been able to appeal to a number of stylised facts which would appear to give the case strong *prima facie* support. The key facts in this context are: that saving rates in Australia have been in long-term decline; that Australia's

national saving is low by international standards; that prospective population ageing implies increasing saving requirements; and that Australia runs an uncomfortably high current account deficit. A further point is that the adequacy of retirement income provision under the current superannuation plan has been called into question by some observers. The first of these points was examined in detail in Section 2, but the remaining points are worth amplifying.

5.1 International comparisons

By international standards, Australia's national saving rate is relatively low (Figure 11). Over the past three decades, gross national saving in Australia has averaged 21 per cent of GDP, 2 percentage points below the OECD average. It is also the case that saving in Australia has declined more rapidly than in the OECD as a whole (Table 3). These comparisons may be suggestive of a cause for concern, although they obviously do not address issues as to how saving requirements might vary across countries in relation to factors such as age structure, growth and the availability of profitable investment opportunities. It is evident that the English-speaking countries in general run lower-than-average saving rates, and Australia saves more than some countries with whom we are often compared, including the US, UK, New Zealand and Canada. On the other hand, it might be argued that Australia is a relatively high-investment country and therefore has a higher saving requirement, a point taken up further below.

Figure 11: Average Gross National Savings Rates: 1969–1997



Source: OECD (1999b)

Table 3: Gross National Saving
Per cent of GDP, decade average

	Australia	OECD
1970s	23.7	24.8
1980s	20.0	21.7
1990s ^(a)	17.0	20.4

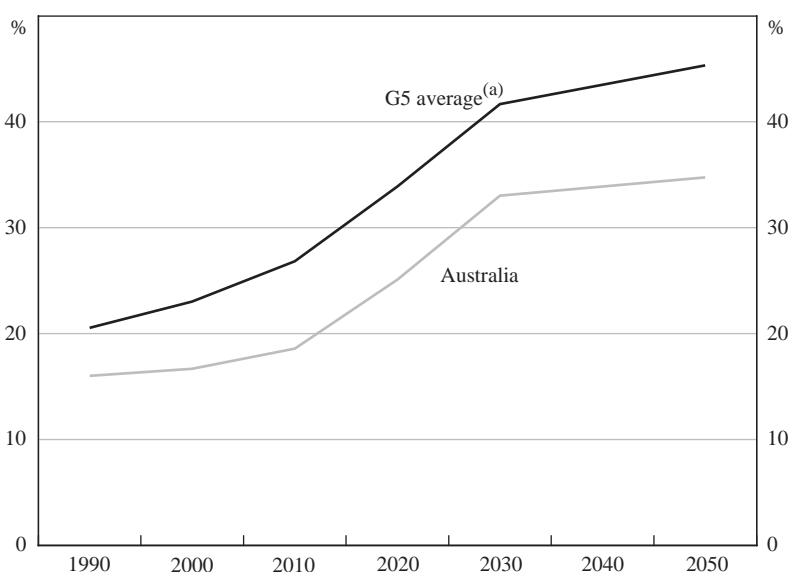
(a) 1990–97

Source: OECD (1999b). These data are compiled using SNA68 national accounts, and are therefore not directly comparable with the data in Table 1.

5.2 Saving and population ageing

Like most advanced countries, Australia is currently in the midst of a significant long-term ageing of the population structure. A useful summary measure of prospective population ageing is the elderly dependency ratio (the ratio of the over-65 population to that of the 15–64 age group). Official projections of this ratio for Australia and for a group of major industrial countries are presented in Figure 12. The projections point to a marked increase in elderly dependency in most advanced

Figure 12: Elderly Dependency Ratio
Population 65+ / population 15–64



(a) France, Germany, Japan, the United Kingdom and the United States.

Sources: Bosworth and Burtless (1998), Bos *et al* (1994)

countries, although it will be less pronounced in Australia than elsewhere. These trends, which have already been under way for some decades, are expected to accelerate, with the period of most rapid population ageing in most countries projected to occur between 2010 and 2030. A summary statistic of these trends is that the number of persons of working age per person of retirement age in Australia will, on these definitions, decline from about 6 at present to about 3 in 2030.

Population ageing can be expected to have implications for both private and public saving rates. Standard life-cycle models of consumption predict a hump-shaped age distribution of household saving, with people attaining maximum saving rates in the decade or two leading up to retirement.³⁰ With most of the baby-boom generation in Australia now at, or close to, the age of maximum saving, simple life-cycle theories would therefore predict that demographic trends will soon begin to reduce household saving.³¹ Yet formal evidence to link age profiles to saving in an Australian context is scarce and inconclusive. De Brouwer (1999) finds that the Australian consumption function is unaffected by the inclusion of an elderly dependency ratio, and Lattimore (1994) finds that demographic variables have effects on the saving rate which are both slight and sensitive to the specification of the consumption function.

The more important implications of population ageing are probably those for public saving.³² It is usually argued that the problem of population ageing requires either an increase in current public saving (relative to what would be needed with a stable age profile) or pre-emptive structural actions to limit the build-up of expenditure obligations in the future. The focus on pension reform in a number of OECD countries is an example of the latter.

Assessing the implications of demographic trends for future public expenditure and saving requirements is a highly complex exercise. Among the factors that need to be considered are the effects of population ageing on government pension liabilities, health expenditures and tax revenues, all of which will add to government financing requirements in the decades ahead, as well as any offsetting effects arising from lower expenditures associated with falling juvenile dependency (for example, lower aggregate education costs). In a detailed multi-country study of these issues Roseveare *et al* (1996) suggest that while all OECD countries face significant net increases in financing requirements as a result of population ageing, Australia is among the best placed. This is partly because, as already noted, population ageing is projected to be less pronounced in Australia than elsewhere.

There are also some important structural characteristics in Australia that will help to make the impact of population ageing on public finances significantly smaller than elsewhere. Australia enters the period of accelerating population ageing with

30. Piggott (1997b) citing Mylott (1996), reports that maximum saving rates are reached in the 45–64 age cohort.

31. This is the conclusion of Masson, Bayoumi and Samiei (1995).

32. This is consistent with the conclusions of Bosworth and Burtless (1998) for the major industrial countries.

relatively low levels of government debt. More importantly in this context, the pension system in Australia generates relatively low per capita social security costs by international standards, since the pension is not universal and not related to pre-retirement income.³³ This is in contrast to most other OECD countries, where governments typically run unfunded, income-related pension schemes which are now assessed as having substantial net unfunded liabilities. In a recent study drawing on these OECD estimates, Disney (2000) summarises the impact of population ageing on government pension liabilities by presenting estimates of the increase in average tax revenues required to maintain a stable public debt ratio in the period to 2030; in Australia this increase, equivalent to 2.4 per cent of GDP, is the second lowest (after Ireland) in the OECD area.

While these studies have focused on government pension liabilities, other studies have emphasised the impact on prospective health expenditures. The World Bank (1994) finds a strong cross-country correlation between the age profile of a population and the proportion of its income spent on health. However, existing evidence for Australia (Richardson and Robertson 1999) suggests that age structure has been a weak predictor of the relative size of the health sector, presumably reflecting a tendency for governments to ration funds to the sector over time on the basis of available resources. Similarly, Dowrick (1999) and Johnson (1999) present a fairly relaxed attitude to the ageing problem, arguing that behaviour may adjust to changing demographic circumstances through greater investment in human capital and in other ways that are not yet foreseeable.

Table 4: Social Expenditure Costs Per Head

Constant 1990 dollars

	Age pension	Other aged	Unemploy- ment benefits	Other social benefits	Health	Edu- cation	Employ- ment	Total
0–15	0	4	0	883	443	9 313	2	2 245
16–24	0	2	384	346	443	1 529	165	2 870
25–39	1	2	300	423	602	303	60	1 690
40–49	6	3	211	503	565	141	38	1 466
50–59	57	6	215	1 088	942	58	25	2 390
60–64	1 139	12	184	1 729	1 579	24	13	4 681
65–69	2 430	31	0	2 041	2 185	16	0	6 703
70–74	3 368	60	0	1 626	3 255	16	0	8 324
74+	4 168	263	0	1 135	6 111	12	0	11 689

Source: Creedy (1999)

33. See for example Kahn (1999) and OECD (1998).

Nonetheless, data on current patterns of government expenditure suggest that there is at least the potential for expenditure to be considerably influenced by the age structure of the population. Estimates compiled by Creedy (1999), showing public expenditures on different age categories for the main classes of social expenditure, are presented in Table 4. These suggest that per capita health costs for higher age cohorts are significantly higher than social security costs, and that they increase more steeply with age. An implication of this is that the impact of population ageing on future health expenditures could be larger than the impact on pension costs, if existing patterns of health expenditure in relation to income were maintained. Of course, a major uncertainty in thinking about these issues is the future of productivity growth. It has been pointed out that higher trend productivity growth can significantly ease the net burden on future governments from these developments by generating stronger revenue growth, although countervailing that to some extent is that the associated growth in real incomes tends to raise community aspirations, and hence the demands on public expenditure, at the same time.

5.3 The current account

Another factor often regarded as supporting the case that Australia's saving is insufficient is the size of the current account deficit.³⁴ It can be pointed out that while Australia saves less than the OECD average, similar international comparisons also show that Australia is a low saver relative to domestic investment (Figure 13). In general there is a strong cross-country correlation between national saving and investment levels, which is another way of saying that the volume of a country's domestic saving appears to act as a constraint on the level of investment.

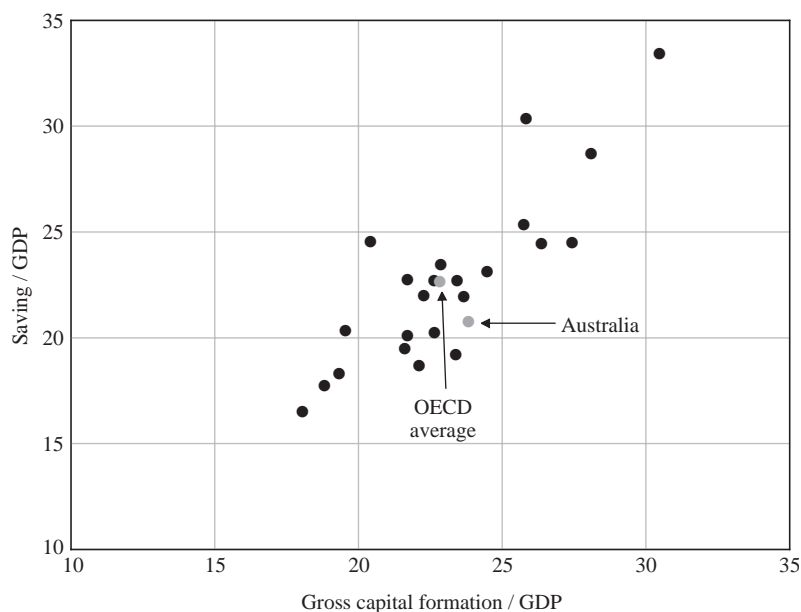
While these simple correlations obviously ignore important issues of optimisation through time, a number of recent studies have sought to capture these issues more fully by attempting to model an optimum sustainable consumption path for Australia. In general these studies have concluded that Australia does save less than the optimum, although there is considerable uncertainty as to the extent of the shortfall. Cashin and McDermott (1998) use a method which essentially tests whether the current consumption path is sustainable (that is, consistent with a stable ratio of external debt to GDP). They find that, since the mid 1980s, net national saving has been between 2 and 4 per cent below the level required to satisfy sustainability.³⁵

An alternative approach to the same question by Guest and McDonald (1999) uses a growth model of the Australian economy to solve for an optimal saving path consistent with national investment requirements and with meeting the inter-temporal budget constraint. In their base model they estimate that Australia is currently under-saving relative to the optimum by a considerable amount (more than 8 per cent of GDP). This result appears to be mainly driven by the expected population dynamics in the decades ahead: the forthcoming population transition implies that there should be a relatively high saving ratio now, if standard assumptions about

34. For further discussion of this issue, see Gruen and Stevens (this volume).

35. Leachman and Thorpe (1998) reach a similar conclusion.

Figure 13: Gross Capital Formation and Saving
1969–97



Source: OECD (1999b)

optimal consumption smoothing are maintained. However, Guest and McDonald also found their results to be highly sensitive to the model specification, with the current actual saving rate able to be replicated within a plausible range of parameter assumptions. Hence, in a full equilibrium framework, the proposition that there is significant under-saving, and the extent of that under-saving, appear difficult to establish. For those convinced that lowering the current account deficit should be an important policy priority, these optimal saving results are probably not the decisive arguments.

5.4 Adequacy of retirement provision

Sceptics of the proposition that Australia under-saves would argue that the adequacy or otherwise of the level of saving cannot be established by these general macroeconomic criteria – the key issue is whether, at the micro level, decisions are being distorted in a direction that leads on average to under-saving. This brings the focus back to questions as to whether private saving decisions are being distorted by policy, and whether there exist other sources of under-saving which policy should set out to correct.

The literature on private saving behaviour offers some grounds for thinking that such an under-saving bias may be important. Theorists have argued that something akin to a time-consistency problem exists for individuals, such that they would generally prefer to defer being virtuous – the example of a smoker who always wants

to quit tomorrow.³⁶ This induces a greater short-termism than is embodied in the true rate of time preference, and is therefore argued to create a general bias towards under-saving relative to the optimum.³⁷ This theoretical result seems consistent with survey evidence suggesting that people fail to plan rationally for retirement. For example, studies in the United States have found that people systematically fail to focus on their saving needs, or tend to underestimate them – or, equivalently, that they overestimate the standard of living that their current saving patterns will generate in retirement.³⁸ These features of private behaviour would seem to support the case for policy intervention to encourage saving.

Policies adopted in Australia, and indeed in most other advanced countries, can be interpreted as seeking to address this problem through a two-pronged approach, comprising a compulsory saving requirement and a safety net for those who are not in a position to save enough. The unavoidable existence of the safety net arguably reinforces under-saving biases and strengthens the case for the compulsory saving element. If this is accepted as the rationale for the policy approach, it raises the further question of whether the compulsory level of contributions is sufficient to meet the stated goals of counteracting any under-saving bias and providing households with adequate retirement incomes.³⁹

This has been a matter of some debate in Australia, with some commentators arguing that the existing 9 per cent contributions target will be sufficient, while others are of the view that more will be required. In this context, studies generally assume an aspired replacement rate (the ratio of post-retirement to pre-retirement levels of income or consumption) of the order of 60 per cent.⁴⁰ Tinnion and Rothman (1999) find, using a consumption replacement benchmark, that the 9 per cent contributions target should be sufficient, at least for relatively low-income earners. This result depends crucially on access to remaining part-pension entitlements, and replacement ratios are much lower for middle and upper-income earners for whom continuing access to government pensions will be less important. Some of these features are evident in the official projections for retirement incomes summarised in Table 5. FitzGerald (1993) argues for a higher contribution rate of around 18 per cent, with ASFA (1999) estimating that a range of 12 to 15 per cent would be necessary to meet adequate replacement benchmarks at most levels of income. Consistent with a view that existing contribution rates may be too low, Webster (1997) finds in survey evidence that employees have a strong tendency to overestimate their ability to fund retirement from their existing superannuation plans.

36. Some of these arguments are canvassed by Piggott (1997a).

37. This is analogous to the theoretical problem of time-consistency in the literature on inflation control.

38. See for example Lusardi (2000) and Moore and Mitchell (1998).

39. The case for compulsory self-provision for retirement is not universally accepted. Freebairn (1998) provides a contrary view.

40. Figures of the order of 60 per cent are widely used, but it matters whether consumption or income is the chosen benchmark, the consumption benchmark being less demanding than that for income.

Table 5: Projected Sources of Retirement Income

Per cent of pre-retirement expenditure

Pre-retirement income (per cent of AWOTE)	Funded annuity	Tax	Age pension	Total
<i>Single males</i>				
75	49	(6)	49	93
100	53	(5)	31	79
150	59	(5)	11	65
200	63	(6)	2	59
<i>Couples</i>				
75	38	(5)	42	75
100	40	(4)	26	63
150	45	(4)	10	51
200	48	(5)	3	47

Source: Willis (1995), Table 1. The projections assume a 9 per cent contribution rate, a 6 per cent real rate of return on funds invested and an unbroken contribution period of 40 years for the main income earner. Further details of the assumptions are given in the original source.

Another relevant point here is that the projected retirement incomes generated by a 9 per cent contribution rate would still leave most retirees on at least a part-rate government pension even when the system has fully matured. An implication of this, which does not seem to have been remarked upon, is that it would leave most retired people still in the income range where the interaction of the means test with accumulated superannuation, and hence the incentive to engage in double-dipping, is most severe. In other words, the existing plan is not projected to raise most retirement incomes beyond the point where the double-dipping incentive is likely to be most significant. These issues clearly merit further study. It may be that, even if scepticism prevails on the macroeconomic case for higher saving, there is still a case for promoting an increase in saving from current levels on the grounds of retirement income adequacy.

6. Conclusions

In hindsight, despite various controversies encountered along the way, the policy debate during the past decade can be seen as characterised by some important points of common ground. In particular, saving-related policies in Australia have been guided by a shared presumption that saving is too low, and by a gradually emerging consensus on a strategy to remedy that. The strategy has had two main elements – an emphasis on the role of fiscal responsibility, and the promotion of private saving through development of the compulsory superannuation system.

The implementation of these policies has coincided, for much of the past decade, with a gradual increase in national saving. However, the increase has come off an exceptionally low base and contains a large cyclical element. It was only at the end of the decade that the national saving rate again attained its average level of the 1980s, and it is not clear whether a structural increase in national saving is yet under way. Private saving, in particular, has yet to show any obvious response to the increase in compulsory contributions. As has been the case in other countries, this experience testifies to the difficulty of generating a sustained increase in private saving through government policy actions. Nonetheless, it should be emphasised that the impact of the superannuation strategy now in place was always projected to be fairly gradual, and the key test of its effectiveness in raising private saving lies in the decade ahead.

While quite a high degree of consensus has developed around the broad policy approach, a number of issues remain unresolved and likely to require further attention. Two can be briefly highlighted. The first concerns the ability of the current superannuation system to generate satisfactory levels of private saving. This has several dimensions including the appropriate level of compulsory contributions, the extent to which further action may be required to reduce scope for the dissipation of accumulated funds, and the interaction of the tax and benefit system with compulsory superannuation in the years around retirement. The discussion above suggests that significant problems remain in this area.

A second issue concerns the complexity of the system. This has been widely commented on, although it is obviously a difficult problem to deal with. The complexity arises from several sources including grandfathering of incremental rule changes and the multi-stage nature of the taxation treatment. Complexity is argued to contribute to administration costs and to blur incentives built into the taxation of superannuation, since those incentives are not easily understood. Closely related to this issue is the broader question of the appropriate overall tax burden on superannuation, and the extent to which it should remain concessionary.

These are issues on which there is not at this stage a consensus, although the possibility of a further increase in compulsory contributions is being actively debated. Many of these issues are likely to prove interrelated, since public support for further expansion of the compulsory system may depend on developments in the other aspects of system design. Given the primacy that superannuation policy has now attained in the strategy for private saving, it seems inevitable that these issues will remain high on the policy agenda in the years ahead.

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Discussion

1. John Freebairn

Edey and Gower provide a comprehensive review of the numbers on Australian saving, the associated policy debates, and policy changes over the 1980s and 1990s. To me a very interesting and challenging policy question is whether Australia is saving too little, and if so why, and then what are the desired policy interventions?

Saving is not an end in itself, but rather a means to a higher goal of maximising consumption, and the utility it provides, over time. An important role for saving is intertemporal consumption smoothing for unanticipated adverse effects, over the business cycle (clearly documented for both private and public saving by Edey and Gower) and over the life cycle. It also has been argued that even for a relatively open capital market economy, including Australia, the observed close relationship between domestic investment and domestic saving (as illustrated in Figure 13 of Edey and Gower) due to high implicit transaction costs associated with different legal systems, distance and so forth, requires Australia to save to fund current investment. However, given the quite wide swings in Australia's dependence on overseas savings, from 2 to 6 per cent of GDP, it seems reasonable to ignore the investment argument for savings and concentrate the discussion on the use of savings for intertemporal consumption smoothing.

Edey and Gower argue that Australia saves too little by drawing primarily on comparisons with other OECD countries, the trend decline in the national saving rate, the larger and growing current account deficit, and the projected ageing of the population. They also point to the myopia and short-termism of individuals. In my view there are also a number of important policy distortions which reduce the incentive to save and reward from private saving.

Australia's system of means-tested aged pensions, cards and other retirement income support result in high effective marginal tax rates on saving for retirement years. The withdrawal rate associated with means testing of the aged pension is 40 per cent (reduced from 50 per cent in the 1999 tax reform package). Further, as shown in Table 5, even individuals on double Average Weekly Ordinary Times Earnings (AWOTE) can expect to receive a part-aged pension. Presumably the system of compulsory superannuation can be justified in part as a policy response to force individuals to increase their saving for retirement. Even here, in addition to the questions of adequacy of the 9 per cent rate discussed by Edey and Gower, policy could move much quicker to remove leakage via early access to superannuation and the current preferential tax treatment of lump sums versus annuities. Also, even if the present scheme might be satisfactory for full-time workers, it is much less likely to be satisfactory for the growing numbers of part-time workers and those with broken careers, including many women.

Important motives to save include making provision for private consumption of health and education services and for consumption in retirement. In Australia,

however, governments provide from taxation revenue at least a basic level of health, education and retirement incomes. Given this backstop, the incentive for private saving is greatly diminished, and especially for those on low and middle incomes. Current governments fund these services from current revenues on a pay-as-you-go basis. With governments taking primary responsibility for social expenditures, and projected increases in these outlays in the coming decades, it is arguable that governments should be net savers over the business cycle rather than the present federal government stance of fiscal neutrality over the cycle. Just how big the surplus should be requires more assessment.

The Australian tax system likely distorts intertemporal consumption and saving decisions towards too high a level of current consumption. While the tax system is titled an income tax system, in fact some savings receive a consumption base treatment, including savings invested in owner-occupied housing and business investment in human capital. Others receive close to a consumption base treatment, including superannuation; and there are concessions for the returns on other forms of saving, including the benefits of deferral and lower tax rates on capital gains. Granted these facts, together with the relative importance of these forms of savings, it remains the case that many savings options receive an income tax treatment, including saving via financial instruments and business equity. To the extent these income-taxed forms of saving represent marginal saving, the present tax system distorts decisions against private sector saving.

Assessment of the net effect of compulsory superannuation on private sector saving is a difficult task for all the reasons discussed by Edey and Gower. My guess is that the problems of quality of data and of accounting for the effects of many other determinants of saving make it unlikely that econometric estimates based on macroeconomic data will prove a fruitful avenue for research. Extending the simulation modelling work of Gallagher (1997), and in particular evaluating the robustness of results to likely ranges of key parameters, seems a useful research strategy.

A better understanding of the path of private saving over the 1990s, and peering into the future, seems worthwhile by splitting private saving into the household and enterprise components together with the material on balance sheets provided in Figures 3 and 4 of the Gizycki and Lowe paper (this volume). Using this disaggregation is not to deny the valid points made by Edey and Gower that in general it is better to consider private saving as an aggregate. In part, the marked growth of private saving by enterprises in the 1990s is associated with what Gizycki and Lowe term restoration of their balance sheets after the excesses of the 1980s. To the extent this balance-sheet restoration has been completed, as is indicated in their Figure 4, it seems unlikely that enterprise saving will contribute in the coming years to private saving in the way it did in the 1990s.

The decline in measured household saving in the 1990s may be explained partly by the dramatic increases in both household debt and household financial assets (Figure 3 of Gizycki and Lowe). In part there is a measurement issue with capital gains excluded from the measures of household income and saving. A potentially

fruitful area for further analysis of household consumption and saving decisions is the inclusion of balance sheet assets and liabilities in the explanatory model. Poterba (2000) provides an excellent review of these issues for the US. In particular, it would be useful to evaluate the likely order of response of household consumption to a sharp fall in equity (and home dwelling) prices should the asset bubble break.

To conclude, combining the near completion of the compulsory superannuation levy at a rate of 9 per cent, no further significant build-up of enterprise financial assets, and little reason to anticipate a marked increase in the household saving rate implies that the private sector saving rate is more likely to fall rather than rise over the next decade.

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2. General Discussion

The discussion of the paper by Edey and Gower focused primarily on the causes of the recent decline in national saving in Australia. Participants debated the effect of compulsory superannuation on private sector saving. There was also considerable discussion of the implications of demographic change for national saving.

In discussing the possible causes of the decline in private saving since the mid 1970s, the various policy distortions identified by Freebairn in his discussion of the paper were considered. One participant made the point that Australia's system of state-provided health care and subsidised education (through the Higher Education Contribution Scheme, for example) may be one reason why households in Australia save less than most OECD countries. Another pointed out that prior to financial deregulation, households needed to establish a saving history in order to get a loan for house purchase. The relative ease with which home loans can be obtained post-deregulation might be an important factor. It was noted that the high effective marginal tax rates on pensions implied by the system of means-tested aged pensions may discourage private saving. A few participants also wondered if the introduction of mandatory superannuation in 1992 had reinforced the view that one need not save for retirement.

Some participants argued that household consumption and saving decisions have recently tended to be significantly influenced by asset market developments. In

particular, they pointed out that households are increasingly spending out of capital gains from financial assets, and suggested that a closer examination of household balance sheets might help explain why private saving in Australia is relatively low.

On the issue of superannuation, many felt that the current system – a target mandatory contribution of 9 per cent of gross salary by 2002/2003 – would not provide a sufficient boost to national saving. One participant expressed concern that a substantial portion of the contribution is spent on administrative costs. Citing the Chilean system as being a good model, this participant argued that employers should be required to contribute savings net of administrative costs. This would not only contribute to enhancing national saving, but would also give employers strong incentives to minimise administrative costs. Some participants also remarked on the limited coverage of the current system, pointing out that it does not cover employees earning less than the exemption threshold of \$450 per week. One participant made the point that the primary policy objective of compulsory superannuation was to provide retirement income, not necessarily to boost national saving, and that the system had in fact been very effective in augmenting retirement income.

Finally, the implications of the ageing of the population for national saving, and particularly for public-sector saving were considered. Some participants remarked that the combined effect of increased pension liabilities and health-care costs could lead to a substantial decline in public-sector saving. At the same time, it was noted that the problem of an ageing population is perhaps not as pronounced in Australia as it is for many other OECD countries.

The Australian Labour Market in the 1990s

Peter Dawkins¹

1. Introduction: Unresolved Issues

Since the mid 1970s the historically high unemployment rate in Australia has been a major issue of concern to policy-makers. A related issue has been the widening distribution of employment with substantial growth in the number of households with no employed persons, alongside strong growth in the number of households with two or more persons working. There has also been a widening distribution of earnings amongst the employed workforce.

As a result there has been much discontent about labour market outcomes. This has led to a lively debate about labour market policy, but a lack of consensus about how to approach it. In the 1980s the Labor Government adopted a Prices and Incomes Accord to help contain inflation while promoting growth and employment. After the recession of the early 1990s, a major investment in labour market programs, *Working Nation*, was embarked upon, with the aim of promoting a substantial reduction in unemployment, which had gone above 11 per cent. On the face of it these policies represented an interventionist approach. At the same time, however, after a short period of very centralised wage fixing in the early years of the Accord, the Labor Government promoted a move towards more decentralised wage determination through enterprise bargaining, while still retaining the Accord with the Australian Council of Trade Unions (ACTU).

When the Coalition Government came to power in 1996, it substantially cut the *Working Nation* labour market programs, but kept pushing ahead with labour market reform, this time without the consent of the ACTU, seeking to further decentralise and deregulate wage setting, while at the same time reducing the powers of trade unions. It also introduced *Job Network* – a market-oriented approach to the provision of employment services.

It appears therefore that there has been a significant move towards a more free-market orientation. However, Australia still retains a structure of minimum wages at a high level by international standards, and the Government has been favouring regular increases in these minimum wages especially at the lower levels.² The Government remains concerned about the level of unemployment and of ‘welfare dependency’ and is looking for ways of moving people from welfare to work. It is not clear that it necessarily sees moving towards a freer labour market as the way forward. This is probably because of the problem of trying to balance

1. Thanks to Rachel Derham for her research assistance, to Beth Webster and Mark Wooden for providing some of the data used, and to Ross Garnaut, David Gruen and Mark Wooden for comments on an earlier draft.

2. These have sometimes involved larger increases in the minimum wages at the bottom, and smaller increases in minimum wages of higher-classified workers.

efficiency and equity in labour market outcomes and also because of problems of getting legislation through the Senate. Nonetheless the Minister for Employment has been foreshadowing a possible further deregulation of the labour market, by bringing wage setting and industrial relations regulation under the domain of the Federal Government's corporations power under the Constitution.

Meanwhile, the Opposition has been critical of the cuts to labour market programs and appears to favour restoring more powers to centralised wage setting and industrial tribunals. Thus the debate about the proper role of government in influencing labour market outcomes remains an open one.

To all this, it should be added that there is a growing awareness of the importance of macroeconomic policy in influencing labour market outcomes. In particular, the role of monetary policy in seeking to avoid a recession is seen as of central importance.

In this paper I will argue that while there are a number of unresolved questions, there are some very strong economic and institutional dynamics that are tending to lead policy in a certain direction, and that it will be difficult for governments to resist it whatever their complexion. Nor in the author's view should they try to resist it.

Technological change, trade liberalisation and globalisation³ have been forcing economic reform and assisting productivity growth, while tending to widen the distribution of employment and the distribution of earnings.⁴ In this environment skills are increasingly important and education and training policy are, therefore, of major importance. However successful the education and training policies are, though, it is very difficult to resist the pressure for more decentralised wage determination and a widening distribution of earnings. Any attempts to do that risk worsening the distribution of employment opportunities.

This then raises important questions about how to deal with equity concerns, arising out of the tendency for the distribution of earnings to widen, the more so the more we deregulate the labour market. In other words, can we avoid the diabolical trade-off? Following Dawkins and Freebairn (1997), Dawkins (1998, 1999), Dawkins *et al* (1998), Garnaut (1998), and Keating (2000), it is argued that the appropriate use of tax or social security arrangements, to deal with these equity concerns, is the answer. This should be done in a way that also sharpens the incentive to work, and helps to get unemployment down along with a number of other instruments. This was also a central thrust of the plan put forward by the 'five economists'⁵ in 1998.

Trends in aggregate labour market outcomes are the focus of Section 2 of the paper. Similarities to and differences from the 1980s are highlighted. In Section 3, labour market institutions and policies in the 1990s are the focus. Changes from the 1980s are again highlighted. In Section 4, there is a discussion of the drivers of labour

3. The concept of 'globalisation' will be discussed later in the paper.

4. We will see later that there is some doubt about the role of globalisation in affecting the distribution of earnings.

5. Dawkins *et al* (1998).

market outcomes and the role that institutions and policies may or may not have played in that process. In Section 5, unresolved issues and alternative ways of resolving them are discussed. In Section 6 the conclusions are presented.

2. Trends in Labour Market Outcomes in the 1990s: Similarities to and Differences from the 1980s

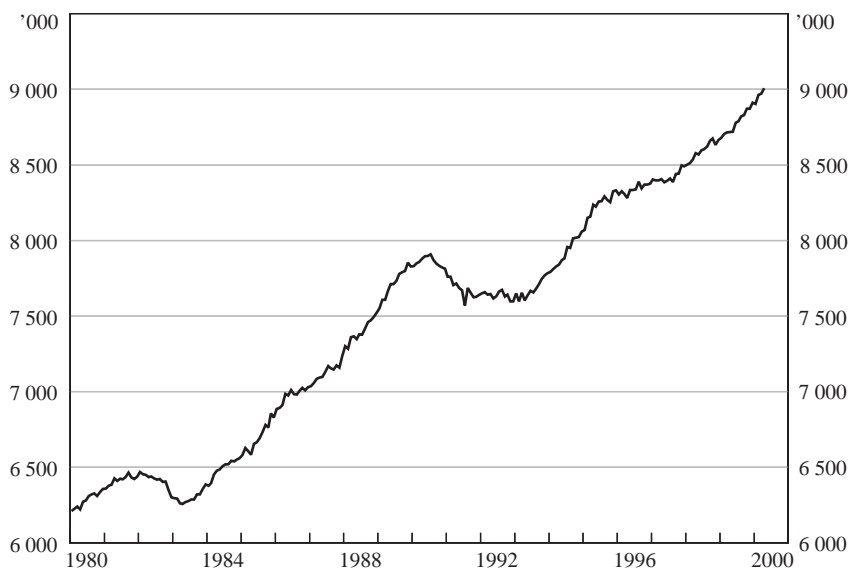
In this section an overview is presented of trends in aggregate labour market outcomes in the 1990s. Of particular interest is how some of the trends in the 1990s were quite different from the experience of the 1980s and some were very similar.

2.1 Similarities

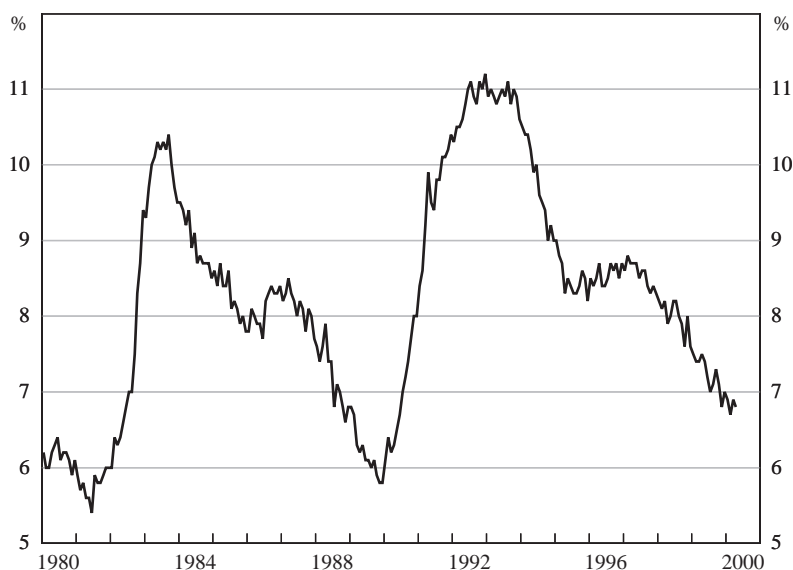
The time pattern of aggregate employment and the unemployment rate in the 1990s followed remarkably similar paths to the 1980s (Figures 1 and 2). The recession at the beginning of the decade led to a big jump in the unemployment rate in a short period of time – a very similar experience to the recession of the early 1980s. This was followed by a slower but steady reduction in unemployment in the remaining years of the decade, again a very similar experience to the 1980s. The size of the employment growth after the recession in the early 1990s was not as large as the employment growth enjoyed between 1983 and 1990, a point that is developed more in Section 2.2.

Another similarity is the growth of part-time employment and in the hours of work of full-time employees. The incidence of part-time employment has continued on its

Figure 1: Aggregate Employment



Source: ABS Cat No 6203.0

Figure 2: Unemployment Rate

Source: ABS Cat No 6203.0

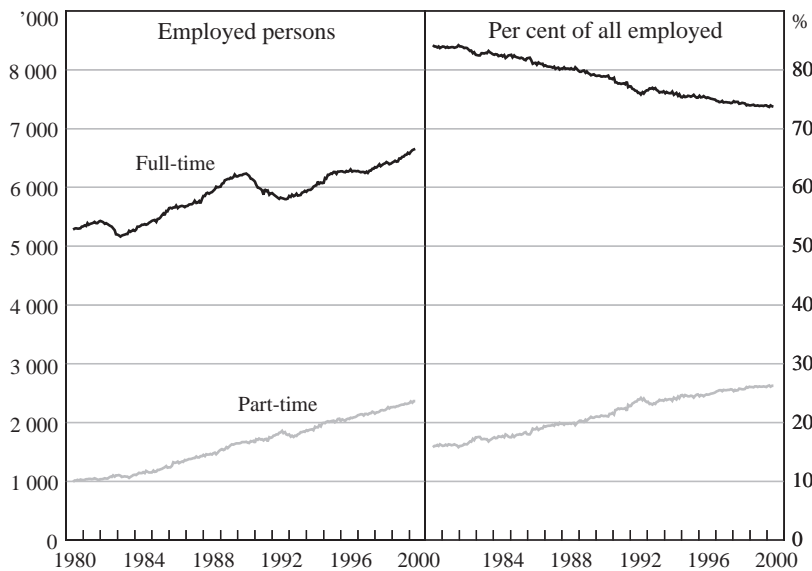
long-run upward trend (Figure 3), with the absolute numbers of part-time employees approximately doubling over the two decades, and with only a very minor dip in the recession at the beginning of the decade. Average hours of work of full-time employees have also risen in the 1990s as they did in the 1980s (Figure 4), although since 1994 it appears the upward trend has slowed and may have halted in the last year or two.

A third similarity relates to the widening distribution of earnings of full-time employees (Table 1). Looking at the first and last columns in Table 1 it can be seen that for both male and female non-managerial workers, the earnings of the lowest decile in the distribution have continued to fall relative to the median. Similarly the earnings of the highest decile have risen relative to the median.

A fourth similarity is that there has been an ongoing increase in the concentration of employment into 'job-rich families' and 'job-rich communities' and of 'joblessness' into 'jobless families' and 'job-poor communities' (Dawkins 1996; Gregory and Hunter 1995; Miller 1997; Reference Group on Welfare Reform 2000a).

Figure 5 shows how the number of income units in Australia with no job has increased substantially between 1982 and 1997, as have the number of income units in which there are two job-holders, illustrating this widening distribution of jobs. The only type of income unit where there has been substantial growth in just one person working, is the single adult (without child) income unit.

Figure 3: Part-time and Full-time Employment



Source: ABS Cat No 6203.0

Figure 4: Hours of Work by Full-time Employees
Per week, annual average



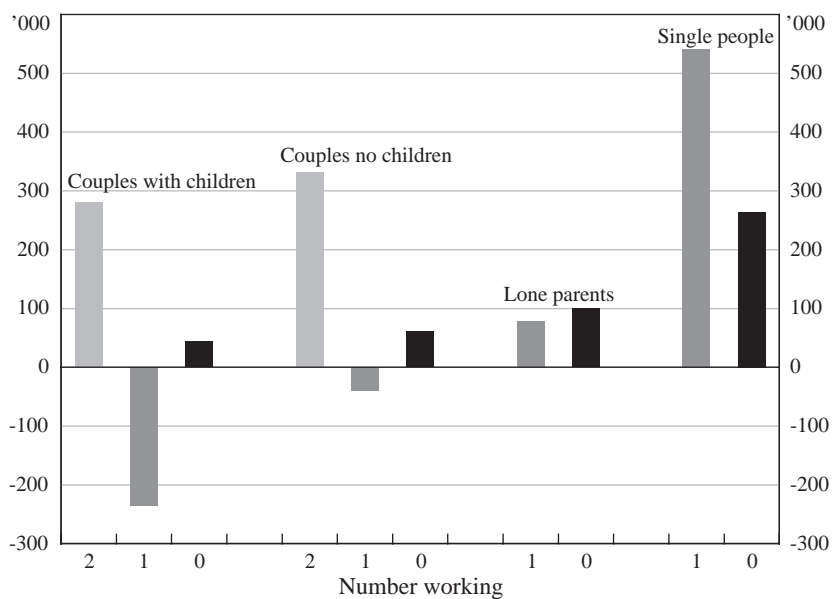
Source: ABS Cat No 6203.0

Table 1: Distribution of Earnings for Full-time Non-managerial Workers
As a percentage of median earnings

	Lowest decile	Lower quartile	Upper quartile	Highest decile
<i>Males</i>				
1975	76.0	85.6	121.1	141.2
1980	73.8	84.0	123.2	150.4
1985	72.5	80.7	125.7	154.1
1990	69.5	80.6	126.0	156.3
1995	67.7	79.4	127.8	160.7
1998	65.5	78.4	128.7	162.6
<i>Females</i>				
1975	80.2	88.8	115.3	136.5
1980	81.8	88.0	119.3	142.8
1985	78.6	87.3	121.2	147.9
1990	74.9	84.1	123.1	147.6
1995	73.4	84.1	125.3	152.0
1998	71.8	82.3	127.5	150.4

Source: Norris and McLean (1999)

Figure 5: Distribution of Work Across Income Units which Include Working-age Persons
Increase/decrease in number of income units, 1982–1997



Source: Reference Group on Welfare Reform (2000b), Appendix 2

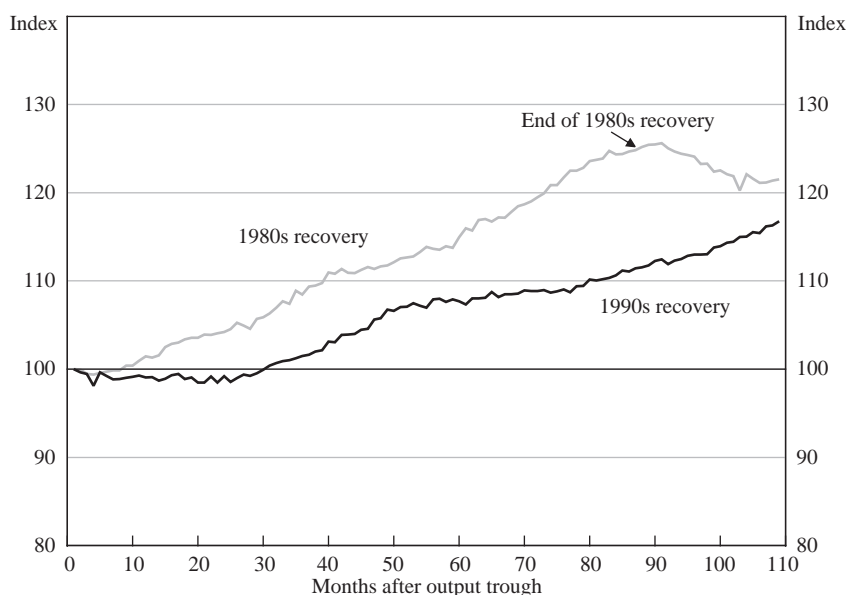
By June 1999, about 160 000 couples with dependent children had neither parent in paid work and there were 280 000 jobless lone parent families. These households contained around 860 000 children, representing 17 per cent of dependent children in Australia (Reference Group on Welfare Reform 2000a).

2.2 Differences

Just as some of the above similarities are striking, some differences are striking as well.

First, the size of the employment growth after the recession in the early 1990s was not as large as the employment growth enjoyed between 1983 and 1990 (Figure 6), although the continuation of the employment growth in 1999 and 2000 makes it a longer expansion period.

Figure 6: Recovery of Aggregate Employment in the 1980s and 1990s



Source: ABS Cat No 6203.0. Note the 1980s recovery is assumed to commence in the first quarter of 1983 and the 1990s recovery in the second quarter of 1991, following Debelle and Swann (1998).

The next and probably most striking difference concerns the trend in the labour force participation rate, which changed a great deal in the 1990s compared with the 1980s. In the 1980s there was a reduction in participation during the recession, followed by quite a large increase over the remaining years of the decade. By contrast in the 1990s, while there was again a reduction during the recession, in the recovery it almost returned to its previous peak but has failed to increase further, stagnating

Figure 7: Participation Rate

Source: ABS Cat No 6203.0

after 1995 (Figure 7). Along with the slower growth in the population of working age⁶, this has enabled the unemployment rate to fall by about as much as it did in the 1980s, without requiring quite such a large increase in employment.

The difference in trends in the participation rate between the two decades was dominated by the behaviour of female participation (Figure 8).

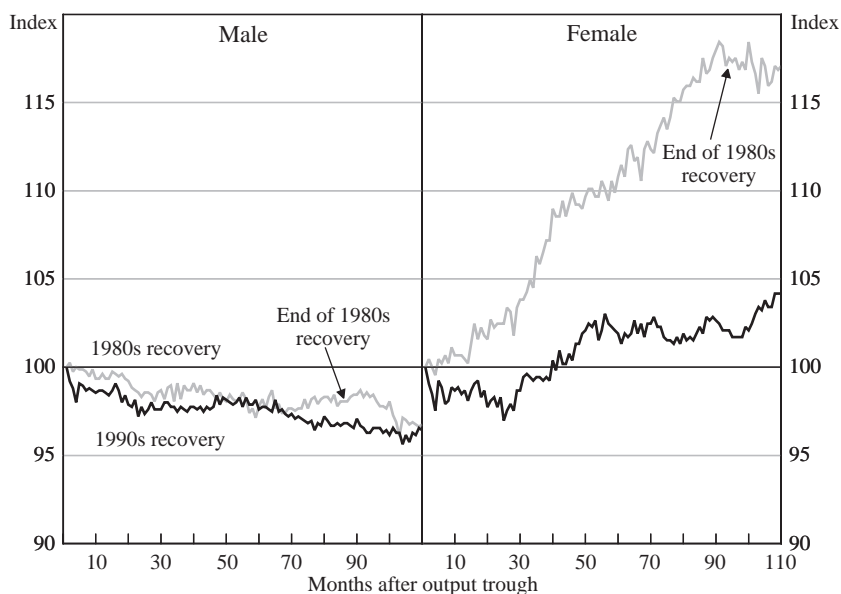
The next difference is that the reduction in unemployment took longer in the 1990s recovery than in the 1980s (Figure 9). The fact that unemployment came down as much as it did, despite the slower growth in employment, was largely due to the sluggishness of the participation rate.⁷

Further, while in the 1980s the employment expansion and reduction in unemployment was accompanied by a reduction in hidden unemployment (as proxied by either 'discouraged workers' or the 'marginally attached'), especially amongst females, this has not been a feature of the employment expansion in the 1990s (Figure 10). Furthermore, underemployment, as measured by the percentage

6. Annual working age population growth in the 1990s was 1.4 per cent, down from 2.0 per cent in the 1980s.

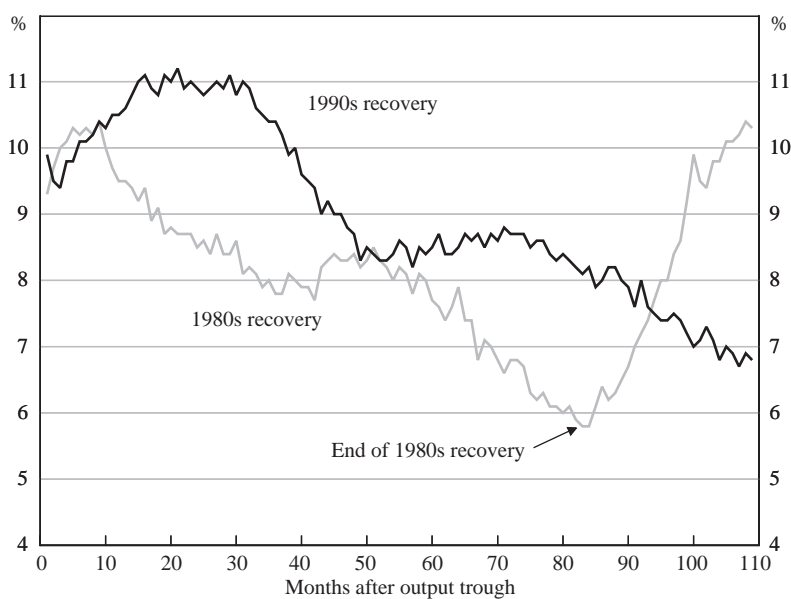
7. Debele and Swann (1998) have shown that male unemployment showed a particularly weak response to the recovery in the 1990s. This is consistent with the observation that it is female participation that has been relatively sluggish compared with the 1980s.

Figure 8: Recovery in Participation of Males and Females



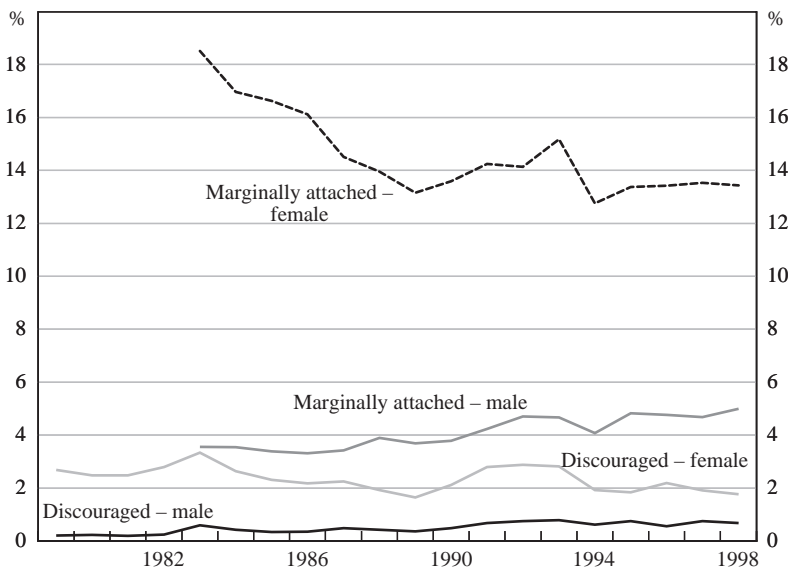
Source: Updated version of graph from DeBelle and Swann (1998), produced from ABS Cat No 6203.0

Figure 9: Unemployment Rates in the Recoveries of the 1980s and 1990s



Source: ABS Cat No 6203.0

Figure 10. Hidden Unemployment Rates: Discouraged Workers and the Marginally Attached



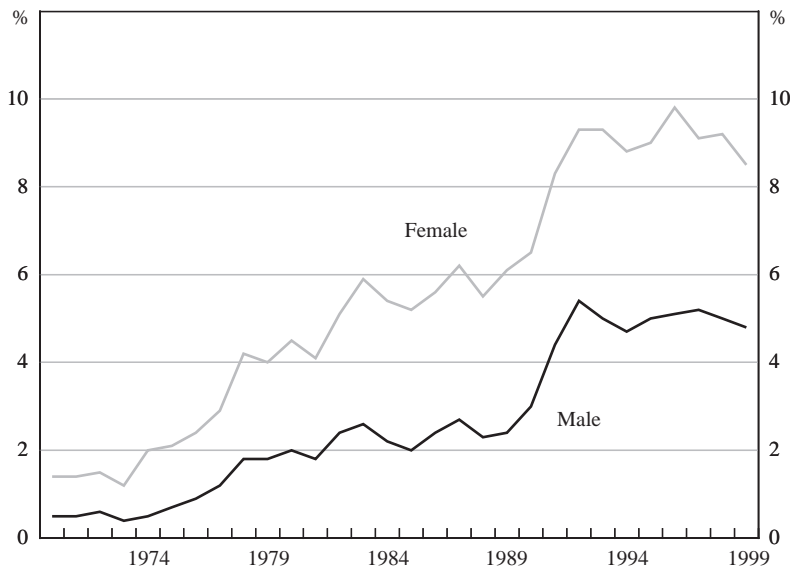
Source: Wooden (1996), updated by Mark Wooden based upon ABS data.

of employees who would like to work more hours, increased significantly during the recession of the early 1990s and has since remained at an historically high level (Figure 11).

Furthermore, the trends in labour productivity and real wages were quite different in the two decades. In the 1980s labour productivity increased quite slowly. In the 1990s it increased faster. The contrast in trends in real wages was even more striking. In the 1980s, real wages declined steadily after the introduction of the Accord. In the 1990s, in an era when enterprise bargaining was becoming prevalent, real wages have grown quite strongly. Thus it appears that, possibly as a result of the enterprise bargaining era, employees have cashed in significantly on the increasing labour productivity (Figures 12 and 13).

This has produced a different outcome with respect to real unit labour costs. While they have continued on a downward trend (Figure 13), it has been a much more modest downward trend than in the 1980s. This is likely to be part of the reason why employment growth has not been quite so strong as in the expansion in the 1980s.

Figure 11: Underemployment Rate
As at August



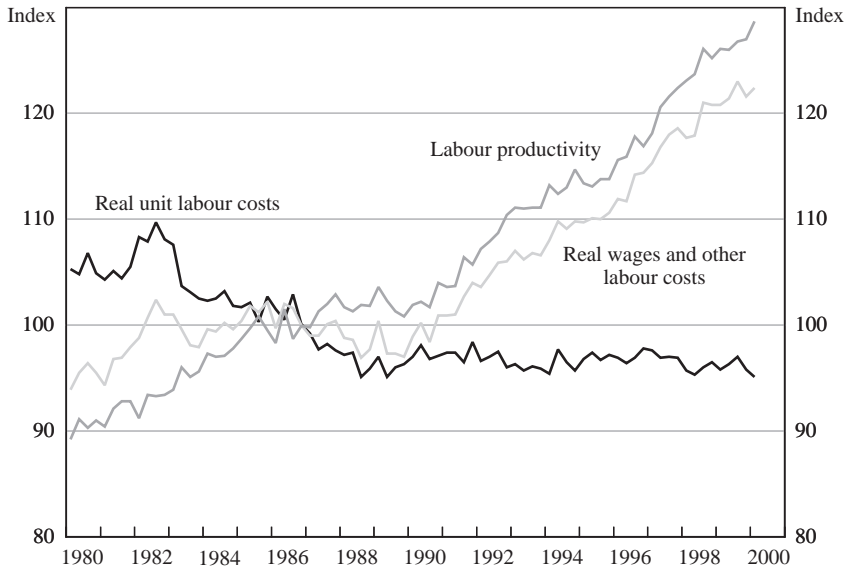
Source:Wooden (1996), updated by Mark Wooden based upon ABS data.

Figure 12: Real Wages
AWOTE, 1989/90 prices



Source: ABS Cat Nos 6302.0 and 6401.0

Figure 13: Labour Productivity, Real Wages and Real Unit Labour Costs



Source: Treasury, Unit Labour Costs (available at www.treasury.gov.au/economicdata)

3. Labour Market Institutions and Policies in the 1990s

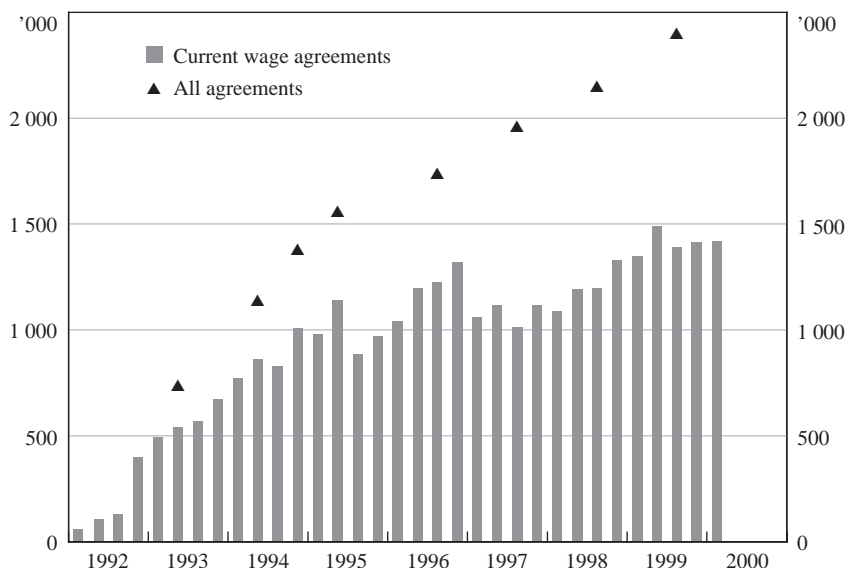
3.1 Enterprise bargaining

The most dramatic change in the institutional environment in the 1990s has been the rise in the incidence of enterprise bargaining. Figure 14, taken from Wooden (2000c), shows how since enterprise agreements were introduced in the Federal system they have grown in importance dramatically in the 1990s. The current wage-agreement series shows the number of employees covered by current Federal enterprise agreements, as published quarterly by the Department of Employment, Workplace Relations and Small Business (DEWRSB). Wooden (2000c) points out that the DEWRSB series only includes current agreements and not all agreements in force. He has added to those covered by current agreements an estimate of the numbers covered by all agreements to produce the all agreements series in Figure 14.⁸

There has also been growth in enterprise agreements in the State jurisdictions and this has resulted in such wage setting being the dominant mode of wage setting. Table 2 presents estimates, obtained by a survey of firms conducted by DEWRSB, of the coverage of agreements as opposed to those whose wages are still set purely by awards.

8. In many cases formal agreements are not renewed.

**Figure 14: Coverage of Federal Enterprise Agreements,
Number of employees**



Source: Wooden (2000c)

Table 2: Coverage of Agreements and Awards

Type of wage-setting arrangement	Percentage of employees covered ^(a)
Registered collective agreements	42
Over-awards/unregistered agreements	22
Registered individual agreements/common law	14
Awards only	22

(a) Only applies to workplaces with 5 or more employees and excludes agriculture.

Source: Joint Governments' Submission (2000)

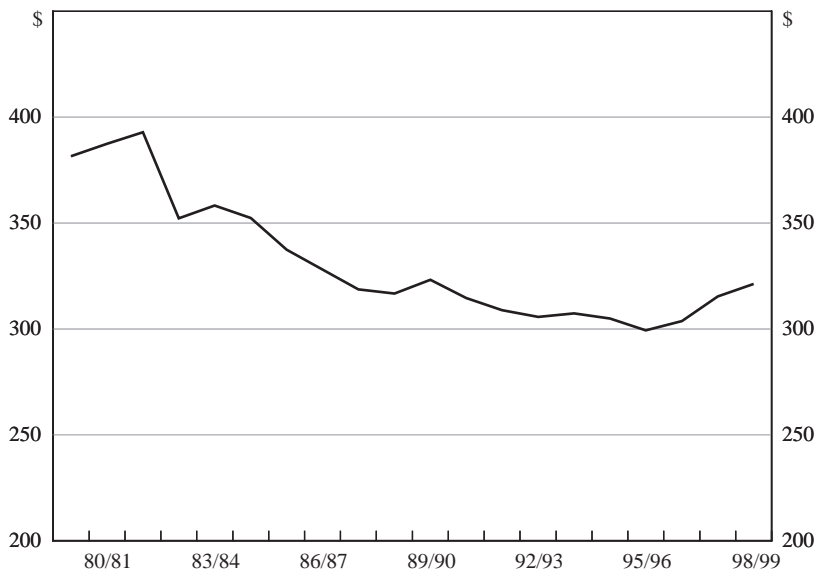
3.2 The wages safety net

The strong growth of enterprise bargaining has curtailed the importance of the Industrial Relations Commission and its State counterparts. However, for the approximately 22 per cent of employees who have continued to rely on awards for their wages to increase, the decisions of the Industrial Relations Commission in its Safety Net Reviews have been important. These reviews have often been referred to as 'Living Wage Cases', a term coined by the ACTU. Their claims for increases in

the wages safety net or 'living wage claims' retain a major role for the ACTU and the Industrial Relations Commission.

Interestingly, it can be seen from Figure 15 that the real value of minimum wages in Australia were on a downward trend through the 1980s, due first to the wages freeze, and then to the Accord. But this slowed down during the 1990s, once enterprise bargaining came into full swing and the Industrial Relations Commission became concerned about the safety net falling behind enterprise bargaining outcomes. Indeed the 'living wage cases' since 1996 have given a significant boost to real minimum wages.

Figure 15: Real Minimum Wage
\$ per week, 1989/90 prices



Source: Reserve Bank of Australia, *Australian Economic Statistics*. The data are weighted averages of the lowest rates of pay for a full week's work (excluding overtime) for adult male wage earners. Since 1997, adjustments have been made on the basis of national wage increases. Deflated using the CPI.

There remains a lively debate about the effect of minimum wages in Australia, with proponents of significant regular rises in minimum wages pointing especially to evidence from the US that minimum wage rises do not have an adverse effect on employment (Card and Krueger 1994, 1995). Those who see minimum wage rises as a bigger risk to employment point out that in the US the minimum wage is much lower relative to median earnings than in Australia, and that fewer workers are paid the minimum wage (see for example Dawkins and Gruen (1999) and the Joint Governments' Submission (2000)).

Table 3 presents evidence from Metcalf (1999) on the real value of the national minimum wage in each of nine countries, and its value relative to full-time median earnings. This shows that Australia is at the high end of the distribution as far as minimum wages are concerned.

Table 3: Summary of Minimum Wage Systems in Selected OECD Countries with a National Minimum

Country (<i>year of introduction</i>)	End 1997 NMW ^(a) in US\$ using PPPs ^(b)	Mid 1997 NMW as % of full-time median earnings
Australia (<i>1996, some form since 1907</i>)	6.65	54
Belgium (<i>1975</i>)	6.40	50
Canada (<i>Women (1918–30); Men (1930–59)</i>)	5.33	40
France (<i>1950, 1970 in current form</i>)	5.56	57
Japan (<i>1959, 1968 in current form</i>)	3.38	31
Netherlands (<i>1968</i>)	6.00	49
Spain (<i>1963, 1976 in current form</i>)	2.94	32
United States (<i>1938</i>)	5.15	38
United Kingdom (<i>1999</i>)	5.44	44

(a) National minimum wage

(b) Purchasing power parity

Source: Reproduced from Metcalf (1999)

Metcalf (1999), who has conducted a detailed study of the effects of minimum wages in the context of the setting of a minimum wage in the UK, has pointed out that modest increases in minimum wages when they are at very low levels do not tend to have adverse effects on employment, and may sometimes have positive effects. However, at higher levels increases in minimum wages can be expected to have significant adverse effects on employment. It seems that the setting of the minimum wage in the UK was strongly influenced by this observation and that we should be much more cautious about raising the much higher Federal minimum wage in Australia.

When it is added that the Federal minimum wage is only the bottom rung of a whole structure of minimum wages in Australia, this provides further reason to become nervous about the effect of raising them significantly, especially armed with the knowledge that international evidence suggests that the elasticity of demand for low-skilled labour tends to be higher than for others.

3.3 Labour market programs

As a result of the recession in the early 1990s, the Labor Government introduced its *Working Nation* policies, the major emphasis of which was labour market programs including wage subsidies. A target of a 5 per cent unemployment rate was set and significant progress was made in that direction in 1994⁹ (but not in 1995). This was probably due more to the economic recovery than to the labour market programs, although there is some evidence that the labour market programs have had a significant effect on the incidence of long-term unemployment.¹⁰

These programs were nonetheless expensive and the newly elected Coalition Government, in cutting government spending, targeted labour market programs as an area to cut. Instead, they introduced *Job Network*, involving the ‘outsourcing’ of employment placement services to private as well as public providers. With funding attached to the contracts with the providers, this program aimed at creating a strong incentive for successful placement. This funding could be used partly for purposes like those of the previous labour market programs, but only if the providers considered it appropriate.

In addition to *Job Network* the Coalition Government later introduced the *Work for the Dole Scheme*, itself a kind of labour market program with some similarities to some of the community employment programs that had been operated in the 1980s and to some extent under *Working Nation*.

The rationale for the *Work for the Dole Scheme*, as espoused by the Coalition, is partly to provide useful experience and promote good work habits, but it is also seen as a way in which the unemployed can meet their ‘mutual obligation’ requirement associated with receiving income support. Indeed in the 1990s mutual obligation (referred to by the Labor Government under *Working Nation* as ‘reciprocal obligation’), has become a very important feature of employment policy.

3.4 Tax, social security and the labour market

There has been a growing awareness in the 1990s of the importance of the relationship between the labour market and the social security system. This has been a major motivation for the establishment of a review of the welfare system by the current Federal Government.

The interim report of the Reference Group on Welfare Reform¹¹ established in this process noted that although there has been incremental reform, the social support system has its origins ‘in a fundamentally different economic and social environment. It was designed during a time of low unemployment, generally of short duration, and when the most common [household] type was a couple with children and a principal

9. There was also a substantial reduction in unemployment in 1993 due to the pick-up in the economy, while *Working Nation* was being devised.

10. See for example Stromback, Dockery and Ying (1999).

11. The author is a member of the Reference Group.

male breadwinner. Social security was provided for a small minority of cases in which a family was unable to provide for itself, due to unemployment or severe disability, or where there was a sole parent. Such benefits were means-tested to ensure that support went to those with obvious needs.

‘The growth of unemployment, the rising trend of lone parenthood and an ageing population has made income support a less exceptional circumstance. These changes have resulted in a growing array of benefit types with associated payments and means-test... The increasing complexity of the system and [the associated] high effective marginal tax rates, along with the compartmentalisation of the system, and the rising numbers on income support, has led to the Reference Group’s conclusion that the system needs fundamental reform’ (Reference Group On Welfare Reform 2000a, p 10).

The Reference Group argued that there were four particular shortcomings with the existing income support provisions and associated support services:

- The current rigid categorical array of pensions and allowances for people of workforce age is overly complex and relies heavily on presumptions about capacity for participation within particular groups of people rather than recognising the diversity of each individual’s capacity and circumstances.
- Incentives for participation could be improved and some forms of work are not sufficiently rewarded.
- There is insufficient recognition of the many forms in which people make a contribution, including social participation.
- The service delivery arrangements and access to services are fragmented and not sufficiently focused on participation goals for all people of workforce age.

Figure 16 shows what has been happening, on average, to the relationship between unemployment benefits and the minimum wage over time. It is striking that in the 1980s this was on a strongly rising trend. However, it seems that this has changed in the 1990s, first with a slow-down in the growth, and more recently with a slight decline. This has been driven mainly by the fact that benefits were rising quite significantly in the 1980s but have slowed down in the 1990s (Figure 17). However, the ratio reached its highest point since 1976 in 1996, suggesting that there has perhaps been a progressive blunting of the incentive to work since the early 1980s that has only recently been halted.¹²

12. This provides a broad approximation to the trends in replacement rates on average across different household types. It does not, however, attempt to deduct taxes or add family payments to the minimum wage calculation. For a more detailed discussion and estimates of trends in replacement rates for different family types see Reference Group on Welfare Reform (2000a). This indicates that replacement rates for families with children (which are the highest) rose modestly in the 1980s due largely to increases in assistance to those who were renting privately. They rose a little more for families without children (to become just behind those for families with children) and more again for singles without children (albeit from a low level). It is also confirmed that there have been modest reductions in the 1990s except for singles.

Figure 16: Ratio of Unemployment Benefits to the Minimum Wage



Sources: Reserve Bank of Australia, *Australian Economic Statistics*. The data are weighted averages of the lowest rates of pay for a full week’s work (excluding overtime) for adult male wage earners. Since 1997, adjustments have been made on the basis of national wage increases. AusStats, NIF Taxes and Transfers. Weighted Average Unemployment Benefit.

Figure 17: Unemployment Benefits
Composite person per quarter, 1980/81 prices



Source: AusStats, NIF Taxes and Transfers. Weighted Average Unemployment Benefit.

There has certainly been a growing awareness of work incentive issues and a growing interest in the idea that an important feature of policies aimed at raising employment could be to increase the incentive for people to move from welfare to work. In the 1990s this has resulted in an interest in the idea that people on low wages in households with low incomes might have their wages supplemented by income support payments.

4. The Drivers

Having reviewed the trends in labour market outcomes and in labour market policies and institutions, the focus in this section is on what has driven these trends. Important questions include for example, has it been the changes in policies and institutions that have driven the outcomes, or are they endogenous? Have there been more fundamental drivers that have driven outcomes, policies and institutions?

4.1 The business cycle

Clearly the business cycle has had a profound influence on labour market outcomes in the 1990s. The recession at the beginning of the nineties led to very high unemployment (about 11 per cent) and the subsequent long recovery has brought the unemployment rate down again to below 7 per cent. This is a good illustration of the argument that the worst thing that can happen as far as unemployment is concerned is a recession. Thus, if it is possible to prevent a recession, delay a recession, or reduce the severity of a recession, then the better the outlook for the unemployment rate.¹³ Thus macroeconomic policy is of great importance as far as labour market outcomes are concerned. In observing the movement of aggregate employment and unemployment in the 1980s and 1990s, the business cycle appears to have been a major driver.

Having said that, it is a matter of concern that despite a long recovery period of high economic growth, we still have unemployment of about 6½ per cent. With inflation rising slightly and monetary policy having tightened somewhat, this is leading some commentators to suggest that perhaps we are close to the natural rate of unemployment or the NAIRU, and perhaps only major structural reform can reduce the NAIRU to 5 per cent or below. We will return to this issue in Section 4.5.

It should be added that when we look underneath the aggregate trends in employment and unemployment (for example at trends in part-time employment) and at trends in average and relative wages, the cycle does not appear to have much influence. There are clearly some secular trends tending to cause rising earnings inequality and also a strong growth in part-time and casual employment.

13. This observation is also very pertinent to the incidence of long-term unemployment (see Chapman and Kapuscinski (2000)).

4.2 Technological change, trade and globalisation

4.2.1 *Technological change and part-time employment*

The most pronounced change in labour market outcomes over the last two decades has been the approximate doubling of the number of part-time employees, a substantial proportion of whom are casual workers. Part-time employment now represents over 20 per cent of employment. The major driver of this trend is thought to be technological change which has made part-time and especially casual employment, increasingly attractive to employers, especially in the service sector (Dawkins and Norris 1995). This trend, however, was made possible by the substantial growth in the labour force participation of women, for whom part-time/casual employment is often a very attractive proposition, as it is to many young people, particularly those in education.

It is also possible that one of the reasons why casual employment (which is mostly part-time) has been so successful is the flexibility it affords to employers under the industrial relations system, relative to permanent employment.

4.2.2 *Trade and technology and the earnings distribution*¹⁴

Trade effects and the Stolper-Samuelson theorem

Especially in the United States, but in many other OECD countries as well, there has been a widening of the earnings distribution over the last twenty-five years. One of the features of this in some countries (including the US) has been a widening of skill differentials.

There have been two main possible causes of this that have been put forward. One is the increase in the importance of international trade, often referred to as 'globalisation'. Under one version of this explanation, consistent with the Stolper-Samuelson 'wage equalisation' theorem, an increase in trade tends to cause a reduction in wages of unskilled labour in countries with a comparative advantage in the production of skill-intensive commodities. This is because there is a shift in the demand for commodities with low-skill content towards those countries with a comparative advantage in low-skill intensive commodities. This in turn reduces the demand for low-skilled labour in the relatively high-skilled economies, and forces the low-skilled wages towards low-skilled wages in the less-skilled (less-developed) economies.

Under the Stolper-Samuelson theorem, relative producer prices change and also there is a second-round effect increasing the demand for low-skilled labour in high-skilled economies as a result of these changes in relative prices and wages.

Empirical evidence for these Stolper-Samuelson effects has been hard to find. Some studies have found changes in skill differentials, particularly in the US,

14. This section draws on Dawkins and Kenyon (1999).

consistent with the theorem, but less evidence of the producer price effects, and less evidence still of increasing demand for low-skilled, low-wage labour.¹⁵

If evidence of the Stolper-Samuelson effects have been hard to find in the US, they have been even harder to find in Australia, where there is a lack of evidence, even, of changes in skill differentials.

When considering what has happened to the overall distribution of earnings, at first sight it seems plausible that the same is true for Australia as the US. Table 1 provides evidence on the widening distribution of earnings presented in Norris and McLean (1999). It shows that over the last twenty-five years the earnings of the lowest decile and quartile of the earnings distribution have declined markedly relative to median earnings. Also, the earnings of the upper quartile and decile of the earnings distribution have risen markedly relative to median earnings. This is true for both males and females.

When examining the reasons for such a widening of the earnings distribution, however, Norris and McLean point out that to a large extent the explanation lies in the strong growth in employment of high-wage workers, rather than in changes in the relative wage of high-wage and low-wage workers. They reproduce evidence from the Economic Planning and Advisory Commission (EPAC 1996) as evidence of this (Table 4). It demonstrates that there was very strong growth in employment in high-wage and high-skill jobs between 1986 and 1995, but not in low-skill and low-wage jobs. Meanwhile there was no significant difference between the growth in wages of high-wage and low-wage employees.¹⁶

Table 4: Wages and Employment Growth by Occupational Group
Per cent

	Nominal wages 1986–1995	Employment 1986–1994
<i>By 1986 wage of occupation</i>		
High	58	22
Middle	50	16
Low	57	–4
<i>By skill level of occupation</i>		
High	58	24
Middle	52	0
Low	55	2

Source: EPAC (1996)

15. It is perhaps unsurprising that the second-round effects on the demand for low-skilled labour have been hard to find because they might be swamped by the first-round effects.

16. It should be added, however, that there has been a widening of intra-occupational differentials as against inter-occupation differentials, though this is not particularly associated with Stolper-Samuelson effects either.

This is consistent with the evidence on occupational wage differentials uncovered by Fahrer and Pease (1994), who were specifically looking for evidence on Stolper-Samuelson effects in Australia. They found no evidence of a systematic widening of occupational wage differentials between 1987 and 1993. They focused on the wage differentials between unskilled machinists and high-skilled managers, administrators and professionals, which showed no obvious signs of an upward trend.

In view of the changes to the wage setting system since 1993, it might be expected that there has been such a widening since then. It seems plausible that with enterprise bargains and individual contracts providing for higher wage increases than awards, such occupational wage differentials may have widened. To test this, Dawkins and Kenyon (1999) obtained similar data from the ABS as those presented by Fahrer and Pease (1994), but updated to 1998. These data are presented in Table 5. Perhaps a little surprisingly, there is still no obvious sign of a widening of these occupational wage differentials, although this requires further research.

The Industry Commission's study of the trade liberalisation and earnings distribution (Murtough, Pearson and Wreford 1998) also found no general evidence of the changes in wage relativities (or in relative producer prices) that would be predicted in accordance with Stolper-Samuelson effects.

The evidence appears to be that unemployment has increased among workers with less education, for new entrants to the labour market (youth) and for older males displaced from tariff-adjusting industries. Some economists argue that wage rigidity,

Table 5: Occupational Wage Differentials in Australia

Low-skilled occupation	Ratio of hourly wage to skilled hourly wage As at May						
	1991	1992	1993	1994	1995	1996	1998
<i>Machine operators</i>							
Food processing	0.63	0.65	0.65	0.69	0.66	0.70	na
Textile sewing	0.55	0.54	0.53	0.53	0.52	0.52	0.49
Shoemaking	0.60	0.59	na	0.57	0.53	0.55	0.62
Wood processing	0.63	0.60	0.61	0.61	0.61	0.60	0.59
Paper and paper products	0.77	0.79	0.77	0.77	0.68	0.77	0.66
Chemical production	0.84	0.73	0.71	0.68	0.75	0.75	0.76
Clay and stone processing	0.68	0.62	0.61	0.64	0.66	0.60	0.56
Basic metal product	0.67	0.66	0.70	0.73	0.67	0.72	na
Other metal products	0.62	0.67	0.62	0.65	0.68	0.59	na
Photographic products	0.62	0.66	0.78	0.60	0.64	0.63	0.55
Plastics production	0.61	0.62	0.66	0.66	0.63	0.72	0.62

Source: Dawkins and Kenyon (1999). Constructed from ABS data.

due to institutional factors, has prevented full wage adjustment to occur, thus shifting the burden to unemployment (see Fahrer and Pease (1994)).

It is certainly the case that unemployment is highest among the low-skilled, although Vickery (1999) has not found evidence that the incidence of unemployment amongst the low-skilled has risen any faster than for the higher-skilled. This is because there has been a shift in the supply of labour towards higher-skill just as there has been a shift in demand.

Technological change

The other main explanation that has been put forward for the widening distribution of earnings, is that of 'skill-biased' technological change. Under this explanation, technological change (e.g. computerisation and digitisation) has tended to be complementary to high-skilled labour but a substitute for low-skilled labour, thus leading to growth in demand for high-skilled labour and a decline in demand for low-skilled labour. This explanation is more consistent (than the Stolper-Samuelson theorem) with the strong growth in demand for high-skilled labour driving the widening of the earnings distribution.

Further shift-share analysis by Fahrer and Pease (1994), decomposing changes in employment by industry sector into the respective contributions of trade and productivity effects (and where the trade effects are further decomposed into imports from 'low-wage countries' and 'high-wage countries'), suggests that productivity effects have been the dominant force behind the decline in manufacturing employment between 1981/82 and 1991/92, except for one industry – clothing, textiles and footwear. The latter industry is the only one that tends to fit the Stolper-Samuelson stylised facts. Fahrer and Pease (1994) interpreted their results as support for an explanation for changed employment patterns based on skill-biased technological change in the presence of wage rigidities.

Murtough *et al* (1998) used the Monash Model to analyse the effects of trade liberalisation versus effects of technology. Note that in the Monash Model, rigid wage relativities between occupations are assumed, which appears to be consistent with the evidence presented above.

Their results indicated that between 1986/87 and 1993/94, the number of hours worked in manufacturing had fallen by 12.7 per cent of total Australian labour supply, and that employment had not grown over that period. Of this about one-tenth, i.e. 1.4 per cent, of the decline in hours worked was estimated to have been caused by changes in industry assistance (including tariffs). About a quarter, i.e. 3.2 per cent, was estimated to have resulted from technological change across the economy that reduced the use of manufactured inputs and labour per unit of output. About one-third, i.e. 4.4 per cent, of the estimated employment decline was linked to shifts in preferences between imports and domestic products not attributable to changes in relative prices. The authors suggest that 'it is possible that some of this change was associated with the removal of quantitative import restrictions' (Murtough *et al* 1998, p xii).

Tyers and Yang (1997) used a global computable general equilibrium model to examine the effect of trade versus technology on output and factor rewards. One of

the three regions of older industrialised economies was Australasia. The findings support the view that, as in the US, technological change has been the main driving force in the widening of factor rewards in Australia, benefiting professional labour most, production labour next, and farm labour least. Indeed, farm labour in Australia is found to have been affected negatively.

The inter-relationship between globalisation and technological change

While the international literature has favoured the technological change explanation of widening earnings dispersion over the globalisation explanation, some authors have pointed out that there is a strong link between technological change and globalisation. In particular, Feenstra (1998) has argued that the 'disintegration' of production in the global economy has been a major driver of skill-biased technical change, favouring high-skilled labour in high-wage economies and low-skilled labour in low-wage economies, with the associated intra-firm trade not showing up in the trade in final goods and services.

4.3 Wages and the wage-setting system

4.3.1 Wages and employment

One of the outcomes of the 1980s was a fairly widespread consensus amongst Australian labour economists that the decline in real wages under the Accord, and the associated decline in real unit labour costs was a major determinant of the strong employment growth in that period. As we saw in Figures 12 and 13, real wages have grown quite strongly in the 1990s. The effect on real unit labour costs has been ameliorated by a rise in labour productivity. However, part of the explanation of why employment has not grown as strongly as it did under Accord period, is arguably, that real unit labour costs have not been restrained as much.

Just as the Accord is generally given credit for the paths of real wages and employment in the 1980s, have changes in the wage-setting system driven the real wage growth and productivity growth in the 1990s?

4.3.2 The wage-setting system

In the 1990s the wage-setting system has become more decentralised. Enterprise bargaining has become the dominant mode of wage setting rather than arbitrated awards. This was discussed in Section 3.1.

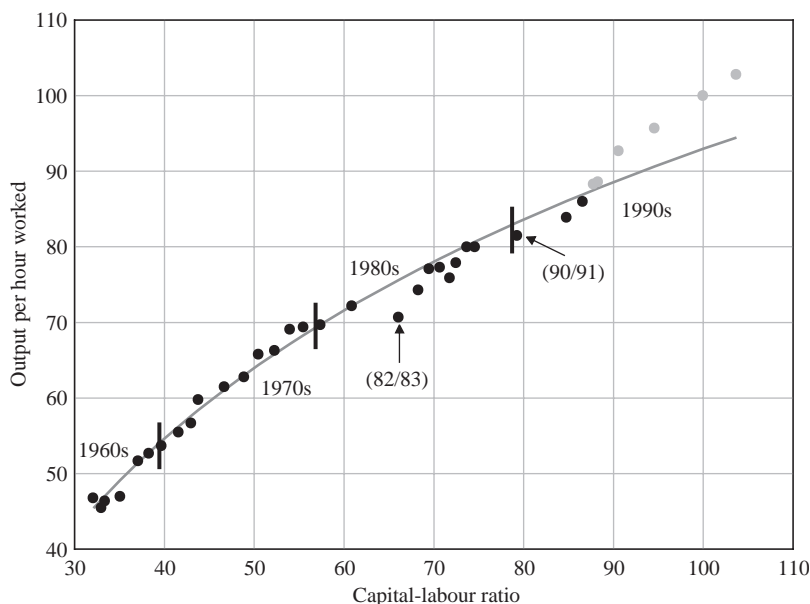
It is very difficult to determine the effects of changes in the wage-setting system on labour market outcomes. This is because of the difficulty of establishing the counterfactual, i.e. what would have been the outcome had the wage-setting system not moved in favour of enterprise bargaining. Further it could be argued that even trying to establish the counterfactual could be a misconceived idea because the move to more decentralised wage setting could be the outcome of other changes, such as deregulation of product markets, liberalisation of trade, technological change and globalisation, rather than an exogenous policy development.

Despite that, let us consider whether the change in wage-setting may have impacted on wages, productivity, employment and unemployment.

One of the motivations for moving to more decentralised wage bargaining was certainly to raise labour productivity and that has been observed. The fact that a high proportion of the benefits of labour productivity growth has been taken in the form of higher real wages is consistent with the story that enterprise bargaining has created the incentive for labour to increase its 'effort' in order to gain higher wages.

Figure 18 (grey observations) shows how labour productivity growth appeared to take off around 1994 soon after enterprise bargaining began to take hold (Parham 1999), providing circumstantial evidence that enterprise bargaining may have been a major cause. However, it is apparent that labour productivity rose quite sharply after the recession in the early 1980s, suggesting that there may have been a post-recession effect in operation. It is also noticeable that in the 1980s labour productivity was fairly sluggish, arguably influenced partly by the wage restraint under the Accord which tended to cause rising labour intensity. Thus in the post-Accord period capital intensification may have been a major part of the story, reinforced by the effects of a sustained period of microeconomic reform. That is not to deny that enterprise bargaining may also be part of the story.

Figure 18: Productivity Growth
Index, 1996/97=100



Source: Parham (1999), updated by Wooden

17. Declining unionisation has been another significant feature of the 1980s and 1990s. Union density reduced from about 48 per cent to 28 per cent between 1982 and 1998, based on an ABS survey of trade union membership, and from about 54 per cent in 1982 to 35 per cent in 1996, based on trade union statistics (Wooden 2000b, p 11).

This may be a surprise to some who might have expected a more decentralised wage-setting system with declining union density¹⁷ to be associated with lower wage outcomes, higher employment growth and low productivity growth. This is the interpretation that is often put on the New Zealand experience of labour market reform.

It does seem that Australia's enterprise bargaining reforms have been quite different from the New Zealand case.

Research by Wooden (2000a) has also found that the union wage mark-up appears to have risen significantly along with enterprise bargaining, albeit with a much lower level of union density than a decade earlier.

The idea that enterprise bargaining has supported strong growth in real wages and increased union mark-ups is also consistent with a story that most of the benefits of rising productivity growth have gone in the form of higher wages. While there has been reasonably strong employment growth in the recovery period after the last recession, it was not quite as strong as in the 1980s when real wages were restrained, and real unit labour costs declined somewhat more than they did in the 1990s.

4.4 The social security system?

In the 1990s there has been a recognition that the increasing complexity of the social security system and the associated high effective marginal tax rates for many low-income families may have been causing serious disincentive problems in the labour market, and may be one of the factors causing the problem of workless families.¹⁸ Both the Coalition Government and the Opposition focused on this issue during the tax debate prior to the 1998 election. Changes to family payments in the tax package have helped reduce the effective marginal tax rates for many low to middle income families with children. But there are reasons to believe that there may be much more left to do to increase incentives to work, as part of the reform to the welfare system aimed at reducing the incidence of workless families and households and the extent of heavy reliance on income support (Reference Group on Welfare Reform 2000a).

4.5 The NAIRU?

Over the last twenty years it has been conventional to assume that there is a non-accelerating inflation rate of unemployment (NAIRU). Thus if we seek, through macroeconomic policy, to get unemployment below that level, inflation will rise. There has been a recognition that the NAIRU can change by two types of mechanisms. First, structural change in the economy (e.g. labour market reform) can reduce the level of unemployment that the economy can sustain. Second, the NAIRU may move up or down in response to changes in the actual rate, by a process of hysteresis.

18. There is very little empirical evidence in Australia about labour supply responses to the effect of tax and social security arrangements. For this reason the Melbourne Institute has been building the Melbourne Institute Tax and Transfer Simulator, incorporating econometric estimates of labour supply behaviour, which will shed more light on this issue in due course.

Under the first mechanism, microeconomic reform is emphasised as necessary to make a lasting impact on unemployment. Under the second mechanism, demand management can itself help to get the NAIRU down.

There is a range of estimates of the NAIRU, each tending to have quite high standard errors. If there is a conventional wisdom about it in Australia, it is probably that it has been around 6 to 7 per cent over the last twenty years (e.g. DeBelle and Vickery 1998; Gruen, Pagan, and Thompson 1999). This kind of assumption is embodied in the main structural models of the macroeconomy in Australia, such as the Treasury Macroeconomic (TRYM) Model, the Murphy Model and the Access Model. However, some studies have estimated it as being much higher (e.g. Crosby and Olekalns 1998) and others have been increasingly questioning the robustness of the concept (a good discussion of the literature can be found in Borland and McDonald (forthcoming)). This is partly because of the wide range of estimates and their high standard errors. It is also because inspection of the data shows that the Phillips Curve relationship between inflation and unemployment has tended to be very 'flat', i.e. there has been a wide range of unemployment rates observed over a small range of inflation levels.

If we accept the conventional wisdom, however, the NAIRU has not been a binding constraint on the labour market in the 1990s, and for most of the time unemployment has been above the NAIRU. The challenge has thus been to get unemployment down to the NAIRU. The long expansion since the last recession has now brought the unemployment rate down to around the NAIRU. Acceptance of this position suggests that getting unemployment down much further without causing rising inflation is a major challenge that may require structural reform of the labour market.

In the author's view, one of the reasons why the NAIRU is a 'rubbery' concept, is that the unemployment rate is not necessarily a very precise measure of the tightness of the labour market. Variations in the level of hidden unemployment and underemployment, and in the amount of long-term unemployment mean that the tightness of the labour market can vary independently of the unemployment rate.¹⁹ This might be caused by hysteresis or by other forces present in the labour market such as changes in the skill composition of the labour force or changes in the demand for different types of skills. Further, the Phillips Curve framework may not take sufficient account of factors other than the labour market in generating inflationary pressure.

Having said that, there would be few economists who would deny that as the economy gets closer to full capacity utilisation, so inflationary tendencies tend to emerge, and inflation has the potential to feed on itself through a cost-price spiral, unless policies are implemented to dampen the process. Such policies will tend to slow the economy and raise the level of unemployment.

19. There have been various attempts to incorporate other measures of labour market tightness in a Phillips Curve framework (e.g. Gregory 1986; Dawkins and Wooden 1985).

Thus as we enter the 2000s, for example, after eight years of continued economic expansion and employment growth, we are seeing evidence of inflation rising and threatening to go above the Reserve Bank's target range. This has led the Reserve Bank to raise interest rates, and to take a more neutral monetary policy stance than the expansionary stance adopted during the Asian crisis.

If growth continues strongly, the Bank may have to raise interest rates further to dampen inflation. The question remains whether this will necessitate preventing the unemployment rate from declining towards 5 per cent. We are thus entering a period that may prove to be a strong test of how useful the concept of the NAIRU is. Having said that, its defenders might argue that what is really being tested is whether the NAIRU has actually fallen.

5. Unresolved Issues

This paper began with the observation that while there has been a shift in the 1990s towards a stronger market orientation in Australian labour market policy, the debate about the proper role of government in influencing labour market outcomes remains an open one.

It was noted that in some ways labour market outcomes in the 1990s have been strong, especially when focussing on labour productivity growth and real wage increases for the employed. The long expansion since the last recession has also enabled a long period of good employment growth and a substantial reduction in unemployment after the high level reached in the recession at the beginning of the decade.

On a less positive note, unemployment remains at about 6½ per cent after a very long expansion, and there remains a high incidence of 'jobless families'. Further, the labour force participation rate has not grown much in this long expansion period. This is not necessarily a bad thing in itself, especially if those not participating are 'optimising'. However, estimates of underemployment and the number of discouraged workers, especially females, remain high, suggesting that if labour demand growth was stronger the participation rate would be higher. And the number of jobless families remains high.

There has also been a widening distribution of earnings, although research by Johnson, Manning and Hellwig (1995) and by Harding (1997) suggests that government social policy has been effective in avoiding a widening distribution of income (at least up to the end of the available income distribution data in 1996). There have been growing concerns, however, that this social policy has been associated with growing welfare dependency and weakened incentives to work.

As we move into the 21st century we face a number of major questions and challenges. Can the strong growth in labour productivity be maintained? Can employment growth continue and enable substantial further reductions in unemployment and hidden unemployment? Can we significantly reduce the number of jobless families? Will the rising earnings inequality continue? Indeed, is rising earnings inequality necessary if we are to substantially reduce unemployment? If so,

can we pursue a social policy that continues to resist rising income inequality while sharpening incentives for people to move from welfare to work?

If we are going to be successful in achieving these various objectives, will it be with a more market-oriented approach or with a more interventionist/regulated approach to the labour market?

In what follows, four different views are presented about the possible way forward.

5.1 View One: there is not much more to do, with a few more years of growth we will be at full employment without any more labour market reform.

Some economists²⁰ have argued that continued strong growth should be able to get the unemployment rate down to 5 per cent or below, and that the emphasis of government policy should be to maintain strong economic growth through an appropriately expansionary macroeconomic policy. Indeed, under this view, a significant worry about the labour market over the medium term is that the ageing workforce and declining fertility may lead us soon to a problem of over-employment rather than unemployment, and that an important policy focus will be to find more labour resources through increased immigration, later retirement etc.

If reforms are needed, they might be to help unleash a more effective labour supply. Thus welfare-to-work policies aimed especially at increasing job readiness and possibly at work incentives²¹ could play an important role to help employment growth to continue.

Under this view, the concept of the NAIRU is not seen as a serious constraint. A concept that might be seen as more useful under this view is that of the stable inflation rate of growth or SIRG put forward by Dungey and Pitchford (1998). They estimated the SIRG as being about 4.4 per cent per annum. On this basis they argued that it may be possible to get unemployment down to 5 or 6 per cent over the four years following 1998, without causing rising inflation.

This general argument is plausible, especially as unemployment has already come down to 6.6 per cent and continued strong growth is being forecast by a number of economic forecasters. However, it represents a high-risk approach to policy to rely solely on economic growth to provide a long-run solution to the unemployment problem.

First, it should be noted that in Dungey and Pitchford's model the ability to achieve unemployment reduction depends partly on what happens to wage costs. Thus there are good reasons to focus on the way in which wages are set as an important determinant of unemployment.

20. Edwards (1999) espoused this view.

21. Under this view it might be argued that in a strong labour market rising wages (including minimum wages) could help to sharpen work incentives without much policy intervention required.

Second, it is striking that although we are now in the eighth year of strong economic growth, the unemployment rate is still at around 6½ per cent and the level of hidden unemployment and underemployment remains quite high. There would appear to be a significant risk that the current expansion could end before unemployment, hidden unemployment and underemployment reach a level that could be approximately described as full employment. Even if unemployment came down as low as 5 or 5½ per cent before rising again, hidden unemployment and underemployment may prove still to be higher than desirable, and arguably even 5 per cent is too high for a *minimum* level of unemployment. This would suggest that there may need to be some structural reform to the labour market for us to achieve full employment.

5.2 View Two: labour market reform has failed – we need to undo the reform process.

If View One is a little optimistic, View Two represents the strongest degree of dissatisfaction with trends in government policy over the 1990s.

Under this view, a major focus is on the widening distribution of earnings, and the level of unemployment would also be a major concern. Decentralising and deregulating wage determination, it is argued, have been a major driver of the widening earnings distribution, and the benefits of strong economic growth have been unevenly distributed with the major benefits going to high-income earners. While unemployment has come down, it is still quite high and what is needed is a much more interventionist labour market policy. One version of such a policy would be associated with coordinated wage setting while restraining aggregate wage growth. Another might be that what is more important is public sector job creation. A proponent of this view might also question the case for free trade and see trade liberalisation as one of the causes of the perceived problems.

These views do not have many supporters in mainstream policy discussion, as the move towards a more open and market-oriented economy has brought with it substantial productivity improvement²², and there are signs that unemployment may be falling towards more acceptable levels. Changes in labour market policy are to a significant extent endogenous, and seeking to make a major reversal of this trend is generally viewed as unrealistic and highly risky.

A milder variant of this argument might be that rather than abandoning the current policy thrust toward a freer labour market and market-oriented solutions, we need to increase the emphasis a little on government intervention, perhaps reasserting the powers of the Industrial Relations Commission somewhat, and spending more on labour market programs.

22. We have also seen that, anyway, there is considerable doubt surrounding the hypothesis that increasing trade openness, in itself, leads to a wider earnings dispersion.

5.3 View Three: only a free market solution will work – we must wind back the role of government.

Under this view, the movement to a free-market solution has been in the right direction, but the job is incomplete. The reason why unemployment remains unacceptably high and welfare dependency a major problem relates to remaining market impediments. These include high minimum wages, which are pricing low-skilled labour out of the labour market and high welfare benefits that lead to welfare dependency. Under this view what is needed is a more complete deregulation of wage setting, by removing the wages safety net, and substantial cuts in welfare benefits. This would allow the forces of supply and demand to work in the labour market to produce full employment and reinforce the incentive for people to move onward and upward through the labour market.

While this is a plausible view, the idea of cutting unemployment benefits is not a realistic proposition. It would carry with it the prospect of too many losers, especially in the short run. Many who are vulnerable in society would be forced into poverty.

5.4 View Four: we need something like the ‘five economists plan’: more labour market reform combined with the use of tax and social security to address distributional concerns.

Under this argument, View One is risky and may be too optimistic for reasons outlined in the discussion of that view above. View Two is not seen as a viable option, also for the reasons outlined above. In theory, View Three could result in full employment, but, as suggested above, would carry with it the prospect of too many big losers who would be forced into poverty, at least in the short run.

Unemployment and hidden unemployment, however, are seen as unacceptably high, and still in need of major attention, beyond hoping that continued macroeconomic expansion and avoiding recessions will deliver full employment. (Nonetheless seeking to avoid recessions is seen as a major plank of economic policy, which makes the steadiness of monetary and fiscal policy a very important ingredient.)

There is strong evidence that apart from the rate of output growth affecting employment positively, the other major determinant of employment growth is the growth of real wages (with a negative sign). Under this view, a policy that can have an irreversible dampening effect on real wage growth (without a commensurate reduction in productivity growth) would enable the economy to achieve a level of unemployment and hidden unemployment that would be much closer to full employment than looks likely otherwise.

Further, given that the labour market has been moving against unskilled labour and that unemployment and especially long-term unemployment is concentrated among the low-skilled, it would be an advantage if this wage restraint applied

primarily to workers with relatively low wages. This proposition is reinforced by the observation that international evidence reveals that the elasticity of labour demand is higher for low-skilled labour than for high-skilled labour. The one policy option that appears to be available to apply wage restraint especially to low-wage workers is to hold back the growth in award wages.

There are two major concerns about a policy aimed at restraining wages growth especially of low-skilled workers. First, it leads to concerns about wage inequality (and its possible implications for income inequality).²³ Second, it needs to be noted that if low wages are restrained and unemployment benefits continue to rise in line with CPI, this raises the replacement ratio and reduces work incentives. This would make it very hard to convert the increased labour demand for low-wage employees into higher employment.

Thus it becomes very important to address this interface between the wage system and the social security system. Cutting unemployment benefits is rejected on equity grounds. This results in the need to supplement the income of low-wage earners (especially those in low-income families), through mechanisms such as a negative income tax, earned income tax credit, or through some other form of in-work benefit paid either through the tax or the transfer system. This is also the mechanism that should be used to deal with equity concerns that arise from the wage restraint of low wages.

The distributional effect of such a policy tends to be in favour of families with the low to middle incomes – families in the second, third and fourth deciles of the distribution of family income (Keating and Lambert 1998) – rather than families in the bottom decile, who are typically outside of paid employment. The benefit to some of those in the bottom decile would accrue if the policy package resulted in employment gains to jobless families.

Further, given the relatively high effective marginal tax rates that apply to low wage earners in low-income families, a policy of this kind would increase work incentives more easily than can be achieved through wage rises.

Other policies to help improve the job readiness and work incentives of those on social security benefits, in the form of job search assistance, training etc, are important complements to this policy.

It is also considered that in the long run, education and training policy is very important in seeking to maintain full employment without allowing the real wages of large numbers of workers to continue falling.

The author favours this approach.

23. These concerns are often exaggerated because there is not a tight relationship between the earnings distribution of individuals and the distribution of household income. Richardson and Harding (1998) have shown for example that people earning low wages or minimum wages are well spread around the distribution of family income.

6. Conclusions

Aggregate unemployment followed remarkably similar paths in the 1990s and the 1980s (with some differences that have been discussed) and the widening distribution of earnings and growth of part-time and casual employment has continued. The trends in employment and participation rates that produced these time patterns in unemployment, however, were quite different, with the recovery in the 1990s involving both slower employment growth and weaker growth in the participation rate. The recovery, however, has lasted longer.

The paths of productivity and wages have been very different in the 1990s compared with the 1980s. The differences appear to be explained by a combination of the effects of trade liberalisation and microeconomic reforms in general, as well as technological change and labour market reform. As yet, it is hard to place magnitudes on the effects of the different factors, which are anyway strongly interrelated.

Labour market policy has also been very different in the 1990s from the 1980s. In his paper on the labour market in the 1980s, Chapman (1990) noted the success of the Accord in restraining wage growth and in promoting employment growth. He quoted Calmfors and Driffill (1988), quite rightly, as providing a theoretical basis with some empirical support, for using wage coordination through a macroeconomic income policy to promote the employment prospects of the 'outsiders', who might be losers in a less coordinated wage setting system, where union power remains substantial. Chapman (1990) also noted however, that there were pressures to increase the role of enterprise bargaining and that it was a challenge for such enterprise bargaining to be accommodated into the Accord.

As it turned out, the 1990s have brought with it a dramatic move towards more decentralised wage setting and away from Accord style arrangements.

Under the Calmfors and Driffill (1988) view, prior to the Accord, Australia had been about halfway between the two better alternatives of highly centralised wage determination or highly decentralised wage determination. The Accord moved Australia towards the centralised end, and the predicted employment benefits materialised. In the 1990s however, Australia has moved towards the other end of the spectrum. While the employment growth has not been as dramatic as it was under the Accord, it has nonetheless been steady and no one is currently arguing for a return to the Accord end of the spectrum. Arguably, the Opposition may want Australia to move back towards the middle of the range, which may provide a test of the Calmfors and Driffill hypothesis that the middle of the range is the worst place to be. The Government on the other hand appears to want to keep the move towards decentralisation going, further testing the idea of Calmfors and Driffill that moving more towards decentralisation can confer additional benefits.

Looking to the future, the level of unemployment, hidden unemployment and underemployment that exists after eight years of sustained strong growth remains a major concern, as does the incidence of jobless families. It has been argued in this paper that we should not be too complacent about labour market policy in this

environment. Continued growth, and as far as possible, avoiding a recession should be a major policy goal. At the same time, we should keep searching for structural change in the labour market to make a more permanent dent in the level of unemployment and joblessness.

It has been argued that an important ingredient in this will be welfare reform as well as increased emphasis on education and training. Alongside this however, the case for restraining wages (especially of low-skilled workers) by holding down the wages safety net has been canvassed, with a suggestion that equity concerns are better met through the tax and social security system, which could be used to boost the incomes of low-wage earners in low-income households and to simultaneously increase work incentives.

This broad approach to policy has been compared with three other broadly defined approaches that might be put forward. It has been argued that there are arguments that tend to cast doubt on the case for other approaches and the likelihood that they could prevail. The other most likely approach is one that aims to produce full employment without any further major structural reform of the labour market (although it could involve small changes to wage setting arrangements²⁴, and probably some movement on welfare reform). What happens to unemployment in the next two years could be a major factor in determining the chosen path. If we get down to a 5 per cent unemployment rate without increasing inflation above 3 per cent, the case for further significant structural change in wage setting arrangements may not prevail, at least for the time being. The discussion in this paper suggests, however, that the case will probably still remain.

24. This could involve some further degree of reduction in the importance of the Industrial Relations Commission, or some small increases, depending probably upon the outcome of the next Federal election.

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Discussion

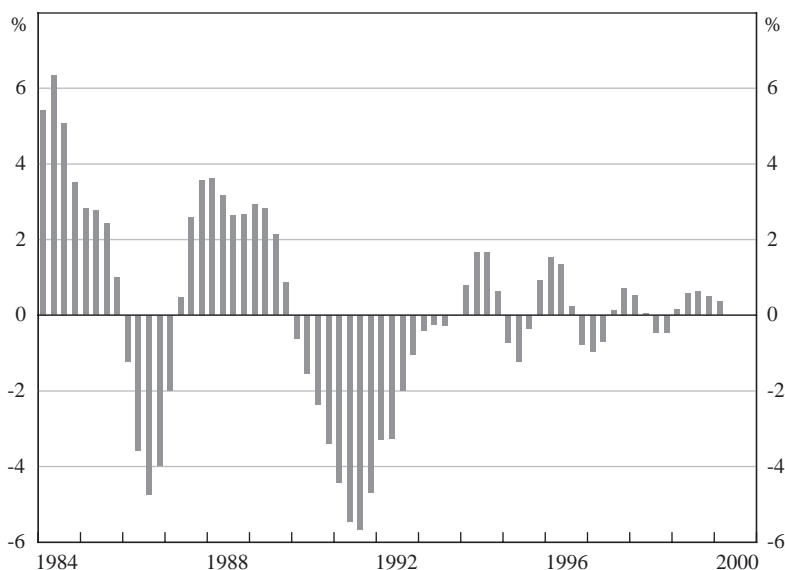
1. Barry Hughes¹

An Okun-accounting approach

Peter Dawkins is one of many expressing surprise that unemployment remains the wrong side of $6\frac{1}{2}$ per cent 'after eight years of sustained strong growth'. An Okun-accounting approach might help. Albeit very crudely applied here, the Okun concentration is on GDP, labour productivity and labour force growth rates *rather than* elapsed recovery time alone. When the 1990s expansion is viewed through Okun spectacles the surprise from the standpoint of prior expectations is how low, not how high unemployment is today.

Figure 1 displays a very crude measure of 'excess GDP growth' over an unemployment stabilisation benchmark. It is formed by deducting from (market sector) GDP growth both the trend labour productivity growth estimates used by Gruen and Stevens (this volume) *and* the actual growth of the civilian population of working age. The sense is to see what is left over to reduce unemployment after

Figure 1: 'Excess' Market Sector GDP Growth
Percentage points per annum



1. Following criticism from David Gruen, this is a revised and extended version of the comments delivered to the Conference.

productivity has eroded demand and the market sector's share of growing supply has been met. Obviously the cyclical stress in the original Okun's law is neglected, as initially are structural movements in participation, hours of work and other variables. Moreover, the use of a single average productivity trend for each of the two long recoveries (1.4 per cent and 2.9 per cent) is also debatable for study of any shorter sub-period.

The results are interesting. The fact that excess growth in the 1990s is relatively minor is, of course, simply another way of saying that stronger productivity gains have eaten into the employment-creating potential of demand. This has been partly offset by just over half a percentage point slower annual average growth of the working age population (around 1.4 per cent compared with nearly 2 per cent in the 1980s expansion). The cumulative GDP growth excesses over the recovery phases are strikingly different between the two periods. The 1980s recovery (the 7 $\frac{1}{4}$ years from March 1983) yielded 10.5 percentage points of 'excess' GDP growth. By contrast the 8 $\frac{1}{4}$ years of 1990s recovery (from June 1991) did not contribute any 'excess' market sector GDP growth (negative 1.6 percentage points), thanks to a poor experience in the first two years and sporadic, but lacklustre movements thereafter. Yet the reduction in overall unemployment has been essentially the same in both recoveries (about 4 $\frac{1}{2}$ percentage points). Unlike the 1980s, demand-side movements in the market sector (strictly, the sectors where outputs and inputs are measured independently) appear to have done nothing for unemployment in the 1990s expansion.

Demand-side movements in the non-market sector might have contributed to the 1990s unemployment reduction, but, of course, it is not possible to repeat the earlier exercise since productivity is not measured independently in this area. However, David Gruen has supplied me with his (trough to peak) trend estimates of labour productivity growth in the broader non-farm sector (0.8 per cent in the 1980s recovery and 2.2 per cent in the unfinished expansion to March 2000). Note that the productivity growth step-up between the two expansions is similar to that in the market sector (1.4 versus 1.5), but the growth levels are lower due to the inevitable dilution from including the non-market sector. Since the GDP expansion in the recovery to date has been very similar (41.7 per cent non-farm overall versus 42.2 per cent in the market sector), a focus on the non-farm sector does yield 'excess' growth points in the 1990s. But the excess remains very much lower in the 1990s recovery (a cumulative 4.1 points) than in the 1980s equivalent (11.9 points). Assuming the correctness of the data, what this suggests is that *all* the demand-side contribution to unemployment reduction in the 1990s came from the motley collection of public and private services in the non-market sector.

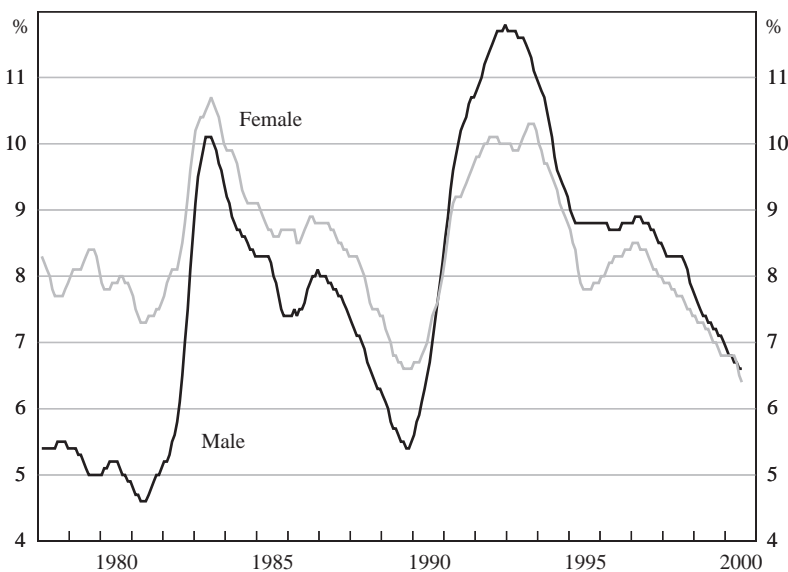
Two sets of broad influences might have contributed to the superior non-demand effects on unemployment in the 1990s:

- neglected labour variables, such as participation or the hours-employment split, might have influenced the output-unemployment relationship; and
- non-GDP influences, such as those from policy or relative wages, might have been kinder to unemployment in the 1990s than in the preceding decade.

The first influence has clearly been in play. As Peter Dawkins illustrates, the participation record has been quite different in the two expansions. That in the 1980s was accompanied by strong (female) increases, only the mutest reflection of which was apparent in the second half of the 1990s, and then only quite recently. In arithmetic terms the expansion in the trend participation rate during the 1980s recovery was 3.1 percentage points of the working age population (equivalent to nearly 5 percentage points of the labour force). By contrast, the 1990s expansion witnessed (to March quarter 2000) a virtually unchanged participation rate (contributing a minor 0.2 percentage point fall in unemployment as a percentage of the labour force). Supply-side differences between the two expansions thus offset the demand-side gap. As far as unemployment is concerned, the two recovery cycles, though similar in net effect, have quite different explanations. The strong demand-side contributions of the 1980s were blunted by surging participation. By contrast, the weak demand-side contributions of the 1990s (exclusively from the non-market sectors) were unhindered by supply offsets.

The obvious lack of a 1990s encouraged worker effect can be explained by the weakness of the demand-side aggregates, but the surprisingly weak participation record of recent years might also have occurred because the 1990s recovery was less kind relatively for females than the 1980s version. The relative unemployment gains made by females over males in the 1980s were not replicated in the 1990s. Indeed, they were reversed partially from the mid 1990s onwards (Figure 2). On the other hand similar stagnation in participation has occurred in the US, where aggregate labour demand weakness has not been evident.

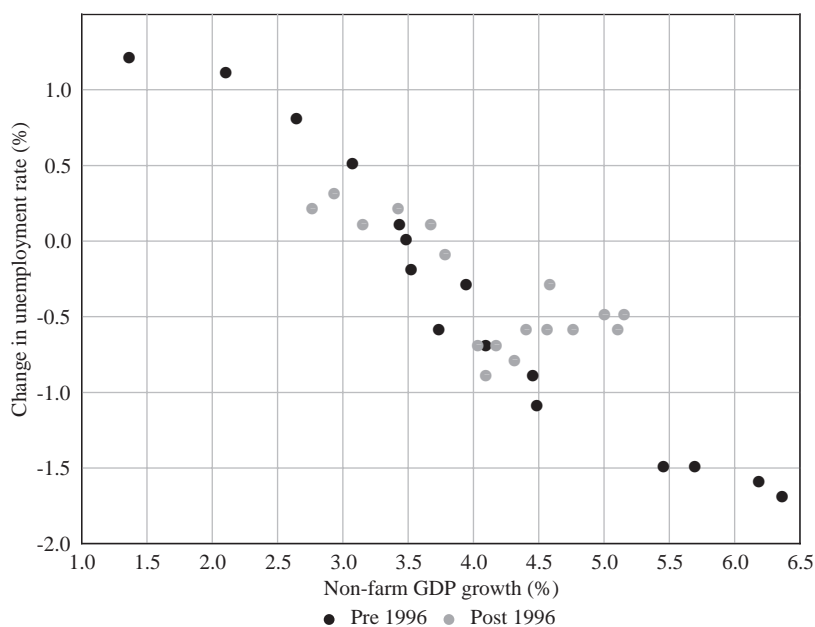
Figure 2: Trend Unemployment Rates



Source: ABS Cat No 6202.0

Nevertheless, in some, but not all, important respects the secular supply differences have offset those from demand and productivity. Figure 3 looks directly to the question posed at the outset with a plot of the (standard Okun) relationship between annual non-farm GDP growth (led one quarter) and the corresponding change in unemployment percentage points. Apart from a period in 1998 when unemployment reductions were low relative to recorded GDP growth (to be explained either by business fear of Asian-crisis effects or residual scepticism over the accuracy of the GDP results posted for this period), the scatter provides quite a close fit. The unemployment rate has been responding to GDP growth.

Figure 3: Non-farm GDP Growth and Unemployment Rate Differences in the 1990s Expansion



Note: The annual percentage points change in the (trend) unemployment rate is plotted against the annual non-farm GDP growth rate (led one quarter) over the period from June 1992 to June 2000.

For the decade as a whole the unemployment stabilisation rate of non-farm GDP growth appears to be just over 3.5 per cent. This benchmark is little different to the 3.69 per cent I calculated six years ago using the vintage of data then available for the years 1975/76 to 1993/94.² As Gruen noted, in this respect the varying labour supply and productivity parameters seem to have offset each other. What differentiates the 1990s from earlier periods is the much steeper slope around which the Okun relationship now revolves. For the earlier period I calculated an Okun coefficient of

2. INDECS (1995).

2.15. In the 1990s as a whole the corresponding number would have been closer to unity, though there is some suggestion of a partial reversion to earlier shallow patterns in the second half of the decade.

The cyclical aspects of Okun's Law clearly changed between the decades. Previously strong cyclical relationships between GDP growth and *both* productivity growth and labour force participation attenuated or disappeared in the 1990s. These changes have allowed unemployment to fall very much further than anyone armed with foreknowledge of subsequent growth rates would have predicted at the start of the 1990s recovery. In this sense, despite the longevity of the upswing, current unemployment is surprisingly *low*, not *high*. In another sense, however, given the changed cyclical dynamics of the 1990s, unemployment has been moving down steadily according to the growth pattern of the decade. From this perspective there is nothing abnormal about current unemployment rates. What is needed is a further period of GDP growth above the Okun benchmark.

The remaining thought, of course, is the second possible explanation. It is not at all obvious from this superficial overview that the various non-growth measures applied in the 1990s have not worked to reduce unemployment. From the standpoint of 1990, unemployment has recovered very well relative to the GDP growth pattern. That appears to be because the cyclical tendencies of participation and productivity growth have attenuated. It is extremely unlikely that the proponents of either the mid 1990s active labour market policies or of the various attempts at improving wage and other flexibility envisaged unemployment reduction operating through the transmission mechanisms of a taming of either cyclical tendency. Nevertheless, there is at least a *prima facie* case for further investigation of the contribution of the non-growth policies.

Longevity, steadiness and the natural rate

Ever since Peter Sheehan and his Victorian colleagues were banished from the technical preparations for the 1983 National Economic Summit, expansionist policy has been based around a 'slow ahead' prescription. Nowadays the same thoughts are more often referred to in terms of 'sustainability'. Either way the prescription inevitably requires policy to be sustained for very long intervals if large amounts of unemployment are to be removed. As I understand RBA explanations, that in substantial part is the way monetary policy is to contribute to the employment/growth objectives. Though clearly delivered through different variables, the present experience has had remarkably similar outcomes to what for a long time was thought to be a successful 1980s experiment.

The current experiment is unfinished. What frightens people about its continuation is the natural rate bogey. Peter Dawkins is suitably circumspect about the fuzzy nature of natural rate estimates. And, without explicitly saying so, he, like the rest of us, would have been chastened by recent US experience. But when it comes to policy prescriptions, the natural rate (or the NAIRU) appears to be resurrected to support the view of the five economists that something else beyond promotion of output growth is needed. This is not an argument about whether growth alone is

sufficient to reduce unemployment, nor about the ultimate existence of a NAIRU at any point in time. It is about whether any binding constraint on growth is imminent.

Frankly, I have no idea what number to put on the current NAIRU. Where the structural level of labour productivity growth might now be located is shrouded in the same mysteries as the attenuation of its cyclical characteristics. We also have little idea of whether the great tide of rising female participation has exhausted itself, or whether there is an unusually large reserve army of hidden unemployed out there at this level of measured unemployment. This is but one aspect of the 'augmented unemployment rate', about which both Dawkins and Dr Greenspan are rightly concerned. Nor do I detect any labour-market-induced signs of rising wage settlements at present in Australia, which is what the natural rate concept refers to.

It is true that the 1980s recovery ended in an unemployment rate not far beneath the present level. But, without wishing to stir up argument, the proximate cause of that episode was that policy lost control of the growth rate of domestic demand. And in the ensuing scramble it is not obvious that labour markets took the lead. Thus the issue of recent precedent is extremely dubious, at least insofar as what is contemplated is continued 'slow ahead' or steady expansion.

In these foggy circumstances econometric estimates of the NAIRU are ephemeral reeds on which to base the whole of macroeconomic policy. The sensible course seems to push ahead slowly, allowing as far as possible a growth rate that would continue to bring down unemployment, all the time looking for signs of wage acceleration. In simple terms, that is what I understand Dr Greenspan to be saying in response to Dr Meyer's econometrics.

The five economists' plan

It is no part of my views, or my record, to suggest that growth alone should be relied upon to fix unemployment. Nor do I oppose a negative income tax. But it would have to be a compelling plan for the electorate to support yet another major upheaval of personal taxation (not to mention social security) anytime soon. That evidence has not been provided. One reason is that, as suggested earlier, unemployment seems to be coming down at least as fast, if not faster, than might have been expected given 'excess growth'. A second is that estimates of how much *further* relative wages would have to be widened to achieve meaningful unemployment reduction are even fuzzier than those about the natural rate. Dawkins' Figure 15 shows a quite substantial fall in the real minimum wage over the past two decades. The obvious questions are why this reduction was not enough, and how much more will be required? To be pointed, would typing pools be in existence today if they had taken a 10 per cent, or even a 20 per cent pay cut? It is noticeable that all Dawkins' references to the minimum wage are about the employment consequences of increasing it. Whatever the merits of these claims, what is at issue here is the matter of pricing in, not out. Symmetry of the response is not obvious.

It might be that widening wage inequality has been part of the explanation of the surprisingly good recent GDP-unemployment experience noted earlier, though the proximate transmission mechanisms do not appear especially conducive to the

explanation. But until such time as this connection is demonstrated to have powerful legs, I would use my own sticks to run as far as possible from those who wish to use yet another grand economic theory to impose another upheaval on a cynical populace.

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INDECS (1995), *State of Play 8: the Australian economic policy debate*, Allen and Unwin Australia, Sydney.

2. General Discussion

Participants had mixed views about labour market outcomes in Australia in the 1990s. Many felt that outcomes had been positive – unemployment had declined to within sight of previous cyclical lows, following eight years of strong economic growth, and labour productivity and real wages had increased strongly. Others, however, were concerned that the benefits of economic growth and reform had been unevenly distributed. Some also felt that despite recent declines, unemployment remained at a high level, and were especially concerned about the recent upward trend in underemployment.

Many participants drew attention to the widening of the employment and earnings distributions that were highlighted in Dawkins' paper. In exploring possible causes for this, some wondered whether the increase in the importance of international trade played a role. It was remarked that the outcomes for Australia could be consistent with the Stolper-Samuelson theorem which implies that international trade benefits relatively abundant factors, which are skilled labour and capital in the case of Australia. Another explanation might be technological change, which was complementary to high-skilled labour, but a substitute for low-skilled workers. A few participants, however, pointed out that the evidence for these effects in Australia had been inconclusive and that further study was warranted.

Many agreed with Dawkins' view that achieving further significant falls in the unemployment rate without generating inflation was a major challenge that might require further labour market reform. In this context, there was some questioning of the usefulness of the concept of the non-accelerating inflation rate of unemployment or NAIRU. It was acknowledged that the NAIRU provided a valuable conceptual framework with which to examine the inflationary process. Furthermore, it might be possible to have a good idea of the current level of the NAIRU some years from now. Nevertheless, it might not be possible to determine the current level of the NAIRU with sufficient precision to make it a useful construct for current policy. It was also pointed out that even in the US, where the NAIRU had worked well up until the early 1990s, the concept had recently become less useful.

There was considerable debate about the appropriate role of government social policies in addressing distributional issues. Many participants expressed the view that the government needs to reform the welfare system by expanding wage safety nets. It was also pointed out that these policies involve significant short-run costs and it was unclear whether the community was prepared to incur these costs. On a similar note, the point was made that such measures could increase welfare dependency and reduce incentives to work, and that a better alternative might be for the government to invest in education and job training programs.

On the supply side, there was some discussion of recent trends in the labour force participation rate. It was noted that the recovery in the participation rate since the last recession had not been as strong as in the 1980s, and participants agreed that at least some of the recent decline in unemployment had resulted from this relatively weak performance of the participation rate. It was argued that a lower participation rate need not necessarily be a cause for concern as it may simply reflect a change in people's preferences. There was, however, not much support for this position, with the alternative view being put that the decline in the participation rate was due to an increase in the number of discouraged workers.

Another supply-side factor that was touched upon was demographic change. Several participants argued that demographic change would have important implications for the labour market over the next few decades, and that there needed to be more analysis of these trends.

Prospects for the Australian Economy in the First Decade of the New Century

1. J Bradford DeLong

What Are Australia's Economic Prospects?

Australia's present

Over the past decade or so the country of Australia has been an effective poster child for neo-liberalism. No matter what the political party in power, governments have pursued privatisation of government enterprises and general microeconomic reform – reductions in regulatory barriers to entry and attempts to eliminate blockages to competition in labour and product markets – in an attempt to accelerate Australian productivity growth.

These policies have been broadly successful, at least as far as their effect on real economic growth has been concerned. Australian measured economic growth in the 1990s, at 2.3 per cent per year per capita, has been more than half a percentage point faster than in the 1980s. Labour productivity in the market sector has grown at 2.9 per cent per year during the business cycle expansion of the 1990s, compared to 1.4 per cent per year during the business cycle expansion of the 1980s. Moreover, this acceleration of labour productivity growth is not the result of a high-pressure macroeconomy in the 1990s: Australian unemployment at the end of the 1990s was unusually high, more than 7 per cent.

However, the burst of productivity growth in Australia in the 1990s has been accompanied by a widening of inequality in income and wealth. (However, Australia remains one of the most egalitarian countries in the OECD.) This should not have been unexpected: if you reduce regulatory barriers to entry and eliminate blockages to competition, factors of production that are in low demand will lose (relatively speaking, at least). The factor of production that was in low demand in Australia in the 1990s was labour: hence a rise in inequality.

Thus even though the macroeconomic and microeconomic news from Australia's program of neo-liberal economic reform has broadly been good, it is not clear whether the political coalition to sustain and enhance this program can be built. Policies that are not perceived as *inclusive* have little long-run chance of persisting.

Australia's future

Looking forward, it is difficult to see how Australia's future economic growth prospects over the next decade or so can avoid being brighter than the present. The United States experienced a surprising burst of productivity growth in the 1990s. The consensus view is that this burst of productivity growth – a full extra 1 percentage point per year of increase in average incomes and in productivity – was the result of computers and communications technologies finally reaching critical mass, and the

benefits from exploiting these new technologies finally became large in macroeconomic terms.

There is every reason to think that the same path of productivity-enhancing computer investment could be followed by Australia if the flow of savings to finance high investment were present. But Australia's domestic savings rate is low. There is little prospect for large government surpluses to indirectly finance private investment, and little prospect for large amounts of direct government investment. In part, at least, because of the perceived uneven benefits from liberalisation and reform, the next decade seems likely to see all available tax revenues earmarked for the social insurance state.

Thus a high-investment Australia in the next decade needs to be financed, in large part, by a capital inflow: a large persistent current account deficit.

Dare a small open economy run a large persistent current account deficit? Remember Britain and Sweden in 1992, Mexico in 1994–95 and East Asia in 1997–98. The 1990s saw a stunning wave of largely unexpected financial crises driven in large part not by deteriorating economic fundamentals but by herd panic on the part of domestic and foreign investors. Growing foreign debt increases the likelihood and severity of such crises. To date, no country with a floating exchange rate has suffered one. But there is no compelling theoretical reason for this immunity – especially if the foreign debt is denominated in foreign currencies. Yet the potential productivity gains from a high level of foreign-financed investment are so large as to be irresistible. It looks as if the risks are worth running – although steps should surely be taken to minimise them.

In essence, therefore, Australia's future looks much like its past. In the late 19th century, Australia was a rapidly growing economy relying on imported capital and vulnerable to the whims of global finance. In the early 21st century Australia may well become the same.

2. Rob Ferguson

The Future – The Adelaide Effect?

We've spent the last days talking about how well Australia has done in the 1990s – now for the future.

What are the prospects for the Australian economy in the next decade?

For those who deal in numbers like us there is an easy tendency to think the future just rolls on from the past, a bit the way compound interest does.

But away from the world of numbers, to quote JM Coetzee:

...the future is merely a structure of hopes and expectations, it resides in the mind, it has no reality.¹

1. JM Coetzee, South African novelist, address to Sydney Writers Festival recorded on ABC Radio National Arts Today Program, 19 May 2000.

Well, what resides in my mind?

I have a view on why Australia has done so well in the 1990s that is influenced by comparing Australia with the old countries in the Northern Hemisphere, England in particular.

I was in London a few weeks ago at a dinner party and a lady from Milan who lives her life in Milan and London asked, 'How often do you come to London?' I said, 'Twice this year but I don't think I'll be coming back so often because I'm finding it so overcrowded and dirty'.

Of course, she'd never been to Australia to know what I was comparing London with.

Why do we keep going back to England? There was a long article in the *Sydney Morning Herald* on Saturday by Peter Conrad,² a Tasmanian who returned to Australia after 30 years finding himself 'in a confident country selling dreams to the world'.

Thirty years ago it was different. He left, like lots of the very bright, to study at Oxford.

He wonders why he went away. He attributes part of the blame to the seditious book in the tea chest he took on the boat trip to England. He had a colonial childhood but it was English literature that alienated him from Australia.

He asks, 'How could I love the place I grew up in when the books from which I derived my mental maps denied its existence?'

Our generation was brought up on a steady diet of Biggles, Enid Blyton and Beatrix Potter.

So it's no surprise that it takes a long time to get over the thatched cottages, cute hedgehogs and Cotswold stone wall hang-ups.

I was in the Cotswolds two weeks ago. It was quaint and very green, so it's little wonder that it takes so long to shake the England that's engraved in our sub-conscious minds. But you realise you've shaken it when after you're back home and, ex the jet lag, you see the blue sky and the birds and realise there's nothing about England you miss any more.

Thirty years ago people left for conversation at places like Oxford. Now you can get it here. Conversation, music, food, art. We have developed lots of culture.

So as our Tasmanian says:

No young Australian will ever feel as isolated, needy and inadequate as I did. Australia's self-confidence has expanded to fill the continent: instead of harrying its restive dreamers into exile, it awards them grants to write novels or direct films.

What about the other world's view of us? Thirty years ago we were still obsessed by our beginnings where Australia began as 'an imperial amenity, a tip for Britain's human refuse'.

2. Peter Conrad in *Spectrum*, *Sydney Morning Herald*, 22 July 2000.

At the end of *David Copperfield*, Dickens sent the improvident Micawber to Australia where he immediately made good!

It's little wonder Australians grew up with a low opinion of themselves.

But now, 30 years later in England, Australia is seen as exotic.

The English TV ads herald the new brand 'Australia' and the punchline is 'Discover the other side of yourself'.

We are no longer down under in Paul Keating's arse end of the world. Down Under, as Peter Conrad says, is no longer derogatory and referring to topsy-turvydom, Down Under is not the unsightly monkey's bum that Keating imagined. It's a place of excitement, potential and excellence, if we want it to be.

But here in the Reserve Bank there's a line that goes, 'What about the Adelaide effect?'

The Adelaide effect reflects the fear that globalisation will suck out all of our head offices and talented people to New York, London or Harvard and leave us just like Adelaide or Auckland. A provincial place where all the kids have to leave town to make good.

Is that what globalisation offers Australia? I believe not.

The Adelaide effect is off-course – another version of the 'winner-take-all society' described by Robert Frank and Philip Cook in their book.³

They talk about trade barriers, travel costs and internal markets being reduced or eliminated all over the world, producing a single unified global market in many industries and professions.

Sure, this is one tendency of globalisation. But how come, given the amount of globalisation that Australia's gone through since the 1980s, we are up amongst the top six OECD countries in the world in terms of productivity growth: Finland, US, Netherlands, Sweden, Ireland and Australia? How come our technology take-up is also right up there? Does this fit the picture of a society hollowed out by globalisation?

Now you may argue that it's early days. The worst is to come.

But my point is we are extraordinarily well placed for whatever might come because what we have created down here is a society that works. A society that is no longer part of the arse end of the world, but something that is exotic and attractive to others. Yet we are still maybe in the last stages of shedding the old colonial engravings in our mind and it makes it hard to see this.

Okay, maybe we are well placed today, but let's have a closer look at the Adelaide effect to see what might happen in the future.

To do this I've gone to the horse's mouth. I spoke to some people in Adelaide and Auckland, and even remote Perth, to get their views. Perth's so remote you'd expect them to be shivering in their boots. What do they all say?

3. Frank and Cook (1995).

Auckland first. New Zealand has lost three head offices to Australia or Asia in the last few years. Nufarm to Melbourne, Brierley NZ to Singapore, and Lion Nathan to Sydney.

Nufarm and Brierley were very small head offices. Brierley's had maybe half a dozen people in their Wellington head office.

The interesting one is Lion Nathan, a big NZ brewer. You'd expect it to be a big deal for them to move to Sydney, but in fact there were only 25 jobs displaced from Auckland to Sydney. Of more importance, however, was the retention of 820 jobs in New Zealand.

What stayed in New Zealand were liquor assets of NZ\$750 million, NZ\$550 million of revenue and taxes of NZ\$150m paid to the New Zealand Treasury. So Lion Nathan has gone global but still is a good corporate citizen in New Zealand. All it has done has placed the senior management of its business at the place where the bulk of its revenue is generated. This hardly seems unreasonable.

The reality is New Zealand is composed of lots of small businesses and that's where the jobs are created and that's where the entrepreneurialism is.

In New Zealand, 90 per cent of businesses have five employees or less. So if you're looking for the engine room of economic activity, it doesn't come from large companies.

I think the Adelaide effect focuses too much on the issue of where the head office is. Big business, regardless of where the head office is located, will want to attract and retain good people and give careers in New Zealand, Australia and the rest of the world.

New Zealand is similar to Australia in this regard. Lots of young people go overseas for work experience and work 2, 5, 10 years.

But most yearn to get back. They accumulate capital and experience globally and come back to live very good lives at the local exchange rate.

My correspondent in New Zealand reads the *Wall Street Journal*, the *Financial Times*, the *Economist* and the *Australian Financial Review* on the internet. Technology has made it easy to live anywhere.

But it's not all good news from Auckland. There is a word that used to be used directed to Australia that can still be directed at Auckland. Provincialism.

There was an article in the AFR recently that suggested New Zealand was having difficulty attracting and retaining good quality immigrants.

New Zealand society is nowhere near as diverse as Australian society.

In the post-World War II period over five years, Australia became home for more than a million Greeks and a million Italians.

This didn't happen in New Zealand.

Their blue-collar labour force was provided by Polynesians and this has left New Zealand society lacking in diversity and, some say, accordingly somewhat hostile to Asian migration.

This will be New Zealand's loss.

I heard our Foreign Minister, Alexander Downer, talking at a dinner the other night about how when he was a kid and his father was in the Menzies Cabinet, his Dad would come home and talk about the nation-building that Australia was engaging in during the post-War period by bringing in so many settlers.

What about Adelaide itself? My Adelaide correspondent tells me that the loss of head offices is no big deal. He says, 'Globalisation allows Adelaide to be good at what it does well'.

The Adelaide we know from the past became great because of copper and sheep and wheat, but all that's gone because of commodity prices.

Then there was the Adelaide that was propped up after the war by protection.

They were false props that built an artificial motor vehicle industry and, when the props were removed with tariff reduction, the people who were made redundant saw their house prices collapse so they couldn't move to other jobs.

That sort of artificiality was bad for Adelaide. What's happening now is they are building sound foundations.

So the wine industry is doing well in exports at the current dollar rate and lots of good processing jobs are moving to Adelaide because there's a well-educated workforce and it's not an expensive place to live. Sure, a lot of the kids might leave for Sydney but didn't that always happen to Adelaide?

Then there's Perth, the remotest city on the planet. Next to the Indian Ocean and the closest city 2 000 kilometres away is Adelaide.

But in Perth they have realised that you have to look outside of Perth for additional markets and capital.

There's a technology company called ERG that's sold ticketing systems in Sydney, London, Rome and New York. All done out of Perth.

Once again, Perth's a great city to live in, great services, low cost structures and a good environment.

What about research and development in Australia? Well, in medical research Australia has a competitive edge.

Why?

1. Low wage costs
2. Currency effect
3. Portability of research.

Research doesn't have to be done in the US any more. It can be farmed out. The National Institute of Health in the US funds research globally, including the US, on the basis of excellence, not geography. So Australia has at least two world-class medical research centres – the Walter and Eliza Hall Institute in Melbourne and the Garvan Institute in Sydney – and in Perth at least one major research institute is already the beneficiary of major US research dollars.

So what I'm talking about in Australia and New Zealand is the way we have adjusted to globalisation already. The success of that adjustment is there to see from what we've talked about over the last few days. It seems to me the floating exchange rate has got a lot to do with the way we have adjusted. We sometimes forget how important that event was in 1983 because the adjustment process has become so seamless.

I think globalisation allows Australia to be a sort of Switzerland of the new century. They had snow and mountains and clocks. What we've got is a society that works very well, where distance has been eliminated and so you can live here without isolation doing business around the world.

Sure, there are other places with great attributes, be it Canada or California or New Mexico. There's a cluster of lucky places around the world and we're one of them.

What would the knockers say?

We're provincial and we're a long way away. But that's nonsense.

Others might say that the US will just buy our best people. Is that the essence of the Adelaide effect? Everybody has a price it says. That's true if you measure your life by money, but not everybody does that and we don't particularly want that sort of culture anyway. We can afford to lose those people.

Others may say we don't have the capital markets of Wall Street or Silicon Valley but what is clear today is that it is capital that goes to good ideas rather than the reverse.

So we've got access to capital, we've got access to a big market – the world. The output of the future – software – can be sent anywhere.

So to me that's the future. Our problem is we don't know it enough. We are still suffering from those colonial engravings in our minds. We need to get the buzz that Ireland or Israel has developed. Do they discuss a local version of the Adelaide effect in Dublin or Tel Aviv? I doubt it.

It's not about Adelaide. It's about excellence, about doing well at things at which you excel. That's the challenge.

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3. Ross Gittins

Another Decade, Another Set of Issues

In thinking about the prospects for the economy in the coming decade it's always easier to focus on the things that need attention and the things that could go wrong than on the things that could go right. That's the economist's way and, in any case, if you thought everything was going to be fine, there wouldn't be a lot to talk about. But Gruen and Stevens' paper (this volume) reminded us that, had you been engaged in such a future-gazing exercise at the start of the 1990s, you wouldn't have dared to hope that things would go so right on so many fronts as we now know they did. So it behoves us to resist the temptation to become too oppressed by the problems and risks that lie ahead. As well, it gives us a much more promising starting point from which to cope with those problems.

But the 'noughties' will be a decade in which the growing confidence of economists at the end of the 1990s will be tested. Has there been some structural improvement in the way the economy works and in the way the macro managers manage that will allow the economy's improved performance during the 1990s to continue unabated for another 10 years? Or will some Factor X turn up that returns us to our more accustomed state of anxiety and mediocrity? Gruen and Stevens were honest in reminding us that at least part of our success in the 1990s was owed to the significantly more stable external environment in which we operated. Can we expect the rest of the world to be as kind to us in the noughties? There are no guarantees. I was also interested to see in their paper a shift in the rhetoric from stressing the need to 'prolong the expansion' to stressing the need to achieve a 'shallow' recession. We can confidently expect to see a recession some time in this decade – its degree of severity will be, to me, the ultimate test of our much-hailed structural improvement and superior macro-management 'framework'. But, if we can pass that test, the US experience in the 1990s promises us we can expect to make great strides in the noughties. Another question that will be answered in the coming decade is whether the improvement in our rate of productivity growth of the 1990s proves to be a lasting step-up or just a once-only catch-up – whether it was about improved productive efficiency or greater dynamic efficiency.

I foresee that fiscal policy will remain an area of pressure and problems in the noughties. On the positive side, governments will reap the benefits of the recent round of tax reform, in the form of buoyant growth in revenue. Over time, the GST will raise far more than the motley collection of indirect taxes it replaces, and I also believe that the Australian Business Number (ABN), the pay-as-you-go (PAYG) system and other 'integrity measures' will do much to restore the revenue-raising power of income tax. The New Tax System is truly a structural improvement from a fiscal-policy perspective. But I doubt if it will end the annual struggle to balance the Budget. The problem I see is that we've gone through a 20-year period of using fairly crude methods to restrain government spending in various areas, but we're not going to be able to keep the lid on for another 10 years.

One area is defence spending, with its allegedly looming problem of ‘block obsolescence’. Another is general capital works, with the rural revolt contributing to pressures for increased spending on rural telecommunications, roads and highly expensive new railways (notwithstanding the assurances that these visionary projects can be fully financed without government contribution). As well, we have a lot of bills outstanding in the area of repairing the environmental damage done by 200 years of inappropriate farming practices.

But the two really big areas of government spending where crude cost-capping measures can’t hold out much longer are the financing of health care and the financing of higher education. Peter Forsyth (this volume) said a bit about education, so I’ll mention health. The pressure is coming not so much from the ageing population as from the cost of technological advances. The challenge is to find a better trade-off between equity (universal coverage) and efficiency, so the savings from greater efficiency can be used to afford more of the benefits from advances in medical science. The answer is some form of ‘managed care’, and the stumbling block is the desire of the medical profession to protect its income.

Reform of health and education financing can be seen either as challenges for fiscal policy or, following Forsyth, as major outstanding items on the agenda of microeconomic reform. There are two other major issues for the decade. We’ll have to decide whether or not we need to achieve a higher rate of national saving, and what part measures to encourage or compel increased private saving may play in that. We will also have to make up our minds about population growth - what we’re doing about immigration and the declining birth rate.

Now for some political economy. We hear much these days about ‘reform fatigue’ – and it’s real enough – but my positive observation is that there’s a countervailing force: these days, federal governments aren’t allowed to merely preside. We’ve come to expect them to have one or two major projects on the go at all times. As you recall, it was big business’s complaints about the present Government’s lack of activity and vision at the time of the 1997 Budget that prompted John Howard to embark on tax reform. So I remain confident the coming decade will see progress on at least some of the major issues I’ve mentioned.

One of the lessons of the 1990s was that, though governments that preside over poor macroeconomic performance can expect to be punished by the electorate, it doesn’t follow that governments that preside over good performance can expect to be rewarded. The good performance we’ve been celebrating these past two days wasn’t worth many votes to the Howard Government at the 1998 election and it’s not likely to be worth many at next year’s election. This is part of the dynamic of the pressure on governments to always have some major reform project on the drawing board.

But another part of the phenomenon is a kind of Top 40 effect: when the public, the media and the Opposition don’t have unemployment, inflation or interest rates to complain about, they don’t hold congratulatory conferences, they find other things to worry about. The obvious current example is distributional issues (which I will

leave to Bob Gregory to comment on in detail), but I would argue that concern about the environment is correlated with the business cycle.

And then, of course, there are the discontents of RARA-land – rural and regional Australia. If the rural revolt has a big effect on the outcome of the next election – or is merely perceived by the politicians’ conventional wisdom to have had such an effect – it’s likely to remain high on the political agenda of both sides for much of the rest of the decade. RARA is an area where, I fear, rational policy advisers have been caught short. They’re full of policies for unwinding cross-subsidies between the city and the bush, but short of second-best proposals: politically attractive measures that would be less than utterly wasteful. This is a vacuum the politicians will fill with their ominous ‘nation-building projects’.

This Top 40 effect is one reason it’s so hard to sustain large Budget surpluses when times are good. And it’s a reminder that, even if we realise our hopes of maintaining the economy’s improved performance during the noughties, there’ll be plenty of other issues to occupy our attention.

4. Bob Gregory

Miracle Economies Are in the Eye of the Beholder: Our Failure to Create Sufficient Full-time Jobs

Many of the papers at the Conference have emphasised the improved economic outcomes of the Australian economy over the last decade. Commentators have highlighted the lower rate of inflation, higher productivity growth and the development of a sounder financial system. Many good things have happened but looking back over the discussion of the last two days, there seems to be perhaps a little too much optimism and also perhaps an unwarranted degree of satisfaction with the 1990s outcomes.

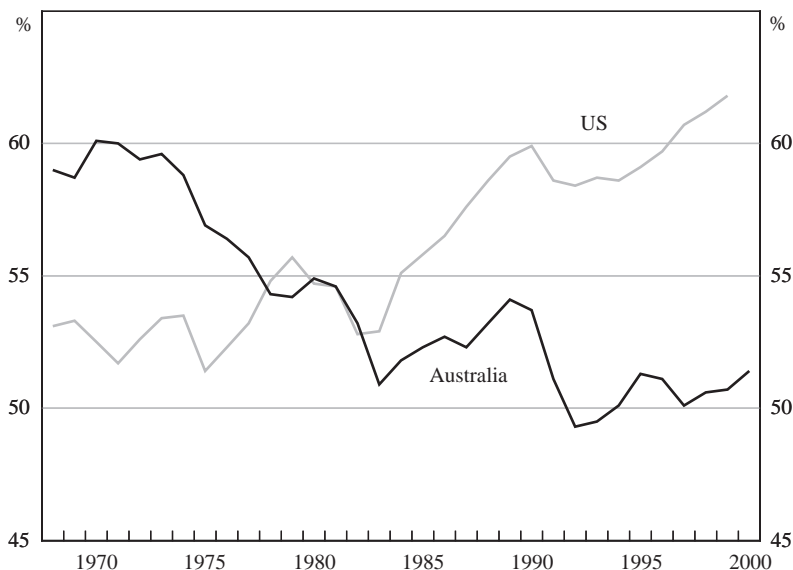
To re-balance the discussion I focus on three major areas where performance has been worse than during the 1980s: an inadequate growth of full-time jobs, a widening of the distribution of earnings among full-time workers and a rapid growth of those of working age whose principal source of income is government pensions or benefits. These areas pose the major policy problems of the coming decade.

There is no evidence to date that the ‘miracle’ economy has begun to consistently generate better performance in any of these areas. Maybe it is too early to detect a change. Perhaps, in response to the current upswing in the interest rate cycle, these outcomes may deteriorate further.

A continued shortage of full-time jobs?

The poor performance in full-time employment generation is particularly noticeable if the Australian record is compared to that of the US (Figure 1). From the mid 1960s

Figure 1: Australia and US Full-time Employment to Population Ratio
Per cent of population 15–64 years



Sources: Australia – author’s calculations based on ABS Cat No 6203.0 (August, various issues);
US – US Department of Labor, Current Population Survey

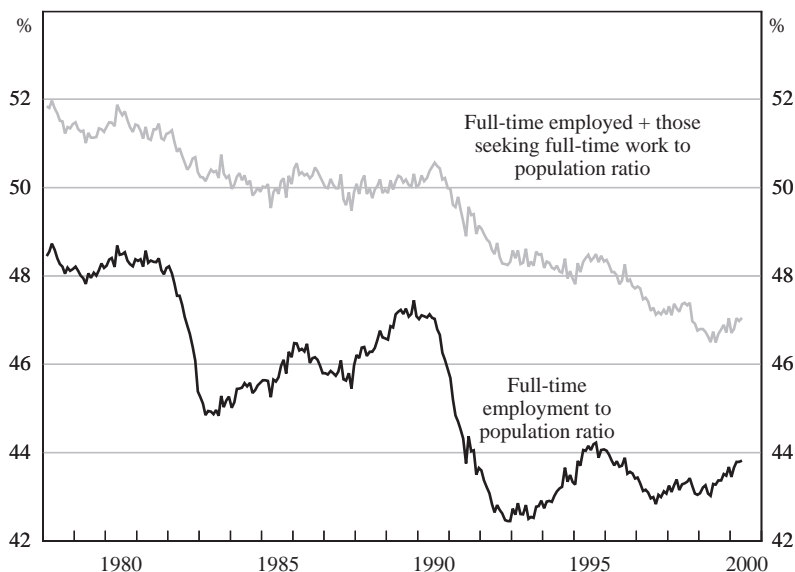
through to the early 1970s, the Australian full-time employment to population ratio was approximately 7 per cent above that of the US. We were a high-employment economy. Then the dramatic slide in the Australian full-time employment to population ratio began. The full-time employment to population ratio fell 9 per cent between 1970 and 1983, by which time it was below that of the US.

Australian full-time employment began to increase from the depths of the recession in the early 1980s but since 1990 the full-time employment to population ratio has fallen once more – a further 4 per cent – and the full-time employment to population ratio of the US has increased a further 3 per cent.

Such a poor Australian performance during the 1990s raises two questions. Why has the unemployment rate fallen and, if a smaller proportion of the population is working full-time, how are those without a full-time job supporting themselves?

The answer to the first question is straightforward. Unemployment has fallen during the 1990s, despite the lack of full-time job growth, because labour supply has contracted. This is easily seen by comparing the change in the full-time employment to population ratio with the Australian full-time labour supply which is constructed by adding the unemployed who are seeking full-time work to the full-time employed (Figure 2). Full-time labour supply, defined in this way, has declined dramatically over the last twenty-five years and the decline has been larger in the 1990s than the 1980s.

Figure 2: Full-time Labour Supply and Demand to Population Ratio
Per cent of population 15+ years



Source: ABS time series statistics, supplied through EconData DX Data Services, March 2000

During the 1980s the unemployment decline is principally explained by employment growth. During the 1990s the unemployment decline is principally explained by supply reductions. Indeed, if full-time employment growth was only to keep pace with population growth over the next decade, and if individuals continued to withdraw from the full-time labour force at the average withdrawal rate of the 1990s, the unemployment rate would fall to less than 5 per cent by 2005. But as we will see, it seems unlikely that labour supply will continue to fall at such a substantial rate.

Not all declines in full-time employment are necessarily a bad thing. For example, voluntary withdrawal from full-time employment to pursue education, to raise children or to retire on a self-funded pension would be regarded as good outcomes. This leads us to the second question. How are individuals, who previously would be employed full-time, supporting themselves?

Table 1 provides a substantial part of the answer. The first row lists the increase in the population, 15–64 years, for three periods: 1970 to 1980, 1980 to 1990 and 1990 to 1998. The third period does not cover the complete decade because we have not been able to obtain all the data we need on a consistent basis for the whole period.¹

1. The data on the number of welfare recipients are taken from Whiteford (2000). Over the last two years full-time employment has grown more strongly but the performance of the 1990s is still not as good as the 1980s. The number of welfare recipients has fallen slightly over the last two years.

Table 1: Increase in Full-time Employment, Non-student Welfare Recipients and Population 15–64 Years

	1970–1980		1980–1990		1990–1998	
	000s	%	000s	%	000s	%
Increase in:						
Population 15 – 64 years	1 548	(100)	1 867	(100)	1 062	(100)
Full-time jobs	329	(21)	840	(45)	156	(15)
Welfare recipients	723	(46)	459	(25)	743	(70)
Residual	507	(33)	568	(30)	163	(15)

Note: The period August 1988 to June 2000 has seen much stronger growth of full-time employment. Between August 1990 and June 2000, 479 000 full-time jobs have been created, which is still substantially less than the 1980s outcome.

Sources: ABS Cat No 6203.0; Whiteford (2000)

The second row lists the additional full-time jobs created in each period. The strong employment growth during the 1980s is readily apparent, as is the poor performance of the 1990s. During the 1980s the ratio of additional full-time jobs to the population increase of working age was 45 per cent. During the 1990s this ratio was 15 per cent.

The third row lists the increase in the number of individuals 15–64 years who are receiving welfare benefits and pensions as their principal source of income. During the 1970s and 1990s but not the 1980s, the increase in the number of welfare recipients exceeded the increase in full-time jobs. The increase in welfare recipients during the 1990s, as a ratio of the population increase, is an astounding 70 per cent. The failure of the labour market to provide income support from full-time work is clear. Those who cannot find full-time work are being supported by the welfare system.

The fourth row of Table 1 lists the population increment that is not supported either by full-time work or welfare payments. Little is known about this group but the increase during the 1990s is quite small.²

To learn a little more about the extraordinary increase in welfare recipients since 1970 we have divided them into three groups; the unemployed, those with disabilities or illnesses and those with parenting responsibilities. Each of these groups account for about one-third of benefit and pension recipients. Each group has increased over the last three decades, 459 000 over the period 1980–1990 to an increase of 743 000 between 1990–1998 (Table 2). There are some noticeable patterns. It is only during the 1970s that the increase in the number of unemployed was the major contributor

2. During the 1970s and 1980s some of this group would have been supported by student allowances.

Table 2: Increase in Non-student Welfare Recipients
15–64 years, 000s

	1970–1980	1980–1990	1990–1998
Increase in:			
Disability and sickness	184	187	150
Parenting and widows	160	91	319
Unemployed	379	180	274
Total	723	459	743

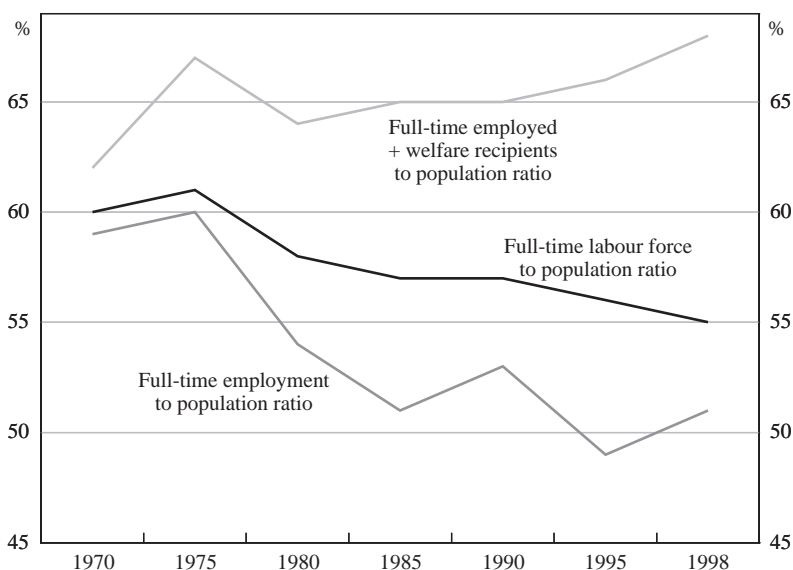
Source: Whiteford (2000)

to the increase in the number of welfare recipients (accounting for 52 per cent of the increase). During the 1990s the increase in the unemployed accounted for 37 per cent of the increment.

Finally, to further emphasise the failure of the labour market to create full-time jobs, we provide an estimate of the ‘potential full-time labour force’ defined as all those employed full-time, those seeking full-time work or receiving their principal income source from welfare payments (Figure 3). The level of welfare recipients as

Figure 3: Full-time Employment, Labour Force and Welfare Recipients

Per cent of population 15–64 years



Source: See Table 1.

a proportion of the 'potential full-time labour force' has increased from 5.4 to 15.8 to 19.1 and to 25.7 per cent for 1970, 1980, 1990 and 1998 respectively. In 1970, one in twenty members of the 'potential full-time labour force' was supported by government pensions and benefits. By 1998 the ratio had increased to one in four. The comparison of the size of the potential labour force with the full-time unemployment rate (Figure 3) makes clear that those supported by unemployment benefits represent only about one-third of the 'potential full-time labour force' without a full-time job.

Since 1970, and relative to the population 15-64 years, the 'potential full-time labour force' has increased 6 percentage points and is approximately the same as the proportion of the US population employed full-time. As the full-time employment to population ratio has fallen in Australia most of the job loss has gone into government benefit and pensions rather than unemployment.

In response to the exceptionally poor performance of the labour market during the 1990s the Australian government is seeking to reduce the number of people on welfare by applying sticks and carrots to encourage individuals to take up employment. To find full-time employment for the 'potential full-time labour force' over the next decade, however, is a far greater task than just finding jobs for the unemployed. For example, to move from where Australia is now to a full-time employment to population ratio similar to the US requires an additional 1.4 million full-time jobs, and this is without including a job creation allowance to meet population growth. To achieve the ratio of full-time employment to the 'potential full-time labour supply' reached at the beginning of the 1990s requires an additional 415 000 full-time jobs over and above the demands generated by population growth. Against an annual growth of full-time jobs of 53 000 between 1990 and June 2000, these job creation rates are a large task. They require a number of years of very strong employment growth similar to the last year and yet current indications – evidenced by interest rate increases and the prospect of more to come – suggest that this fast rate of employment growth cannot continue.

The next decade: how might more full-time jobs be created?

Given the general level of optimism expressed over the last two days it might be thought that there was a clear view as to the solution to the lack of full-time job growth and a way forward to change the poor outcomes of the 1990s. But the problem was largely ignored, partly because the labour market focus was on recent declines in the unemployment rate and partly because many structural features of the economy – except for the ability to produce full-time jobs – seem to have improved.

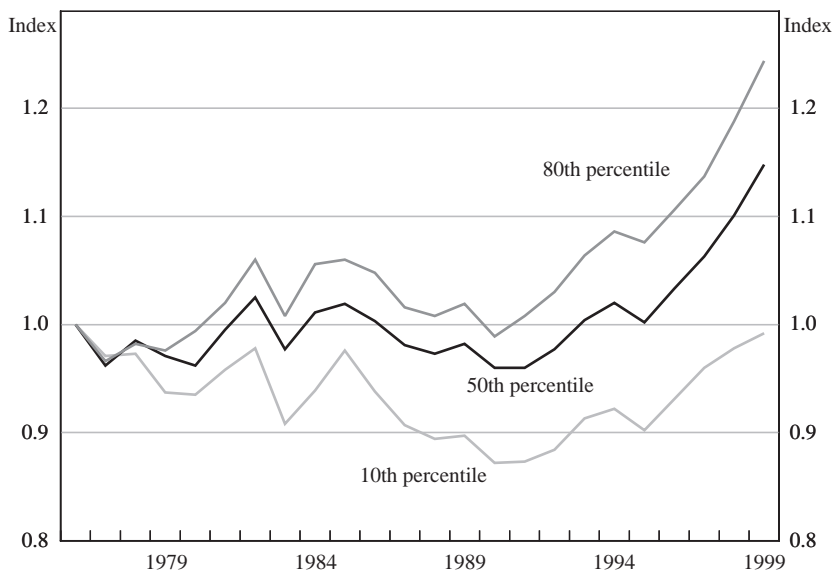
At the beginning of the last decade the most common policy suggestion to create more full-time jobs was to deregulate the labour market to create an environment in which real wage falls could occur, particularly for the low-paid. The view was widely shared that the job creation solution lay on the demand side of the labour market and that micro reforms would be effective.

To review the history of wage changes, and to comment on the results of deregulating the labour market, we focus on the distribution of average weekly earnings from full-time employment. Each annual cross section of individual earnings has been ranked from high to low and real earnings at the 10th, 50th and 80th percentiles are presented in Figure 4. A number of points are immediately evident.

First, real full-time weekly earnings at the median have increased only 15 per cent over the last twenty-three years, and all of that increase has occurred since 1996. This history suggests a number of unpleasant thoughts. One is that it is remarkable that the full-time employment to population ratio has continued to fall so dramatically in the face of no increase in median real wages between 1976 and 1996. For those who believe in a link between average real wages and employment growth it is disturbing that employment outcomes have not been better. What sort of average wage outcome would have produced enough jobs? The inevitable conclusion has to be that a very large wage fall was needed, one of a magnitude that does not seem possible.

The pessimism deepens when we realise that over the period as a whole there have been substantial falls in low wages, especially relative to the median. Over the two and half decades full-time earnings at the 10th percentile have fallen 15 per cent, relative to the median, and not increased in real terms. This suggests that a policy based on a moderate wage reduction, say a 5 per cent wage reduction for those at the

**Figure 4: Index of Real Full-time Weekly Earnings
at 10th, 50th and 80th Percentile**
Adult persons, 1976 = 1.0



Source: ABS Cat No 6310.0

bottom of the wage distribution, would be relatively ineffective.³ The labour market has already experienced real wage reductions of this order and the full-time employment situation has continued to deteriorate.

Finally, at the end of the 1990s, real wages of all workers began to increase. Although these increases have gone disproportionately to those on high wages, those on low wages have also begun to achieve real wage increases. For policy advisers who have argued that a deregulated labour market would moderate real wage growth, produce real wage reductions at the bottom of the wage distribution and create full-time jobs, these are disturbing outcomes. The new deregulated labour market appears to be less successful at delivering real wage moderation than the Accord process.

It is also noticeable that there have been real wage increases at the 10th percentile dating from 1996 onwards, when the unemployment rate was 8.5 per cent. Each reduction in the unemployment rate since then has been accompanied by further real wage increases. The nexus between real wage and unemployment changes seems such that it is difficult to see the current environment consistently producing the large number of full-time jobs that are needed. Already, our policy stance has begun to produce interest rate increases to slow job growth.

The results to date suggest that deregulating the labour market has failed to meet the initial objectives of full-time job creation and moderation of real wage growth. If the deregulated labour market is said to have succeeded then it has to be credited with the labour productivity increase and the large real wage increases to those at the upper end of the wage distribution. The experience of the 1990s suggests that neither of these results has created a faster growth of full-time employment.

Given the failure of a deregulated labour market to produce sufficient full-time jobs it is to be expected that the policy emphasis will increasingly shift to the supply side of the labour market. This was clearly stated by Tony Abbott, Minister for Employment Relations, in his recent address to the Centre for Independent Studies,

Why might a generous safety net designed to help people on the dole, *coupled with wage restraint to boost jobs* (emphasis added), only make unemployment worse? Because for many people working has become more trouble than [it is] worth. Wage restraint might indeed produce a glut of jobs, as economists claim, but not of willing workers to fill them... The role of the welfare system in creating and sustaining unemployment has been one of the great unmentionables of [the] Australian public policy debate. (Abbott 2000)

In the Minister's view, inadequate labour supply has played an important part in the inadequate growth of full-time jobs and unemployment cannot fall further because the unemployed are not truly seeking work. He appears to be arguing that policies are needed to reduce the level of income support of those on benefits and pensions – 'working has become more trouble than it is worth'. He is also seeking

3. Something of this order has been advocated by Dawkins and Freebairn (1997). The pattern of real wage outcomes here for the low-paid are so different from those of the US where real wages over a similar period have fallen by as much as 25 per cent for those on low wages.

to increase the pressure – ‘or the trouble’ – on the unemployed by requiring them to fulfil mutual obligations such as applying to five hundred employers for jobs each year and accepting work for the dole. Given the failure of the 1990s it is inevitable that welfare and labour supply issues will be at the centre of the employment policy debate over the next decade. I offer the following comments.

First, it is clear from Figure 3 that the large falls in full-time employment and the increase in the numbers on government benefits and pensions are primarily generated by recessions. Demand-side management failure is the initial source of the problem. Supply-side policies alone will not be completely effective unless we can avoid deep recessions and to a large extent that is not within our control. Having said that, however, the economy does seem better placed to moderate recessions than it has been for some time.

Second, an important part of the welfare debate, largely ignored by economists, is the relative role of financial incentives (such as the level of benefit and pensions) compared to administrative rules and regulations (conditions of access to benefits, the use of threats, the creation of a less friendly welfare environment, mutual obligations and so on). The current emphasis of government is to stress administrative rules and regulations and to toughen attitudes towards those receiving government benefits. In policy terms we are embarking on a major policy initiative and social experiment to see whether supply-side reforms can significantly help to create jobs.⁴

Third, in some of the discussion around unemployment and welfare reform the impression is created that the adoption of mutual obligations will bring about a significant fall in the number of pensions and welfare recipients and lead to a fast creation of full-time jobs. Given the past history of wage and employment outcomes it is difficult to see such a policy being effective quickly in terms of full-time job creation. The task is too great for quick short-run returns. It seems inevitable that the emphasis will eventually have to be placed on substantial financial incentives as it seems likely that small changes to financial incentives will be relatively ineffective. This suggests that declines in the real level of benefits and pensions are a distinct possibility.

Finally, it is evident from Figure 4 that over the last two and half decades wage inequality has increased considerably with full-time weekly earnings increasing 24 per cent at the 80th percentile but not at all at the 10th percentile. The faster the rate of growth of real wages among higher income earners the larger the extent to which low wages will have to fall to modify average wage increases. Since 1996 median real wages have increased 15 per cent. Suppose that 10 per cent would have been a better outcome. If all the adjustment were to be borne by the bottom three deciles of the wage distribution, their wages would need to fall by an additional 15 per cent.

4. The government has recently received the report of the Reference Group on Welfare Reform (2000). This report stresses more positive intervention to reduce the number of welfare recipients. The government is expected to issue a formal response before the end of the year.

Concluding remarks

I began by commenting that perhaps the general tone of the discussion over the two days was a little too optimistic. Over the last decade our GDP growth rate was the second highest in the OECD, a cause for optimism, while at the same time the rate of full-time employment growth in the 1990s was the second worst decade since World War II. Furthermore, the growth in welfare recipients, as a proportion of the population increase, was the largest in any decade over the same period.

It is disturbing that we do not seem to have a good grip on what is going wrong and that we are being diverted from the task because other parts of the economy do seem to be doing well. It could be argued perhaps that all the micro reforms will take some time to work and that we will see an employment pay-off soon. However, the fact that so much of the productivity growth seems to have gone into wage increases, especially for those who earn above-average wages, does leave us with some pessimism and the feeling that at the end of the day, in the absence of a change in the underlying forces in the economy, we may need more radical policies.

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5. General Discussion

The discussion of the final panel session provided an opportunity for participants to discuss future prospects for the economy, as well as to return to themes that had been discussed in earlier sessions of the conference, which might have important implications for the future.

The tone of the discussion about future prospects for the Australian economy was one of cautious optimism. Participants agreed that macroeconomic outcomes in the 1990s had been favourable on many fronts, but some argued that continued reforms were needed for these outcomes, particularly the strong productivity growth, to be sustained.

In taking stock of important developments in the 1990s, participants pointed to eight years of solid growth, declining unemployment and low inflation as being very positive outcomes. They attributed these outcomes to structural reforms and prudent macroeconomic management. The significance of a relatively benign external environment over most of the 1990s was also highlighted. As a sign of just how benign this environment had been, one participant remarked that it was perhaps unique that terms-of-trade shocks had been mentioned only once in a conference about a decade of Australian economic experience. The relevance of fiscal reform was also discussed, with some echoing Ross Gittins' view that the new tax system had been an important structural improvement.

Others argued that more should be done to arrest the rise in income inequality, and that a more equitable distribution of earnings may enhance the prospects for continued growth and stability. One participant added that the concerns recently raised by Australia's rural communities need to be addressed, and that these concerns should play a significant role in decisions made for the country as a whole.

A few referred back to the paper by Edey and Gower to consider the future implications of policy-induced disincentives for saving, as well as the implications of demographic change. Indeed, one participant nominated demographic change as one of the key developments that would determine economic outcomes over the decades to come. This participant pointed to the implications of ageing not only for national saving, but also for labour market outcomes and for government expenditure.

The current account debate was also revisited. Several participants acknowledged the trade-off highlighted by DeLong – on the one hand, Australia can continue to benefit from a higher level of investment funded by foreign saving; on the other hand, continued reliance on foreign saving could make the economy more vulnerable to sudden changes in investor sentiment. It was acknowledged, however, that Australia's effective supervisory and regulatory system should significantly reduce its vulnerability to changes in investor sentiment. Furthermore, it was pointed out that much of the foreign investment in Australia had been in the form of long-term and less volatile foreign direct investment.

Biographies of Contributors

Charles Bean

Charles Bean (MA, Cambridge; PhD, MIT) is Chief Economist and an Executive Director at the Bank of England, having previously been Professor of Economics and Head of Department at the London School of Economics (until September 2000). He has published widely, in both professional journals and more popular media, on European unemployment, on European Monetary Union, and on macroeconomics more generally. He has served on the boards of several academic journals, and was Managing Editor of the *Review of Economic Studies* (1986–90). He has also served in a variety of public policy roles, including: as consultant to HM Treasury; as special adviser to both the Treasury Committee of the House of Commons, and the Economic and Monetary Affairs Committee (Labour Group) of the European Parliament; and as special adviser on the House of Lords enquiry into the European Central Bank.

Peter Dawkins

Professor Peter Dawkins is the Ronald Henderson Professor and Director of the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne. He has held this position since 1996. Prior to that he was Professor of Economics at Curtin University of Technology. He holds a BSc and a PhD from Loughborough University in the UK, and an MSc from the University of London. He migrated to Australia in 1984.

His research has been in labour economics, social economics and industrial economics and he has published several books and many articles in these areas. He has been prominent in policy debates about unemployment and the tax and welfare system, and in October 1998 was one of five prominent economists who sent a letter to the Prime Minister outlining a plan for substantially reducing unemployment. In October 1999, he was appointed to the Federal Government's Reference Group on Welfare Reform, which presented its final report in August 2000.

J Bradford DeLong

J Bradford DeLong is Professor of Economics at the University of California at Berkeley. He is also Co-editor of the *Journal of Economic Perspectives*, a Research Associate of the National Bureau of Economic Research, and a Visiting Scholar at the Federal Reserve Bank of San Francisco.

He served in the US government as Deputy Assistant Secretary of the Treasury for Economic Policy from 1993 to 1995, reporting to Assistant Secretary Alicia Munnell. He worked on the Clinton Administration's 1993 budget, on the Uruguay Round of the General Agreement on Tariffs and Trade, on the North American Free Trade Agreement, on macroeconomic policy, on the unsuccessful health care reform effort, and on many other issues.

Before joining the Treasury Department he was Danziger Associate Professor in the Department of Economics at Harvard University. He has also been a John M Olin Fellow at the National Bureau of Economic Research, an Assistant Professor of Economics at Boston University, and a Lecturer in the Department of Economics at MIT.

He has written on, among other topics, the evolution and functioning of the US and other nations' stock markets, the course and determinants of long-run economic growth, the making of economic policy, the changing nature of the American business cycle, and the history of economic thought.

His major current projects are two books: an intermediate macroeconomics textbook called – no surprise – *Macroeconomics*, and *The Economic History of the Twentieth Century: Slouching Towards Utopia?*

Past publications include 'Speculative Microeconomics for Tomorrow's Economy' (*First Monday*, 2000; co-authored with Michael Froomkin), 'America's Peacetime Inflation' (in *Reducing Inflation*, 1998), 'Keynesianism Pennsylvania Avenue Style' (*Journal of Economic Perspectives*, Summer 1996), 'In Defense of Mexico's Rescue' (*Foreign Affairs*, 1996; co-authored with Christopher DeLong and Sherman Robinson), 'Princes and Merchants: European City Growth before the Industrial Revolution' (*Journal of Law and Economics*, February 1993; co-authored with Andrei Shleifer), 'The Marshall Plan: History's Most Successful Structural Adjustment Programme' (in R Dornbusch *et al* (eds), *Postwar Economic Reconstruction and Lessons for the East*, Cambridge: MIT, 1993; co-authored with Barry Eichengreen), 'Productivity and Machinery Investment: A Long-Run Look, 1870–1980' (*Journal of Economic History*, June 1992), 'The Stock Market Bubble of 1929: Evidence from Closed-End Funds' (*Journal of Economic History*, September 1991; co-authored with Andrei Shleifer), and 'Equipment Investment and Economic Growth' (*Quarterly Journal of Economics*, May 1991; co-authored with Lawrence Summers).

Brad DeLong has taught finance, macroeconomics, economic history, and social theory. He has also spent three years (1988–1991) in part-time academic administration responsible for Harvard University's undergraduate programs in Economics, as Head Tutor of the Department of Economics. He holds a PhD (1987), an MA (1984), and a BA *summa cum laude* (1982) from Harvard University.

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Steve Dowrick is Professor of Economics in the Faculty of Economics and Commerce at the Australian National University, currently an ARC Senior Fellow and Fellow of the Australian Academy of Social Sciences. His research has covered the economics of union-employer bargaining and the economics of growth.

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Malcolm Edey is Head of Economic Analysis Department at the Reserve Bank of Australia. He was appointed to the position in January 1997. Before that he was Head of Economic Research. Earlier he spent three years working in the Economics Department of the OECD in Paris, where he worked on monetary and financial policy issues and on the economic survey of Mexico. He is a graduate of the University of Sydney and holds a PhD from the London School of Economics.

John Edwards

John Edwards is Chief Economist for HSBC Australia. From 1991–1994 he was Senior Adviser (Economic) for Treasurer and then Prime Minister Paul Keating. His four books include *Keating – The Inside Story* (Viking 1996), an account of Dr Keating's role in economic policy-making in the eighties and early nineties. Mr Edwards spent his early career as an economic and political journalist, including political correspondent for *The Australian*, Washington correspondent for *The National Times*, economics editor of *The Bulletin* and Washington correspondent for *The Sydney Morning Herald*. He holds his PhD in economics from George Washington University in Washington DC. His other books include a political biography of former Prime Minister Malcolm Fraser, and *Superweapon* (Norton 1982), a narrative history of the MX missile system.

Rob Ferguson

Until August 1999 Rob Ferguson was Chief Executive of Bankers Trust Australia Limited, which was part of Bankers Trust Company in New York. He was also Chairman of Bankers Trust New Zealand and a member of the Management Committee of Bankers Trust Company.

Following sale of the funds management arm of the company to Principal Financial Group, Mr Ferguson became Chairman of BT Funds Management (now called BT Financial Group). This group is the second largest Fund Manager in Australia, with more than A\$40b in funds under management for Australian and international clients. BT Financial Group is also the largest international Investment Manager in Asia.

Mr Ferguson is also Chairman of Vodafone Pacific and the Australian Rural Leadership Foundation and Deputy Chairman of the Sydney Institute. He is a Council Member of the National Gallery of Australia, and a Director of Westfield Holdings Limited, the St James Ethics Centre, Helitech Industries and the Australian Davos Connection.

After joining Bankers Trust in 1972 as a Portfolio Manager in BT Funds Management, Mr Ferguson was appointed Director of Corporate Finance in 1977 and in 1982 became Deputy Managing Director. In 1985 he was appointed Managing Director of BT Australia Limited and in 1986, upon the company's gaining a banking licence, was appointed Managing Director of Bankers Trust Australia Limited.

Prior to joining Bankers Trust, Mr Ferguson worked for a Sydney stockbroker in their Sydney and Hong Kong offices.

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Peter Forsyth

Peter Forsyth studied economics at the Universities of Sydney and Oxford. After graduation he worked at the University of New South Wales, and then Australian National University. In 1993 he became Professor of Economics at the University of New England. In 1997 he moved to Monash University, where he is now Professor of Economics. From 1997 to June 2000 he was Head of the Department of Economics at Monash University.

His main research field has been applied microeconomics. He has a particular specialisation in transport economics, and in particular the economics of air transport. This has led on to an interest in the economics of tourism, on which he has also published extensively. He has also written on privatisation and regulation. During the 1980s he developed an interest in booming sector models, and wrote on the economic implications of the North Sea oil boom for the UK economy. He has also examined microeconomic reform in Australia from a broader perspective, including its impacts (or lack of) on the current account. In 1992 he edited and contributed to a book, *Microeconomic Reform in Australia* (Allen and Unwin).

John Freebairn

John Freebairn is a Professor and Head of the Department of Economics, The University of Melbourne. He is a graduate of the University of New England and the University of California, Davis. His previous appointments include Monash University, the Business Council of Australia, La Trobe University and the Australian National University.

Professor Freebairn's main research activities are in analyses of taxation reform, the causes of and potential policy strategies to reduce unemployment, and the options for pricing infrastructure. He is a co-author of *Australia at the Crossroads: Our Choices in the Year 2000* (Harcourt Brace Jovanovich Group 1980), *Spending and Taxing: Australian Reform Options* (Allen and Unwin 1987), *Saving and Taxing II: Taking Stock* (Allen and Unwin 1988) and *Savings and Productivity: Incentives for the 1990s* (Allen and Unwin 1989). He has also published a number of chapters in books, and numerous articles in international and Australian economic journals.

Ross Gittins

Ross Gittins has been Economics Editor of *The Sydney Morning Herald* since 1978 and is also a columnist on *The Age*, Melbourne. His journalistic experience includes editorial writing and stints in the parliamentary press galleries in Sydney

and Canberra. Before joining the *Herald*, he worked as an auditor with the national chartered accounting firm Touche Ross & Co. He has a BCom degree from the University of Newcastle and is an associate of the Institute of Chartered Accountants in Australia.

He was a Nuffield press fellow at Wolfson College, Cambridge, in 1983 and journalist-in-residence at the Department of Economics of the University of Melbourne in 1994. In 1993 he won the Citibank Pan Asia award for excellence in finance journalism. He has written and contributed to numerous books and publications on popular economics, but his sole academic article is 'The Role of the Media in the Formulation of Economic Policy', *Australian Economic Review*, 4th Quarter 1995.

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Marianne Gizycki is currently Senior Economist, System Stability Department at the Reserve Bank of Australia. She has been with the Bank for nine years. Before joining System Stability Department Ms Gizycki worked in Bank Supervision Department and Economic Research Department, where she worked on a range of issues including banks' capital adequacy requirements and surveillance of banks' traded markets operations. Marianne Gizycki holds a Bachelor of Commerce from the University of Melbourne.

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Luke Gower is an economist in the Reserve Bank of Australia's Economic Analysis Department. He has previously worked in International Department and, until recently, as an economist in Economic Research Department. Before joining the Bank, Dr Gower was based at the Australian National University, from which he holds a PhD in economics. Much of his published research has been on aspects of Japanese corporate finance and macroeconomic performance. His recent publications include 'Displaced Capital and Japanese Economic Growth', *Journal of the Japanese and International Economies* (2000), with Dominic Wilson, and he was co-editor (with Peter Drysdale) of the series *The Japanese Economy* (Routledge 1999).

Bob Gregory AOM

Bob Gregory's research interests are primarily in Australian labour markets and economic policy generally. He is currently Professor of Economics in the Research School of Social Sciences at the Australian National University, Canberra.

Professor Gregory has been closely involved in Australian economic policy development. Through 1990 to 1993 he was Principal Consultant in a series of Aged Care Reviews for the Department of Community Services and Health. In 1988, he was a member of the committee that recommended the introduction of student income contingent loans, collected by the Tax Office. He was a Member of the Board of the Reserve Bank of Australia from 1985–1995. From 1986–1991 he was a member of the Australian Sciences and Technology Council.

Professor Gregory is an elected Fellow of the Academy of the Social Sciences (1979). In 1996 he was awarded the Order of Australia Medal. He is a past President of the Economic Society of Australia.

David Gruen

David Gruen became Head of Economic Research Department at the Reserve Bank of Australia in May 1998. He has been with the Bank for eleven years, working in the Economic Research and Economic Analysis areas. From August 1991 to June 1993, he was visiting lecturer in the Economics Department and the Woodrow Wilson School at Princeton University. Before joining the Reserve Bank, he worked as a research scientist in the Research School of Physical Sciences at the Australian National University. He holds PhD degrees in Physiology from Cambridge University, and in Economics from the Australian National University.

Thomas M Hoenig

Mr Hoenig is President and Chief Executive Officer of the Federal Reserve Bank of Kansas City. He is a member of the Federal Open Market Committee, the key body with authority over monetary policy. Mr Hoenig joined the Federal Reserve Bank of Kansas City in 1973 as an economist in the banking supervision area. He was named a vice president in 1981 and senior vice president in 1986. He took office in October 1991 as the eighth chief executive of the Tenth District Federal Reserve Bank. Mr Hoenig directs Federal Reserve activities in the seven-state Tenth Federal Reserve District - an area that includes Colorado, Kansas, Nebraska, Oklahoma, Wyoming, the northern half of New Mexico, and the western third of Missouri. Mr Hoenig is a member of the Board of Directors for the University of Missouri-Kansas City, and serves on the Board of Trustees for Benedictine College, Atchison, Kansas. He is a member of the Board of Trustees of Midwest Research Institute and is a member of the banking advisory boards at the University of Missouri-Kansas City, and the University of Missouri-Columbia.

Barry Hughes

Barry Hughes is a consulting economist with strong links to the Credit Suisse group. He was formerly Chief Economist of CSFB and Professor of Economics at the University of Newcastle. He has also held a variety of economic advisory positions with the Commonwealth Treasurer and State Premiers. He is a graduate of the London School of Economics and Princeton University.

Paul Kelly

Paul Kelly is the International Editor of *The Australian*. He was previously Editor-in-Chief of *The Australian* (1991–1996).

After graduating from Sydney University he worked in the Prime Minister's Department in Canberra (1969–71) before transferring to journalism. His positions

have included Political Correspondent with *The Australian* (1974–1975), *National Times* (1976–1978), and Chief Political Correspondent, *The Sydney Morning Herald* (1981–1984). He was National Affairs Editor of *The Australian* (1985–1991).

Paul Kelly is the author of five books, *The Unmaking of Gough* (1976), *The Hawke Ascendancy* (1984), *The End of Certainty* (1992) on the politics and economics of Australia in the 1980s, November 1975 and, most recently a collection of articles, *Paradise Divided*. He has been involved in the coverage of Federal governments from Gough Whitlam to John Howard. He is now completing a five-part television documentary for the ABC that will be screened to mark the centenary of Federation.

Robert Leeson

Robert Leeson is currently Associate Professor in Economics at Murdoch University. Previously he was Associate Professor and Bradley Fellow at the University of Western Ontario and Lecturer in Economics at Flinders University.

For the last ten years he has been investigating the dynamics (or contemporary history) of macroeconomics. This research has resulted in forty-three chapters or articles in journals such as the *Economic Journal*, *Economica*, the *Cambridge Journal of Economics* and *History of Political Economy*. Two books have been published so far in 2000 and four more are very close to completion. He was the editor of *AWH Phillips: Collected Works in Contemporary Perspective*, recently published by Cambridge University Press.

Philip Lowe

Philip Lowe is currently Head of Financial Institutions and Infrastructure Division in the Bank for International Settlements' (BIS) Monetary and Economic Department. His recent posting to the BIS follows two years as Head of System Stability Department at the Reserve Bank of Australia. Prior to this he was Head of the Reserve Bank's Economic Research Department, and has also held positions in Economic Analysis Department and International Department. He has a Bachelor of Commerce from the University of New South Wales and a PhD from Massachusetts Institute of Technology. He has written numerous papers on the Australian economy, monetary policy and the financial system.

John Quiggin

Professor John Quiggin is an Australian Research Council Senior Research Fellow in Economics, based at the Australian National University in Canberra and at the Queensland University of Technology. He has also worked at James Cook University, the University of Maryland, the University of Sydney and the Australian Bureau of Agricultural and Resource Economics. Professor Quiggin is prominent both as a research economist and as a commentator on Australian economic policy. He has published over 300 research articles, books and reports in fields including risk analysis, production economics, and the theory of economic growth. He has also

written on policy topics including unemployment policy, microeconomic reform, privatisation, competitive tendering and the economics of education. He was awarded the Australian Social Science Academy Medal for 1993 and elected a Fellow of the Academy in 1996.

A detailed *vita* and electronic versions of many publications are available at <http://ecocomm.anu.edu.au/quiggin>.

Colin Rogers

Colin Rogers is a Reader in Economics and Dean of the School of Economics at the University of Adelaide. His main fields of teaching and research are open economy macroeconomics, monetary theory and policy and the history of Keynesian monetary economics.

Publications include: *Money Interest and Capital* (Cambridge University Press 1989); *Macroeconomics*, the South African edition of Dornbusch and Fischer (McGraw-Hill 1986–1994) with P Mohr; *Macroeconomics and the Australian Economy: Recent Performance and Challenges of the 1990s* (Prentice Hall 1993), with Penny Neal. He has a BCom (Hons) from the University of Natal, Durban and a BCom (Economics) from the University of South Africa, Pretoria.

Richard Snape

Richard Snape is Deputy Chairman of the Productivity Commission. He is also Emeritus Professor of Economics at Monash University where he held a chair in economics from 1971 to 1999. At the Productivity Commission and its predecessor, the Industry Commission, he has been a Commissioner on several Inquiries, most recently presiding on *Broadcasting* and *International Air Services*.

Professor Snape has held visiting professorships in Stockholm and Geneva, and served at the World Bank for two years in the late 1980s where he edited *The World Bank Economic Review* and *The World Bank Research Observer*. For several years he co-edited *The Economic Record*. He was a member of the World Trade Organization's Dispute Panel for a dispute between the United States and India. His main research interests are in international trade policy.

Publications include: (with Lisa Gropp and Tas Luttrell), *Australian Trade Policy, 1965-1997; A Documentary History* (Allen and Unwin 1998), (with Jan Adams and David Morgan), *Regional Trade Agreements: Implications and Options for Australia* (AGPS 1993) together with several other books and reports and many articles, and a 13-part television series for Open Learning, *The Global Economy*.

Glenn Stevens

Glenn Stevens holds degrees in Economics from the University of Sydney and the University of Western Ontario, Canada. He has spent most of his professional career in the Reserve Bank of Australia, joining the Bank's Research Department in 1980.

In 1990, he was a Visiting Scholar at the Federal Reserve Bank of San Francisco. He was Head of the Economic Analysis Department of the Reserve Bank from August 1992 to September 1995, and Head of its International Department from September 1995 to December 1996. Since December 1996, he has been Assistant Governor (Economic), responsible for overseeing the economic analysis and research of the Bank's staff and formulating policy advice for the Governor and Board of the Bank. He is a member of Advisory Boards of the Hong Kong Institute for Monetary Research, and the Institute for Applied Economic and Social Research at the University of Melbourne.

William R White

Mr White was appointed Manager in the Monetary and Economic Department of the BIS in June 1994, and in May 1995 he took up the position of Economic Adviser and Department Head.

Born in Kenora, Ontario, in 1943, Mr White received a Bachelor of Economics and Political Science Degree (Hons) from the University of Windsor in 1965 and was also awarded the Governor-General's medal. He then attended the University of Manchester on a Commonwealth Scholarship, where he earned both an MA and a PhD in Economics, graduating in 1969.

That year he began work at the Bank of England as an economist, remaining there until he joined the Bank of Canada in 1972. Mr White spent his first six years at the Bank with the Department of Banking and Financial Analysis, first as an Economist and finally as Deputy Chief. In 1978 he became Deputy Chief of the Research Department and was made Chief of the Department in 1979. He was appointed Adviser to the Governor in 1984 and Deputy Governor of the Bank of Canada in September 1988. In that last position, his responsibilities included the analysis of international economic and financial developments, and operational matters pertaining to the Bank's activities in foreign exchange markets.

List of Conference Participants

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Jillian Broadbent <i>Company Director and Reserve Bank Board Member</i>	Ken Henry <i>The Treasury</i>
Peter Crone <i>Office of the Prime Minister</i>	Thomas M Hoenig <i>Federal Reserve Bank of Kansas City</i>
Peter Dawkins <i>The Melbourne Institute of Applied Economic and Social Research</i>	Barry Hughes <i>Credit Suisse Asset Management</i>
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