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The 100th *Economic Roundup*

John Hawkins and Leanne Neo[1]

Over the course of 100 issues the *Economic Roundup* has evolved from mainly discussing recent economic statistics and reprinting budget statements to being a vehicle for placing Treasury research and policy analysis before the wider community.

To keep improving the *Economic Roundup*, and assess the ongoing demand for paper copies when the full contents are freely available on Treasury's website, a survey is included with the paper copies of this issue.

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1 The authors are from Domestic Economy Division, the Australian Treasury. This article has benefited from comments and suggestions provided by Janice Appleton, David Parker and Jyoti Rahman. The views in this article are those of the authors and not necessarily those of the Australian Treasury.

A brief history of the *Economic Roundup*

The *Economic Roundup* commenced publication in May 1988, initially monthly.[2] It changed to a quarterly publication with the Summer 1990 edition.[3] This move was prompted by the Australian Bureau of Statistics introducing its monthly *Australian Economic Indicators* in February 1991, which took over the role of summarising the month's economic data. Given the proliferation of economic data available in various publications and electronically, the 'Statistical Appendix' was pruned from over 30 pages in 1990 to around 15 pages from 1993 and it was dropped totally in 2003. [4]

Over time there have been more feature articles, and they have tended to become longer and more analytical. Recent issues have often had articles grouped around a particular theme, such as 'forecasting the economy' in Autumn 2005 and 'international trade' in Spring 2005. The work of individual authors is now attributed.

In addition to the feature articles indexed on pages 147-157 of this issue, the *Economic Roundup* contains selected speeches (indicated by italics in the index) and submissions to parliamentary inquiries. There are also some regular articles (not listed); the Summer edition includes estimates of private sector wealth for Australia and the Spring edition includes a 'year in review' article. Since 2002 most issues have included a summary of Treasury's business liaison meetings.[5] A recent addition is a guide to new material on the Treasury website (www.treasury.gov.au), which includes summaries of working papers.

As the index shows, the topics covered in the articles and speeches have been very broad-ranging. They answer questions as diverse as 'which Nobel prize winner in Economics lived in Australia?'; 'does Australia have more French restaurants or McDonalds?'; 'which is the only OECD country to have a flat tax system?'; 'when was the first age pension introduced in Australia?'; 'which Treasury Secretary built his own electric car?'; 'when and where was iron ore first smelted in Australia?'; and 'which OECD economy is the most remote from the rest of the global economy?'[6]

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2 Treasury first published the monthly *Round-up of Economic Statistics* in February 1973 with a four-page issue, based on a briefing note provided to Cabinet. Its name was changed to *The Round-up* in March 1985. As its initial name suggests, its focus was on reporting on recent economic data, although from 1977 it would occasionally include feature articles. Gittins (1989) described the *Economic Roundup* as 'vastly improved' on its predecessor.

3 The exceptions are Autumn 1994 when no issue was published and 2001 when a bumper centenary issue replaced the Summer and Autumn issues.

4 The mass media covers economic data extensively in Australia, to a greater degree than in most other countries; see Macfarlane (2006). In addition, most commercial and investment banks produce newsletters.

5 A detailed explanation of the Business Liaison Programme is in the Spring 2001 issue.

6 The answers are given in footnote 8 on page 5 for those who want to test themselves.

In recent years Treasury has attempted to place policy advice within a more rigorous framework that acknowledges there are other goals than just maximising (per capita) real GDP. This 'wellbeing framework' was described in articles in the Winter 2004 issue, and it informs the approach adopted in other articles as well. The five elements of the wellbeing framework are consumption possibilities, complexity, distribution, opportunity and risk. Consumption possibilities are addressed in numerous articles about economic growth (for example, Winter 2003). Consumption possibilities in turn depend on the '3Ps' — see Henry (2003) and there have been articles covering **P**opulation (Summer 2006), **P**articipation (Summer 1999, Spring 2006) and **P**roductivity (Autumn 1992, Summer 2006).

Aspects of the other components of the wellbeing framework are also covered, for example complexity in the tax system (Winter 2005); the distribution of income (Autumn 2003) and the distributional effects of the tax system (Spring 2003); opportunities from globalisation (Winter 2000, Autumn 2002, Winter 2006); and risk in the context of forecasting (Autumn 2005) and global uncertainties (Spring 2002). There have been articles on health (Winter 2005); education (Autumn 2006); and Australia's involvement in improving the wellbeing of other countries (Spring 1996, Winter 2006).

Some readers may be surprised that Treasury was one of the first institutions in Australia to address the issues of the greenhouse effect and climate change. The first article on this topic appeared as early as November 1989, well before there was substantial media attention to this topic. There have been a number of subsequent articles on environmental issues.

There have been many articles on taxation issues, particularly after responsibility for taxation legislation was transferred from the Australian Taxation Office to Treasury in 2002. A history of Australia's tax system appeared in the Winter 2006 issue.

The *Economic Roundup* has played a role in making Treasury more transparent and accountable. For example, it has explained how Treasury goes about its forecasting (Autumn 1996, Autumn 2005); how foreign investment approvals are decided (Summer 1997); and the role of the Board of Taxation (Spring 2001). When Treasury officers appear before the Senate Estimates committee, there are often questions based on articles in the *Economic Roundup*.

The *Economic Roundup* has also addressed the desire of the community to know about Treasury's views on macroeconomic issues. For example, a Senate committee recently recommended Treasury 'undertakes more analysis related to the longer-term outlook for the current account, and publishes its findings to enhance public understanding

and discussion'.[7] Articles on aspects of the current account have covered its relation to saving and investment (Autumn 2005, Summer 2006), resource exports (Spring 2005), manufactures exports (Winter 1992, Winter 2006), imports (Summer 2004-05), trade in services (Spring 1995, Winter 2006) and the net income deficit (Centenary 2001, Winter 2006).

As well as articles about the Australian economy, the *Economic Roundup* has included Australian perspectives on the world economy. This has increasingly involved a greater emphasis on the Asia-Pacific region, including such still-contemporary issues as reserves accumulation by Asian economies (Spring 2004), the Chinese currency (Spring 2005) and economic development in the Pacific (Spring 2006).

As Australia has increased its involvement with international and regional economic institutions, Treasury has put forward views on the appropriate roles of the IMF (Autumn 2003) and World Bank (Spring 1994).

The *Economic Roundup* provides an outlet for the dissemination of research and analysis done in Treasury, on a broad range of topics. It is hoped that the publication of these articles enables the public to have a better understanding of Treasury's involvement in the policy arena and the analytical work it undertakes.

Free copies of the *Economic Roundup* are provided to a number of politicians, journalists and libraries. The initial annual subscription cost of the *Economic Roundup* in 1988 was $83, which Gittins (1989) thought a bit expensive. With the move to quarterly publication, the subscription price was slashed to $40 in 1990. Since then it has risen to $47.30. This 18 per cent increase is well below the 45 per cent increase in the CPI over the same period. And of course, since it began being placed on the Treasury's website, it has been effectively free for many readers.

The electronic version of the *Economic Roundup* is continually being improved. At some stage it may be distributed in only an electronic form. An insert with the paper version of this issue of the Roundup asks recipients whether they still want paper copies.

The effective audience of the *Economic Roundup* is boosted by the stories that appear in the press based on articles in it. This press coverage has expanded over time as more original feature articles have been included.

The recent report on Australia's economy by the OECD (2006) refers to eight articles from the *Economic Roundup*. With the *Economic Roundup* coming to the 100th issue, it is hoped that the publication will continue to inform public policy debate.

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7 Senate Economics References Committee (2005), Recommendation 1.

References

Gittins, R 1989, 'A lot better info — at a lot higher cost', *Sydney Morning Herald*, 11 September.

Henry, K 2003, 'Economic prospects and policy challenges', address to Australian Business Economists (Treasury website: www.treasury.gov.au).

Macfarlane, I 2006, 'Economic news: do we get too much of it?', notes for talk to Australian Financial Review Leaders' Luncheon, 28 April, Sydney (RBA website; www.rba.gov.au).

Organisation for Economic Co-operation and Development 2006, *OECD Economic Surveys: Australia July 2006*, Paris.

Senate Economics References Committee 2005, *Consenting Adults Deficits and Household Debt,* Senate Printing Unit, Canberra.

Answers to questions[8]

8 The answers to the questions on page 2 are: John Harsanyi (see Autumn 2006 issue); 600 French restaurants but 700 McDonalds (Autumn 2002); Slovakia (Spring 2005); by New South Wales in 1900 (Centenary 2001 issue); Sir Roland Wilson (Spring 1996); in Mittagong in the 1840s (Spring 2005); and New Zealand — Australia is second most remote — (Summer 2004-05).

Managing prosperity

Address to the 2006 Economic and Social Outlook Conference, Melbourne, 2 November

Ken Henry

In the past decade and a half Australia's performance has improved dramatically, with GDP per person growing faster, on average, than in the OECD. Managing this level of prosperity requires avoiding inappropriate responses to developments such as the information and communications technology revolution, population ageing and the re-emergence of China and India. We also need to address long standing policy failures such as the inappropriate pricing of natural resources and the deprivation suffered by most indigenous Australians.

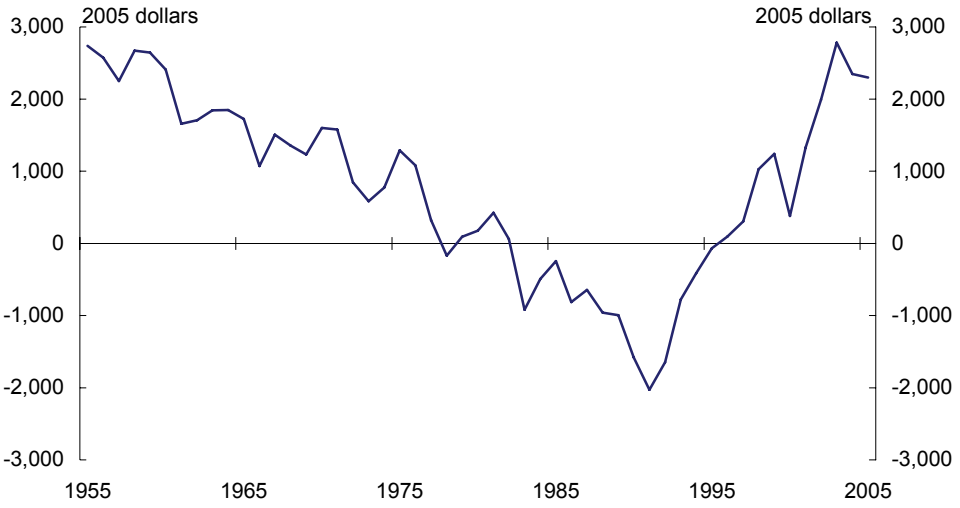
Introduction

In the mid-1980's *The Economist* magazine summed up Australia in the following terms: '… if you look at history, Australia is one of the best managers of adversity the world has seen — and the worst manager of prosperity.'

This rather pithy one-liner was revived by Don Stammer in 2002. Don and others have since concluded that the statement is no longer true. Of course, challenges remain. But things have changed. Due to much improved macroeconomic and structural policy frameworks, we have enjoyed the longest period of low-inflation growth in our economic history and, importantly, we have so far managed to avoid the policy errors committed in earlier episodes of prosperity. That optimistic thesis is now firmly established and is reflected in economic surveys by the OECD and the IMF.

Chart 1 illustrates the essence of the story. It shows the gap between Australian and OECD average levels of real GDP per capita — the most frequently used measure of average living standards.

Chart 1: Australia's economic revival
The difference between Australian and OECD average GDP per person



OECD includes only the 24 longest standing member countries.
Source: Groningen Growth and Development Centre and The Conference Board, Total Economy Database, September 2006, http://www.ggdc.net.

In the four decades from 1950, our relative performance deteriorated in trend terms. But in the past decade and a half Australia's performance has improved dramatically. GDP per person has grown faster, on average, than the OECD, raising Australia's GDP per person from the bottom third of OECD countries in the early 1990s to the top third today. On this measure, the standard of living in Australia now surpasses all

G7 countries except the United States. That is our recent history, but it is not the end of the story.

Clearly, the history is only partial, since real GDP per capita in a year doesn't measure everything that is relevant to the wellbeing of Australians.

And what of the future? Past success doesn't mean that we will always manage prosperity well. If we are to do so, we will have to avoid policy error.

The risk of policy error has two principal sources: First, inappropriate responses to a set of largely exogenous structural shocks of medium- to long-term duration arising from the continuing information and communications technology revolution, population ageing and the re-emergence of China and India; and second, failure to appreciate the implications of past policy success for future policy discipline.

Even if we can avoid policy error, we won't be able to say that we have managed prosperity well unless we have also taken the opportunity to correct for past mistakes — for doing better in areas of chronic policy failure, some stretching back over generations. There are three systemic challenges to policy reform in these areas. First, addressing many of the more obvious areas of policy failure will demand more from our federated system of governance than it has previously proved capable of delivering. The fragmented, uncommercial arrangements for the supply of water and energy illustrate both the problem and the reform challenge. Second, some of the problem areas might demand solutions that are simply too confronting to command wide-spread community support. The severe capability deprivation suffered by most indigenous Australians illustrates this challenge. And third, some of the more egregious instances of policy failure are rarely, if ever, seen in those terms — that is, we have a recognition problem. This challenge is illustrated by the failure of governments, stretching back to colonial times, to insist on the appropriate pricing of access to natural resources like water, timber and fish stocks; and by widespread environmental degradation, including a history of habitat destruction and species extermination. I don't have time tonight to do justice to the issues raised in this third category, but I will have something to say about the other two.

The risk of policy error

As a consequence of past policy success — due overwhelmingly to a couple of decades of structural reform and the implementation of credible, transparent anchors for macroeconomic policy — the Australian economy is operating flexibly, at a level close to full capacity utilisation.

A high rate of capacity utilisation is not simply a consequence of the terms-of-trade boom, though the sharply higher terms-of-trade has boosted national income, and tax

revenues, considerably. It would be dangerous to base economic decisions, including fiscal policy decisions, on those terms-of-trade being sustained. And the drought provides further reason for being cautious about the longevity of these 'boom' times.

There are two further reasons for caution: having closed much of the excess capacity gap, we should expect to see slower trend growth in real GDP; and, as is reasonably well understood these days, following the release of the 2002 *Intergenerational Report*, population ageing will reduce the rate of growth of our productive capacity.

All of this provides a strong case for a policy focus on measures — in the domains of population, participation and productivity — that expand the economy's supply potential. That there should be such a policy focus seems reasonably well accepted.

Less well understood is the even more important point that, in an economy experiencing more or less full capacity utilisation, all activity, including of governments, that commands additional real resources without at the same time expanding supply capacity must impose a cost on somebody.

Thus, almost every day I hear somebody arguing that some activity should be accorded a special taxpayer-funded hand-out, either because it will 'create' some impressive number of new jobs or because, if it doesn't receive taxpayer-funded support, an equally impressive number of jobs will be 'destroyed'. These arguments must be based on a view that the economy is in a state of chronic under-utilisation of labour and that the central task of government is to provide taxpayer-funded subsidies to those who have sufficient wit to find ways of employing people.

Well, that view is at odds with what we observe in the Australian economy of today, where policy settings have achieved a period of sustained success and, as a consequence, labour is in scarce supply. It is because of the intensity of competition for scarce labour that we hear so much about 'skill shortages' these days.

There are three important consequences of a near full employment economy that are worth emphasising. First, provided growing businesses are not being subsidised in any way, we can be confident that any consequent reallocation of labour in their favour increases GDP. On the other hand, if growing businesses are being subsidised, or if governments step in to prevent other businesses from shrinking, then GDP is lowered by their command of the nation's scarce labour. Second, government activity that doesn't expand supply capacity necessarily crowds out private sector activity. This crowding out represents the opportunity cost of the government's having command of some part of the nation's scarce resources, including labour. And third, any attempt to inhibit an allocation of the economy's factors of production consistent with its terms-of-trade must have adverse implications for GDP.

So what would 'job creation' mean in an economy close to full employment? I would highlight three cases.

First, it seems fair enough to say that Australian businesses create jobs when they develop employment programmes for older workers who would otherwise take 'early retirement'. Second, it seems fair enough to say that a business would create a job if it were to employ any one of the 710,000 people on the Disability Support Pension. And third, it is surely fair enough to say that businesses like Argyle Diamond Mines create jobs when they develop employment opportunities for indigenous Australians who would otherwise face a life of passive welfare dependency.

Common to these three cases is that the employment opportunity is matched with someone who would otherwise not be in the labour force. Jobs are 'created' in these cases because the employment opportunity also lifts the rate of labour force participation.

In addition to these three notable areas, useful job creation strategies include early childhood initiatives to improve the prospects of healthy mental and social development, and preventative health initiatives to reduce the incidence of chronic medical conditions that prevent active engagement in the labour force — and in life more generally.

Not only do we appear now to be living in something approximating a full-employment economy, it is an economy going through quite significant structural change as a result both of the ICT revolution and the terms-of-trade impact of the re-emergence of China and India. There is a risk of costly policy resistance to the structural changes implied by these external shocks.

The ICT revolution is changing the whole configuration of the production chain in the tradeables sector of industrialised economies and, with the effect of earlier global tariff reductions and falls in transport costs also working in the same direction, delivering a much greater integration of our manufacturing sector into global production chains. And it is shifting the boundary between what is tradeable and what is non-tradeable. Some services traditionally regarded as non-tradeable — in particular, those not requiring the physical presence of the service-provider — are fast becoming globalised.

It is pretty well accepted these days that Australia's economic interests have been well served by trade liberalisation and globalisation. And yet, even in this country, the accelerating liberalisation of trade in services has attracted the pejorative label of 'off-shoring', with India usually identified as the winner and the industrialised world, Australia included, as the loser.

'Off-shoring' used to be called importing. And that is what it is: importing services. It is true that India gains from being able, because of ICT developments, to export services to the industrialised world. The ICT revolution, initiated in Silicon Valley, and considered by many to have given America 'new economy' status in the 1990s, turns out to be a precious gift to the people of India. But the industrialised world, Australia included, also has much to gain from 'off-shoring' — most obviously through a lowering of costs to business and, ultimately, consumers.

Opposition to 'off-shoring' is based on the same protectionist nostrums that were once used to support the high tariff wall that a generation of Australian policy makers has been busy dismantling. It may be dressed in different garb, but it is no more respectable.

The re-emergence of China and India has given us our highest terms-of-trade for 30 years. The last time we had a terms-of-trade boom of this magnitude the economic consequences were not attractive. On this occasion, thus far at least, things have gone pretty well.

A much improved policy framework has made the economy more stable and resilient to external shocks. As a consequence, the profound adjustments that the economy is undergoing in response to the terms-of-trade boom have been remarkably smooth, at a macroeconomic level, compared with past experience. The external stimulus to the minerals sector has not translated into the sort of generalised inflation shock we saw in the 1970s because we have greater relative wage flexibility, the exchange rate has appreciated, product and factor market outcomes have remained quite competitive, macro policy has remained credibly anchored, and as a consequence inflation expectations are also relatively well anchored.

But the same structural flexibility that has underwritten such benign macroeconomic outcomes is facilitating a reallocation of real resources in favour of mining, construction and those parts of the manufacturing sector that provide inputs to those industries. Some are finding this structural adjustment hard to accept. In that resistance to change, there is a risk of a lapse into old thinking — evident more generally in rising protectionist sentiment in a world where there is a crisis of global governance and declining international cooperation.

Making the most of opportunity

The Council of Australian Governments (COAG) has accepted that there is a strong case for addressing long standing policy failures in pricing, competition and competitive neutrality that have prevented the development of national markets in water, energy and other areas of economic infrastructure.

The COAG goals are ambitious and well targeted. But COAG agreements are not the same thing as reform outcomes. To date, progress against commitments has been slow.

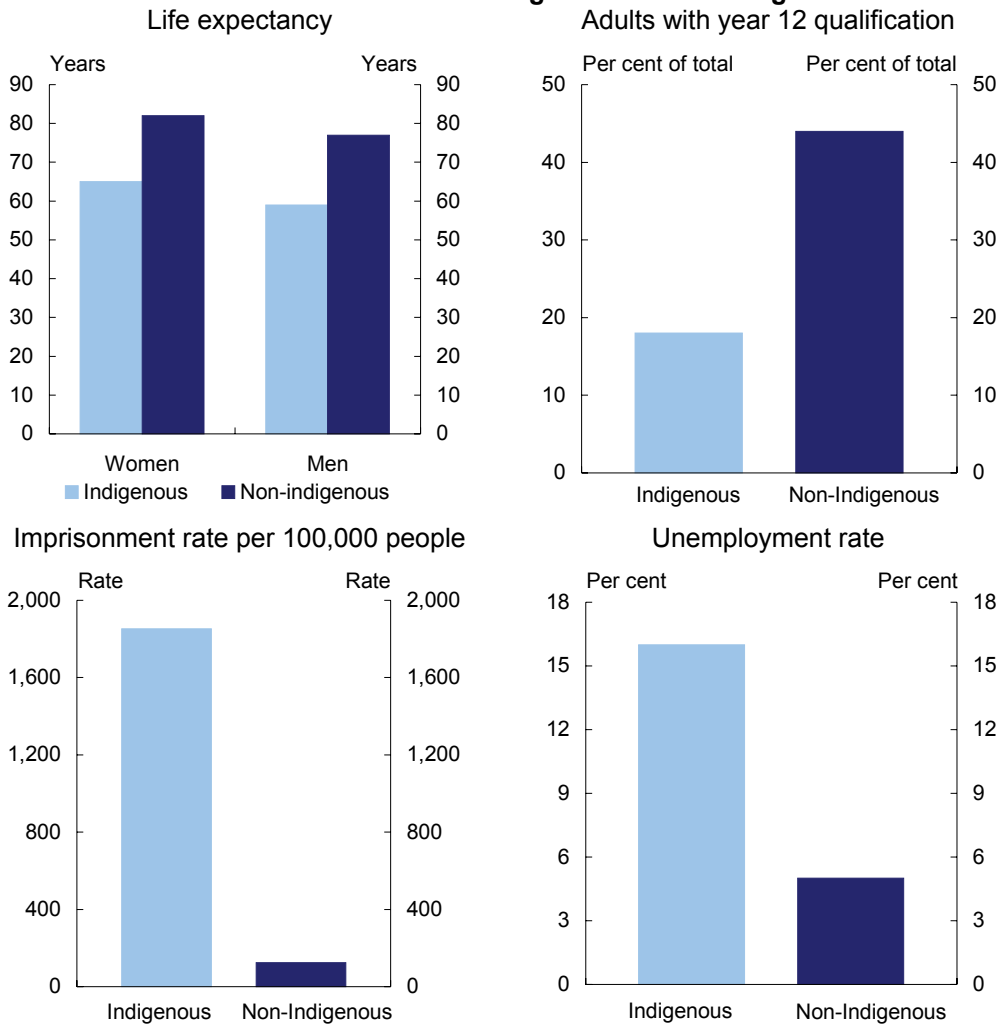
The COAG agreements are a product of cooperative federalism. Advocates of cooperative federalism — more numerous among the states than in the Commonwealth, of course — should have a strong interest in the implementation of the COAG agreements since that experience is writing a judgement on the quality of our federal arrangements, and on the strength of the cooperative federalism model. So far, the judgement is not particularly favourable.

Even so, the inadequacy of present market arrangements for water and energy is so apparent today that we can be confident of these areas occupying a position in the mainstream of policy development for some time.

Other instances of policy stress are not nearly so noticeable — or, at least, are less often noticed. Far from the mainstream, indigenous disadvantage is a dull glow on the periphery, capturing our attention only fleetingly, usually when presented to us as salacious. Most Australians know there is something wrong because they see images of substance abuse and domestic violence in indigenous communities. But that is about all they see. And it might be all they want to see; for the most part preferring the mental image of the indigenous community as a sheltered workshop for the permanently handicapped.

Well, indigenous communities are not sheltered workshops. They are a constituent component of mainstream Australia. But it has to be said that the life experience in that part of the mainstream is rather unusual — as Chart 2 illustrates.

Chart 2: Indicators of indigenous disadvantage



Indigenous Australians have a dramatically lower life expectancy — 17 years less than the Australian average, dramatically lower rates of year 12 completion, substantially higher unemployment rates and substantially higher rates of imprisonment.

Indigenous disadvantage diminishes all of Australia, not only the dysfunctional and disintegrating communities in which it is most apparent. Its persistence has not been for want of policy action. Yet it has to be admitted that decades of policy action have failed.

The good news is that there is a growing level of support — significantly, including among indigenous community leaders — for innovative approaches. Many of these new approaches are being targeted to local circumstances, with high rates of

indigenous participation in design and implementation. Some of the indigenous development initiatives being undertaken by mining ventures in the West and the North are producing impressive results. And the work undertaken at the Cape York Institute under Noel Pearson's leadership, which has led to the development of several pilot projects that take a fresh approach to welfare and service delivery, is equally impressive. There is reason for hope.

Noel's development goal for the Cape York communities, grounded in the work of Nobel Laureate Amartya Sen, is that indigenous people have the capability to choose lives that they have reason to value. There is a vast chasm separating most indigenous Australians from this goal. Yet it is precisely the goal to which all Australians should commit.

Incidentally, I was struck, during a visit to one of the Cape York communities last year, that the principal concern of its leaders was the red tape burden of reporting and compliance arrangements arising from a multiplicity of government intervention programmes and delivery agencies. Compliance with red tape was absorbing all of the administrative capacity of the community. Reducing the red tape burden on indigenous communities must be a national reform priority.

Concluding remarks

To date, we have responded well to the challenges of the ICT revolution, population ageing, the re-emergence of China and India and the discipline of a full capacity economy. It is no longer true that we are the 'worst manager of prosperity'. Yet the risks of policy error are considerable. In our present economic circumstances, the premium on high quality policy decisions is unusually high.

In addressing the consequences of a long history of policy failure that has denied us effective national markets in things as important as energy and water, and has produced appalling levels of environmental degradation and indigenous disadvantage, we have to do better — much better if we are to be able to make any credible claim to future generations of Australians that we managed prosperity well.

A few weeks ago I was invited to visit my old high school on the mid north coast of NSW where I spent 6 years in the early 1970s, completing Year 12 in 1975. In the three decades since I hadn't been back. The school has changed enormously, of course. Today's student population of 850 is about 15 per cent smaller than in my day. And it has changed in other, quite profound, ways. The indigenous student population in my day was about three-tenths of 1 per cent. Today, it numbers 17 per cent. One happy consequence is that the graffiti that adorned the walls of the four brick buildings in my student years has been replaced by spectacular murals of stunning indigenous

artwork. The couple of dozen demountable class rooms of my day — freezing in winter and roasting in summer — have been replaced by an additional five modern air conditioned brick buildings, networked with state-of-the-art IT infrastructure. At the centre of the school, cleverly located to achieve effortless integration with the general body of students, is an impressive purpose-built facility for students with special needs. The students I spoke to were bright, energetic and happy. The teachers appeared enthusiastic and dedicated to their students. Teachers and students alike were obviously very proud of their school. I was impressed.

And yet, I came away from the school with a sense of unease. Other things had changed at the school as well. And some of these changes were not so impressive. Given the substantial increase in year 12 retention rates over the past 30 years, I probably shouldn't have been surprised to learn that, today, less than half the students in years 11 and 12 study mathematics. Even so, I was disappointed. I was surprised to learn that in many years it is impossible to put even one physics class together. And I was shocked to learn that the school no longer offers economics; not at all. At my old school, economics is dead. Maths, physics and economics are simply too hard. One of the teachers — who had turned his back on the study of medicine at Sydney University to devote his life to the teaching of economics — told me that these outcomes really shouldn't surprise anybody. The set of incentives confronting teachers and students should not be expected to produce anything else. Today, many students are happy studying what this teacher and I, as students ourselves, would have regarded as soft options. Anyway, the soft options pay better. And teachers don't get rewarded for having students achieving ordinary grades in tough subjects.

There is a temptation to think that we can indulge ourselves in consuming the fruits of this economic boom; that this lucky country of ours can afford the luxury of the soft option.

But in that temptation lurks an intergenerational tragedy: if we succumb to the temptation we will avoid its costs, but we will impose an unnecessary burden on our children and grandchildren — indeed, on all future generations of Australians. Is that to be the legacy of this period of prosperity?

Australia's recent economic success is not the consequence of soft options. That path leads back to the economic outcomes of the 1970s. Like the study of maths, physics and economics, policy discipline is hard. But it is not too hard. Like those subjects, it is precisely as hard as it needs to be.

The Participation Modelling Project

Anthony King[1]

The Participation Modelling Project (PMP) was established in Treasury in July 2005. This paper describes the origins of the PMP and the initial work conducted by the project, and outlines the modelling strategy that is being pursued.

1 The author is from Tax Analysis Division, the Australian Treasury. The Participation Modelling Project Team is Michael Burke, Sandra Dandie, Anthony King, Jin Liu, Joseph Mercante, Tracy Oliver and Marty Robinson. This article has benefited from comments and suggestions provided by the team, Mike Callaghan, David Gruen and Nigel Ray. The views in this article are those of the author and not necessarily those of the Australian Treasury.

Introduction

The Participation Modelling Project (PMP) was established in Treasury in July 2005, in recognition of the need for enhanced modelling capacity to support the Government's labour force participation agenda.[2] The PMP has a broad objective: to establish the capacity within government to identify the likely labour market participation impacts of a range of policy proposals, including personal tax and income support changes.

This paper begins with an account of the impetus for and establishment of the PMP. This is followed by a description of the two main areas of work on initial capacity building undertaken during the first year of the project: a review of Australian estimates of labour supply response elasticities and work with the MITTS behavioural microsimulation model.[3] The paper then moves to cover lessons from overseas and other considerations in development of the PMP modelling strategy, before outlining the main areas of modelling activity identified in the strategy.

The policy impetus

Participation in the labour market is a core policy focus for government, with this stemming from both macro and micro perspectives. At the aggregate level, increasing participation is a key component of policy efforts to enhance Australia's growth prospects and meet the demographic challenges ahead (Commonwealth of Australia 2004a, 2004b, Henry 2004). At another level, employment is seen as a crucial element in the wellbeing of individuals and families — evident, for example, in the welfare to work agenda (Commonwealth of Australia 2005b), and the concern for work incentives in tax and superannuation reform (Commonwealth of Australia 2006a, 2006b).

That there is scope for increased labour force participation in Australia is suggested by comparison with other OECD countries (Gruen and Garbutt 2003). This scope is given a more detailed complexion by a variety of survey data on matters such as barriers to employment and comparisons between actual and preferred hours of work. In looking to increase labour force participation, a feature is the wide range of policies that may

2 The PMP was announced in the 2005-06 Budget (Commonwealth of Australia 2005a, p 255).
3 MITTS is the Melbourne Institute Tax and Transfer Simulator, developed by the Melbourne Institute of Applied Economic and Social Research.

have a bearing on outcomes. Tax, welfare to work, and superannuation policy have already been mentioned and there are many other relevant policy areas: for example, child care, training and industrial relations.[4]

Besides the diversity of relevant policy initiatives, the participation impacts of policy measures are seldom straightforward. Consider what might be seen as a simple example: the possible impact on participation of a cut in marginal tax rates. On the one hand, the tax cut will increase the return from working and make work more attractive than leisure (the 'substitution effect'). On the other hand, it will increase the after-tax income at the current level of hours worked which will operate in the opposite direction as an incentive to reduce hours worked (the 'income effect'). The outcome will depend on the balance between these two opposing effects. Moreover, the balance is likely to vary for people in different circumstances (for example, different income levels or family arrangements), as is their ability to gain employment or change hours of work. The underlying workings of financial incentives become even more intricate when policy change involves means-tested benefits. Non-financial issues and demand-side considerations can add further layers of complexity. Clearly, modelling likely participation impacts is not a simple matter.

The prominent role of labour market participation in the current policy debate has not been matched by the capacity to analyse and quantify the potential labour market participation effects of policies. Recognition of this provided the impetus for establishment of the PMP.

The project

The PMP has been established as a unit in Treasury's Tax Analysis Division — the location of most of the other detailed individual- and household-level modelling undertaken by the department. The work of the PMP does, however, have relevance across Treasury and this is reflected in broad Treasury representation on the steering group that guides the project.

The PMP Steering Group also reflects the whole-of-government nature of the PMP, with representation from Treasury as well as from the Department of Employment and Workplace Relations (DEWR) and the Department of Families, Community Services and Indigenous Affairs (FaCSIA). The three departments are also represented on a

4 A good indication of the range of policy relevant to labour force participation can be gained by reference to the scope of the recent parliamentary report on Working for Australia's future: Increasing participation in the workforce (Parliament of the Commonwealth of Australia 2005).

Participation Modelling Technical Group that has been set up to facilitate collaboration on model development and model use across departments.

An Academic Reference Panel has been established to provide continuing input of academic expertise to the PMP. The panel, comprising Australian and international labour market experts, is ensuring that the work of the PMP is conducted to a high standard of rigour and draws on latest developments in the field.

Initial capacity building

At the outset of the PMP, two areas were identified where better capacity to estimate participation impacts could be developed quickly. These were reviewing estimates of labour supply response elasticities and getting the MITTS behavioural microsimulation model operational in Treasury. These two activities accounted for much of the PMP effort over its first year.

Elasticities of labour supply response

Summary labour supply elasticities can give an initial view of the likely labour supply response from a change in the financial incentives attached to work; for instance, stemming from a change in tax rates. Thus, for example, there is the established view that males of prime working age have labour supply elasticities that are very low — possibly around 0.1 or 0.2. This means that a 1 per cent increase in their financial returns from work will result in just a 0.1 or 0.2 per cent increase in their labour supply. The corresponding elasticities for secondary earners, such as many partnered women, or sole parents are generally taken to be much higher, perhaps around 0.5 or even approaching 1.0 for some groups in the population.

A shortcoming with these summary elasticities is that they are just that — summary estimates at a broad level which conceal a complex pattern of responsiveness. They may provide a broadbrush impression of likely responses, but policy analysis typically requires a finer grain. Estimates of labour supply elasticities are, however, notorious for the considerable variation they exhibit. They vary, for example, according to estimation technique, data source and population subgroup, over time and across countries. As a result, a number of surveys of labour supply elasticities have sought to draw conclusions from the array of estimates.[5] These reviews, however, have generally

5 See, for example, the major reviews by Killingsworth and Heckman (1986) and Blundell and MaCurdy (1999), and the more recent work by Evers, Mooij and van Vuuren (2005).

not covered Australian estimates.[6] A first task for the PMP has been to fill this gap with a comprehensive survey of Australian estimates of labour supply elasticities.

The published Australian research contains broadly similar results to overseas studies. It reveals significant variation in elasticities across groups in the population — differentiated, for example, by income level, hours of work or family status. This highlights the importance of modelling based on individual- or family-level data. Reviewing elasticities has also been instructive in tracing the development of labour supply modelling. This is an evolving field with important developments over recent decades to take better account of the potential wages of those not working and of the complexities of tax/transfer systems.

Melbourne Institute Tax and Transfer Simulator

The Melbourne Institute Tax and Transfer Simulator (MITTS) is a behavioural microsimulation model that has been developed by the Melbourne Institute of Applied Economic and Social Research (the Melbourne Institute) and incorporates the advances in labour supply modelling mentioned above (Creedy, Duncan, Harris and Scutella 2002). The development of MITTS from 1998 had drawn on the earlier experience with behavioural microsimulation at the United Kingdom Institute for Fiscal Studies.

Development of the Australian model was undertaken with Commonwealth assistance (through the then Department of Family and Community Services) and the intellectual property in MITTS is jointly owned by the Melbourne Institute and the Commonwealth. MITTS has increasingly been used by the Melbourne Institute and by third parties in analysis of tax and income support policy proposals.[7] The Commonwealth had not yet established the capacity to operate the model fully, and doing so became a major initial task for the PMP. This has been combined with a detailed evaluation of the model. The work has been undertaken in close liaison with, and with assistance from, the Melbourne Institute.

In part, MITTS is like other static microsimulation models that estimate the budgetary and distributional impacts of changes in personal income tax and/or transfer payments, such as Treasury's personal income tax model or STINMOD (Lambert et al, 1994). But MITTS also includes a behavioural labour supply component that assumes that individuals, or couples, choose the number of hours they wish to work to maximise utility subject to a budget constraint. This provides the facility to estimate detailed labour supply responses to changes to personal income tax and income

6 An important exception is the survey of Australian women's labour supply elasticities by Birch (2005).

7 Examples can be found on the MITTS website at http://www.melbourneinstitute.com/labour/behavioural/MITTS.html.

support. The static nature of the model means that it creates a 'before' and 'after' snapshot for individuals but takes no account of the time path of change.

MITTS is an advanced and complex microsimulation model that can be very useful for exploring some of the labour market incentive effects of possible changes to tax and income support policy. This is despite the fact that the behavioural elements of MITTS only cover part of the population. Excluded groups are full-time students, the self-employed, people over 65 years old, and disabled people. The labour supply of these groups is fixed in the model.

For the population that is covered by MITTS, various considerations suggest that the model, at its current stage of development, is more useful for exploring relative orders of magnitude and patterns of possible labour supply responses than for making estimates of absolute labour supply responses. These considerations include issues with the timeframe of the model estimation data and with the quality of the modelling of labour supply for particular groups, and an assumption that people's observed labour supply is their preferred labour supply.

Perhaps most importantly, the usefulness of MITTS does not extend to providing a reliable basis for forecasting the employment impacts of changes to tax and income support policy. MITTS does not deal explicitly with the demand side of the labour market. It provides estimates of potential impacts based on incentives for individuals to vary their labour supply after a policy change. In the case of the labour market impact of tax cuts, MITTS will estimate the potential increase in employment, assuming the existence of adequate and appropriate labour demand. The impact of the demand side, and the timeframe over which any change in employment is likely to take place, are fundamental qualifications to estimates from MITTS. These questions are receiving attention in PMP work.

Lessons from overseas

Drawing on the overseas experience with participation modelling has been an important input into identification of the PMP modelling strategy. There is a good deal of common ground in the participation policy issues, and thereby modelling questions, being faced by Australia and other countries.[8] Looking at overseas experience provides a reminder of the potentially vast scope of participation modelling — in terms of policy issues, particular population groups, and timeframes.

8 Leaders in the field include Norway, Sweden, Denmark, the Netherlands, the United Kingdom, the United States and Canada.

Related to the diversity of participation questions, and also to the difficulty of modelling behaviour, it is clear that there are no easy answers to modelling participation, nor are there standard approaches. Instead, governments draw on a wide range of techniques and information to address these issues. This range spans formal modelling (such as microsimulation and computable general equilibrium modelling), natural experiments, informal and ad hoc modelling, rule-of-thumb elasticities and, of course, a good dose of informed judgment.

While the emphases and approaches vary from one country to another, there are two themes in the general approach to participation modelling in other countries:

- 'An eclectic approach' — given the uncertainties about behavioural responses, and the modelling difficulties, other governments frequently use a range of estimation and modelling techniques to hone in on likely responses ('triangulation').

- 'Keep it simple' — while there is a common quest for more sophisticated modelling of labour market response, this is accompanied by concerns about the useability of modelling and care not to stretch modelling beyond its capabilities.

Technical and conceptual advances in participation modelling are being made, though these stand to add to or strengthen strings in the bow, rather than revolutionise the approach by governments to the analysis of these issues. Finally, the overseas experience repeatedly reinforces the point that modelling possibilities are very much constrained by the quality of available data.

Developing the modelling strategy

Given the broad objective for the PMP, the appropriate modelling direction for the PMP was not immediately evident at the outset of the project. Embarking on a particular course of detailed and sophisticated model development is not a trivial decision. Indeed, the PMP evaluation of MITTS, including detailed checking of computer code, served as a salutary reminder to all involved of the importance of, and resources needed for, maintenance and quality control of a complex model.

Given the range of possible modelling directions, development of the PMP modelling strategy was the other emphasis in the first year of the PMP alongside the initial capacity building. Development of the modelling strategy has drawn on a range of inputs. These have included: continuing discussion with the PMP Steering Group, consultation with overseas government and research organisations, and advice from the Academic Reference Panel (including at a workshop held in June 2006) and other experts. In addition, the strategy has been informed by the evaluation of MITTS, the review of labour supply elasticity estimates and their underlying methodologies, and

broad-ranging background research into policy issues, modelling techniques and data availability.

Considerations

A number of key considerations have had a bearing on development of the PMP modelling strategy.

Purpose of modelling

The role of the PMP is to enhance participation modelling capacity within government. The purpose is to contribute to practical policy analysis — by enhancing and complementing the range of tools that can be used to develop a view on likely participation impacts. This has some implications for the general design principles and modelling approaches to be used. In particular, use in the provision of policy advice highlights the need for rigour and the importance of: transparency, ease of understanding, the ability to explain model outcomes, and recognition of the inevitable uncertainty about estimated behavioural responses. It also means that model run-time is important.

Building lasting capacity, rather than a one-off modelling effort, has implications for the attention given to the ease of updating, documentation and training. This is particularly the case with modelling in government where staff turnover tends to be higher than in academia. The purpose of the modelling — notably the 'useability' of modelling — may also place some constraint on the scale and complexity of modelling.

The modelling environment

The PMP was established with the understanding that capacity would be developed either by adopting and modifying existing quantitative models or by developing new modelling. There is a need to avoid duplication with other modelling development, to take advantage where possible of other modelling work, and to have consistency where appropriate with other modelling in government.[9]

Resources

The PMP budget allows for significant development of modelling capacity. Besides work undertaken by the PMP team, the project includes provision for the external commissioning of aspects of research and development (including joint work), and for collaborative work with other government departments.

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9 For example, there is the APPSIM dynamic microsimulation modelling project being undertaken by NATSEM in partnership with a number of Australian Government agencies (see www.natsem.canberra.edu.au/appsim).

Data availability

The scope of potential model development is largely constrained by available data. It is true that much modelling work can be concerned with filling gaps in available data, though this is more a marginal activity and the richness and timeliness of available data are very real constraints. These constraints will apply differently to specific areas of modelling. They need to be viewed not only in terms of data availability at present, but also with regard to the future availability of data — important for updating purposes and possible model extensions. Cross-sectional and longitudinal survey data are primary sources. Administrative data can also be an important source. Modelling of particular policy areas and population groups is likely to require some imputation of information.

Multiple models

The PMP is proceeding with the view that different types of models will be appropriate for particular aspects of modelling participation impacts. The expected outcome is thus a suite of tools, rather than a single model. Certainly, there are advantages where a single model or model framework can be used to address a range of policy issues. However, differences in the nature of policy issues, different timeframes, different data requirements, and the general experience that useful models tend to be those that have been developed with a specific purpose, all point to the need to be open to multiple models. There is also the argument for using more than one model to provide estimates on a particular question, with the greater confidence this may provide on both the likely direction and magnitude of impacts.

Incremental development of capacity

A staged approach to model development — with discrete steps within the model development plan — provides a number of benefits for the project. An incremental approach to development provides the discipline of milestones with the opportunity for periodic review and, if necessary, redirection along the way. It also allows for the progressive increase in modelling capacity which is important for both practical reasons and for demonstrating the value of the modelling development.

The need to focus the modelling effort

The range of policy areas with potential labour market impacts is vast, and it has been important to identify the priority policy areas for the PMP. Addressing this question has been an initial emphasis for the project. The focus of attention has been determined with regard to current priorities and emerging policy areas, the feasibility of useful modelling, and the need to avoid duplication with other modelling work. A number of policy areas have been identified as high priority for initial investigations (though not necessarily formal modelling) by the PMP. These include: personal income tax, family

payments, welfare to work, child care, retirement and superannuation, child support, and wages.

The PMP modelling strategy

The resulting PMP strategy identifies three main areas of modelling work: behavioural microsimulation, modelling of the retirement decision, and accounting for the demand side and adjustment paths. In support of these three focus areas, and also across the broader scope of participation issues, the strategy includes maintaining an understanding of the policy debate, the body of evidence on participation responses, and relevant data.

Behavioural microsimulation

There is a central, feasible and useful role for behavioural microsimulation (in the style of MITTS) in a number of the policy areas that have been identified as priorities for investigation. There are three parts to the planned work on behavioural microsimulation modelling:

- maintenance of the MITTS capacity;
- improvements to the behavioural microsimulation capacity; and
- extensions to the behavioural microsimulation capacity.

MITTS provides the capacity to estimate the potential labour supply responses from changes to the personal tax and income support systems (for the population excluding the self-employed, full-time students, the disabled and people aged 65 years or over). Basic maintenance of MITTS will provide continued capacity for this type of analysis. This will require the updating of MITTS (base data, behavioural estimations, and parameters) and training to ensure that staff are skilled in the use of MITTS. It will involve continued liaison with the Melbourne Institute and collaboration with MITTS users in DEWR and FaCSIA.

The evaluation of MITTS has identified a number of areas where the model may be improved. These include technical issues, such as model run-time, and modelling issues, such as the way that the wages that non-workers could earn if they gained employment are imputed. There is also the broad question of whether the behavioural microsimulation capability of MITTS is best kept in a separate model or whether it should be integrated with other Treasury modelling.

Regarding extensions to the behavioural microsimulation capacity, as mentioned above, MITTS currently excludes a number of population groups: disabled people,

full-time students, people aged 65 years and over and the self-employed. There are also key policy areas which are not modelled, including aspects of welfare to work policy, child support, child care and minimum wages. Extending behavioural microsimulation to include some of these population and/or policy areas would greatly expand the potential range of policy options that could be modelled.

The retirement decision

While clearly an important policy issue, Australian modelling of the retirement transition/decision is not well advanced by international standards. Reasons for this have included the limited availability of longitudinal and asset data, although these impediments are gradually reducing. Modelling of the retirement decision requires a different approach to MITTS-style static behavioural microsimulation. In particular, it needs a better capacity to handle dynamics. The aim of the work in this area is to develop modelling which will allow estimation of the impact on labour force participation of older workers of policy changes in the areas of taxation, superannuation and income support.

The demand side

Behavioural microsimulation models such as MITTS do not include explicit consideration of the demand side of the labour market and they abstract from the time path of adjustment after a policy change. Addressing this limitation is important to understand better how changes in financial incentives translate into employment. It is similarly important that modelling of the retirement decision takes account of the demand side.

Consideration of alternative approaches to addressing these issues has led to the view that the most promising way forward for the PMP is through the addition of some form of demand side constraint to labour supply modelling, rather than through attempting any sophisticated macro-micro model linkage. Examples of such demand-side constraints include the application of demand elasticities to the output of a labour supply model, the application of demand side restrictions to labour supply preferences for individuals within a microsimulation model, and the development of a view on the likely time path of adjustment.

A related issue is macro feedback (through, for example, changing wage rates) which may be important with large-scale policy change. Consideration of the options for dealing with this issue will continue.

The next steps

The focus of PMP work over the coming period will be on the three areas described above. This modelling development will continue to draw on the advice from the PMP Steering Group and Academic Reference Panel and, importantly, will proceed in an incremental and flexible manner. The PMP strategy allows for possible shifts in emphases in response, for example, to changing policy priorities, the availability of new data, or other modelling developments. Above all, the approach being taken by the PMP reflects the need for the modelling effort to be useful in practical policy analysis, by enhancing and complementing the range of tools that are available for developing a view on likely participation impacts.

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Older men bounce back: the re-emergence of older male workers

Steven Kennedy and Alicia Da Costa[1]

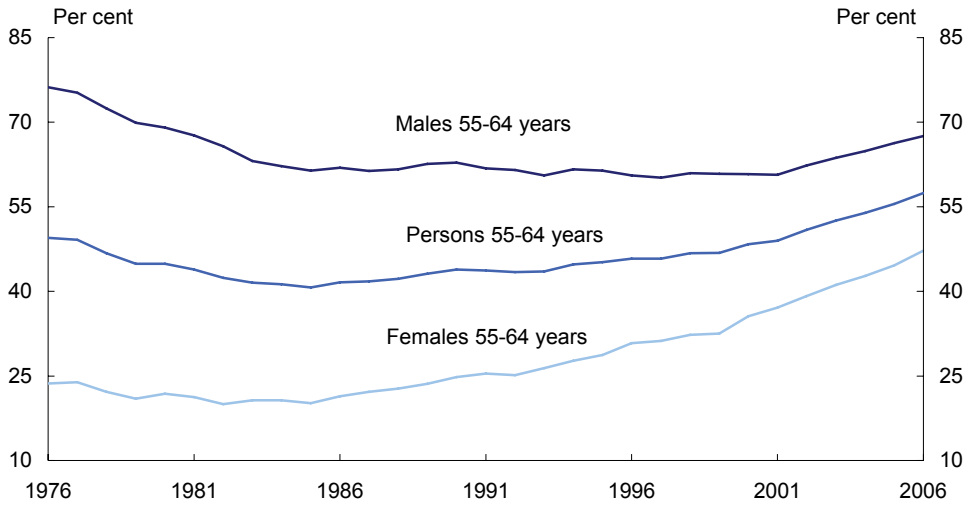
Over the past five years, the labour force participation rate of older Australian men has risen after declining for over 25 years. In combination with ongoing increases in older women's participation, the participation rate of older persons is now at its highest level on record. We describe some of the trends in older persons' participation with a focus on older men and discuss some possible reasons why older men's participation has reversed its long decline. We find that improved labour market conditions for older workers is the most likely explanation for the recent increase in participation but that the increase is supported by long-lived improvements in health and education.

1 The authors are from the Domestic Economy Division, the Australian Treasury. This article has benefited from comments and suggestions provided by Sandra Dandie, David Gruen, Jason Harris, John Hawkins, Rob Heferen, Anthony King, Lan Lu, Paul McMahon, David Parker and Jyoti Rahman. The views in this article are those of the authors and not necessarily those of the Australian Treasury.

Introduction

Over the past five years, there has been a significant reversal of a long trend in older men's labour force participation. After declining steadily for over 25 years, participation by older men (which we define as men aged 55 to 64 years) began increasing around 2000, to be currently at levels not seen since 1980 (Chart 1). The recent increase is most dramatic for men aged 60 to 64 years, although the increase for men aged 55 to 59 years is also significant. In combination with the continuation of the 30-year upward trend in women's participation, older persons' participation is now at its highest level on record.

Chart 1: Labour force participation of older persons



Note: Estimates for 2006 are based on data available until September 2006.
Source: Australian Bureau of Statistics 2006, *Labour Force, Australia, Detailed,* cat. no. 6291.0.55.001, Canberra (ABS Labour Force Statistics); Australian Bureau of Statistics 1978, *The Labour Force, Australia 1978 (including revised estimates from August 1966)*, cat. no. 6204.0, Canberra; authors' calculations.

The re-emergence of older male workers is not just an Australian phenomenon. In the United States, the United Kingdom, Canada and Sweden older men's participation has also increased over the past five to ten years. Along with continuing rises in female participation, older persons' participation rates are rising in all these countries (Table 1).

Table 1: International comparisons of participation rates for older persons

	1985	1990	1995	2000	2005
Males (55-64 years)					
Australia	61.4	62.8	61.4	60.8	66.3
Canada	68.8	64.0	58.3	60.7	66.7
United Kingdom	69.0	68.1	62.5	63.2	68.1
United States	67.9	67.8	66.0	67.3	69.3
Sweden	76.0	75.5	70.9	72.6	76.4
Females (55-64 years)					
Australia	20.2	24.8	28.8	35.6	44.6
Canada	33.4	34.9	36.2	41.4	49.4
United Kingdom	35.0	38.7	40.8	42.5	49.1
United States	42.0	45.2	49.2	51.9	57.0
Sweden	60.0	65.8	63.9	65.9	69.2
Persons (55-64 years)					
Australia	40.7	43.9	45.2	48.3	55.5
Canada	50.4	49.2	47.1	50.9	57.9
United Kingdom	51.4	53.0	51.4	52.7	58.4
United States	54.2	55.9	57.2	59.2	62.9
Sweden	67.8	70.5	67.4	69.3	72.8

Source: Organisation for Economic Co-operation and Development (OECD) 2006, *Labour Force Statistics, 1985-2005*, OECD Publishing.

What should we make of this development? Are we witnessing the first behavioural responses of employers to ageing populations or does the increase in participation of older persons reflect the different behaviours and preferences of the post-war baby boom generation who started comprising older age groups around the turn of the century?

This article sheds light on these and other questions by describing the recent trends in older Australians' labour force participation and by exploring a number of pathways through which participation may be affected. The focus of the article is on older men's participation, as their trend behaviour has altered most significantly. However, older women's participation is also discussed, particularly as labour force participation decisions are most often made jointly in a household rather than by 'textbook' individuals.

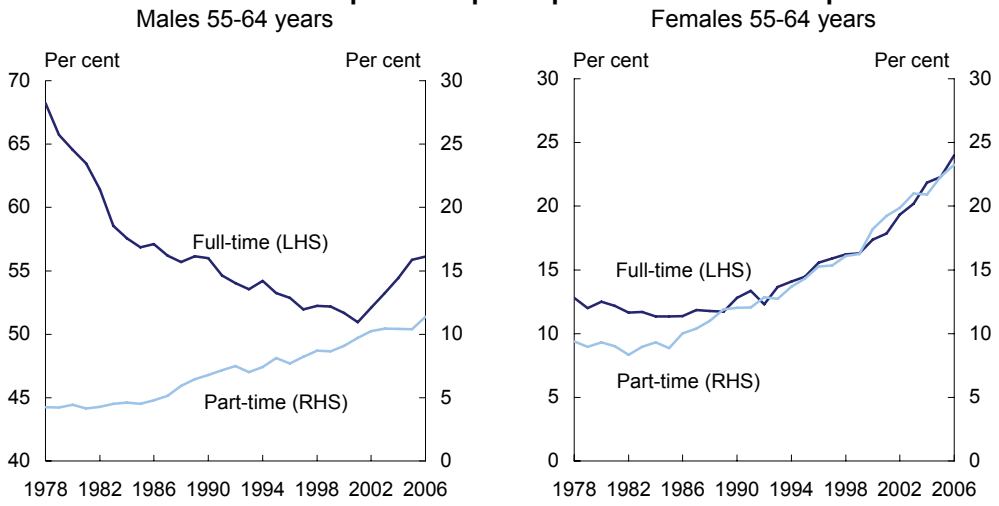
Describing older persons' labour force participation

Underlying the increase in older persons' labour force participation has been a strong rise in part-time participation for men and women.[2] For example, around half the overall increase in older women's participation over the past two decades has been in

2 The full-time participation rate is the share of the population who are employed full-time or unemployed and seeking full-time work, while the part-time participation rate is the share working part-time or unemployed and seeking part-time work.

part-time participation. The recent increase in older men's participation has also reflected ongoing rises in part-time participation. However, there has also been a significant turnaround in full-time participation, which has driven the overall increase in participation for older men. The recent sharp rise in older men's full-time participation comes after 25 years of falls and is occurring at the same time as part-time participation continues to rise at roughly the same rate as it has over the past two decades (Chart 2).

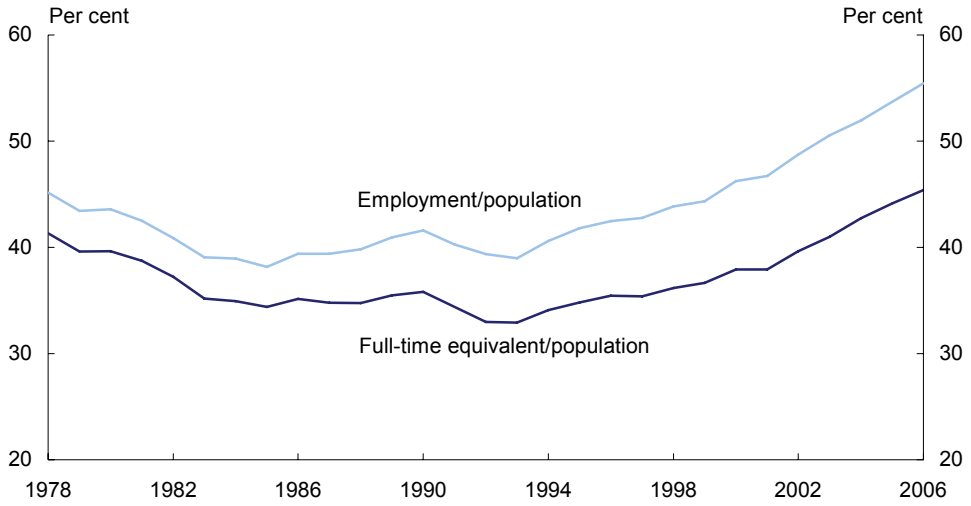
Chart 2: Full-time and part-time participation rates for older persons



Source: ABS Labour Force Statistics; authors' calculations.

In combination with low unemployment, the increase in older persons' participation has led to record levels of older persons' labour input. Chart 3 shows two measures of labour input, employment and full-time equivalent employment, both as a share of population. The latter shows that, even after adjusting for the increase in part-time employment, the overall labour input of older persons is still at a record level.

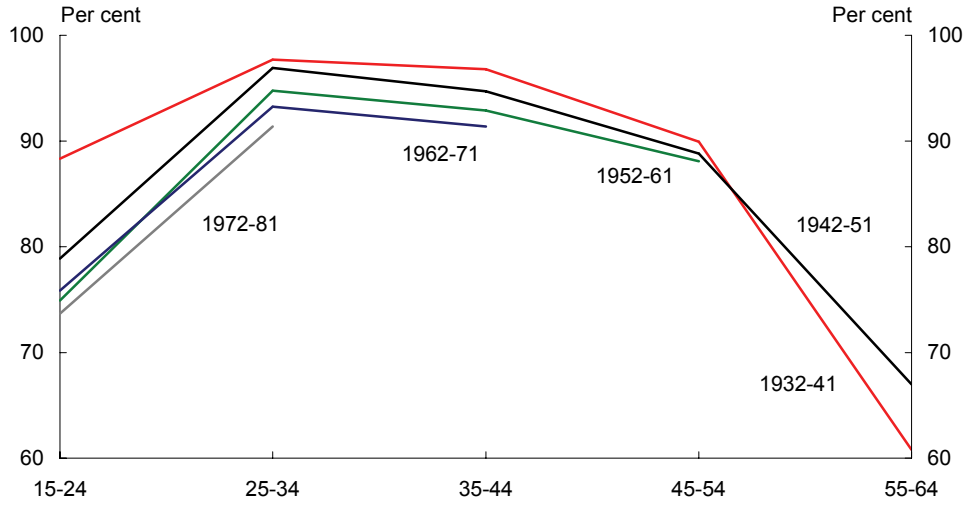
Chart 3: Employment to population ratios for older persons (55-64 years)



Source: ABS Labour Force Statistics; authors' calculations.

Over time, the labour force participation of different age groups reflects the experiences of different cohorts of individuals. Chart 4 shows labour force participation rates across the lifecycle for different (birth) cohorts. For example, the chart shows for men born between 1942 and 1951 their participation at age 15 to 24 years in 1966, then 25 to 34 years in 1976 and so on until they are aged 55 to 64 years in 2006.

Chart 4: Male labour force participation by birth cohort

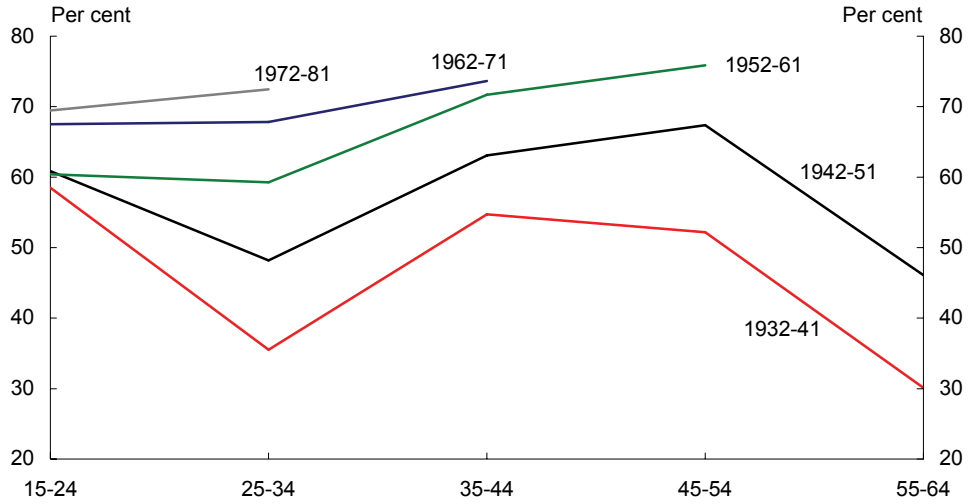


Source: ABS Labour Force Statistics; ABS Census; authors' calculations.

The chart shows that younger cohorts of men (men born more recently) have consistently had lower participation than older cohorts.[3] However, there has been one significant exception to this pattern of behaviour. In particular, the recent increase in older men's participation does not appear to reflect a time persistent cohort effect — that is, where the ageing of a high participation cohort leads to a lift in older age group participation rates. This is reinforced by the fact that the cohort of men born between 1942 and 1951, who currently comprise the 55 to 64 years age group, have higher participation rates than the previous cohort only in the 55 to 64 age range.

In contrast to men, younger cohorts of women have had progressively higher participation rates than older cohorts, which have persisted across the lifecycle (Chart 5). This suggests that the upward trend in older women's participation will persist for some time yet, with higher participation at younger ages likely to lead to higher participation at older ages.

Chart 5: Female labour force participation by birth cohort



Source: ABS Labour Force Statistics; ABS Census; authors' calculations.

3 Ravindiran (2003) found significant 'cohort' effects for men's participation and that these were leading to lower participation.

Explaining the recent increase in older men's participation

The possible explanations for the recent increase in older men's participation can be categorised broadly into: supply side explanations including the role of wages and other economic incentives in influencing people's behaviour, and the characteristics of labour; demand side explanations including employers' perceptions about the value of older persons' labour input; and market efficiency and labour dynamics, which characterises the way supply and demand for labour interact.

Wages, wealth and pensions

The key economic incentive for people to supply labour is the wage they receive in return. An increase in (real) wages will have two effects. First, as the person has more income, they need to work less to maintain their consumption possibilities; this is called the income effect. Second, as the cost of leisure or earnings forgone from not working increase, people tend to work more, known as the substitution effect. With the two effects working in the opposite direction, the labour supply outcome of an increase in wages is theoretically ambiguous.

In addition to the effect of wages, a person's wealth will also affect their decision to participate in the labour force. This is particularly relevant for older persons where a decision not to participate may effectively represent retirement from the labour force. In this case, people are weighing up their ability to enjoy more leisure now while maintaining a desirable standard of living through their retirement. An increase in wealth would tend to suggest earlier retirement as it essentially reflects the same impact as the income effect associated with an increase in wages.

Over the past five years, there has been a large increase in the wealth of older Australians, reflecting initially the housing boom followed by significant growth in financial wealth driven by the mining boom. This would tend to reduce the participation of older workers and would not explain the recent increase in participation of older men.

Another aspect of income in retirement is the provision of old age public services and pensions. Research published by the OECD (2006) highlights the important role of rules governing access to retirement benefits and the incentives generated by retirement income programmes. For example, the increase in the age pension in Australia through the 1970s is thought to explain a large portion of the ensuing drop in the participation of men aged 65 years or more (Merrilees 1983). Moreover, the fall in participation of men aged 60 to 64 years in the early 1980s was influenced by World War II veterans qualifying for the war service pension. Over the past 10 years, there have been no large changes in the relative value of or access to age pensions for

males, which suggests that the age pension has not been an important factor in explaining the recent increase in older men's labour force participation.

Access to other pensions such as the Disability Support Pension (DSP) has clearly affected the participation of older males. Over the 1980s and 1990s the number of men on the DSP aged between 50 and 64 years rose to a peak in 1996 of 15.3 per cent of the age group. The proportion of men aged 50 to 64 years on the DSP stabilised around the mid-1990s and has been falling steadily since late 1990s. Recently, there have been changes to the DSP, which tighten access and encourage workforce participation. While these changes are probably not yet having a large effect on participation, they may be playing a small role.

Recent policy changes to taxation and superannuation access may also provide incentives for older persons to remain in the workforce longer. The Mature Age Worker Tax Offset, introduced in July 2004, provides an annual tax rebate for persons aged 55 or over who choose to remain in the workforce. From July 2005, persons aged 55 years or over have access to their superannuation in the form of a non-commutable pension while still working. Additionally, from 1 July 2007, superannuation benefits will be tax free or subject to a reduced rate of tax after age 60.

Worker and household characteristics

Poor health is the most commonly cited reason why people retire from the labour force. The 2003 HILDA survey found that 42 per cent of people aged 45 years or more cited medical advice or health reasons as the primary reason for retiring or partly retiring. With the average health of the population improving over time, we would expect participation to rise in older age groups. However, this long-lived change is likely to be at best only a small part of the recent increase in older men's participation and does not explain the long-term decline that preceded the increase.

It is well established that people with higher educational qualifications participate more in the labour force. Kennedy and Hedley (2003) show that the labour force participation of men with some post-school qualifications is around 10 percentage points higher than for those without post-school qualifications for most age groups. As the labour force becomes more highly educated, we would expect the participation of older workers to increase although, as for many of the supply side explanations, this would not explain the earlier longer-term decline in men's participation and the recent increase.

Decisions to either retire or continue to participate in the labour force are most often made jointly in a household. Around 75 per cent of people aged 55 to 64 years are married. The increase in women's labour force participation may be positively affecting men's participation. In this case, men may be choosing to continue working

while their spouses work and then retire together. With married women on average around 2 to 3 years younger than their spouses (Qu 1998) and with women's participation increasing over many years, this may be beginning to affect men's participation.

Countering this effect may be the substitution of one household member's labour income for another. If households are deciding that they have enough income with one member working, and the younger female partner finds maintaining employment easier, then increasing female participation could have tended to reduce male participation. As one might have hoped, 'there appears to be compelling international evidence of an important effect of the value that spouses place on spending time with each other on joint retirement decisions' (Borland 2005). In other words, the positive effects of women's participation on men's participation are likely to dominate the negative effects.

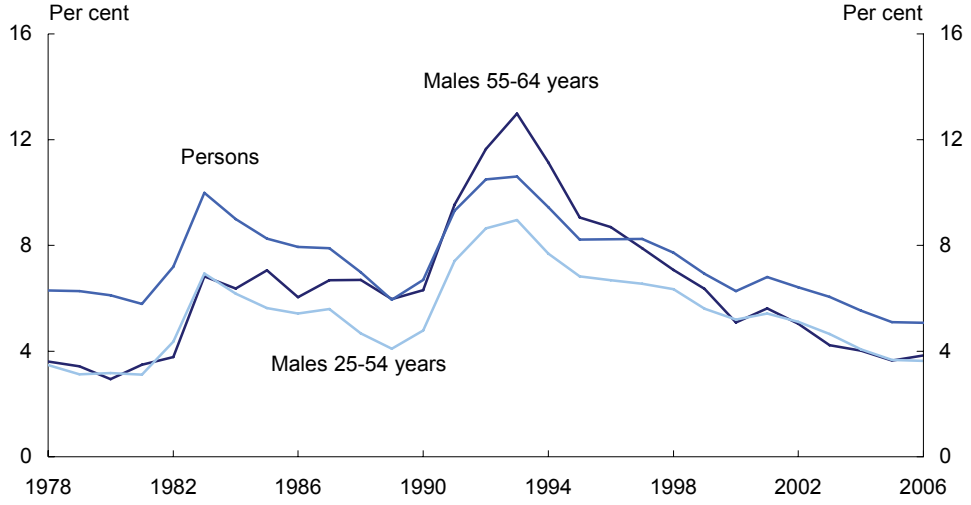
An important reason for why older men may be participating more in the labour force is a change in preferences. Baby boomers (those born between 1946 and 1962) have progressively comprised a larger portion of the older age groups since 2000. Baby boomers may be taking a different attitude to working in their later years and they may have a different set of income expectations for retirement. That is, they expect to live longer and in better circumstances than previous generations. The size of this effect is hard to gauge although it is striking that the improvement in older men's participation began as baby boomers began entering these age groups.

Demand for older male workers

Many studies of older men's participation focus on supply side aspects such as the economic incentives to supply labour. However, some studies find an important role for demand side factors. O'Brien (2000) finds that hidden and high unemployment rates were an important aspect of falling older men's participation over recent decades.

Chart 6 shows unemployment rates for older men over the past 20 years and it is clear that older men were particularly adversely affected by the rise in unemployment during the early 1990s recession. The comparison between unemployment rates for older men and those aged 25 to 54 years is especially stark, and illustrates that the early 1990s marked a nadir for older males in terms of labour market outcomes. For the rest of the population, it was more of a repeat of the unemployment experience of the early 1980s.

Chart 6: Unemployment rates



Source: ABS Labour Force Statistics; authors' calculations.

In part, very high older male unemployment rates reflected a succession of large structural changes to the Australian economy through the 1980s, as inefficient and protected industries were swept away and competitive industries emerged. Unfortunately for older men, the industries most affected by both the recession and structural changes were those where they tended to be employed. For example, between 1989 and 1995 employment in the manufacturing industry fell by 8 per cent, with, in 1989, manufacturing accounting for around 21 per cent of older men's employment. This situation was further exacerbated by the fact that it was more difficult for older men to re-train and find other employment compared with younger men.

Unemployment rates for the general population are at 30-year lows; those for older men are even lower, which highlights the dramatically improved labour market conditions for these workers. Adding further to this point, these unemployment rates are being achieved by older men while their participation rates are rising.

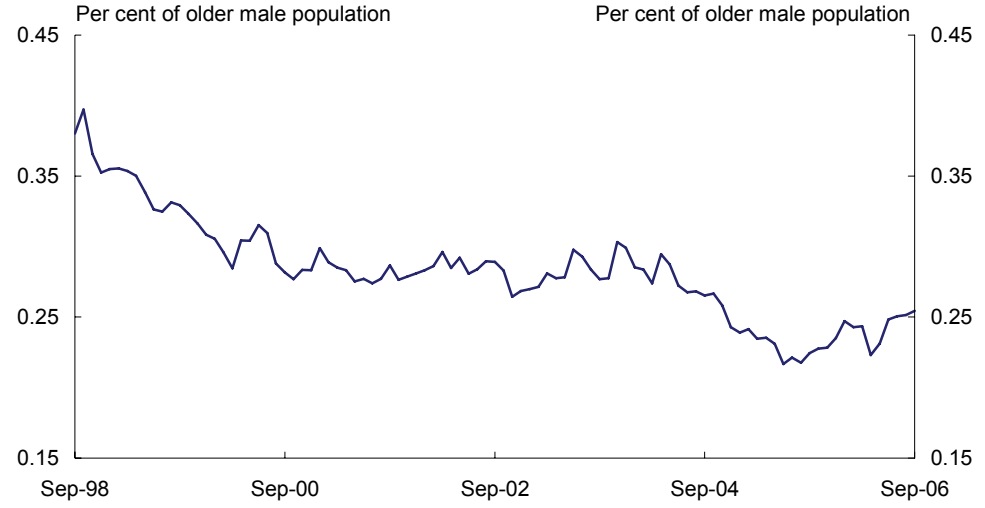
Attitudes and employers' preferences also play a role in older men's participation in the labour force. The existence of legislation in a number of countries to prevent discrimination based on age is evidence of these factors at play (OECD 2006). A number of studies have shown that employers consider older workers to be less productive (see Borland 2005 for a review of recent studies). To date, there has only been limited evidence of a change in attitudes toward older workers, although initiatives by organisations such as the Business Council of Australia in promoting the value of older workers are a sign of change.

Labour market efficiency and dynamics

We noted earlier that there have been substantial long-term changes in the structure of employment for older men, with part-time employment becoming increasingly prevalent until more recently. While the recent turnaround in older men's participation reflects significantly improved outcomes for full-time participation, the long-term increase in part-time work may still reflect the preferences of older workers. That is, they may prefer part-time work as part of a transition to retirement. This is supported by ABS data for 2005, which show that for men aged 25 to 54 years working part-time, around 41 per cent would like more hours of work compared with around 24 per cent for those aged 55-64 years.

An aspect of the older work force is their increased propensity to leave the labour force if they are retrenched (Borland and McDonald 2001). While recent data on the retrenchment of older workers are not readily available, we can examine labour force flow data to see if fewer older workers have been moving labour force states or in particular, been exposed to spells of unemployment. Chart 7 shows that there has been a fall in the flow from employment to unemployment for older men. This suggests that the recent strength in the labour market has reduced employment exit rates and has lessened the potential for opportunistic or unplanned retirement; that is, retiring once one loses one's job.

Chart 7: Flows of older men from employment to unemployment (55-64 years)



Source: ABS Labour Force Statistics; authors' calculations.

Summary

The recent increase in older persons' labour force participation is a welcome development and bodes well for the improved circumstances of older persons both now and when they retire. It is also a positive sign for future economic growth as Australia's population continues to age. Moreover, recent policy changes to taxation and superannuation access should support ongoing increases in older persons' participation.

There are many reasons for the increase in participation of older persons and, in particular, the recent increase in older men's participation. The general improvement in labour market conditions for older men, especially in full-time employment outcomes, appears to be playing an important role. In combination with long-term factors such as improving education and health, we may well see even higher participation rates among older Australians in the future. It is noteworthy that despite the participation rates of older Australians being at record levels, they have not yet reached the levels of a number of countries including the United States, United Kingdom, Canada and Sweden.

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Reflections on the global economy and the Australian mining boom

Keynote address to the Australian Business Economists Forecasting Conference
11 October 2006

David Gruen and Steven Kennedy[1]

Growth has been strong in the years since the global economic downturn of the early 2000s. The current rapid cooling of the United States housing market is likely to lead to a noticeable slowing in United States economic growth, but unlikely to lead to a recession, absent other significant adverse shocks. China is following an economic trajectory previously travelled by several of its East Asian neighbours. China's economy is likely to continue to grow rapidly for a considerable time. Its rising incomes, extraordinarily high investment rates and rising urbanisation are leading to huge rises in demand for resources, fuelling the Australian mining boom.

Comparison with the previous Australian mining boom suggests that the huge investment surge associated with the current boom should soon generate strong growth in mining export volumes.

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1 The views expressed are those of the authors and not necessarily those of the Australian Treasury. We are grateful to Robert Ewing, Angelia Grant, Stephen Joske, James McIntyre, Steve Morling, Hassan Noura, Martin Parkinson, Robert Seaton and David Turvey for help putting this talk together, and for helpful comments.

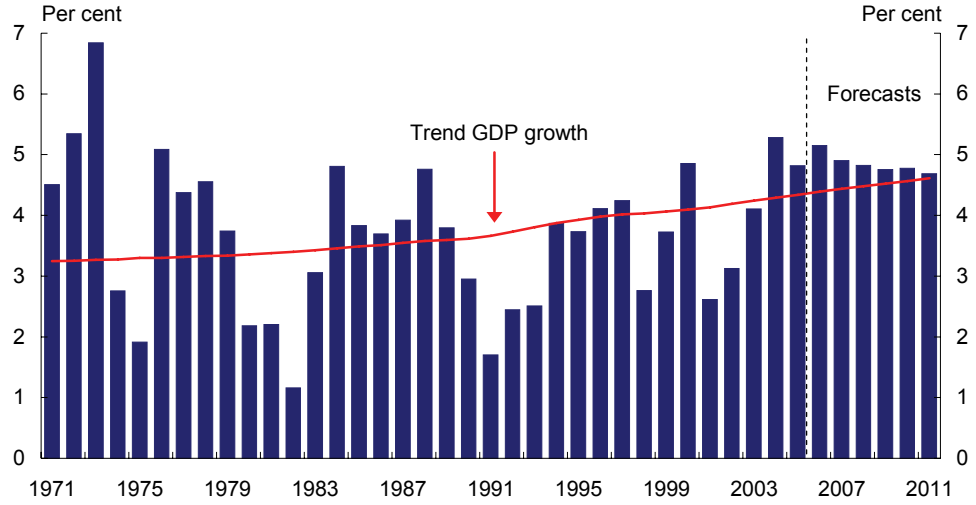
Introduction

Thank you for the opportunity to speak to you this afternoon. Let me begin my remarks with some broad overview comments about growth in the global economy.

Output has expanded strongly in the years following the global downturn of 2001 and 2002. Global growth in 2004 recorded its strongest pace for over 30 years, exceeding 5 per cent. Growth almost reached 5 per cent again in 2005, and is expected to exceed this rate in 2006 (Chart 1).

There is probably some gradual upward drift through time in the trend rate of global growth, because the share of large emerging economies with high trend growth rates, like China and India, is gradually rising. Nevertheless, the rate of global growth over the 3 years, 2004 to 2006, looks to be clearly above the global trend rate, even allowing for some upward drift. That, in turn, implies that the global output gap is now significantly smaller than it was a few years ago.

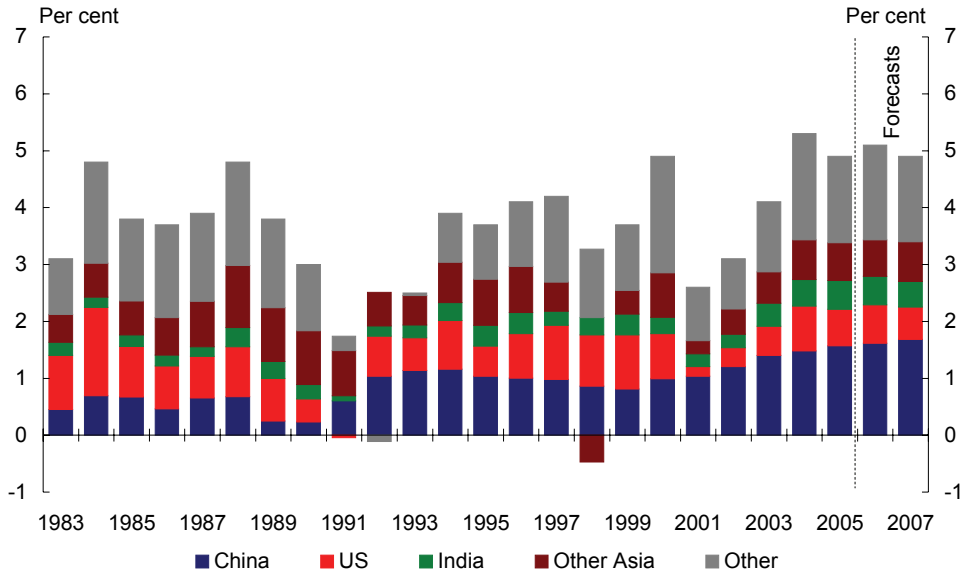
Chart 1: Global GDP growth



Source: IMF.

Notwithstanding this observation, the IMF is forecasting a continuation of strong growth out to 2011. Economic activity in most regions is meeting, or exceeding, earlier expectations — a statement that is particularly true for the large emerging economies of China and India. These economies have been major contributors to world growth in recent years, with China estimated to have contributed over 30 per cent of world growth in 2005 (Chart 2).

Chart 2: Contribution to global GDP growth



Source: IMF.

Over the usual macroeconomic forecasting horizon of a year or so, global growth is expected to become more balanced with the Euro area having gained momentum, Japan having finally convincingly emerged from its post-bubble malaise that had stretched on for a decade and a half, and developing countries continuing to generate impressive growth rates. The US economy, by contrast, is slowing, with the US housing market cooling rapidly.

There are uncertainties surrounding this outlook. After a number of years of strong global growth, I have heard it said that there are now more than the usual uncertainties. And it would be tempting to agree with that assessment were it not for the fact that it is hard to recall a time when there were less than the usual uncertainties.

But there are undoubtedly uncertainties. An obvious one relates to the historically unprecedented current account imbalances in many of the world's largest economies, particularly the United States, and the question of whether large net foreign asset and liability positions can continue to build up without triggering some disruption in the world's capital markets at some point. Added to that, one could mention continued volatility in the world oil market, as well as the inflationary pressures that are gradually building as a consequence of the closing of the global output gap.

Having given a brief overview of the state of the global economy, I want to focus in some detail on developments in the two economies that have been contributing the most to global growth in recent years, the United States and China.

United States

The rapid cooling of the US housing market over recent months, while not the only important development in the US economy at present, is clearly of considerable interest. It is this aspect of the US economy on which I will focus my comments today.[2]

Housing starts (known as commencements in Australia) fell by 19.8 per cent through the year to August and real housing investment fell by 1.5 per cent through the year to the June quarter. This has led a number of commentators to raise the possibility of a US recession. How seriously should we take this possibility?

Weakness in the housing sector has two principal implications for economic growth. The first is the direct effect of a fall in dwelling investment on overall activity. The second is the potential for falls (or at least little or no growth) in house prices to lead to a substantial slowing in consumption growth. The second implication — house prices affecting wealth and borrowing constraints, and in turn consumption — is the aspect of housing market weakness that most often concerns economists.[3]

To illustrate the potential for both aspects of a weak housing market to affect the US economy, it is instructive to draw comparisons with countries that have recently experienced housing booms and subsequent slowdowns. To do so, I will compare US outcomes with those in Australia, the United Kingdom, and the Netherlands.

All these countries have experienced large housing cycles and have at least some similar housing characteristics. Around 70 per cent of households in the US own a home, which is roughly the same proportion as in Australia and the UK, while for the Netherlands it is around 50 per cent.[4] Furthermore, all these countries experienced rapid growth in house prices and an associated rapid rise in housing debt in their housing booms. The ratio of residential mortgage debt to disposable income in the US is currently close to 80 per cent while in Australia and the UK the comparable figure is over 100 per cent, and in the Netherlands over 200 per cent.

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2 Another important development is the apparent slowing in the trend rate of US labour productivity growth which, if sustained, implies that the US is currently experiencing an adverse shock not only to aggregate demand (from the housing slowdown) but also to aggregate supply.

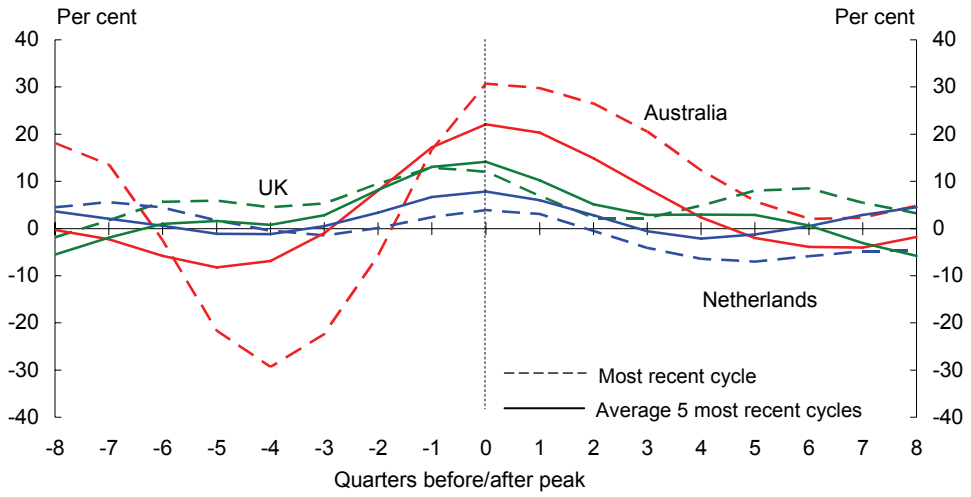
3 At least it is unless the housing market weakness also leads to serious stress in the financial system.

4 Figures from Rae and van den Noord (2006).

It is also relevant to note that variable interest rate mortgages are most common in Australia and the UK, while fixed-rate mortgages dominate the US and Netherlands markets.[5]

Let me start with an exploration of the implications of a slowdown in dwelling investment before moving to house prices and consumption. Chart 3 shows the most recent Australian, UK and Dutch dwelling investment cycles with the peak of each cycle dated as 'quarter 0'. Dwelling investment at its peak was growing by around 30 per cent through the year in Australia, 13 per cent in the UK, and 4 per cent in the Netherlands.[6] Comparing these cycles with typical dwelling investment cycles for each country, we can see that the downturns in the most recent cycles were milder than usual in Australia and the UK, but slightly more severe than usual in the Netherlands.

Chart 3: Dwelling investment: Australia, UK, Netherlands
(through-the-year growth)



Source: OECD Quarterly National Accounts.

Turning to the US, Chart 4 compares the current US dwelling investment cycle with the average of the most recent five cycles.[7] The peak of each cycle is again dated as

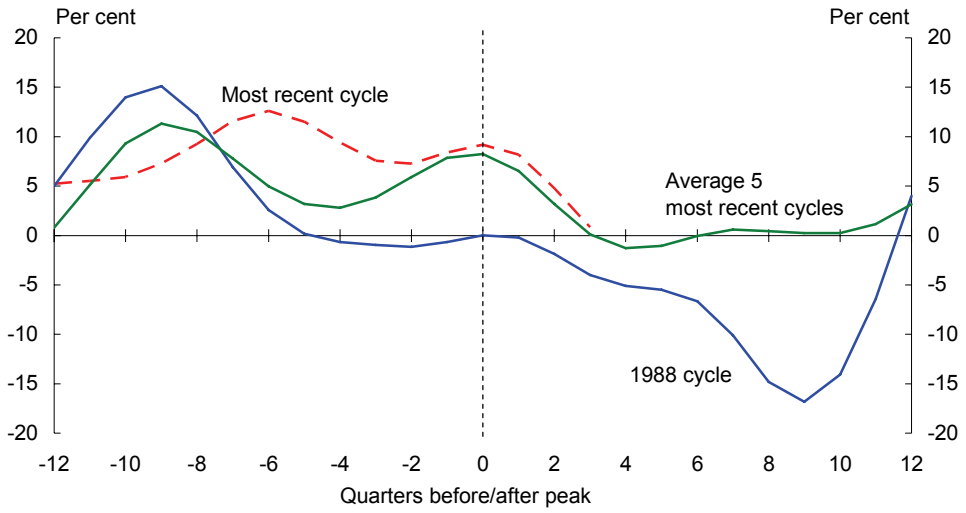
5 This observation is important for the US because a significant portion of the current stock of US housing market debt was locked in at fixed interest rates below their current level from mid-2002 to late 2005. As a consequence, US housing activity is likely to respond less to interest rate changes than activity in Australia or the UK, with their predominance of variable rate mortgages.

6 Quarter 0 in Chart 3 is March 2002 (Australia), June 2001 (Netherlands) and March 2003 (UK). The dynamics of the Australian housing cycle were complicated by the introduction of the GST which led to a sharp rise and subsequent fall in dwelling investment in 2000.

7 Unsurprisingly, the current cycle is included in the average only when the data allow. Quarter 0 for the current US cycle is September 2005.

quarter 0. US dwelling investment has fallen by an average of around 1.3 per cent in the first year of the past four US dwelling downswings.[8] With dwelling investment currently making up around 6 per cent of US GDP, a fall of this size would subtract around 0.1 per cent from through-the-year growth in GDP, compared to an average contribution from dwelling investment of 0.2 per cent.[9]

Chart 4: Dwelling investment: United States
(through-the-year growth)



Source: US Bureau of Economic Analysis.

The largest US dwelling downturn in the last 30 years was in 1988-1991 when dwelling investment fell, at one point, by 17 per cent over a single year (Chart 4). If dwelling investment were to fall by this amount, it would subtract about one percentage point from growth. Assuming the rest of the economy was growing at its trend rate, this would see US growth at an annual rate of around 2 to 2¼ per cent.[10]

In summary, even a significant fall in US dwelling investment is unlikely to lead to substantially slower growth or, in particular, a recession if growth in the rest of the economy is relatively unaffected.

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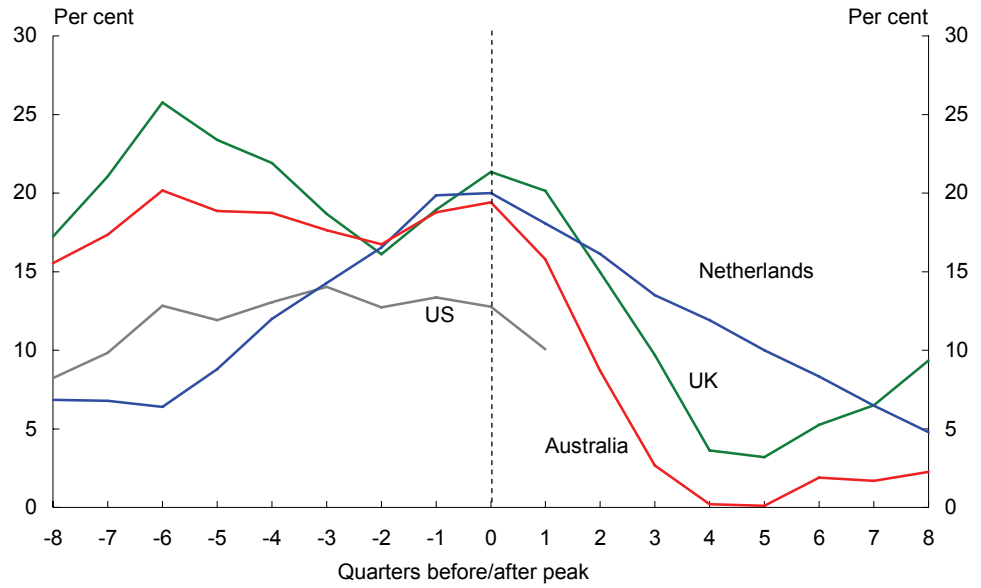
8 This average is calculated over the year following the peaks in through-the-year growth in December 1988, June 1994, September 1996 and December 1998.

9 The ratio of dwelling investment to GDP in the US is similar to the ratios in Australia (6.3 per cent, June quarter 2006) and the Netherlands (6.7 per cent, March quarter 2006). The ratio in the UK is much smaller at around 3.5 per cent of GDP (March quarter 2006).

10 Similar calculations have been published recently by UBS in their US Economic Perspectives note, 22 September 2006.

The effects of flat or falling house prices on consumption and, more broadly, overall economic growth are, however, less clear than the direct effects of weak dwelling investment. But they are potentially more important. Chart 5 shows through-the-year growth in house prices for the US and the three comparator countries, with the timing convention the same as in earlier charts.[11]

Chart 5: House price growth
(through-the-year)



Sources: Australian Bureau of Statistics; Halifax; NVM, US Office of Federal Housing Enterprise Oversight.

House price growth peaked at around 20 per cent in all three comparator countries but, by this measure, the boom in US house prices has been much smaller, suggesting that the correction might also be smaller.[12]

For insights into how US consumption might respond to slowing house price growth, we can also examine consumption growth during these house price cycles.

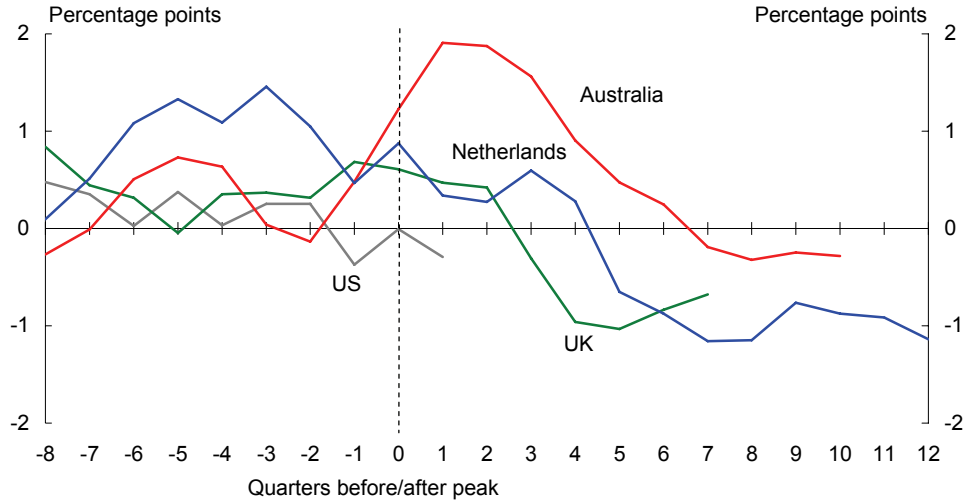
Chart 6 shows the contribution to economic growth from deviations in consumption from its longer run (past 30 years) trend growth rate. As can be seen, consumption

11 The timing of the peaks in growth in dwelling investment and house prices differ somewhat, however. As reported earlier, quarter 0 in Charts 3 and 4 are March 2002 (Australia), June 2001 (Netherlands), March 2003 (UK) and September 2005 (US), while for Chart 5 they are December 2003 (Australia), December 1999 (Netherlands), June 2004 (UK) and March 2006 (US). Chart 6 uses the same timing as Chart 5.

12 The US house price series used for Chart 5 is a repeat-sales index. An alternative series from the National Association of Realtors shows a fall in median house prices of 1.7 per cent over the year to August 2006, but this series does not adjust for the changing composition of sales.

responded quite differently to the slowdown in house prices in the three comparator countries.

Chart 6: Contribution to GDP growth from consumption deviation from trend
(through-the-year)



Sources: OECD Quarterly National Accounts; US Bureau of Economic Analysis.

For Australia, after rising sharply, consumption growth fell significantly following the slowdown in house price growth but with a lag. In the Netherlands, consumption growth also fell with a lag following the slowing in house price growth and grew well below its average rate for the subsequent three years. Interestingly, while consumption has remained weak in the Netherlands, house prices have recovered, growing over the past two years at close to their 20-year average rate.

The UK saw a more muted consumption response to the boom in house prices compared with the other countries and, likewise, a more muted consumption response to the slowdown in house price growth.

What has been the situation thus far in the US? Somewhat like the UK, US consumption growth rose only modestly above its longer run average during the housing price upswing. This again suggests that the US consumption slowdown might also be relatively modest.

Of course, there are many other factors at play in this analysis. For example, while housing wealth in Australia has grown roughly in line with growth in the housing

stock since the house price boom ended, net nominal financial wealth has grown quickly (15 per cent per year since 2003), reflecting the commodity boom.[13]

This was not the case in the Netherlands where, as house-price growth was slowing, financial wealth dropped sharply — as a consequence of the collapse in share prices in Europe and the US with the bursting of the dot-com bubble. Furthermore, the external environment facing the Netherlands was also much less favourable. In contrast to Australia, the Netherlands' external environment, the Euro area, was growing only sluggishly over the years 2001-03, providing a further dampening effect on domestic economic activity and consumption growth. And furthermore, in contrast to the other comparator countries, and to the US, monetary policy could not be used in the Netherlands to respond to the economic weakness arising from its housing slowdown, because the Netherlands belongs to the European Monetary Union.

My summary of this evidence is that it seems reasonable to expect a sharp cooling in the US housing market to generate a noticeable slowing in US economic growth over the next year or so.[14] But it is hard to imagine a cooling in the US housing market, on its own, generating a US recession. For such an outcome to eventuate would, it seems to me, require some significant other adverse shocks — of the kind that hit the Netherlands economy at roughly the same time that its housing market was unwinding.

Looking further afield, what are the likely implications of a significant slowing in the US for growth in the rest of the world? While none of us can be sure, the gradual decline in the US economy's share of global economic activity should lead us to expect a US slowdown to have less serious global implications than it once did.

The IMF (2006) recently undertook an analysis that suggests that a 1 percentage point slowdown in the US could lead to a reduction in world GDP growth of around one half of a percentage point (about 0.2 percentage points directly and about ¼ percentage point from the impact on other countries). Hence, if the US slowed by around 1 percentage point from current forecasts, to something around 2 per cent or less in 2007, the forecast for world GDP growth would drop from close to 5 per cent to around 4½ per cent, which would still be a strong outcome.

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13 There is also a powerful regional dimension to the commodity boom, with Western Australia and Queensland benefiting at the expense of Victoria and New South Wales. This is being reflected in regional disparities in economic growth and house prices, among other things.

14 See also Box 1.2 in the IMF's April 2006 *World Economic Outlook*, where it is suggested that a 10 per cent slowing in the rate of US real house price growth could slow real GDP growth by as much as 2 percentage points over the subsequent year.

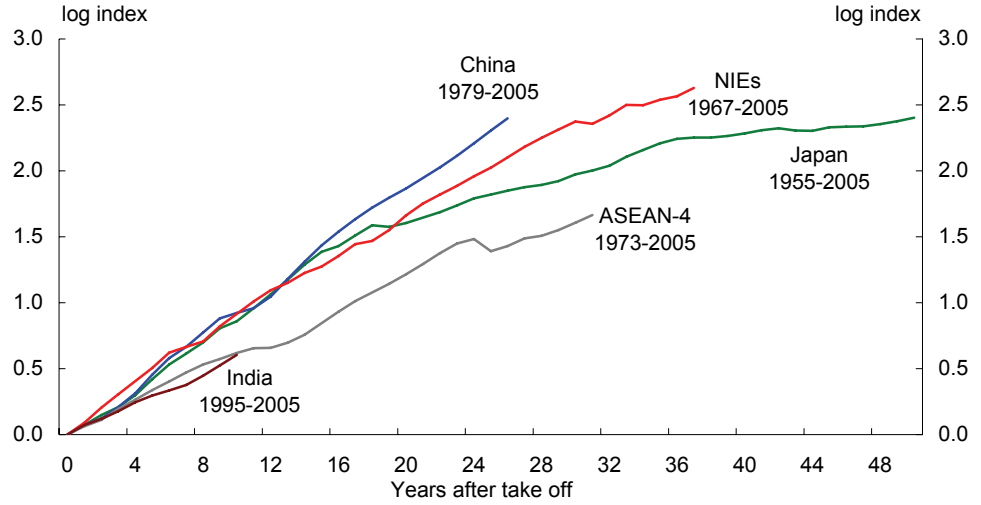
China

Let me move on now from the likely developments in the US housing market over the next year or so to a topic best approached with a much longer timescale in mind: economic growth in China.

Continuing rapid growth in China, as well as other large developing economies, is arguably the international economic development with the most far-reaching consequences for the global economy. China is currently the world's second-largest economy after the United States, and on plausible assumptions may become the largest within a decade or so.[15]

While China's recent growth rates have been impressive, they have not been markedly higher than those recorded in earlier decades by Japan, the East Asian newly industrialised economies (NIEs) (Hong Kong, Korea, Singapore and Taiwan), and ASEAN 4 (Indonesia, Malaysia, Philippines and Thailand), as shown in Chart 7.

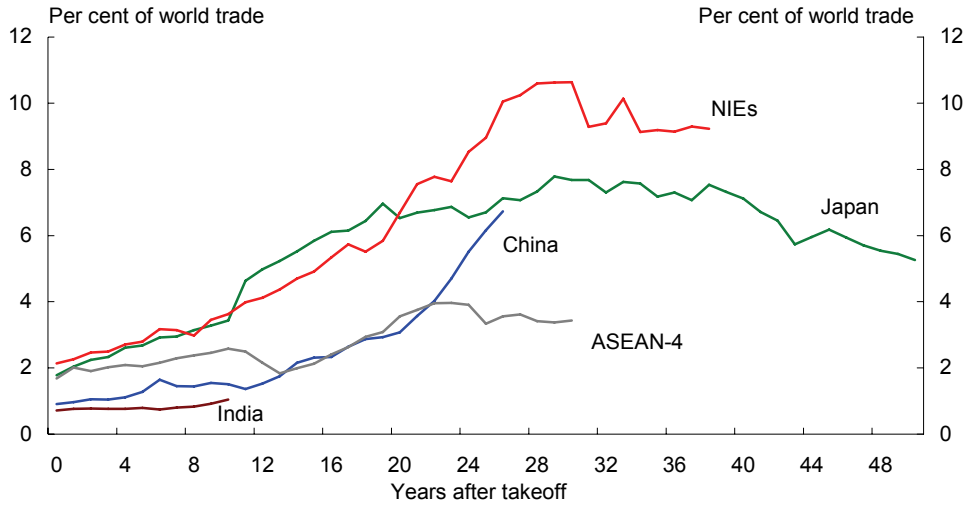
Chart 7: Growth after takeoff



Note: Takeoff is the first year when the country experienced at least 10 per cent annualised growth in the value of exports over the previous three years.
Sources: IMF; WTO; Treasury.

15 These estimates are on a purchasing power parity (PPP) basis. This is the preferred basis for comparing the relative size of economies because it uses a conceptually appropriate approach to estimating prices in both the traded and non-traded sectors of the economies, in contrast to comparisons based on market exchange rates.

Chart 8: Share of world trade after takeoff



Sources: IMF; WTO; Treasury.

In terms of contributions to global trade, China's share thus far has been less than Japan's, at comparable stages after takeoff (Chart 8). China's share is now almost 7 per cent, and is rising so rapidly that it is likely to soon surpass Japan's peak share of world trade during its rapid development.

The process of 'catch up' in China is similar to that followed by Japan and the East Asian NIEs in past decades, namely moving towards the technologies, more market-friendly economic structures and, eventually, the standards of living of the developed economies. The catch-up phase in China may continue for longer, however, because the productivity gap between China and the advanced economies is larger than was the case for its East Asian predecessors at comparable stages after takeoff — primarily because the global productivity frontier has moved further out since the time of the rapid development of the other East Asian countries.

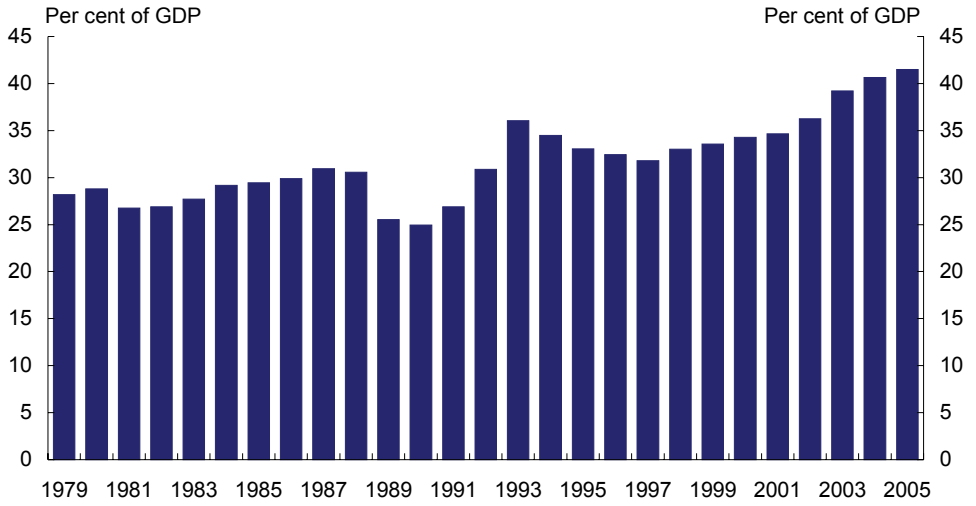
This line of argument suggests that China may continue to grow at around its recent average rates for quite some time to come, although it will undoubtedly experience inevitable bumps along the path to modernisation. Of course, such bumps often require adroit policy responses — to ensure that they remain 'bumps' and do not evolve into something more serious and long term.

Sustaining strong growth is likely to depend on continuing with internal reforms that may grow more demanding over time. In particular, China will need to press on with financial sector reform, and will also need to adjust to both the inevitable appreciation of its real exchange rate and the rapid ageing of its population. Much will depend on maintaining political and social stability through these processes of transition which will invariably benefit some groups, and some parts of the country, more than others.

China's investment

China's growth in recent years has been supercharged by truly extraordinary rates of investment in physical capital. The rate of gross fixed capital formation has steadily risen over the past decade, and now accounts for over 40 per cent of GDP (Chart 9). The most recent available data suggest a continuation of this trend, with urban fixed asset investment 30 per cent higher (nominal, year-to-date) than a year ago.

Chart 9: China: Gross fixed capital formation



Source: CEIC China database.

While local government-directed investment (which most commentators suspect is relatively inefficient) remains important, high rates of investment are also being driven by broader economic forces. These include:

- extremely high rates of national saving, which are in part a response to the lack of a welfare safety net — something that is unlikely to change much for some time. This implies that China can sustain extremely high investment rates while still running current account surpluses;

- continued access to low-cost labour which, along with stability and good infrastructure, means that China continues to attract global manufacturing. China remains by far the largest emerging-market recipient of foreign direct investment, with net inflows forecast to reach US$86 billion this year (Economist Intelligence Unit); and

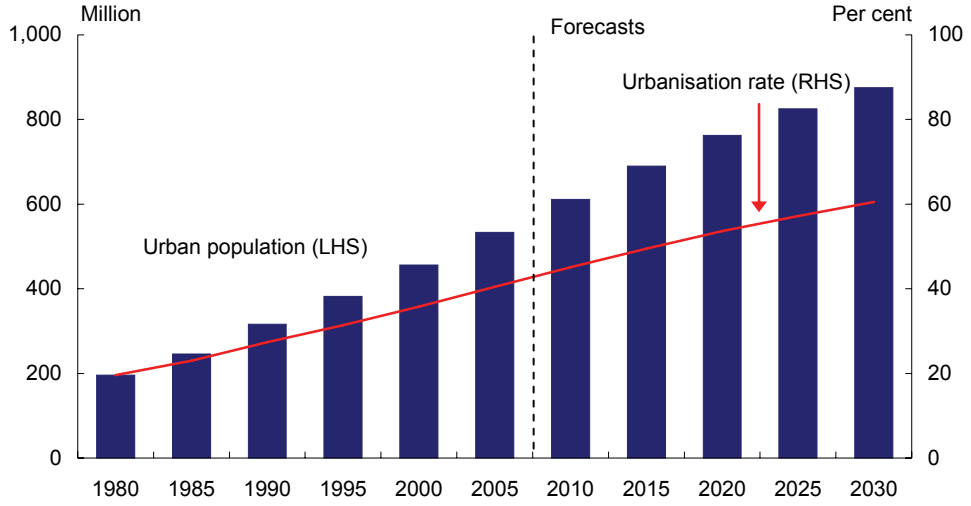
- the continuing process of urbanisation across China.

This final factor is particularly striking. China's urban population has almost tripled over the past quarter-century, from around 200 million to around 530 million

(Chart 10). And despite the enormity of the numbers, 530 million still represents about 40 per cent of China's population, so that urbanisation in China still has a long way to go. Indeed, far from being the most urbanised country in the developing world, China has a slightly lower proportion of the population living in urban areas than the average for low-income countries.

The UN estimates that China's urban population will grow by over 60 per cent in the next quarter-century to around 875 million people or around 60 per cent of the total population. Most of this urbanisation is expected to take place in the less developed central and western regions of China.

Chart 10: China: urban population

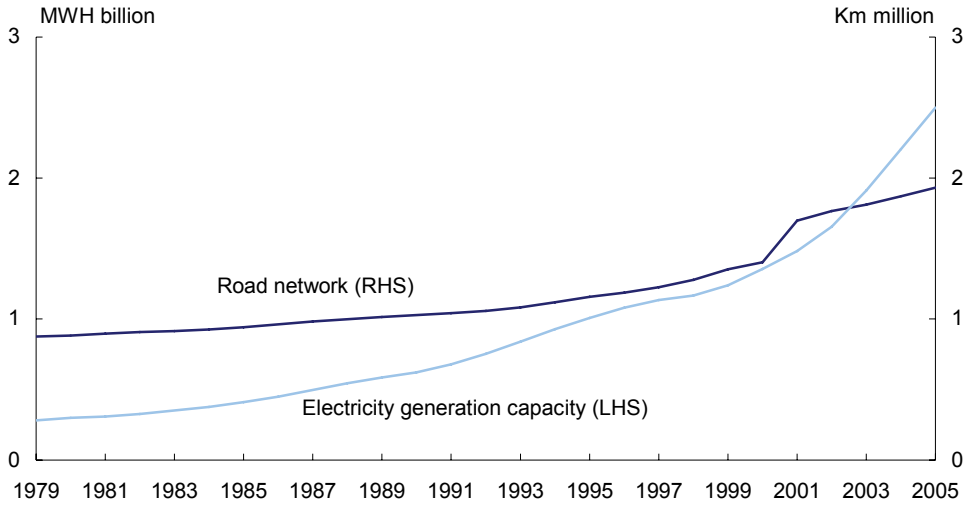


Source: United Nations.

China's demand for construction materials

Growing urbanisation and rising incomes are leading to huge rises in demand for new housing and infrastructure, such as roads, electricity, and water and gas connections. For example, over the past quarter-century, China's electricity-generating capacity has increased almost tenfold while the length of the road network has doubled (Chart 11). All of which is translating into a construction boom and a rapid increase in China's demand for construction materials.

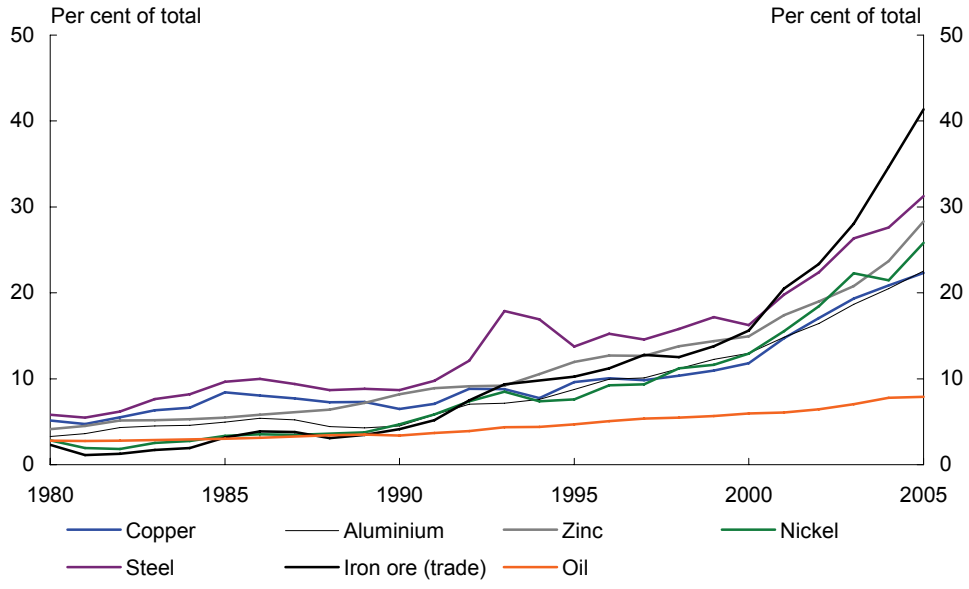
Chart 11: China: electricity generation capacity and road network



Source: CEIC China database.

Similarly, Chinese demand is now having a dramatic effect on a range of globally traded commodities. For example, China currently accounts for about 30 per cent of the world's consumption of zinc and over 40 per cent of the seaborne trade in iron ore (Chart 12).

Chart 12: China: share of world material demand



Source: Macquarie Research.

The implications of these huge increases in demand coupled with a sluggish response in global supply have been predictable — world prices have risen dramatically.

If China continues to grow over the medium term at the sort of rates we have seen over the past few decades, further sizeable increases in Chinese demand for commodities seem the most likely outcome.[16] What that implies for world commodity prices will then, of course, depend on how rapidly global supply can rise to meet this rising demand (at prevailing prices).

An intriguing possibility, which presumes no serious derailing of the catch-up process in China and other large developing economies, is that commodity prices may remain relatively high — well above the average cost of production — for an extended period of time, providing a continuous incentive for raised levels of exploration and mining investment (Garnaut 2006).

The Australian mining boom so far

Which brings me to the implications for Australia.

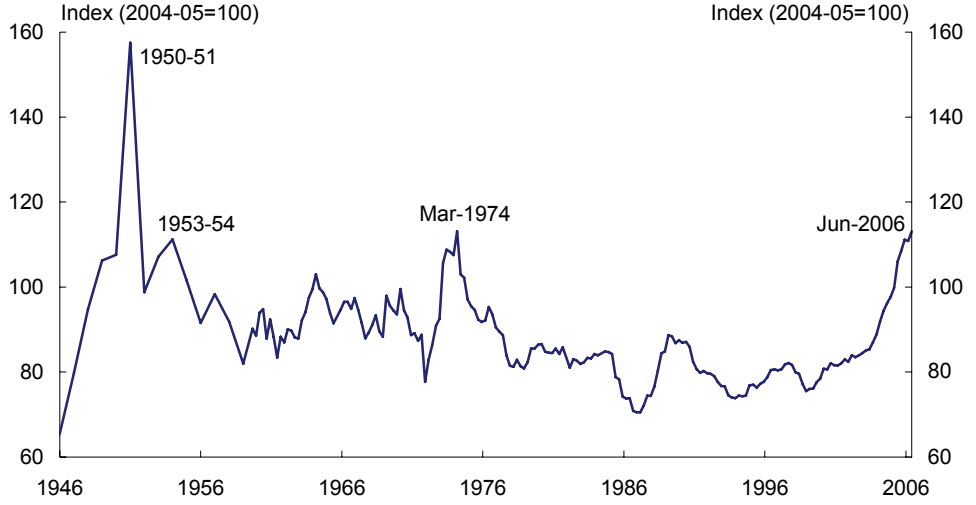
If commodity prices do remain high on average for an extended period, this will have significant longer-run implications for the industrial structure of the Australian economy, and for regional patterns of economic activity — implications that have been spelt out in some detail in recent speeches by Ken Henry (2006a, b).

Rather than revisiting all these implications today, I want to spend the rest of my time taking a closer look at just one of them. I want to have a look at how the Australian mining boom has developed thus far, because there are some interesting tales to tell on this score.

A good place to start this discussion is with the Australian terms-of-trade, the ratio of the prices we receive for our exports to the prices we pay for our imports (Chart 13).

16 Continued rapid rises in demand for energy by China and other large developing economies will also have serious implications for growth in global greenhouse gas emissions, which highlights the importance of including these countries in global efforts to contain this growth.

Chart 13: Australia: terms-of-trade



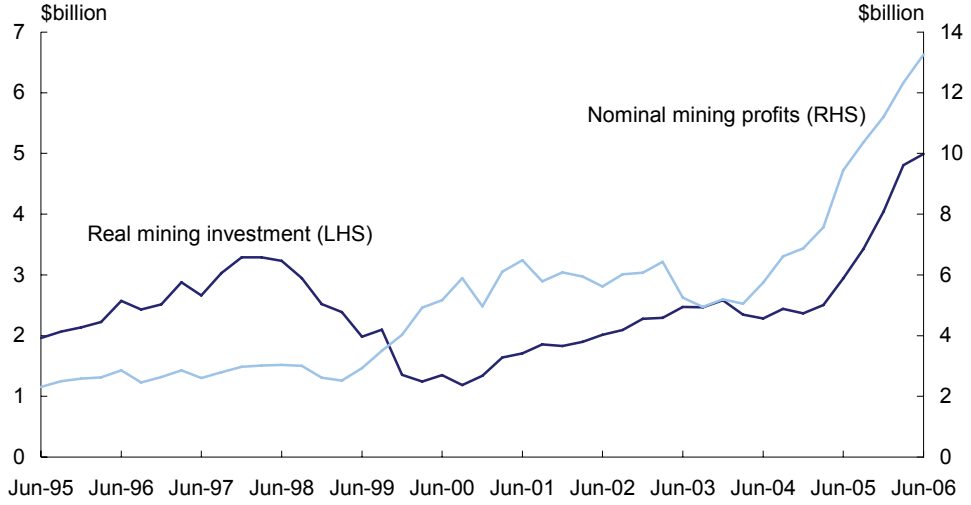
Sources: Source: From September 1959: ABS National Accounts (cat. no. 5206.0), prior to September 1959: MW Butlin (1977) 'A Preliminary Annual Database', RBA Discussion Paper 7701.

Australia's terms-of-trade have now risen to the level we saw, briefly, 32 years ago in the March quarter of 1974. Remarkably, however, one has to go all the way back to the wool-price boom of the Korean war in the early 1950s for the last time when the Australian terms-of-trade were higher than they are now.

The main reason the terms-of-trade are currently so high is, of course, the sharp rises in non-rural commodity prices in recent years.[17] These sharp price rises have generated huge profits in the mining sector, and a huge rise in the quantity of mining investment (Chart 14). Mining profits accounted for 5½ per cent of GDP in the most recently available June quarter 2006 national accounts data, which is double their share a mere two years ago.

17 High commodity prices are not, however, the only reason for the high terms-of-trade. Australia's imports of information and communications technology (ICT) goods also tend to improve Australia's terms-of-trade. While ICT goods account for only a small share of imports of goods and services (between about 5 and 8 per cent by value over the past two decades), their prices have fallen sufficiently rapidly that they have improved Australia's terms-of-trade by a little more than 1 per cent per annum in recent years (Gruen 2001). Furthermore, the huge rise in supply of low-priced manufactured goods from China and other developing countries has gradually reduced the price of Australian manufactured imports, further improving the terms-of-trade.

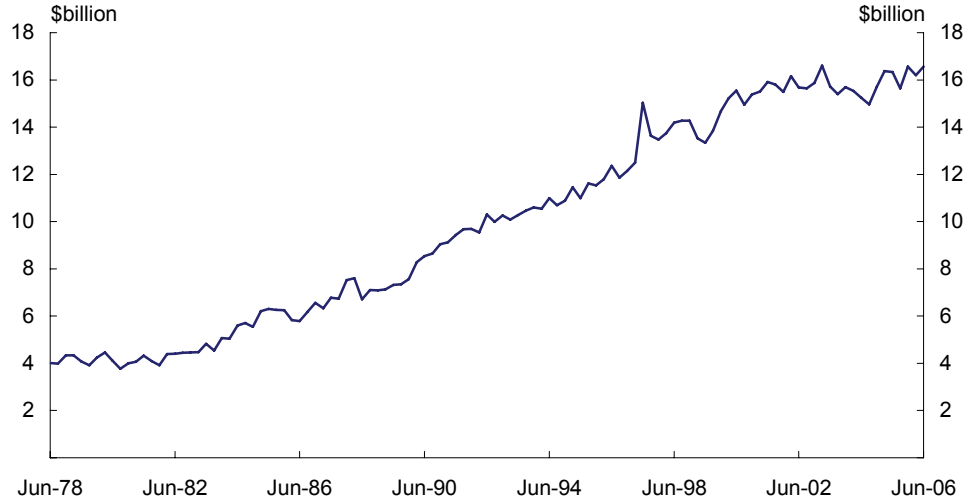
Chart 14: Australia: mining investment and profits



Source: Australian Bureau of Statistics.

Thus far, however, the huge lift in mining investment has not generated much by way of increased mining production or exports, at least not for the sector as a whole. For example, the volume of exports of non-rural commodities, having risen strongly over the 1980s and 1990s, has shown almost no growth thus far in the 2000s (Chart 15).

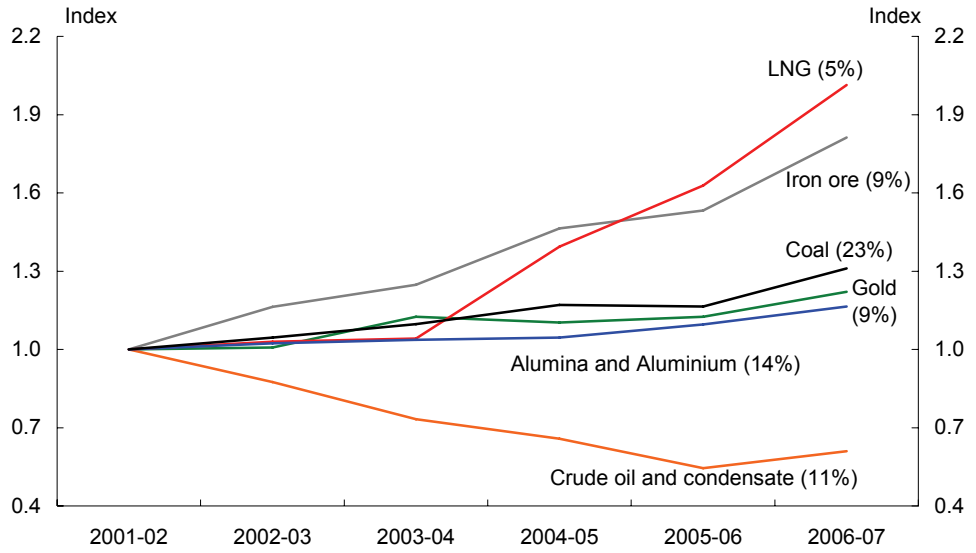
Chart 15: Australia: exports of non-rural commodities
(volumes)



Source: Australian Bureau of Statistics.

This aggregate outcome does, however, mask an interesting compositional story. Chart 16 shows export volumes for Australia's main non-rural commodity exports since 2001-02, along with ABARE's forecasts for the current financial year, 2006-07.

Chart 16: Australia exports of individual commodities
(volumes)



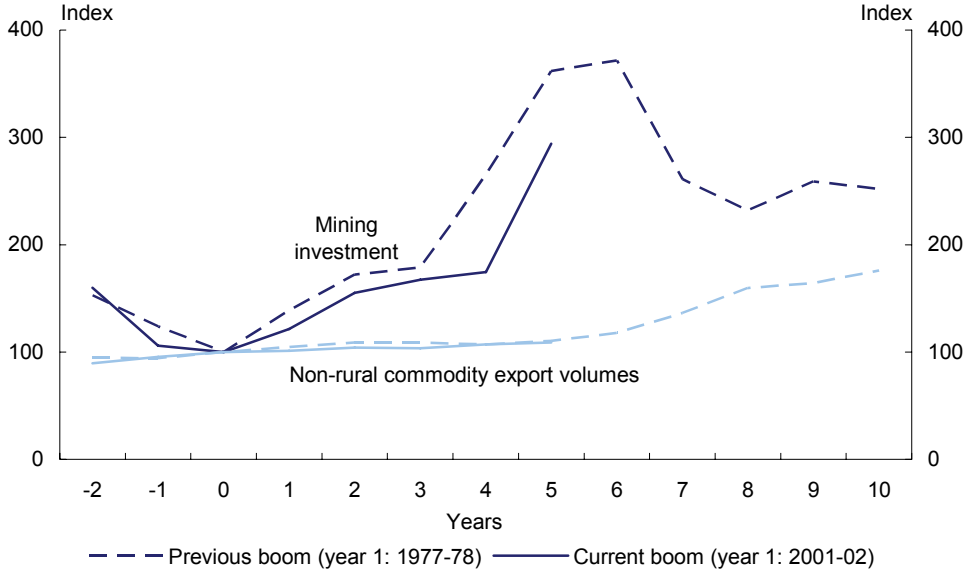
Note: Figures in parentheses show the share of each commodity in Australia's non-rural commodity exports in 2001-02. Taken together, the commodities shown accounted for around 70 per cent of non-rural commodity export values in that year.
Source: Australian Bureau of Agriculture and Resource Economics.

Over the most recent four years, 2001-02 to 2005-06, export volumes for a few non-rural commodities have grown quite strongly. Thus, the volume of liquefied natural gas (LNG) exports has grown at an average annual rate (compounded) of 13 per cent over these four years, and iron ore export volumes at an annual rate of 11 per cent. Over the same period, average annual growth rates for export volumes have been slower for coal (4 per cent), gold (3 per cent) and alumina and aluminium (2 per cent). By contrast, exports of crude oil and condensate have fallen at an average annual rate of 14 per cent over these four years, as production from Australia's oil fields has fallen sharply.

Notwithstanding this compositional story, however, many commentators have been puzzled by the slow overall growth in non-rural commodity exports. To paraphrase their argument: shouldn't growth in commodity export volumes have been stronger, given the huge lift we have seen in mining investment?

In attempting to answer this question one way or another, it is revealing to compare outcomes for real mining investment and non-rural commodity export volumes thus far in the current mining boom with those during Australia's previous mining boom, in the late 1970s/early 1980s. For each boom, I define 'year 1' as the first year that saw double-digit real growth in mining investment — which was 1977-78 for the previous mining boom, and 2001-02 for the current one.

Chart 17: Two mining booms in Australia



Source: Australian Bureau of Statistics. Mining investment in 2005-06 is a Treasury estimate.

Using this timing convention, Chart 17 then shows the levels of real mining investment and non-rural commodity export volumes from year -2 onward for the two mining booms.[18] As the chart shows, a slump in mining investment preceded both booms. Once the boom gets going, however, mining investment rises rapidly and by a huge amount. Mining investment in year 5 of the late 1970s/early 1980s boom was a factor of 3.6 higher than its level in year 0 (implying a compound annual growth rate of 29 per cent over the five years), and a factor of 2.9 higher in the current boom (a compound annual growth rate of 24 per cent).

18 The ABS mining investment series excludes investment in the sub-sector 'metals', so metals are also excluded from non-rural commodity exports in the chart.

Turning to exports, growth in non-rural commodity export volumes has been remarkably similar in the two booms (at least up to year 5, the latest year for which the comparison can currently be made). Five years into the current mining boom (as defined here), export volume growth has been sluggish, but the same was true five years into the previous boom.[19]

Strong export growth did eventually occur in the previous mining boom, but in the second half of the decade following the start of the boom rather than in the first half of that decade.

If that experience provides a guide for the current boom, the sluggish growth in non-rural commodity exports we have seen over the past five years should not have come as a surprise. But the experience of the previous boom does suggest that we should anticipate strong growth in non-rural commodity export volumes over the next few years.

19 Although the results are not shown, gross value added by the mining sector evolves over time in much the same way as the volume of exports for both mining booms.

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Does Australia's geography affect labour productivity?

Bryn Battersby[1]

Over the past 40 years, Australia's labour productivity level relative to the United States has trended slowly upwards. However, there remains a substantial gap between Australian and United States labour productivity levels. The persistence of this gap has raised questions about whether there are factors that might limit the extent to which Australia can catch-up to the United States.

To explain this gap, there is growing interest in the hindrances that might be imposed by Australia's unique geographic isolation and vastness. If the level of labour productivity is constrained by geography, then the scope to close the productivity gap with the United States is also constrained.

This paper summarises some recent Treasury work that has sought to quantify the extent to which Australia's geography explains the productivity gap with the United States. This work has found that Australia's geography might explain as much as half of the productivity gap with the United States.

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1 The author is from Macroeconomic Policy Division, the Australian Treasury. This article has benefited from comments and suggestions provided by Greg Coombs, Graeme Davis, John Hawkins, Jyoti Rahman, Dominic Regan and Joann Wilkie. The views in this article are those of the author and not necessarily those of the Australian Treasury.

Introduction

In 2002, the Australian Government released the first Intergenerational Report, which outlined both the opportunities and the risks for the Australian economy well into the future, with a particular focus on the impact of an ageing population on economic growth and budgetary outcomes. To aid in that analysis, economic growth was deconstructed into three key drivers — population growth, changes in participation rates in the labour force, and labour productivity growth. This deconstruction has come to be known as the three-Ps framework and has been the focus of much research in Treasury and elsewhere.[2]

This paper outlines work that has sought to contribute to the understanding of the third of these three-Ps: labour productivity.[3] Over the last 40 years, Australia's labour productivity relative to that of the United States has been slowly trending up (as Chart 1 demonstrates). However, there continues to be a substantial gap between the Australian and United States labour productivity levels. Given that the United States represents the frontier of labour productivity in many sectors, the factors underlying this gap have been seen as a potential source of short term gains to Australia's labour productivity as Australia catches up with the United States. However, the persistence of this gap has frustrated those hopes and raised questions about whether there are factors that might limit the extent to which Australia can catch-up to the United States.

If limiting factors do exist, they would help to explain the persistence of the labour productivity gap between Australia and the United States. More importantly, this added context around the story of Australian labour productivity may help to identify where policies might be targeted appropriately to ensure Australia's labour productivity is optimal.

This paper explores the role that geography might play in limiting Australia's labour productivity catch-up with the United States. Australia has a geography that is both sparsely populated and remote, which creates a set of impediments that are unique in the context of developed countries. If geography does limit our ability to catch-up with the United States, then it should be possible to observe this by applying one of the standard models of labour productivity; including a variable that captures the difference in remoteness and vastness between Australia and the United States; and testing whether that variable matters in the scheme of the model.

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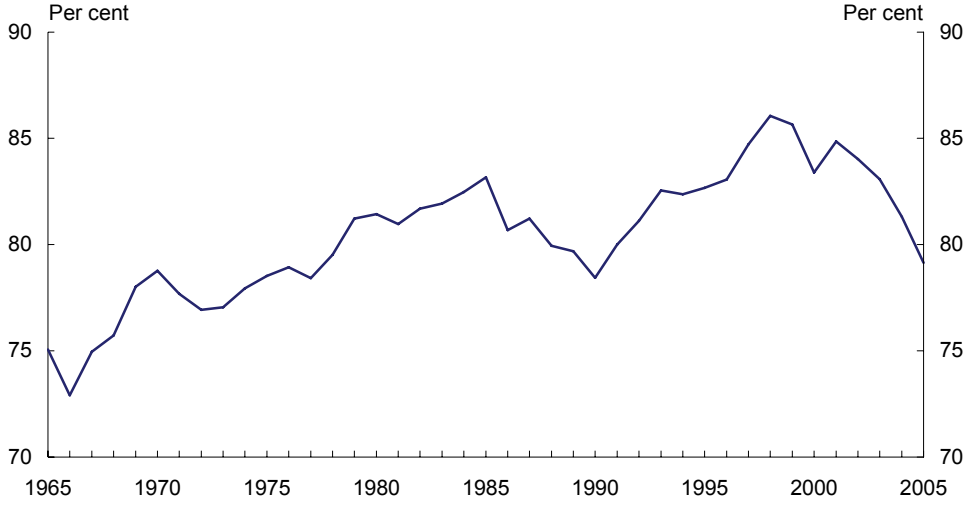
2 The *Economic Roundup* has presented much of this research: see pages 154-6 of this Roundup.

3 This paper summarises the findings presented in the Treasury Working Paper 2006-03: *Does distance matter? The effect of geographic isolation on productivity levels*. That paper provides a detailed exposition of the data and analytical methods that underpinned this research.

Chart 1: Australian labour productivity as a proportion of the United States



Source: The Conference Board and Groningen Growth and Development Centre, Total Economy Database, May 2006, http://www.ggdc.net.

In what follows, the reasons why geography might matter in limiting Australia's labour productivity catch-up with the United States are outlined. In the third section, differences in labour productivity, physical capital, human capital, and geography are compared across the states of Australia and the United States. That analysis results in a key finding: perhaps up to half of the productivity gap between Australia and the United States is explained by the remoteness and sparseness of Australia.

Why would geography matter?

Before entering into the empirical analysis, it pays to consider why geography might limit the level of labour productivity in Australia relative to the United States. In Budget Statement 4 of the 2003-04 Federal Budget, the effect of Australia's isolation on labour productivity was considered:

> … to a greater extent than for many other countries, resources will be allocated to activities where distance confers natural protection by decreasing the competitiveness of imported goods or services. As a consequence, Australia's relative levels of productivity may be behind global best practice in these areas. (p 4-22)

This section builds on this statement and provides a case that Australia's geography affects the ability of many Australian firms to achieve full internal and external economies of scale. However, it is also argued that this does not preclude the existence of these firms because geography also acts as a natural barrier to trade and allows

them to exist profitably (in much the same way a tariff might act as an artificial barrier to trade and allow inefficient firms to exist profitably).

Full internal economies of scale arise when unit costs of production for a firm stop falling as output increases. For many small firms, production has to increase only slightly before full internal economies of scale are reached. In these cases, the market for the firm is likely to be only sub-national. This means that a country's population will usually have no effect on a small local firm's ability to profitably reach full internal economies of scale.

For other firms, production can increase substantially before full internal economies of scale are reached. In these cases, operating profitably may require a very large and accessible market, which may not be present domestically. For most countries, there is little reason to expect that this market will be limited to just the local population if the country has a generally open economy. Indeed, large companies that take advantage of internal economies of scale are regularly supported by global markets of suppliers and consumers.

However, transport and trade costs might naturally make an economy more closed and this could create a potential for a national or local scale effect. This could quite well be the case for Australia — a country that is geographically isolated and sparsely populated. Australia's remoteness from large markets means that firms in some industries in Australia are unable to achieve the same economies of scale as those in the same industries in Europe or North America. Reciprocally, the costs of trade for international producers make them less competitive in Australian markets. This higher 'world price' in some Australian markets makes Australian firms in related industries profitable without having to achieve the same economies of scale. While this is still an economically efficient outcome, it does mean that some Australian firms will be less productive than similar firms based in larger markets.

Firms can also take advantage of external economies of scale to lower their costs. External economies of scale allow firms to reduce unit costs in production through commonality in production and distribution processes with other firms and through spill-overs in innovation between firms. Geographic agglomeration of economic activity and economic networks are regular sources of this scale. However, firms in countries like Australia, which are both geographically isolated and sparsely populated, may be less able to take advantage of these external economies of scale simply because it is more costly to establish networks over the great distances both within the country and to other countries.

The hypothesis that geography matters is therefore underpinned by a microeconomic reference to the additional costs of participating in the Australian market and the effect these costs have on any firm's ability to operate profitably in Australia. In the next

section, aggregate labour productivity is examined in a standard model to identify whether this microeconomic hypothesis is borne out in the aggregate data.

Estimating the effect of geography

To ascertain whether geography matters, it was necessary to construct an econometric model that tested for a relationship between labour productivity and geography. The standard economic model of labour productivity normally describes a simple relationship between labour productivity and physical and human capital. In this relationship, the more physical capital that is provided in production (such as machinery and equipment), the more productive people are expected to be (though at a diminishing rate). The same sort of relationship is modelled between labour productivity and human capital — the more educated, skilled and healthy a person is, the more productive they will be, other things held constant.

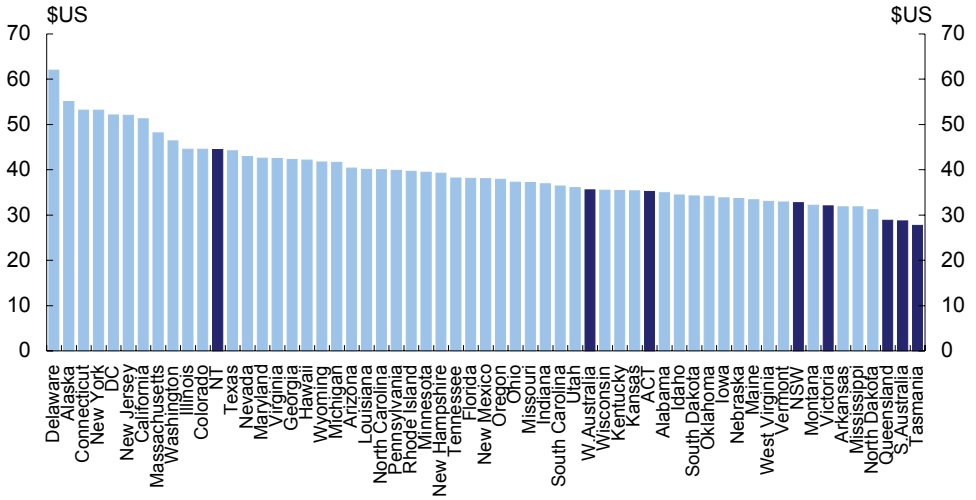
In this analysis, one further variable is added to the standard model, which describes the geography of the economy. It is possible to say that geography matters under the conditions that the necessary labour productivity and capital intensity data are appropriate; the construction of the geography variable is acceptable; and the geography variable is statistically important in the econometric model of labour productivity. If these requirements are met, it is then also possible to tentatively estimate the importance of geography and the implications for policies that target labour productivity growth.

Below, we consider each of these requirements separately using data from each of the states in Australia and the United States.[4]

In Chart 2, the productivity levels (output per hour worked) of the states of Australia and the United States are presented. The data that were used to account for physical and human capital in explaining these labour productivity levels are presented in Chart 3 (the stock of physical capital per hour worked) and Chart 4 (number of bachelor degrees per thousand hours worked). Based on the standard model of labour productivity, it would be expected that those states that have higher capital to labour ratios in Charts 3 and 4 are generally those that have higher labour productivity levels in Chart 2. As it turns out, while there are exceptions, this pattern is recognisable.

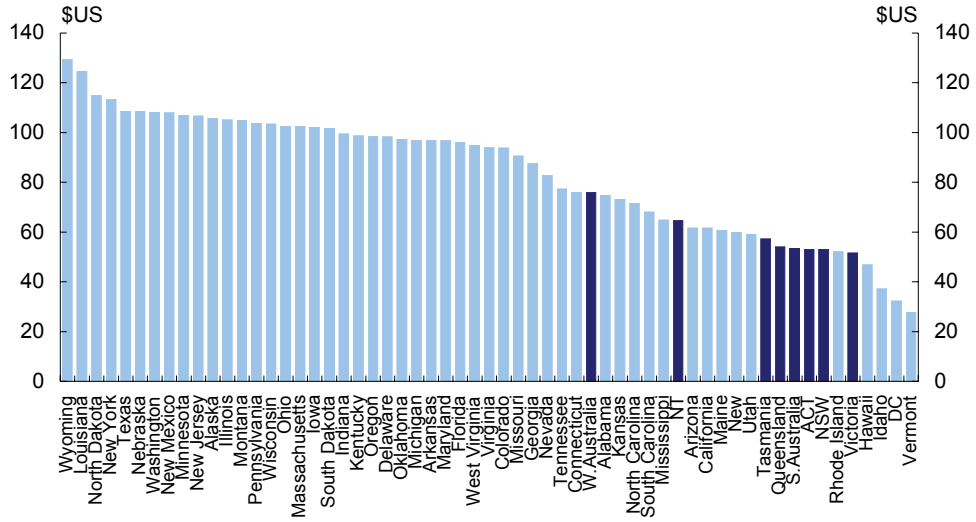
4 Using data from Australia and the United States is useful in this type of analysis because of the general similarity in policies and culture between the two countries. Countries that have significantly different policies and cultures would require additional variables to capture these differences to ensure that the results are not statistically biased.

Chart 2: Australian and US state labour productivity, 2001



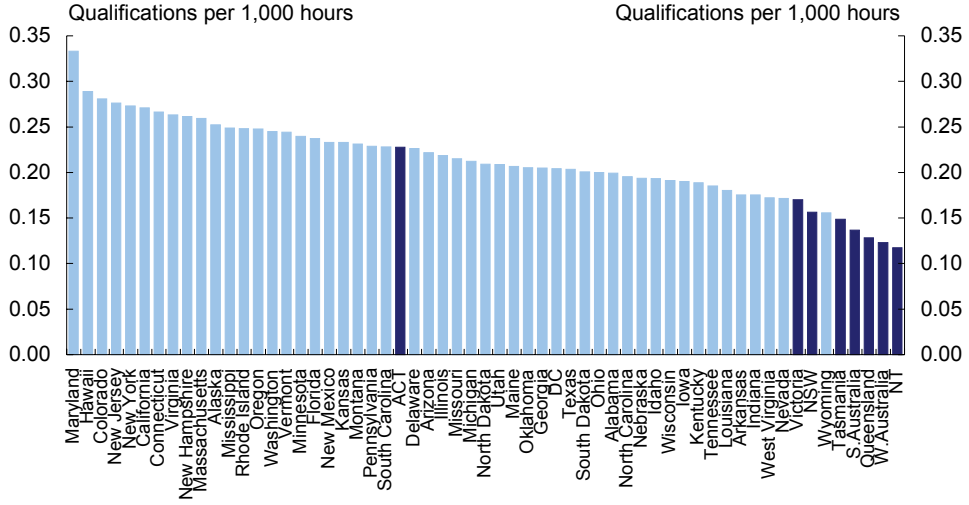
Source: Treasury calculations.

Chart 3: Australian and US state physical capital to labour ratio, 2001



Source: Treasury calculations.

Chart 4: Australian and US state human capital to labour ratio, 2001



Source: Treasury calculations.

The final variable in this analysis captures the geography of each state of Australia and the United States. The features that are described by the geography variable (which, in this analysis, is called the 'proximity indicator') are the economy's remoteness from other economic activity around the world and the degree of economic activity that goes on at home.

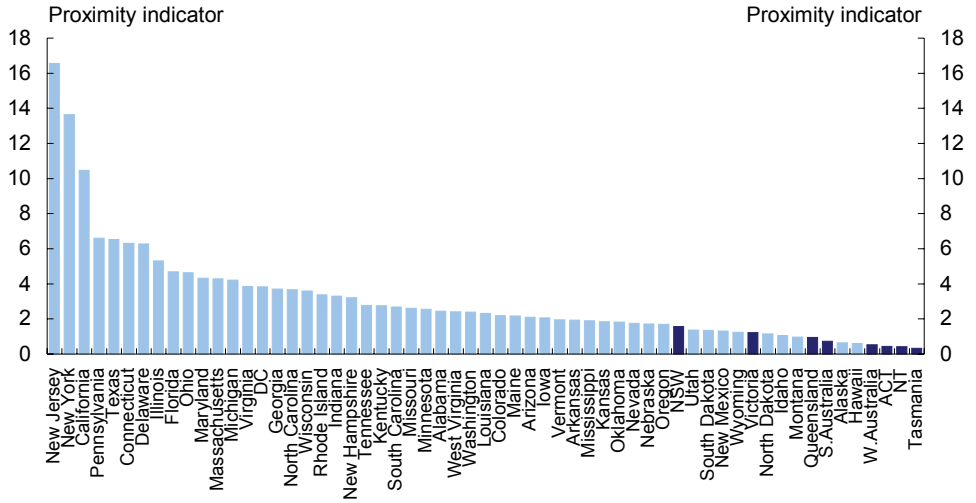
The proximity indicator that was developed for this analysis is presented in Chart 5. The construction of the indicator required a calculation using the following three sets of data for each state:

- the extent of economic activity in different areas of the world;
- the distance from the state to that economic activity; and
- a rate at which the importance of economic activity around the world decreases as the distance to that economic activity increases.

A final, but important note on the construction of the indicator is that the size of each state was included in each state's indicator. Thus, states that are economically large but surrounded by economically smaller states continue to capture the effect of essentially being proximate to their own economy. In this sense, a state like Tasmania would be both geographically remote and economically small, which would result in a relatively low proximity indicator. On the other hand, a state like New York would be the very opposite, given its large home economy and location in the heart of the economic activity of the east coast of North America.

Because of the complex nature of this construction, the actual value of the proximity indicator (on the Y axis in Chart 5) is quite difficult to interpret, but this value is rather tangential to the analysis at hand. It is more useful to consider the comparative values of proximity between the states. In this sense, the proximity variable indicates that New Jersey's proximity to economic activity is somewhere around 30 times greater than Tasmania's. The variable also indicates that Victoria is about as proximate to economic activity as Wyoming or North Dakota, which stresses the importance of the size of the own state economy in the construction of the proximity indicator.

Chart 5: Australian and US state proximity indicators



Source: Treasury calculations.

With the inclusion of the proximity indicator, the development of the dataset was complete and ready for analysis. Using these data, we set about estimating the extent to which the proximity indicator in Chart 5 explained labour productivity in Chart 2, while accounting for physical and human capital to labour ratios presented in Charts 3 and 4. In the next section, the results of that process are outlined.

Results

The results from the estimation of the labour productivity model using the data presented in the previous section suggested that there was a significant relationship between labour productivity and geography. In statistical terms, the parameter on the proximity variable was positive and significant, implying that those states with higher proximity indicators tend to have higher labour productivity (if the physical and human capital to labour ratios are held constant). This result supported the motivating hypothesis that differences in geography help to explain differences in labour productivity.

With the statistical relationship established, it was possible to estimate the extent to which the gap in labour productivity between Australia and the United States could be explained by Australia's remoteness and vastness. By applying these statistical results to overall Australian and United States labour productivity equations with an average proximity indicator for both countries, it was then possible to tentatively establish that around 45 per cent of the gap might be explained by the differences in the two countries proximity indicator.

This result must be treated with a great deal of caution for two key reasons. Firstly, the data that were used in this analysis were built from sectoral data for the states of Australia and the United States. However, the sectors for each of the countries were inconsistent, and some manipulation and exclusion of data was required to make the aggregate compositions comparable.

Secondly, a range of technical assumptions had to be made in the construction of the proximity indicator. Treasury Working Paper 2006-03 details these assumptions in some length and shows that the point-estimate of 45 per cent is sensitive to changes in those assumptions. Importantly, the significance of the geography variable itself is far less sensitive to changes in these assumptions. In the end, this implies that geography certainly does matter, but that it is difficult to identify confidently its exact contribution to the labour productivity gap between the United States and Australia.

Conclusion

The key result of this work is the identification of a statistical relationship between labour productivity levels and geography. This result suggests that Australia's labour productivity level is constrained by Australia's vast and remote geography.

To be clear, this result does not suggest that there is an inevitable ceiling for Australia's level of labour productivity. Australia's potential for productivity growth can be deconstructed into the potential for Australia's productivity frontier to continue to expand (through innovation and new technologies) and Australia's capacity to reach its productivity frontier. The result of the analysis outlined in this article suggests that Australia's productivity frontier might be somewhere inside that of the United States', but it does not give any reason to doubt that Australia's frontier will continue to expand at the same rate as that of the United States. This expansion will continue to be driven by the ongoing creation of new technologies and innovative work practices, both in Australia and around the world, and the adoption of these technologies and practices in Australian workplaces.

The result in this paper can also be turned around to make the point that more than half of Australia's productivity gap with the United States is not explained by

geography. This implies that there may yet be considerable scope for Australia to still reach its own productivity frontier.

The result of this work also creates a range of new questions. For instance, at the start of this article, some of the likely channels through which geography might affect labour productivity were outlined. But to what extent do these various channels explain the result that is presented in this paper? Is this predominantly a story of constrained internal economies of scale, or limited external economies of scale? Or is there some other channel through which Australia's vastness and remoteness affects the level of labour productivity?

It is also often argued that the impact of distance has declined over time and will continue to decline into the future. This is clearly true in particular cases, such as in the transport of refrigerated goods. However, while these falling costs will continue to improve the wellbeing of Australians, it is not clear that this sort of technological change will necessarily help Australia close the labour productivity gap with the United States. This is because the lower costs from this technological change apply to all countries, which means it becomes cheaper to not only run a business in remote locations, but to also service remote locations from the centres of world economic activity. Further work will be required to identify which of these two effects is dominant with particular changes in technology.

Finally, this work also raises questions that extend beyond just the domain of labour productivity. If geographic factors can shape labour productivity outcomes so obviously, what does this mean for other economic activity and outcomes? We might expect capital to labour ratios will look different in remote areas under a similar hypothesis to that contained in this work. Similarly, we might also expect that the rates of return to other types of investment, such as research and development, may also be different.

Given that the result in this paper suggests that more than half of Australia's productivity gap with the United States is not explained by geography, these are clearly very important questions. Their answers will ultimately provide better guidance on where policies might be best targeted to ensure the ongoing growth of Australian labour productivity which, itself, will be a platform for sustained improvement in wellbeing throughout Australia.

Budget policy and risk expenditures

Wilson Au-Yeung, Jason McDonald and Amanda Sayegh[1]

Governments use a number of policy tools to achieve their objectives, including taxes, spending and regulation. Governments can also affect resource allocation by shifting risk in the economy through financial instruments, such as concessional loans, guarantees and other contingent liabilities. Such 'risk expenditures' are generally less transparent, more poorly targeted and costly than direct outlays. This paper discusses the economic consequences of risk expenditures and budget processes that can improve the management of risk.

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1 This paper was prepared for an APEC conference to be held in Lombok Island, Indonesia in November 2006. The authors are from the Fiscal Group and Macroeconomic Group of the Australian Treasury. This article has benefited from comments and suggestions provided by Michael Anthonisz, Geoff Francis, David Gruen, Hugh Hartigan, Kirsty Laurie, David Martine, Oliver Richards, Neil Richardson and Amanda Robbins. The authors would also like to thank Suzanne Inglis for her research assistance. The views expressed in this article are those of the authors and not necessarily those of the Australian Treasury.

Introduction

The classic role of the budget is to prioritise spending according to an overall fiscal constraint. Budget policy seeks to improve the process for making these decisions. For example, governments are better able to rank their priorities when spending options are appropriately costed. However, budget policy faces substantial challenges when governments seek to achieve policy outcomes through 'risk expenditures', such as concessional loans, guarantees and other contingent liabilities.

Risk expenditures

Risk and government

Risk is uncertainty around a specific outcome.[2] People tend to dislike risk, preferring certain outcomes to uncertain possibilities. Because of this, the existence of risk has significant value. There are a number of ways people can avoid risk. They can pay someone else to take it on — for example, people pay insurance premiums so that insurance companies pay the costs if their house is damaged or destroyed. They can avoid particular activities that lead to risks — such as choosing to swim at a beach patrolled by a life guard to minimise the chance of drowning, rather than at a beach that has more amenity. Any inconvenience or cost in travelling to a patrolled beach represents the value of the risk of drowning. Other swimmers may choose an unpatrolled beach, perhaps because they prefer the seclusion, consider themselves strong swimmers or have local knowledge of safe swimming areas. In this way, risk tends to be allocated to those most willing and able to bear it. If markets are well-functioning, society is better off overall (Arrow and Debreu 1954).

Another way people can avoid risks is by seeking to pass them to government. In some cases where markets are not well-functioning, this can be efficient since risks can be spread across the whole population rather than a narrow segment of it (Arrow and Lind 1970). For example, the Australian Government has established a concessional Higher Education Loan Programme for students because capital markets do not supply sufficient finance to prospective students for their education. The capital market is unlikely to provide sufficient income-contingent loans due to the problem of 'asymmetric information': potential student borrowers have better information than lenders on their true potential for earning income. Further, lenders have no collateral

2 Risk can be more narrowly defined as the volatility of observed outcomes around an average or expected outcome, and therefore distinguished from uncertainty where there is no information for forming expectations about specific outcomes (Knight 1921). In this sense, risk is a mathematical probability (see, for example, Markowitz 1991). However, since markets can and do price 'uncertainty', we include it in our definition of risk for the purposes of this paper.

to seize in the case of default, so they are much more reluctant to lend to students than to businesses borrowing to finance physical capital investments. Indeed, if they lend at all, markets will only provide loans to students at high interest rates sufficient to cover perceived risks.

However, there are only limited cases where governments are better risk bearers than private agents. While governments in the past may have been an important means for communities to diversify risk, today, world financial markets can shift risks far more broadly and use more sophisticated financial instruments than nearly any government (Shiller 2003). Further, when governments take on risk that is not addressing a market failure, they are shifting the risk to taxpayers. To the extent that tax rates are more volatile as a result of governments taking on risk, society is likely to be worse off (Hansen 2003).

While the general presumption is that governments are well-diversified given their size, this may not be the case in practice. Governments are not profit maximisers. Rather, they have a social welfare function (such as providing unemployment insurance), and their finances may be systematically exposed to certain risks, particularly those associated with an economic downturn. Additional risks that are likely to crystallise when economies slow may therefore be more costly for governments to bear than the private sector. Even more importantly, governments or their agents may not have appropriate incentives to manage risks well compared to private individuals who directly bear any gains or losses. Where governments take on risks that should be left to individuals to manage, despite some groups clearly benefiting from such a transfer, social outcomes may be worse (Kaplow 1991). Deciding which risks to take on and which ones to leave to the market is therefore an important policy choice for governments.[3]

The conceptual benchmark for risk expenditures

When a government transfers risk from one section of the community to itself (or to others), it affects the allocation of resources, changing distribution and (most likely) incentives. For example, some State governments provide drought assistance through interest-free loans to farmers. Farmers who receive such a loan benefit, compared to farmers and other members of the community who do not (the distribution effect). By taking on this risk, governments are encouraging investment in sectors of the economy that would otherwise face higher costs due to drought (the incentive effect).

3 Risk is one of the five elements of Treasury's wellbeing framework — the others being the level and distribution of consumption possibilities, complexity and freedom. See 'Policy Advice and Treasury's Wellbeing Framework' (*Economic Roundup*, Winter 2004).

A risk expenditure is a benefit (or cost) to an individual that occurs when government changes the allocation of risk in society. In concept, the government could replace the risk expenditure with a subsidy for insurance premiums sufficient for the private sector to take on such risks and provide loans.[4]

The economic costs of risk expenditures

Costing risk expenditures

The costing of a spending programme is critical to evaluating whether it is a higher priority than other expenditures, is the least-cost option, and fits within the fiscal constraint. However, the costing of risk expenditures is often difficult because of the complex nature and large variety of potential financial policy instruments, including concessional loans, guarantees and investments in non-traded equity. These instruments can either be tradable or non-tradable (such as legislative guarantees).[5] The nominal (or face) value of the financial commitment is generally not the cost to government of making the risk expenditure. For example, the cost of a concessional loan is not the face value of the loan but the difference between the face value and the discounted present value of the loan repayments adjusted for risk, which is generally more difficult to calculate.

In principle, risk expenditures can be costed by benchmarking them against the equivalent outlay necessary for the government to avoid taking on the risk. Such a benchmark is equivalent to determining how much subsidy would make the recipient of a risk expenditure equally well off. The strength of such a framework is that it aims to create consistency across policy instruments which also rely on market prices. If there are market failures that distort the cost of direct outlays, then they should also distort the cost of the risk expenditure. Any benefit from the risk expenditure should then be assessed separately against the costs. Such a framework effectively requires all risks to be valued on a 'certainty equivalent' basis.

This can be done by defining the risk expenditure as the market value of the financial instrument minus the present value of the payments to government from taking on the risk. Importantly, when costing risk expenditures it is the market value, not the expected value, that should be used (Hörngren 2003b). The expected value already discounts future cash flows by the risks surrounding an event. For example, the

4 In practice the Australian Government provides interest rate subsidies for drought assistance, rather than direct loans, for many of the reasons discussed later in this paper.

5 Even where financial credits are not explicitly tradable, modern financial markets can often make them so. For example, legislative guarantees are effectively tradable when companies are bought and sold, even providing their owners significant returns when supported companies are in bankruptcy (Akerlof and Romer 1993).

expected value from receiving $1 billion or nothing from a coin toss is $500 million. However, the market value of such a bet will also take into consideration how much the community values the risk. If the community is risk-averse, then the market value (or how much the marginal person would be willing to bet) would be something less than $500 million.

An example of costing a risk expenditure

Farmer Pickles wants to increase sunflower production by investing in new sunflower growing technology. He needs $100,000, and because the investment is so risky, the best he can borrow from a bank is 15 per cent per annum repaid in five years; implying he must pay back $201,136. Farmer Pickles thinks that sunflowers would not earn sufficient returns to make the investment worthwhile, and declines the bank's offer.

However, a government wishes to assist Farmer Pickles and offers to provide a similar loan at the government's own borrowing rate of 5 per cent if he invests in sunflowers. Farmer Pickles thinks it's a good deal and takes up the offer. There is no obvious cost to the government — even if the government borrows $100,000 from the market to give to Farmer Pickles, this could be repaid with the $127,628 Farmer Pickles intends to repay in five years time.

So what is the cost to government?

The government is bearing the risk that Farmer Pickles may not be able to pay back the loan as agreed. The economy is bearing the cost of resources being diverted from producing something else to investing in the rather risky sunflower industry.

The cost of the risk expenditure is the difference between the $100,000 provided to Farmer Pickles and how much he will eventually pay back, discounted by the market risk:

> *Risk expenditure* = market value of financial instrument less the net present value of payments to government
>
> = $100,000 less [$127,628/$(1.15)^5$] = $36,546

Rather than taking on the risk itself, the government could have provided Farmer Pickles with a direct subsidy of $36,546 towards his bank interest bill. Both he and the bank would have been happy and the government would have borne less risk.

A final noteworthy point is that the risk expenditure changes resource allocation — that is, Farmer Pickles' farm now produces more sunflowers — even if he eventually pays back the loan.

The market value generally includes a market risk premium for systematic market (or non-diversifiable) risk associated with an event, whereas the expected value is simply the average outcome. Market risk is inherent in the prices of all assets and commodities the government buys and therefore needs to be included when assessing risk expenditures. Ignoring market risk when assessing specific risk expenditures would bias government to taking on more risks than may be desired through a more coordinated financial risk management strategy. The decision about how much the government should care about such risk is one the government makes after looking at the overall financial portfolio risk (not the risk associated with specific risk expenditures).

In practice, proxies for market value may well be needed. This can be as rudimentary as determining the expected value and adding a market risk premium calculated through historic financial returns. Alternatively, risk-adjusted returns from similar assets or liabilities can be used. For example, government loan guarantees can be costed by looking at the different interest rates charged on an equivalent non-guaranteed loan (Mody and Patro 1996). More complex methodologies, such as the Black-Scholes option pricing model or Monte-Carlo simulation, are also a possibility, but probably only for large and significant risks, such as those contained in major private financing arrangements.[6]

The economic consequences of risk expenditures

Even though they can be compared to traditional outlays in terms of cost, risk expenditures are likely to be less efficient policy instruments because they are:

- **Less transparent.** There is no commonly used international standard for the presentation of risk expenditures. In particular, the International Monetary Fund's Government Finance Statistics framework (IMF GFS) provides little guidance on how to value and present many risk expenditures in government financial statements. In general, financial derivatives are recorded on the balance sheet at their market value. However, other financial instruments used to make risk expenditures are treated inconsistently and often in ways that do not reflect the true underlying economic substance of a transaction. For example, concessional loans are recorded at their face value with no provisioning for bad and doubtful debts.[7] The IMF GFS also explicitly excludes assets and liabilities that contain contingent risks, even risks that are 'probable' — that is, have more than a 50 per cent chance of occurring — from the balance sheet (IMF GFS 2001).

6 These techniques are discussed in more detail in Irwin (2003).

7 The Australian Government departs from GFS and makes provisions for bad and doubtful debts in its balance sheet to avoid overstating the value of its assets.

Risk expenditures are therefore attractive for governments which may want to create the illusion of meeting fiscal targets, while still reducing net worth (Easterly 1999). Transparency is also affected because some of the risks government is asked to take on may not have readily available markets for costing purposes. Risk expenditures can also be complex and are therefore often difficult to understand.

- **Distorting to incentives.** Risk expenditures are worth more the more risky the beneficiary. This creates an *adverse selection bias* where more risky individuals or businesses are likely to prefer — and therefore lobby more strenuously for — a government guarantee than other forms of assistance. When government takes on risk it also often creates a *moral hazard problem* since the beneficiary has less incentive to reduce the risk themselves. For example, the generous benefits under the United States flood insurance programme have resulted in excessive construction of houses in flood-prone areas (Polackova 1998). Further, governments may face conflicting incentives when managing such risks. Indeed, for developing nations, large infrastructure projects backed by government guarantees can be subject to government interference since they are largely sunk — the assets cannot be used elsewhere without great cost — and often highly politicised because they provide 'essential services' with monopolistic elements (Irwin et al, 1999).

- **Less targeted.** Outlays can generally be targeted directly to meet a specific government priority, whereas risk expenditures are often more indirect and therefore less efficient. For example, cash outlays to farmers during a drought directly target their low income and longer term viability. In contrast, zero interest loans tied to farm production provide an income benefit but also encourage increased indebtedness, inefficiently biasing farm production. Further, while the value of an outlay is known with certainty, the value of a risk expenditure varies with the economic circumstances surrounding the risk, which is much harder to know. This makes risk expenditures harder to target directly to social needs.

- **More costly financing**. Both traditional outlays and risk expenditures ultimately need to be financed by taxes. However, both outlays and risk expenditures for a time can be financed by issuing a liability; a debt liability for traditional outlays and a contingent liability for risk expenditures. Debt issuance is generally a cheaper form of financing government activities than issuing contingent liabilities. Contingent liabilities (or assets) such as guarantees (or concessional loans) are generally illiquid, if they are marketable at all. This reduces the market demand for such financial instruments, and therefore any liquidity premium the markets may otherwise provide. Often, risk expenditures are not market-tested, suggesting there could be windfall benefits to the beneficiary even if some

compensation is paid to the government for taking on the risk. Institutional uncertainty about the legal or moral circumstances under which risks are likely to become payouts also makes them a relatively expensive form of financing.

- **More difficult to manage.** Accountability mechanisms are far less clear for risk expenditures than debt. Traditional outlays face a budget constraint and debt financing is generally carefully controlled by central agencies. There is no similar budget constraint for the amount of risk expenditures that can be made. 'Soft' or uncertain budget constraint makes it particularly difficult for governments to rank risk expenditures by their social value. This can lead to a build-up of liabilities, particularly if fiscal institutions are weak as in many transitioning or emerging markets. For example, contingent liabilities, such as guarantees issued to state-owned enterprises, added around 3 to 4 per cent of GDP to the Czech Republic budget deficit in the late 1990s (Islam, Ghanem and Polackova 1999).

Managing risk expenditures

The issue of how governments should manage risk expenditures is receiving increasing attention internationally (see Polackova-Brixi and Schick 2002). The Asian financial crisis in the late 1990s may have spurred some of this interest. Countries with apparently sound fiscal records suffered extreme crises of confidence associated with the presence of large contingent liabilities, such as concessional loans to business, explicit and implicit guarantees to the financial sector and currency conversion commitments. Guarantees to the banking system emerging from the Asian financial crisis in 1997 added some 50 per cent of GDP to the stock of Government debt in Indonesia, 30 per cent in Thailand and over 20 per cent in Japan and Korea (Polackova-Brixi and Schick 2002). Unlike many of its neighbours and trading partners, Australia suffered virtually no ill effects from the crisis, at least partially due to the sound way that it manages financial risk.

There are three broad but critical elements of a successful budget framework for managing risk expenditures. First, budget *transparency* ensures that the community can hold the government accountable for its risk expenditure choices (Schick 2002). The best practice benchmark for the fiscal framework is outlined in the International Monetary Fund's *Manual of Fiscal Transparency 2001*. The manual proposes that governments adopt accrual accounting, including presenting assets and liabilities on a balance sheet. For Australia, this has led to a greater focus on non-cash expenses and non-debt liabilities, including the financing of superannuation liabilities (currently valued at around A$100 billion).

However, many contingent risks do not meet accounting definitions of expenses or liabilities. For many of these, the manual proposes that governments make annual

statements of all contingent risks associated with current and previous risk expenditures, quantified where possible. For example, the Australian Government, as part of its budget documentation, publishes a Statement of Risks outlining the fiscal risks and contingent liabilities that may affect government finances. Such statements are important for identifying the potential scope of financial risks. The manual also proposes that governments issue long-term fiscal reports. These reports are becoming common practice for many governments. In Australia, it is a requirement under the *Charter of Budget Honesty Act 1998* that the government publish an Intergenerational Report, every five years, showing the long-term fiscal implications of current government policies. Such reports provide the community with information on the fiscal risks associated with existing government policies. This is particularly important if there is a significant delay between making a risk expenditure and its budget consequences.

Second, risk expenditures require *centralised risk management* to identify and advise governments of fiscal risks. Risk expenditures are like normal outlays in that they imply a potential future call on government resources. Internationally, cash or debt management practices for financing outlays are traditionally closely monitored by central government agencies. However, risk expenditures financed by contingent liabilities may not be subject to the same level of oversight. Where risk expenditures are an important tool for government, there is a strong case for the centralised risk manager to monitor and manage both debt and contingent liabilities (Magnusson 1999, Currie and Velandia-Rubiano 2002). Debt managers are likely to have the high-level financial skills for assessing and pricing contingent liabilities (see for example, Hagelin and Thor 2003). A central risk manager is also best placed to identify any systematic relationships between risks, as well as any potential gains from trading them.

Further, a centralised risk manager can oversee the budget rules that allow agencies to make risk expenditures. The specific rules need to reflect the institutional arrangements in a particular country. For example, countries that make particularly significant uses of risk expenditures may consider placing budget caps on the numbers of risk expenditures allowed in a year. Turkey limits the number of government guarantees each year to a fixed percentage of revenues (Schick 2002). Other potential budget reforms include provisioning and appropriating risk expenditures and charging government departments for issuing them, to change the incentives facing agencies. For example, the Netherlands reports as expenses the expected losses on government guarantees and the United States requires agencies to appropriate the expected losses on concessional and guaranteed loans (Schick 2002). By law, Sweden charges fees based on the risk borne by the government for any guarantees provided to the private sector (Hörngren 2003a). In Australia, the government charges agencies insurance premiums even though it self-insures government property. By changing financing costs, such steps improve agency decision making.

Finally, governments should develop a *clear and stable policy framework* for the types of risks that they intend to bear and those that should be left to the market. Clear government public policy intentions with regard to risk expenditures assist in limiting their use to where they are most justified. Credible policy pre-commitments can assist in 'hardening' the budget constraint in many areas (Kornai et al, 2003). The Australian Government has issued guidelines for agencies issuing guarantees that 'as a matter of principle, risks should be borne by those best placed to manage them — that is, the Australian Government should generally not accept risks which another party is better placed to manage' (Department of Finance and Administration 2003). In practice, the guidelines limit the use of risk expenditures, mainly to cases of clear market failure. Even in cases of capital market failure, other policy tools may be preferable to risk expenditures. For example, improving corporate disclosure regulations and enforcement are better ways of dealing with financial market information failures than providing government guarantees to private firms.

Apart from addressing market failures, governments may be better at bearing financial risks where they have more information over potential outcomes. Governments tend to have better information than markets about their own future actions. Private investors would simply charge too much for having to bear such risk. For example, the Melbourne City Link is a private toll road where investors bear most operational risks, such as demand and payment risks, but the State Government bears several risks that are tied to its own actions. If a future government were to ban tolls on City Link, then it would need to compensate investors (Irwin et al, 1999).[8] Of course, the principle of government bearing sovereign risk should not be taken too far. All investments have some degree of 'sovereign risk' — governments would raise little revenue if they were expected to compensate taxpayers for taxes paid. Further, if government institutions are poor, governments may not be responsive to the bearing of financial risks that are ideally better controlled by them than private agents. Financial outcomes will only improve if governments respond to financial incentives. These factors suggest that only where sovereign risk is clear and exceptional should guarantees be considered in place of direct outlays.

Conclusion

Budget policy faces substantial challenges when governments seek to achieve policy outcomes by taking on risk. Risk expenditures are likely to be less efficient policy instruments than general outlays as they are less transparent and more difficult to

8 Private financing arrangements (or 'public/private partnerships') often contain significant financial risks for governments. In response, the Australian Government has issued guidelines that require such arrangements to represent 'value for money' (Department of Finance and Administration 2002).

manage. This paper does not argue that risk expenditures should never be made. Rather, if government intervention is justified, consideration ought to be given to whether other policy tools, such as direct outlays, would be more effective. Governments can also take steps to improve the management of risk by adopting budget frameworks that enhance transparency, have a clear and stable policy framework for allocating risk and have a centralised process for identifying and prioritising risk expenditures.

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An economic survey of developing countries in the Pacific region

Rob Stewart[1]

The economic performance of the Pacific island countries has been, at best, mixed and in many cases quite poor for an extended period of time. Real GDP growth has been volatile with low average trend rates of growth. The Polynesian countries have generally performed better than Melanesia or Micronesia in terms of per capita GDP growth. Several of the Melanesian and Micronesian countries have experienced long-term decline, and very robust GDP growth would be required over the next 20 years simply to return their per capita GDP levels to previously achieved peaks.

Considerable challenges to economic growth and development remain. Against a substantial background of risks, some of which are exogenous, governments must prudently and effectively manage the factors which they can control to achieve the best possible economic outcomes.

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1 The author is from Pacific and Assistance Division, the Australian Treasury. Carla Adami, Sarah Gurr, Sugi Indralingam and Kimberley O'Brien contributed to earlier versions of the article, which has also benefited from comments and suggestions provided by Christine Barron, John Hawkins, Terry O'Brien and Martin Parkinson. James Gilling, Stephen Howes and Theo Levantis of the Australian Agency for International Development, Satish Chand of the Australian National University and Meg Keen of the Office of National Assessments also provided valuable comments. The views in this article are those of the author and not necessarily those of the Australian Treasury.

Introduction

In recent years Australian Government involvement with the developing countries of the Pacific region has increased substantially as development challenges and threats to stability in some countries in the region have intensified. In this regard Treasury is participating in whole-of-government engagement programmes such as the Financial Management Strengthening Program/Economic Reform Unit under the Regional Assistance Mission to the Solomon Islands (RAMSI) and the Economic Advice and Governance Assistance Program (EAGAP) in Nauru. Treasury is also providing assistance to the economic and public sector reform stream of the whole-of-government Enhanced Cooperation Program (ECP) in Papua New Guinea. As part of this increasing involvement, Treasury has expanded its economic monitoring and assessment of Pacific island countries (PICs).

This paper provides a survey of economic growth in developing countries of the Pacific region, with a 'snapshot' focus on long-term economic performance using several selected economic indicators. Data paucity and concerns over the quality and consistency of available data prevent a comprehensive and detailed analysis of economic performance and prospects across the PICs.[2] Lack of data may also be contributing to some citizens and governments in the Pacific not clearly perceiving the extent of slippage in their relative living standards.

The rest of the paper is structured as follows: the next section provides a brief overview of key characteristics of the PICs, highlighting the region's great diversity. Following this, economic growth performance in the PICs over the long term is analysed. The mid-1970s has been chosen as a general starting point as most PICs achieved political independence from the early 1970s onwards.[3] A few comments on trends in the data at the country and sub-regional levels are provided, and several other issues and indicators of economic performance are also briefly discussed before concluding the paper.

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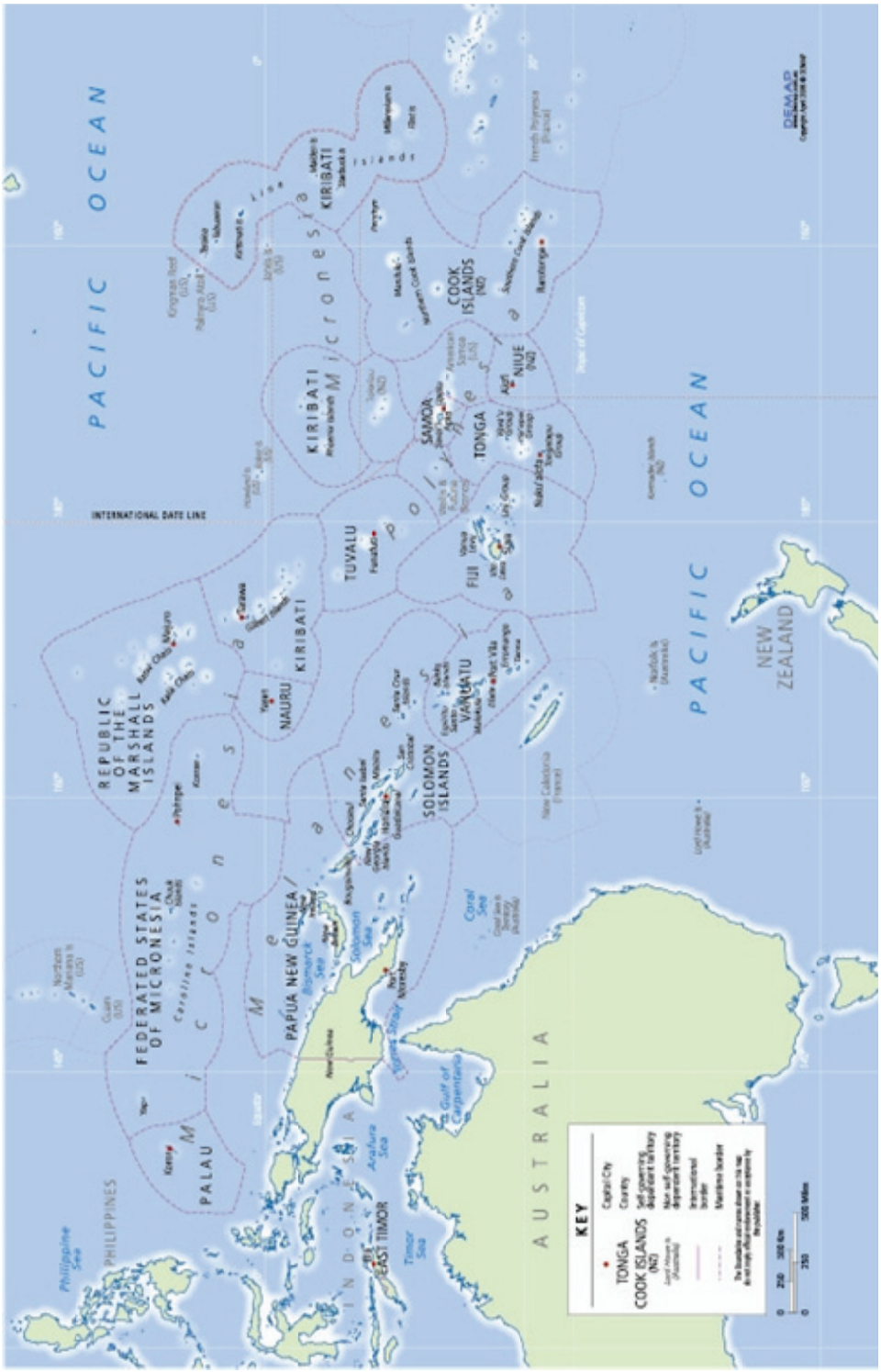
2 The paper draws on the World Bank's World Development Indicators (WDI) as a key data source. The WDI provide the best available consistent source for long-term time series data for Pacific countries. The WDI cover ten of the fourteen developing country members of the Pacific Islands Forum. The countries covered (Papua New Guinea, Solomon Islands, Vanuatu, Fiji, Marshall Islands, Federated States of Micronesia, Palau, Kiribati, Samoa, and Tonga) take in more than 99 per cent of the total PIC population of around 8 million. As the other four developing country members of the Forum (Nauru, Tuvalu, Niue and the Cook Islands) are not members of the World Bank they are not included in the WDI.

3 For example Papua New Guinea achieved independence in 1975 and the Solomon Islands in 1978. However, the first PIC to achieve independence was Samoa, which achieved independence from New Zealand in 1962.

Chart 1: Map of the Pacific



Characteristics of Pacific island countries

The PICs are widely dispersed over a very large geographical area. Out of a total PIC population of almost 8 million people, more than 90 per cent live in the four Melanesian countries of Papua New Guinea, Solomon Islands, Vanuatu and Fiji. As shown in Table 1, in terms of size and population Papua New Guinea, with a population of 5.8 million and a land mass of 463,000 square kilometres, clearly dominates the PICs. At the other end of the scale Nauru with a land mass of just 21 square kilometres and Niue with a population of just 2,000 are amongst the smallest countries in the world.

Although the total land mass of the PICs amounts to almost 530,000 square kilometres, the total Exclusive Economic Zone (EEZ) area covered by these ocean-bounded countries is huge — at more than 20 million square kilometres the combined EEZ is almost forty times that of the total land mass.

In addition to large differences in geographic size and population, diversity is a defining characteristic of the Pacific. Ethnic, social, economic, political, cultural, geographic, environmental and natural resource diversity typifies the Pacific region. Ethnic heterogeneity in the Pacific is reflected in the sub-regional classifications of countries into: Melanesia (Papua New Guinea, Solomon Islands, Vanuatu and Fiji); Micronesia (Palau, Federated States of Micronesia, Republic of Marshall Islands, Kiribati and Nauru); and Polynesia (Samoa, Tonga, Cook Islands, Tuvalu and Niue).

The PICs are highly dependent on natural resources with the majority of people predominantly reliant on subsistence agriculture and fishing. Some countries, particularly in Melanesia, have significant mineral resources and exploitable forestry assets. Most of the countries have significant coastal and offshore marine resources. The richest tuna fishing grounds in the world are found in the Pacific region.

The great diversity in the Pacific region creates some difficulties when analysing economic performance. For example, incomes vary greatly from the upper middle income (UMIC) range for countries including Palau and the Cook Islands, lower middle income countries (LMIC) such as Samoa and Tonga down to low-income countries (LIC) such as the Solomon Islands.[4]

4 Categories defined by the OECD Development Assistance Committee's list of Official Development Assistance (ODA) recipients. As at 2006, their categories are: LIC: per capita Gross National Income (GNI) less than US$825; LMIC: between US$826 and US$3,255; and UMIC: between US$3,256 and US$10,065.

Table 1: Pacific Countries: Land mass and population

	Landmass (km^2)	Exclusive Economic Zone ('000 km^2)	Population ('000 people, 2004)	Population density ('000 people per km^2, 2004)	Population growth rate (annual average per cent growth, 1990-2004)	GDP per capita (US$, 2004)
Cook Islands	240	1,800	18	75	0.6	
Fiji	18,300	1,290	840	46	1.0	2,258
Kiribati	811	3,600	98	134	2.2	532
Marshall Islands	181	2,131	61	340	1.9	1,703
Micronesia, Fed. States	702	2,978	110	157	2.0	2,016
Nauru	21	320	13	632	0.6	
Niue	260		2	7	-2.2	
Palau	458	629	20	44	2.0	6,360
Papua New Guinea	463,000	3,120	5,772	13	2.5	604
Samoa	2944	120	184	65	0.8	1,379
Solomon Islands	28,900	1,340	466	17	2.8	636
Tonga	748	700	102	142	0.4	1,678
Tuvalu	26	1,300	10	371	1.6	
Vanuatu	12,200	710	207	17	2.7	1,151
TOTAL	**528,791**	**20,037**	**7,903**	**15**	**2.2**	**≈900**

Sources: World Bank, World Development Indicators (AusAID 2006).

As such, benchmarking economic performance for the Pacific region as a whole by using international comparisons is problematic and risky. In this paper some use is made of comparisons of PIC performance against the aggregated Low and Middle Income (LMI) and Sub-Saharan Africa (SSA) data provided by the World Bank's World Development Indicators (WDI), (World Bank 2006a), as well as comparisons with Australia. However, comparisons are used purely for the purpose of providing some international context setting. The paper does not use comparisons for benchmarking or critical assessment of PICs.

Despite the diversity of the PICs they have many similar characteristics and face a number of similar constraints and economic issues. Some of the more significant common characteristics and issues include: remoteness and isolation; susceptibility to natural disasters such as cyclones and droughts and vulnerability to commodity price fluctuations; history of colonial experience; narrow economic bases and reliance on natural resources; low economic growth rates; youthful populations; variable but often poor social indicators and poor delivery of public services; high trade shares in GDP, reflecting in particular very high import ratios; fiscal pressures and large public debts; and a dominant role for the public sector in the formal economy.

Economic growth

A key finding in current economic literature on the Pacific is that, while some countries have performed better than others, overall the Pacific region has performed poorly in terms of economic growth and, more importantly, not achieved its growth potential (Chand 2006; AusAID 2006). Economic growth in the Pacific is also highly volatile, reflecting a range of factors such as narrow economic bases, dependence on a few commodity exports (agricultural, forestry, fishing and minerals) being sold into often volatile international markets in which the PICs are price-takers, the impact of natural disasters such as cyclones, and poor governance and political (and policy) instability.

GDP growth

Both Market Exchange Rate (MER) and Purchasing Power Parity (PPP) measures of GDP are used in the GDP growth and per capita GDP growth charts below (Charts 2 to 6). PPPs, which adjust for differences in price levels, are the preferable measure for economists and statisticians to use when comparing GDP and standard of living performance across countries. However, due to data constraints (for example

per capita GDP in PPP was not available for Micronesian countries) both MER (Charts 2, 3 and 4) and PPP (Charts 5 and 6) analysis of GDP performance is provided.[5]

Charts 2 and 3 show economic growth performance in US dollars, at the country level, for Melanesia, Micronesia and Polynesia respectively, over the period 1980-2004. Chart 2 shows GDP growth in Melanesia has been highly volatile over the last 25 years. Real GDP growth has generally fluctuated in a band of -6 to 6 per cent. Two recent points which stand out in Chart 2 are: 18 per cent GDP growth in Papua New Guinea in 1993, driven by a booming mining and oil sector; and a 14 per cent decline in GDP in the Solomon Islands in 2000, during a period of civil conflict. Over the same period, real GDP growth in Australia varied between -2 and 5 per cent.

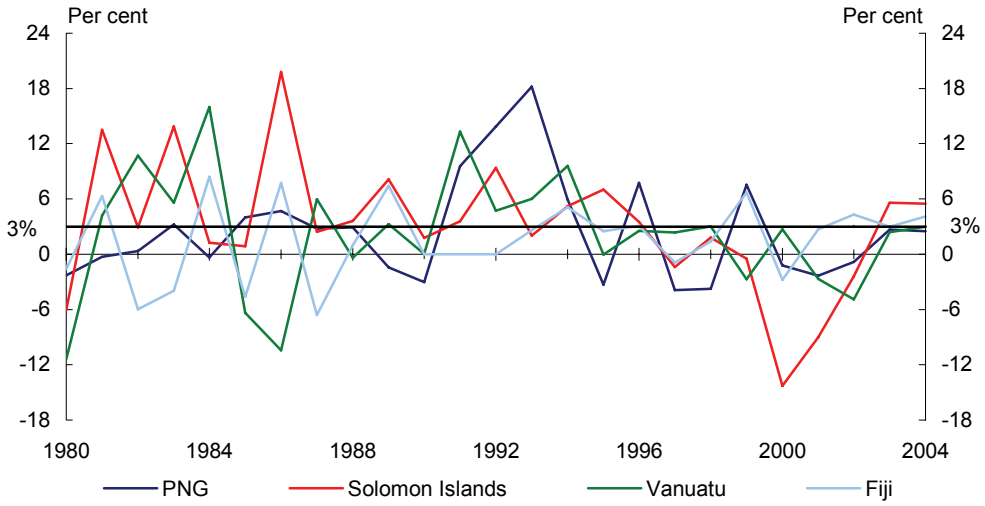
Per capita GDP performance

As shown in Table 1 Melanesia's annual population growth rates are well above 2 per cent (excluding Fiji). Therefore, as an approximate indicator, when GDP growth is below the 3 per cent horizontal line in Chart 2 per capita GDP is likely to be virtually flat or falling. With the exception of Fiji, stagnant or declining per capita GDP has been the experience for Melanesia over the survey period.

5 The PPP measure in Charts 5 and 6 uses an international dollar exchange rate index — each country's index is determined by how many US$ it would take in the domestic economy to purchase US$1 worth of the same commodity in the United States.

PPP and market exchange rates often result in markedly different GDP estimates, especially for developing countries. These differences stem from the fact that PPP estimates of GDP take into account different price levels for identical goods and services across economies. For example, developing economies with relatively low non-traded good prices tend to have PPP-derived exchange rates that are higher than their market exchange rates because a unit of local currency has greater purchasing power in these economies. When expressed in PPP — as opposed to market exchange rate (MER) — terms, their GDP levels will also be higher.

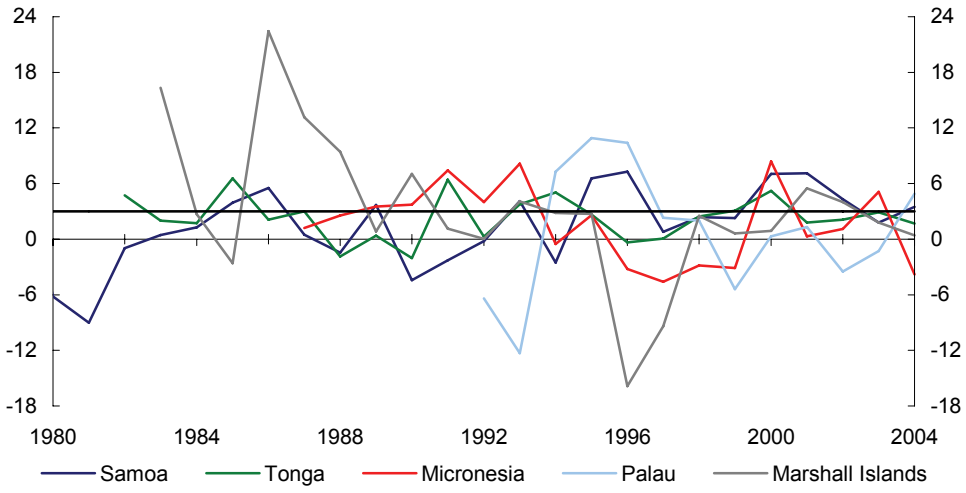
Chart 2: Real GDP growth — Melanesia



Source: World Development Indicators.

Chart 3 shows that GDP growth in Polynesia and Micronesia has also been volatile, although the most severe volatility has been experienced in Micronesia and in the Marshall Islands in particular. Polynesian growth has been relatively more stable.

Chart 3: Real GDP growth — Micronesia and Polynesia



Source: World Development Indicators.

All of the countries in Charts 2 and 3 have experienced significant periods of GDP growth at rates below 3 per cent. However, Polynesia's population growth rates (Table 1) have been lower than those of Melanesia and Micronesia. Therefore, similar GDP growth rates in Melanesia and Polynesia yield very different per capita GDP outcomes, which is shown below in Charts 4 to 6 and Box 1.

Box 1: Population growth and GDP per capita in the PICs: 1970 to 2004

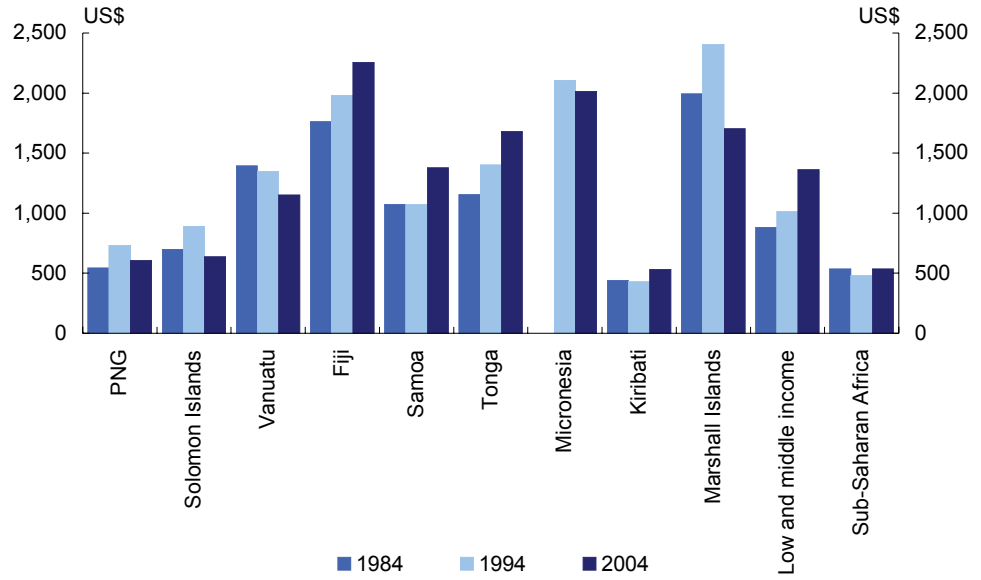
Population growth rates in the Pacific vary considerably, from -2.2 per cent in Niue (due to substantial emigration to New Zealand) to a very high 2.8 per cent in the Solomon Islands (see Table 1). The Melanesian countries of Solomon Islands, Papua New Guinea and Vanuatu have the highest population growth rates while the Polynesian countries have low population growth rates. Lower population growth in Polynesia is partially a result of emigration, whereas very little emigration occurs from Melanesia. However, fertility rates in Polynesia are also lower than those in other PICs. In combination, substantial emigration and lower fertility rates in Polynesia contribute to relatively lower overall population growth in comparison to Melanesia and most of Micronesia.

High population growth rates produce population profiles with a large proportion of young people, as seen in Melanesia. However, Polynesian population profiles also contain a large proportion of young people as a large percentage of emigrants are adults. Overall, around 60 per cent of the total current PIC population is under 25 years of age, which is very high compared to developed countries. However, a demographic shift in population profiles has been occurring in the Pacific over the past 30 years. Considerable improvement in life expectancy in most PICs has occurred as fertility and mortality rates have declined. As a result, the percentage of children (under 15 years) in population profiles has decreased. Correspondingly, the proportion of people of working age (15-64 years) has increased, and the proportion of youth of working age (15-24 years) is particularly high in some PICs. This 'youth bulge' into working age groups has exacerbated unemployment problems (see Box 2) and contributed to social tensions. However, if declines in fertility and mortality rates are maintained the high proportion of children and young adults in PIC population profiles should gradually reduce over time.

GDP per capita is simply the total value of GDP divided by the number of people in a country. Therefore, the higher the rate of population growth the higher the rate of GDP growth required to achieve a certain level of GDP per capita. As the GDP charts (Charts 2 to 6) show, while the trend in GDP growth performance across the PICs has only been modest at best over the survey period, GDP per capita growth has varied substantially as a result of much higher population growth rates in Melanesia in comparison to Polynesia.

Chart 4 shows per capita GDP in US dollars at several points between 1984 and 2004. This chart should be read with caution given the volatility of Pacific GDP growth. With this caveat in mind, some tentative observations can be made. Firstly, divergence in sub-regional performance is noticeable with real per capita GDP in the Melanesian countries in 2004 being either lower or only slightly higher than in 1984. The exception is Fiji with 2004 per capita GDP about 30 per cent higher than it was in 1984. Of the two Polynesian countries shown, Tonga's per capita GDP has grown solidly, and Samoa's per capita GDP has increased significantly over the last decade following the impact of a substantial period of economic reform commencing in the mid-1990s.

Chart 4: Real GDP per capita — market exchange rates



Source: World Development Indicators.

The situation in Micronesia is one of stagnating or declining per capita GDP. The relatively high absolute level of per capita GDP in the Federated States of Micronesia and Marshall Islands is underpinned by very substantial aid flows provided by the United States under a Compact of Free Association.[6] Another beneficiary of the Compact with the United States, Palau, has a much higher per capita GDP (US$6,336 in 2004).

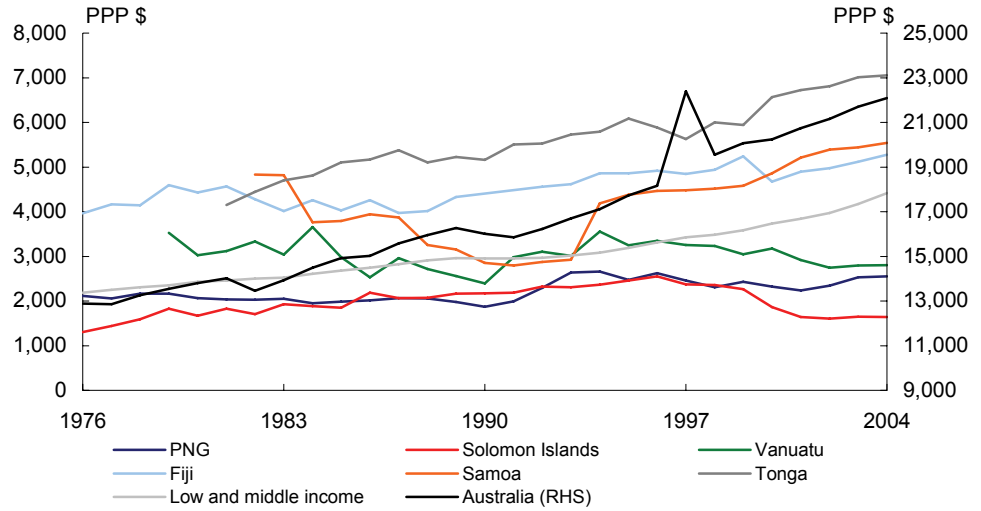
In absolute terms Chart 4 shows per capita GDP performance in Kiribati, Papua New Guinea and Solomon Islands is similar to or slightly above that of the SSA average. The better performers, Fiji, Tonga, and more recently, Samoa have per capita GDP levels at

6 The current Compact of Free Association (Compact II) expires in 2023.

around or significantly higher than the LMI average, and have grown at a similar rate to the LMI average over the period in question.

Chart 5 shows GDP growth performance expressed in PPP. Available data allowed for analysis of Melanesian and Polynesian countries only. The chart shows that there has been significant divergence in performance between the Melanesian and Polynesian countries. The early-to-mid 1990s represents a particularly significant turning point. Samoa had been undergoing a substantial and severe economic decline from the 1970s into the 1990s. Government debt had built to more than 90 per cent of GDP by 1994. The sharp turnaround in Samoa's performance occurs at around the time a major macroeconomic stabilisation and structural reform programme commenced. At around the same time, the Melanesian economies (excluding Fiji) began to decline significantly — creating the divergence along Melanesian and Polynesian lines shown from 1994 onwards. From the mid-1990s onwards the Polynesian countries and Fiji have grown at about the rate of, or better than, the LMI average while the other Melanesian countries have declined.

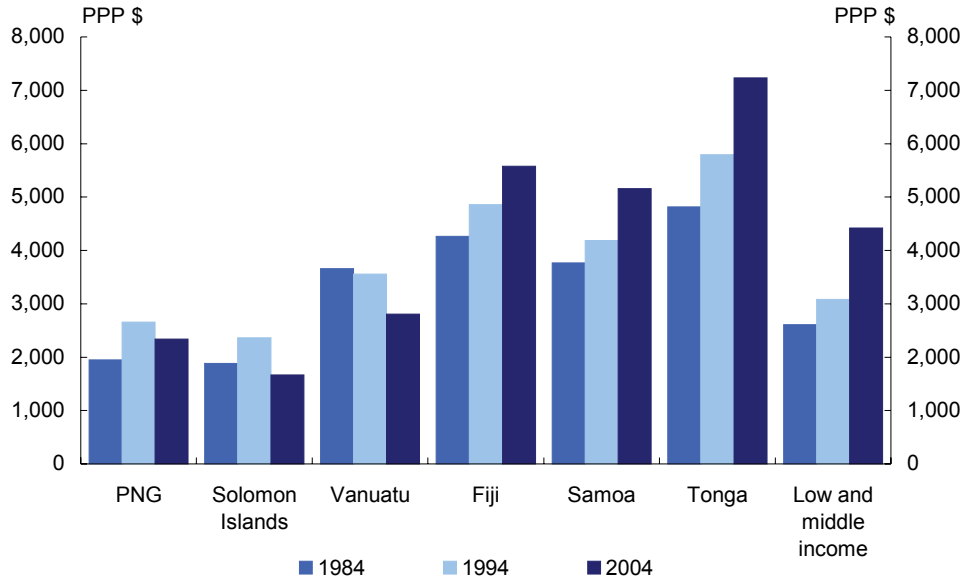
Chart 5: Real GDP per capita — purchasing power parity



Source: World Development Indicators.

Chart 6 also shows real per capita GDP in PPP terms. A comparison of Chart 4 with Chart 6 shows that all of the countries have PPP per capita GDP levels several times higher than per capita GDP levels at market exchange rates. However, Melanesia (excluding Fiji) is still stagnating or declining on the PPP measure.

Chart 6: Real GDP per capita — purchasing power parity



Source: World Development Indicators.

Overall, long-term GDP growth performance across the PICs has been volatile with generally low average rates of GDP growth, whether measured in PPP or market exchange rate terms, with the Polynesian countries performing better than other PICs. Most Micronesian and Melanesian countries have performed far less strongly, with several of them in long-term decline with current per capita GDP levels well below their historical high points.

In some Melanesian and Micronesian countries many years of sustained growth would be required just to return per capita GDP levels to previous high points. For example, in local currency terms, to re-attain its per capita GDP high point of 804 Kina in 1994 Papua New Guinea will require average annual real GDP growth of around 3.3 per cent (0.8 per cent per capita GDP growth) until 2025. Similarly, Solomon Islands would require annual average GDP growth of about 4.6 per cent (peak of SBD$6,709 in 1980) and the Marshall Islands would require annual average GDP growth of more than 5 per cent (peak of US$1,557 in 1995). Given the volatility in actual GDP growth and the fact that annual GDP growth rates have generally averaged less than 3 per cent in these countries over the survey period[7], sustaining the average GDP growth rates required for the number of years required would be a significant achievement. However, even if this was achieved it would only mean that, by 2025, per capita GDP

7 Papua New Guinea averaged 3.2 per cent annual GDP growth over 1965–2004, only slightly lower than the 3.3 per cent rate of GDP growth required to return per capita GDP back to its peak level by 2025.

levels would be back to where they were many years earlier — in the case of Solomon Islands 45 years earlier (1980).

Agriculture, industry and services sectors

The agriculture sector still dominates private sector economic activity in many PICs, and particularly so when subsistence agriculture is taken into account. However, the share of agriculture in measured GDP has declined. Chart 7 shows a declining trend in the share of agriculture in GDP in all the PICs over the survey period. Agriculture contributed 44 per cent of value added to GDP in Tonga in 1977, compared with the then LMI average of around 22 per cent. By 2004 the agriculture share in Tonga had fallen to 29 per cent of GDP compared with the LMI average of just 12 per cent.

While the share of agriculture in Pacific GDP has declined, it remains above the LMI average in most of the countries shown in Chart 6 as the LMI average has also been declining. Therefore, despite trending downwards over the full survey period, the share of agriculture in GDP in Papua New Guinea and Tonga was still around twice that of the LMI average in 2004. As the share of agriculture in GDP has been declining in the PICs the proportional share of GDP from industry and/or services must have been increasing.

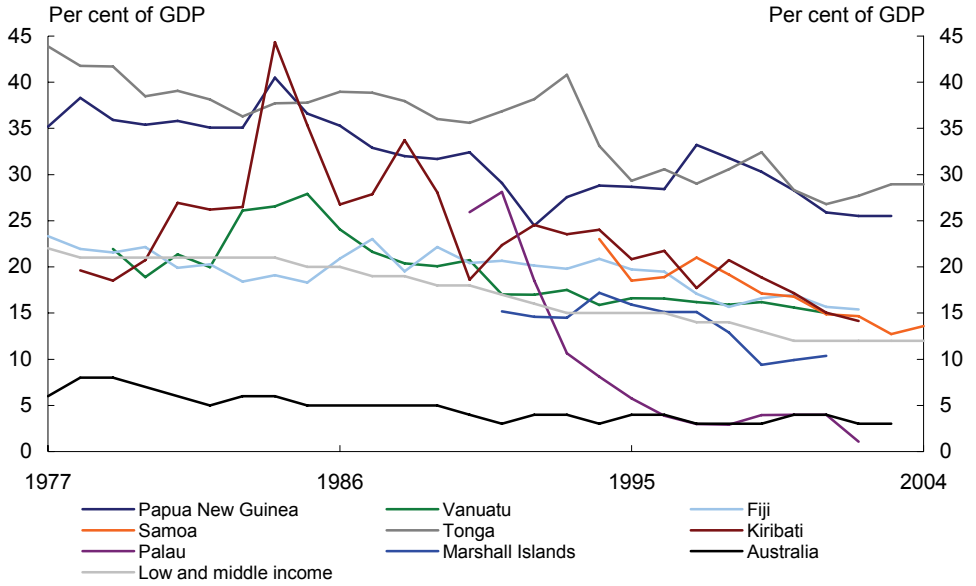
The WDI data show that the contribution to GDP from industry has remained reasonably stable and relatively low at between 12 to 20 per cent over the survey period. Two exceptions have been the more industrialised economies of Fiji and Samoa where the industry share of GDP has been higher, at around 27 per cent for both countries in the early 2000s. Given economic constraints, it is not surprising that industry plays a relatively small role in the production structure in most PICs. Winters and Martin (2004) have found that the cost disadvantages for manufacturing faced by micro and very small economies are very large. They find that cost premiums, due to factors such as high transport and utility costs, mean that manufactured products from micro and very small economies will generally not be internationally price competitive. They also find that even if wages were zero in a micro economy, total manufacturing costs would generally still exceed world prices. And most of the PICs are classified as micro or very small in the Winters and Martin methodology.[8]

The services sector in most Pacific countries has grown over the survey period. For the countries for which data is available the contribution of the services sector is high in all three Pacific sub-regions. The highest service sector shares in GDP are in the Micronesian countries — reaching almost 90 per cent of GDP in Palau in 1997.

8 Winters and Martin use the following population-based definitions for country size: micro economies (<12,000 people); very small economies (12,001-200,000); threshold economies (200,001-1,600,000); and small economies (1,600,001-4,000,000).

However, the service sector also provides a very large share of GDP in Melanesia, reaching around 75 per cent in Vanuatu in the early 2000s. Even in the more industrialised countries of Fiji and Samoa the service sector share of GDP is large at around 60 per cent of GDP in the early 2000s.

Chart 7: Agriculture's share of GDP



Source: World Development Indicators.

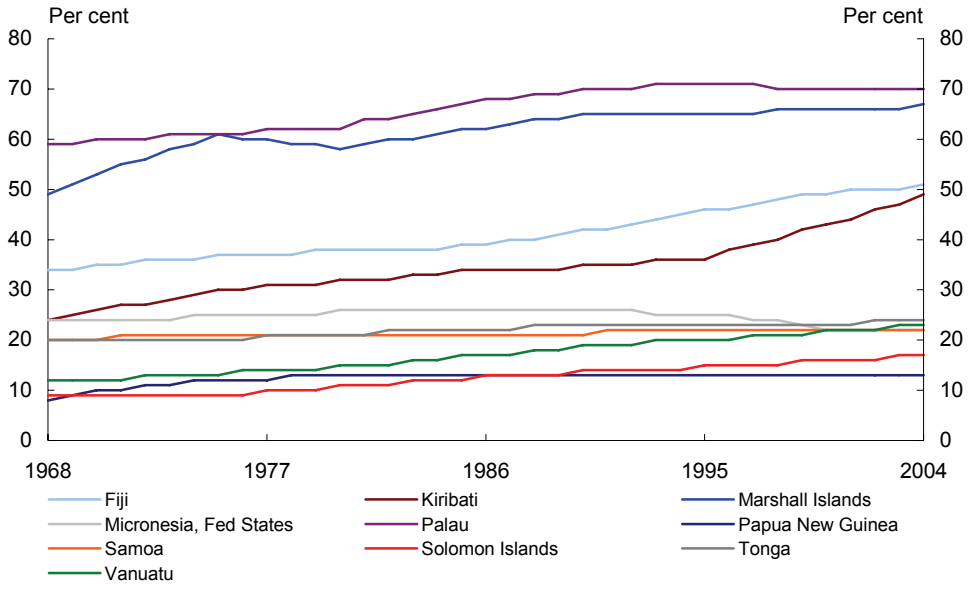
While the size of the services sector in many PICs is large, this does not mean PIC economies are similar to those of more advanced countries which tend to have strong, if not dominating, services sectors. The available data do not fully account for the contribution, and importance, of subsistence agriculture to total economic activity in the PICs. Also, while private sector services such as international tourism are playing an increasingly important role in some PICs, the services sector is generally narrowly based and dominated by government services with the private sector often playing only a relatively minor role.

The dominant role of the public sector can also adversely affect the private sector. State-owned enterprises against which competition is restricted are widespread in some Pacific countries, limiting scope for private sector involvement. In addition, services such as electricity, water supply and telecommunications, provided through government utilities, are often inefficient and expensive. Further, relatively high public sector wages tend to drive up wage rates in the private sector. Government is the dominant formal sector employer, accounting for about one-third to two-thirds of formal employment, across the PICs. In combination these factors contribute to an environment which can crowd out potential private sector activity.

Urbanisation

Chart 8 shows a definite urbanisation trend for most PICs over 1968 to 2004. The process of urbanisation has been strongest in Fiji and more recently in Kiribati. Papua New Guinea exhibits a flat urbanisation rate of around 13 per cent from 1978 onwards. However, the population in urban areas in Papua New Guinea, such as Port Moresby, has been growing rapidly on the back of very fast total population growth. The northern Micronesian atoll countries of Palau and the Republic of the Marshall Islands have the highest urbanisation rates due to their small land masses, lack of agricultural land and high relative population densities. The Melanesian countries (excluding Fiji) have the lowest urbanisation rates which is at least partially explained by the still dominant role of agriculture, including subsistence agriculture, in Melanesia. However, rapid urban growth and the problems it can generate are in fact pressing issues in Melanesia (see Box 2).

Chart 8: Urbanisation in the PICs: 1960-2004



Source: World Development Indicators.

The recent rise in urbanisation in Fiji may be at least partially attributable to the fact that many sugar cane leases are not being renewed on expiration. This is likely to be resulting in at least some former sugar cane leaseholders and employees, primarily Indo-Fijians, moving into urban areas in search of work. Fiji's relatively high population density and higher level of industrialisation in comparison to the rest of Melanesia may also be playing a role in its higher urbanisation rate.

Box 2: Unemployment, urbanisation and agriculture in the PICs

Unemployment is a major and growing concern in the PICs, and is a particularly acute problem in Melanesia. Measurement of unemployment in the Pacific is difficult due to the dominance of subsistence agriculture in many countries and the ability of labour to move in and out of the formal economy. Notwithstanding this difficulty there is ample evidence pointing to a serious and growing problem of unemployment, particularly youth unemployment in urban areas. As far back as 1990 the Papua New Guinea census 'found that 30 per cent of the urban workforce identified itself as unemployed' (Levantis 1997). Male youth joblessness (a combination of male youth unemployed and male youth outside the workforce altogether and not studying) is estimated to be as high as 42 per cent in the Republic of the Marshall Islands (AusAID 2006).

Urban populations in most PICs are growing as the relative contribution of agriculture to total GDP has been declining. While the urbanisation process itself is only moderate in some countries and almost flat in others such as Samoa, urban population growth is a significant issue particularly in some of the Melanesian and Micronesian countries where population growth rates are high. For example, the urbanisation rate in Papua New Guinea grew only modestly from 8 to 13 per cent over the 36-year period 1968 to 2004, and has been stable since around 1978. However, over this period Papua New Guinea's total population has nearly tripled from 2 million to almost 6 million. This means a total urban population of around 197,000 in 1968 had increased to 771,000 by 2004 — an increase in the actual urban population of almost 400 per cent.

Agriculture has limited capacity to absorb efficiently and effectively absorb a rapidly growing labour supply. Unless there is rapid growth in off-farm economic activity and employment, it is likely that total employment opportunities in the rural sector will not be sufficient, particularly as agriculture itself declines in terms of its share of GDP. Employment opportunities in agriculture may be further constrained to the extent future agricultural prospects in the PICs depend on the ability to sell produce into international markets. 'In terms of employment, internationally competitive crops often are land and capital intensive, not labour intensive' (Polaski 2005).

Box 2: Unemployment, urbanisation and agriculture in the PICs (continued)

A lack of economic and employment opportunities in rural areas will result in people, particularly young, physically mobile people, moving into urban areas to seek paid work. In some cases decisions to move to urban areas may also be motivated by perceptions that better and more highly paid work will be available, rather than a sense that no opportunities at all exist in rural areas. In fact, 'Melanesians rightly worry that urban incomes are now 10 to 16 times higher than rural ones and the gap is increasing' (Duncan and Chand 2002). While incomes may be higher in urban areas, this requires finding gainful employment. In this respect perceptions may be very different to reality, as the increasing number of openly unemployed people in urban areas in many PICs attests. Narrowly based urban centres, often dominated by government sector activity, are not providing sufficient employment opportunities for swelling urban populations. AusAID (2006) estimates that, assuming there is no net employment growth in agriculture, **annual** growth in employment required from elsewhere in the economy over the period 2004-2020 would need to be 11 per cent in Papua New Guinea just to prevent the level of joblessness from worsening.[9] For Solomon Islands and Vanuatu annual non-agricultural employment would need to grow by 4.5 and 7 per cent, respectively. However, the World Bank (2006b) projects **total** formal sector employment will grow by just 10 per cent, 7.6 per cent and 10 per cent in Papua New Guinea, Solomon Islands and Vanuatu, respectively, between 2004 and 2015, which equates to annual employment growth of less than 1 per cent in all three countries. This strongly suggests that, assuming there is not employment growth in agriculture, employment growth in the formal sector will be insufficient to prevent the level of joblessness from rising.

Natural resource exploitation

In addition to agriculture, private sector economic activity in the PICs is predominantly based around exploitation of natural resources such as mining, forestry and fisheries. Almost all of the PICs are dependent on primary commodity exports and exploitation of marine resources. Over the past decade, despite volatility, the mining and petroleum sectors have contributed significantly to Papua New Guinea's total exports, government revenue and GDP. However, there are serious concerns over the sustainability of current levels of natural resource exploitation in the PICs. For example, AusAID (2006) states that 'in the Solomon Islands and Papua New Guinea logging continues at two to three times the "sustainable yield" and the major natural, accessible forests in both countries are likely to be logged out by 2020 or earlier'.

9 The level of joblessness in AusAID (2006) is expressed as the ratio of employed persons to the total working age population.

Tourism is also an increasingly important and growing export in many PICs, and possible tensions between natural resource exploitation and tourism prospects could arise. Tourism marketing in the Pacific is heavily focused on access to pristine environments with clean beaches, natural forests and marine attractions. Over-exploitation of the natural environment, for example through unsustainable logging practices which destroy natural amenity, may negatively impact on long-term tourism potential.

Fiscal pressures

Many PICs face fiscal pressures due to structural rigidities in their budgets. On the revenue side annual collections fluctuate widely, as revenue sources are typically narrowly based and dependent to at least some extent on earnings from commodities for which prices can vary greatly. On the expenditure side, structural rigidities can make it difficult to adjust expenditures, notably public sector wage bills, quickly in accordance with revenue shortfalls. Large government sectors, inflexible budget structures and political pressure not to cut public sector wage bills, can result in fiscal deficits when pressures emerge on the revenue side. Conversely, when revenue exceeds expectations (for example due to favourable commodity price changes) additional expenditure is usually relatively easily achieved. Over the survey period, while there have been some exceptions, fiscal deficits have been common occurrences. During the 1990s, and into the 2000s fiscal deficits have generally been the norm for most of the PICs. The Marshall Islands, running large fiscal surpluses over the second half of the 1990s, is the key exception, and Samoa has managed to run close to fiscal balance, with small surpluses or deficits of up to about 2 per cent of GDP, since commencement of its major economic reforms in the mid-1990s. External debt levels in 2005 varied from around 11 per cent of GDP in Fiji to more than 70 per cent in the Marshall Islands (Browne 2006). However, even in countries with high external debt levels, debt servicing is usually not a significant problem as most external public debt is concessional and held by international financial institutions such as the World Bank and Asian Development Bank.

Government expenditure as a percentage of GDP tends to be much larger in smaller PICs with smaller populations because they are less able to exploit economies of scale in the provision of public goods and services, and as per capita aid flows are higher in the smaller PICs it is relatively easier for them to fund larger public sectors. Differing community attitudes to the role of government also influence the size of government and public sectors.

Central government revenue and grants as a share of GDP in 2005 were 22 per cent in Vanuatu, 26 per cent in Fiji and 28 per cent in Papua New Guinea, while there were more than 50 per cent in the Marshall Islands, Federated States of Micronesia and Palau. In Kiribati central government revenue and grants in 2005 equated to

123 per cent of GDP. Central government expenditure and net lending are of a similar magnitude, ranging from 21 per cent of GDP in Vanuatu to between 50 to 60 per cent in the Marshall Islands, Federated States of Micronesia and Palau, while in Kiribati the level of central government expenditure was 146 per cent of GDP (Browne 2006).

External accounts

The PICs are highly open economies, at least partially due to necessity as their domestic production bases are narrow. The import share of trade in goods and services in GDP for PICs fluctuates between around 40 to 90 per cent of GDP over the survey period. This is well above the 15 to 30 per cent LMI average and the average of just over 20 per cent in Australia in 2004. On the export side the PICs also generally have shares of GDP above the LMI average and Australia's, but well below the import share — at around one-third to one-half the level of the import share, making large deficits in the goods and services trade balance common occurrences across the PICs. In addition, declining trade preferences are placing severe competitive pressures on key export industries in some countries such as sugar and textiles in Fiji, which may add pressure on trade deficits. Large trade deficits can dominate the current account, even when prices for commodity exports are high, and current account deficits can be very large. For example the current account deficit in 2005 was 12.1 per cent and 10.8 per cent of GDP in the Federated States of Micronesia and Solomon Islands, respectively (Browne 2006). While PIC economies are already highly open in terms of import penetration and, to a lesser extent, exports, this says nothing about taxation levels on imports and exports or other distortions and restrictions on trade such as quarantine and customs measures.

Notwithstanding that small PIC economies are open and vulnerable to external shocks and irrespective of the various types of currency regimes adopted (see Box 3), balance of payments crises are rare in the Pacific. Exchange rate mechanisms have generally been allowed to adjust in response to macroeconomic imbalances. Gross foreign exchange reserves are generally maintained above commonly cited threshold levels of around three months of import cover without difficulty. Large aid flows and remittances also help to ameliorate the impact of adverse events.

Local Pacific currencies have generally declined (depreciated) against the United States dollar over the survey period. The WDI data also show that real effective exchange rates have declined over most of the survey period with increases (appreciation) occurring only in more recent years — from around 2001. Depreciating real exchange rates should, all things being equal, improve export competitiveness. However, the data generally do not show a strong positive correlation between depreciating PIC exchange rates and increasing exports as a percentage of GDP. This suggests a range of other factors such as inadequate infrastructure, high transport costs, lack of marketing

facilities, product quality issues and regulatory and other constraints may be limiting production and export supply responses.

Box 3: Exchange rate regimes in the PICs

The PICs have adopted a variety of exchange rate regimes since achieving independence. Current exchange rate arrangements in the PICs are:

- **Fixed rate — dollarisation:** The currency of another country circulates as the sole legal tender. PICs currently using dollarisation are: the Federated States of Micronesia, Republic of Marshall Islands and Palau using the United States Dollar; Kiribati; Nauru and Tuvalu using the Australian Dollar; and Cook Islands and Niue using the New Zealand Dollar.

- **Conventional Fixed Peg — Composite:** The country pegs its currency (formally or de facto) at a fixed rate to a basket of currencies where the exchange rate fluctuates within a narrow margin of at most ±1 per cent around a central rate. PICs currently using a fixed peg composite exchange rate regime are: Solomon Islands, Vanuatu, Fiji, Samoa and Tonga.

- **Independent floating:** The exchange rate is market-determined, with any foreign exchange intervention aimed at moderating the rate of change and preventing undue fluctuations in the exchange rate, rather than at establishing a level for it. Papua New Guinea is the only PIC currently using an independent floating exchange rate.

Source: IMF, International Financial Statistics.

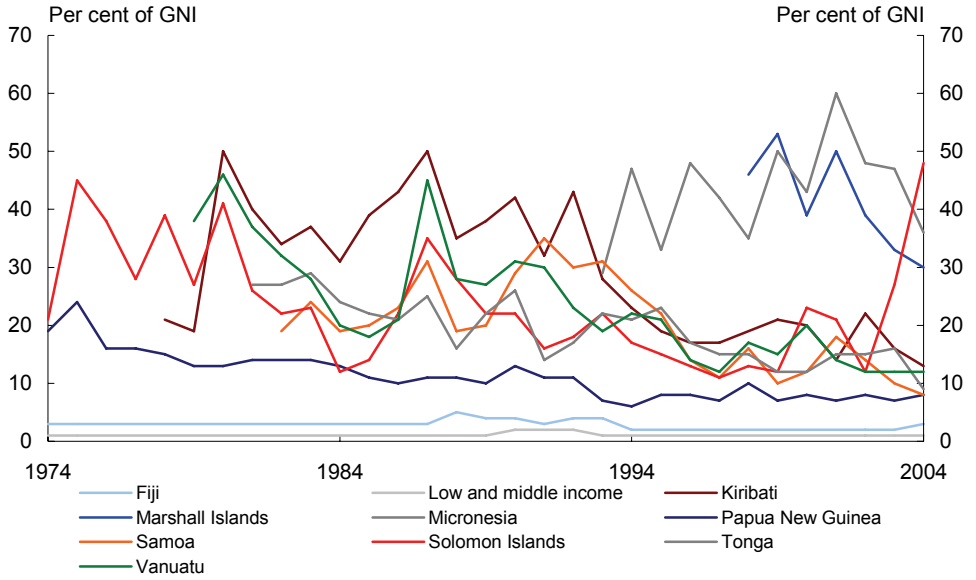
Aid and remittances

Chart 9 shows the contribution of aid to Gross National Income (GNI) in selected Pacific economies. Several observations can be made. First, in comparison with the LMI average, aid is a much more significant proportion of GNI in the Pacific. Second, the provision of aid to the Pacific is highly volatile as a percentage of GNI, although such volatility may be partially, if not predominantly, attributable to the observed high degree of volatility in economic growth in the PICs, rather than high volatility in actual yearly aid flows.[10] Third, excluding the northern Micronesian countries a definite downward trend in aid as a percentage of GNI can be discerned in the PICs over the 30-year survey period, with Kiribati experiencing the most substantial decline. The recent very substantial increase in aid to the Solomon Islands goes against the general trend and reflects substantial increases in aid from 2003 onwards under the Regional

10 Aid volatility as a percentage of GNI could arise due to: volatility in GNI outcomes, with relatively stable aid flows; large fluctuations in aid flows, with stable GNI; or fluctuations in both aid flows and GNI outcomes.

Assistance Mission to the Solomon Islands (RAMSI). Finally, the northern Micronesian countries have the highest aid levels as a percentage of GNI, reflecting the very substantial aid payments they have received from the United States under the Compact of Free Association. Some of the PICs also receive very high aid in per capita terms. In 2003 per capita aid to Oceania was US$216 while for Africa it was US$31 (Radalet, Clemens and Bhavnani 2005). However, more than 90 per cent of the PIC population live in Melanesia, 75 per cent of whom live in PNG alone where per capita aid was US$40 in 2003.

Chart 9: Aid as percentage of GNI: 1974-2004



Source: World Development Indicators.

The size of aid flows to the PICs may create macroeconomic management challenges, and large aid flows to the PICs have been criticised as creating 'Dutch Disease' impacts, such as overvalued exchange rates which reduce international competitiveness in PIC economies.

Remittances are also a major external source of income for some Pacific countries, particularly the Polynesian countries. For example, in 2004 net official remittances in Tonga contributed almost 24 per cent of GNI. However, in the Melanesian countries of

Papua New Guinea, Vanuatu and Solomon Islands net official remittances in 2004 were actually negative at -3.2, -2.7 and -1.5 per cent, respectively.[11]

Investment

Investment in the PICs is relatively low with total investment ratios generally around 15 to 20 per cent of GDP, which is well below the average of around 30 per cent for all developing countries. The Foreign Direct Investment (FDI) component of investment is also low with FDI/GDP ratios generally below 10 per cent in most PICs. Complex rules and regulations concerning business operations are major problems throughout the PICs which act as a disincentive to private sector activity and investment. Raising FDI and domestic investment levels is primarily dependent on macroeconomic stability and implementation of reforms to improve the enabling environment and encourage private sector activity. Browne (2006) points out that in most parts of the Pacific region there has been minimal interest in investment from abroad because of highly cumbersome and restrictive administrative regulations.

The World Bank's Cost of Doing Business indicators for East Asia and the Pacific region (World Bank 2005), show the quality of business regulation in the Pacific is mixed. The regional average time it takes to register property is 60 days. However, in Vanuatu it takes 188 days to register property. The regional average cost to enforce a contract is 55 per cent of the value of the debt, while in Solomon Islands the average cost is 141 per cent of the value of the debt.

Governance performance

Although there is a wealth of current literature on governance issues in the Pacific, quantitative indicators of governance performance are difficult to obtain for the PICs.

On six governance index measures prepared for the World Bank (Government Effectiveness; Rule of Law; Control of Corruption; Regulatory Quality; Voice and Accountability; and Political Stability and Absence of Violence) covering more than 200 countries, Papua New Guinea ranks particularly poorly, placed in the bottom

11 Net official remittances = official remittances received minus official remittances paid. WDI uses data flowing through official balance of payments systems and it is recognised that this is likely to underestimate the total value of remittances as informal, non-cash, and non-household (for example transfers to sporting bodies, youth groups or churches) remittances are not picked up in the official balance of payments. Negative net official remittances mean that a greater amount of income was transferred overseas from people working within a country (remittances paid) than was received into the country from people working overseas and transferring income back into the country concerned (remittances received).

quartile against five of the six measures, and Solomon Islands is ranked in the bottom quartile in four of the six measures[12] (Kaufmann, Kraay and Mastruzzi 2005).

Transparency International (2006) ranks only two PICs for their corruption perceptions index — Fiji, ranked equal 55th, and Papua New Guinea, ranked equal 130th out of 206 countries in 2005. Nevertheless there is ample evidence suggesting that governance performance in the PICs has generally been poor. The Asian Development Bank and Commonwealth Secretariat (2005) estimate that in total Fiji, Nauru and Papua New Guinea have lost US$75 billion in income due to poor governance since independence.

As discussed earlier, Winters and Martin (2004) find that smallness and isolation matters in terms of restricting internationally competitive economic options. This reality only heightens the importance of good governance and making the right policy choices. The cost of poor governance, corruption and inefficiency is likely to be severe in environments where economic options and prospects are already constrained to some extent by exogenous factors such as smallness and remoteness from markets. Chand (2006) goes as far as to argue that poor governance and poor policy choices rather than the handicaps of smallness and isolation have been responsible for poor economic performance in the PICs from 1995 to 2005.

Finally, it can also be noted that political instability in the PICs has been much more prevalent in the diverse and politically fragmented states of Melanesia. The RAMSI intervention in the Solomon Islands was a response to ethnic violence and a breakdown in law and order. The current Government of Papua New Guinea may well be the first to serve its full term in office since Papua New Guinea achieved independence more than 30 years ago. Fiji has experienced military coups and other periods of social unrest since the late 1980s.

Concluding comments

This paper has shown that, on the basis of available data, economic performance has been at best mixed and in many cases quite poor for an extended period of time in the PICs.

Considerable risks and opportunities to economic growth and development for the PICs remain for the foreseeable future. For example, HIV/AIDS and the increasing incidence of diseases such as type 2 diabetes risk undermining gains made in health

12 The governance indicators reflect statistical compilations of responses on the quality of governance from a large range of enterprise, citizen and expert survey respondents in industrial and developing countries, as reported by a number of survey institutes, think tanks, NGOs, and international organisations.

and life expectancy, will add pressure to health systems which in some cases are already inadequately resourced, and will negatively impact economic performance prospects. In Papua New Guinea in particular the emerging HIV/AIDS epidemic could substantially undermine social and economic progress. Declining international trade preferences are placing severe competitive pressures on key industries in some countries such as the sugar and textiles industries in Fiji. Demographic pressures are interacting with weak economic performance to worsen unemployment and associated social unrest and criminal activity in several countries. Environmental stresses are impacting on food production capacity and raise particular concerns for low-lying atoll states such as Tuvalu. A substantial decline in world commodity prices would cause serious income shortfalls in the PICs. However, the telecommunications revolution, and the ongoing process of global economic integration, may provide new prospects for the PICs to expand and diversify their economies and export sectors.

Against a background of substantial risks and challenges, some of which are exogenous, PIC governments must prudently and effectively manage the factors which they can control to achieve best possible economic outcomes.

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Greater international links in banking — challenges for banking regulation

Calvin Doan, Veronica Glanville, Adrian Russell and Damien White[1]

Banking regulators in many parts of the world are confronting the issue of how to marry their domestic policy responsibilities with the increasingly international activities of large banks. This paper highlights the issues arising, the solutions being adopted and the benefits and roadblocks that can emerge when integrating banking regulation. This is an area of considerable interest in Australia and New Zealand because of the common ownership of the largest banks in both countries.

This paper was the basis of a presentation by Damien White to the 11th Melbourne Money and Finance Conference held on 19-20 May 2006.

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1 The authors are from Financial System Division, the Australian Treasury. This article has benefited from comments and suggestions provided by Chris Legg and Jim Murphy. The views in this article are those of the authors and not necessarily those of the Australian Treasury.

Introduction

A major issue being faced by banking regulators in many parts of the world is how to marry their domestic policy responsibilities with the increasingly international activities of large banks.

In common with most industries, retail banking began as a primarily domestic activity. Banking regulation for the most part also grew with a domestic focus — principally protecting domestic depositors and maintaining domestic financial stability. Often this regulation contained strict rules governing — and in many cases essentially banning — foreign entry to banking systems.

However, over time, there has emerged increasing international integration in the banking industry. In some cases this has been aided by governments recognising the benefits of competition in banking and liberalising entry into their domestic markets. And, most recently, banks 'offshoring' functions has created further internationalisation within banks — even in those that only offer services in a single country.

While this has been occurring, most countries have retained a strong domestic focus in their prudential regulation. As a result, some pressures have arisen in the domestic regulation of banks and in how best to maintain domestic financial stability as risks from banks based in, or with operations in, other countries increase. The challenge is, how can we benefit from the efficiencies in the banking sector that arise from international trade in financial services and capital flows while still maintaining the appropriate level of safety in the domestic banking system? Another way of putting this is that it is not simply sufficient to open your borders; you must also examine how your domestic regulatory frameworks interact with those of other countries.

Over the last few years, this issue has generated considerable interest and work in Australia — both in government and in the major banks — because of the common ownership of the largest banks in Australia and New Zealand. But Australia and New Zealand are not alone in having to confront these issues, with the European Union (EU) in particular attempting to integrate the regulation of its member countries.

This paper highlights the issues that countries, especially Australia and New Zealand, are considering and the benefits that can arise when integrating their banking regulation. Hopefully these issues stimulate debate about how regulation and banking might evolve across borders to generate economic benefits for countries while protecting them from financial sector vulnerabilities.

A short history of modern Australian banking regulation

Modern banking regulation in Australia essentially began with the introduction of banking legislation in 1945 that introduced strict quantitative and qualitative controls, interest rate controls and lending directives. 'In addition the system was not open to foreign bank entry and offshore transactions.'[2]

Over the intervening decades Australian banking regulation has moved away from such quantitative rules towards a system of risk-based regulation. This has recognised that overly constrictive regulation inhibits competition, innovation and efficiency — and that allowing financial institutions more freedom, while still managing risks, benefits the whole economy. In the process, regulation to address financial stability has become increasingly concerned with cross-border issues.

Liberalisation started with some tentative reform in the 1970s, with more substantial reform following the Campbell Inquiry in 1979. Reform was aimed at improving efficiency and stability in the tightly controlled banking sector, which in the 1960s and 1970s had lost market share to less regulated non-bank financial intermediaries. By the mid-1980s interest rate controls and credit directives had been removed and the licensing of foreign banks had been introduced. Foreign banks were initially only allowed to operate as local subsidiaries of their foreign parents. Foreign branch operations were allowed following a further relaxation of the regulations in 1992.

While Australia has substantially opened up its banking sector to foreign entrants, we maintain different regulation of foreign bank subsidiaries and branches in our market because of the 'depositor preference' rules in the *Banking Act 1959*. Depositor preference requires Australian incorporated banks, including local subsidiaries of foreign banks, to hold sufficient assets in Australia to meet deposit liabilities in Australia in the event of failure. It is difficult to apply depositor preference to foreign bank branches, as they are not separable from their parent, so they face restrictions on retail deposit taking to protect Australian depositors.

Financial deregulation in the 1970s and 1980s facilitated significant change in Australia's financial system over the next decade, with a large increase in banking assets and the development of new products, some of which were complex and risky. The trend towards product proliferation and the blurring of traditional institutional boundaries created new risks and challenges for regulators and again gave impetus for further reform of the regulatory system.

The *1997 Financial System Inquiry Final Report* — or Wallis Report — was largely a response to these market trends. Following the release of this report, our current

2 Edey and Gray (1996).

risk-based functional approach to financial sector regulation was adopted. A functional approach to regulation attempts to achieve greater stability while ensuring competitive neutrality between different types of institutions, including the local operations of foreign institutions, offering products and services with similar characteristics.

There continues to be increased operation of banks across borders, exemplified by the operations of Australian banks in New Zealand. The challenge again posed is ensuring that any regulatory reform allows improvements in the efficiency and competitiveness of the marketplace without exposing the banking sector and economy to excessive risks.

Regulatory responses around the globe

The increased development of cross-border banking brings new dimensions to the issues facing governments and regulators in regulating banks. The questions expand from simply how to get the best outcome for your country to include: will foreign regulators' actions affect us; could we meet our domestic responsibilities and get the best outcome for two or more countries by choosing a different course of action; and how much reliance can be placed on systems and infrastructure located in other jurisdictions?

There have been a variety of responses.

Basel Committee on Banking Supervision

An early response was the setting-up in 1974 of the Basel Committee on Banking Supervision by the G-10 countries' central banks following serious disturbances in international currency and banking markets. Initially it discussed international cooperation to close gaps in the supervisory net. Gradually it has moved on to improving international supervisory standards by issuing core principles for banking supervision and developing a consistent capital adequacy framework.

The core principles address supervision of international banks with the aim that the local and foreign operations of international banks are sufficiently supervised by the home-country and host-country regulators in a consolidated fashion, while ensuring the compliance costs that could result from being supervised by multiple regulators are minimised.

The Basel Capital Accord aims to create convergence in international capital adequacy requirements. The Committee considered that this would strengthen the stability of the international banking system and remove competitive inequality arising from differences in national capital requirements.

Memorandums of understanding between regulators

Another response, which has been developed by regulators dealing with cross-border issues, is the use of practical expressions of intent in the form of memorandums of understanding (MOUs) with other regulators. These MOUs generally set out the responsibilities of different supervisors and contain protocols for effective information sharing and, more recently, cover responsibilities in a crisis situation.

Home regulators with banks which engage in cross-border activities often sign MOUs with host regulators in countries where the banks have significant operations. An example from Europe is the Austrian Financial Market Authority, which has signed a number of MOUs to ensure that it can supervise internationally operating Austrian banks on a consolidated basis.

In 2003, the central banks of Denmark, Finland, Iceland, Norway and Sweden entered a MOU on financial crisis management. It applies to any bank domiciled in a Nordic country that has cross-border establishments in other Nordic countries. In 2004, an additional, more specific MOU was signed on cross-border cooperation in the supervision of Nordea Banking Group, which is domiciled in Sweden and ranks between the first- and third-largest bank in each of the Nordic countries. The key motivation is that a decision by one central bank in a crisis situation will have important implications for other Nordic central banks.

All EU banking supervisors are also party to two EU-wide MOUs, signed in 2003 and 2005, which set out guiding principles for cooperation in crisis situations.

In Australia, in the last few years the Australian Prudential Regulation Authority (APRA) has entered into MOUs with the prudential regulators of New Zealand, the UK, Hong Kong, China, Germany, the USA and the Netherlands to assist with current or potential cross-border banking issues.

Legislative frameworks

The use of MOUs is a welcome development but regulators themselves can only do so much unless there are regulatory frameworks that facilitate cross-border coordination. This is usually the province of governments.

The EU is at the forefront of this issue as it is trying to integrate its member nations. The single banking market has been in place since 1993. The approach adopted involves three pillars:

- harmonisation of particular regulatory laws and practices;

- home-country control of banks, reinforced through cooperation between national regulators — which means that a bank operating as a branch in other member states will be supervised by the regulator in the country of origin; and

- mutual recognition by national supervisors of the rules and regulations in the countries of origin of foreign bank branches operating in their territory.

The single banking market makes possible the granting of a single licence recognised throughout the EU. This allows credit institutions to set up branches and offer services throughout the EU and to compete on an equal footing.

The EU Financial Services Action Plan was set up in 1999 to provide a framework for progress to a single economic market in financial services. But continuing differences in approaches in different nations have led to concerns that there is still significant work to be done to reduce the regulatory burden faced by banks operating across borders within the EU (further information is provided in the box below).

European Union Financial Services Action Plan

The Financial Services Action Plan was set up in 1999 to provide a framework for progress to a single economic market in financial services and to provide impetus for EU member nations to implement the measures required to do so. The Action Plan was largely completed by its 2004 deadline, with 39 of its 42 measures having been adopted and the others being well advanced.

While significant progress has been made, difficulties have arisen that generally stem from the different starting points of member nations — nations had different traditions and approaches to banking supervision — and from differing national implementation of EU Directives. In the majority of cases, implementation of the Action Plan via directives rather than regulations has allowed for these variations in national adoption. An additional problem has been the failure of some directives to be incorporated into national law by all 25 member nations. By late 2005 only five measures had been incorporated by all member countries.

While complete harmonisation is unlikely to occur in the foreseeable future, there have been attempts by organisations such as the Committee of European Banking Supervisors to improve levels of harmonisation. The Committee has been issuing guidelines to achieve better alignment of supervisory practices and to improve information sharing and cooperation between supervisory agencies. The development of training and staff exchange programmes to create a more integrated supervisory culture has also been proposed.

The Committee views the implementation of the recently issued Capital Requirements Directive, which transposes the Basel II capital adequacy framework into EU law, as an important opportunity to improve convergence of standards and day-to-day practices in member nations.

The Australian and New Zealand response

Australia and New Zealand have also been tackling this issue over the last few years. The Australian and New Zealand banking markets are among the most highly integrated in the world — partly because of New Zealand's liberal policy towards foreign ownership of banks. Around 85 per cent of New Zealand bank assets are Australian-owned and New Zealand assets comprise around 15 per cent of the total assets of Australian banks. Some banks share systems across their Australian and New Zealand businesses. The same four banks are large and important in both countries.

The regulators, APRA and the Reserve Bank of New Zealand (RBNZ), have entered into formal and informal arrangements to enhance working relationships and cooperation. These arrangements include an MOU, a Terms of Engagement on the

implementation of Basel II and regular meetings. However, the need for change in the regulatory framework to better reflect the level of integration has been identified.

In 2004, the Australian and New Zealand Governments announced their desire to move beyond a free trade relationship, and take steps towards a single economic market. In the area of banking services, the near-term objective is to achieve a 'seamless regulatory environment'. This objective is important both for financial stability and efficiency reasons.

From a financial stability perspective, the actions of one supervisor may have implications in the other country which need to be considered. In addition, due to the high level of commercial integration, the fallout from any financial difficulties in the four major banks is unlikely to be confined to a single country — even if it originates in one country.

From an efficiency perspective, minimising regulatory compliance costs and inefficiencies has direct benefits for banks, consumers and investors. In addition, allowing banks to choose an optimal structure and operate efficiently is important if they are to remain competitive in an increasingly global financial services environment.

In light of the single economic market objective, the Australian Treasurer and New Zealand Finance Minister established the Trans-Tasman Council on Banking Supervision to promote a joint approach to banking supervision that delivers a seamless regulatory environment in banking services. The Council's aim is to facilitate the integration of the two markets to the greatest extent possible, while maintaining the safety, stability and efficiency of both financial systems and recognising that we are two sovereign nations.

In the first instance, the Council was asked to report on legislative changes that may be required to ensure that APRA and the RBNZ can support each other in the performance of their current regulatory responsibilities. The Council's terms of reference also require it to:

- enhance cooperation on the supervision of trans-Tasman banks and information sharing between respective supervisors;

- promote and review regular trans-Tasman crisis response preparedness relating to events that involve banks that are common to both countries; and

- guide the development of policy advice to both governments, underpinned by the principles of policy harmonisation, mutual recognition and trans-Tasman coordination.

At their annual bilateral meeting in February 2006, the Australian Treasurer and New Zealand Finance Minister announced that both governments had agreed to legislate the changes recommended by the Council.[3]

These legislative changes will ensure that APRA and the RBNZ can support each other in the performance of their statutory prudential responsibilities and, wherever reasonably possible, avoid actions that could have a detrimental effect on financial system stability in the other country. APRA and the RBNZ will also be required to consult each other on these matters.

The legislative proposals are a first step in creating a regulatory framework that better reflects the high degree of interdependence of our banking markets and will facilitate coordination beyond what can be achieved through mechanisms such as MOUs. The proposals do not aim to align the regulatory objectives, rules and approaches but rather allow the two countries' regulatory frameworks and regulators to operate with fewer points of potential friction (and have ironed out the most pressing issues in this regard). In addition, we have recognised that requiring each country's supervisor to explicitly consider what impact its actions have 'across the Tasman' can maintain or even enhance safety and stability, while allowing more efficient banking outcomes.

One such example is in relation to IT systems in banks. In a situation where a bank is in financial difficulty, regulators need access to the bank's systems to gain sufficient information on which to base decisions and, possibly, to implement the agreed course of action. It may be less costly, because of economies of scale, for each of the four major banks to run a single system from one site to support both its Australian and New Zealand operations. But this can create uncertainties for one regulator — as the systems are in a different jurisdiction, will they be assured access to them in a crisis? (This is an issue with any offshoring arrangement.) The legislation aims to provide comfort to both regulators that the other will not unduly interfere in the provision of centralised services to banks in the other country. Consequently, the regulators will be able to afford the banks greater flexibility in how they structure their businesses within the trans-Tasman market, which is expected to bring compliance cost reductions and efficiency benefits.

3 In Australia these changes are being progressed through the Financial Sector Legislation Amendment (Trans-Tasman Banking Supervision) Bill 2006, which was introduced into Parliament on 14 September 2006. Mirror legislation is also progressing through New Zealand's Parliament.

The future of cross-border banking supervision

A number of mechanisms are being developed to promote convergence of regulation and cooperation in cross-border supervision. But in many ways the world is still in the early stages of deciding how best to achieve the balance between allowing banks more freedom to operate internationally and maintaining safety and stability.

The approaches taken to date tend to emphasise harmonised minimum standards and coordination and cooperation between national supervisors. The Basel Committee has high-level principles relating to cross-border supervision. The EU model has harmonisation of certain rules and mutual recognition while maintaining separate country supervisors. The Nordic supervisory authorities have established protocols for cross-border crisis management. The trans-Tasman model is promoting coordination between APRA and the RBNZ but still allows for different regulatory frameworks and rules.

These are all significant steps towards addressing cross-border supervisory issues and will generate real benefits for the banking industry, consumers and regulators. But is it possible to achieve greater efficiency gains and promote greater safety and stability? If this is our goal, there are a number of difficult issues to address and significant hurdles to negotiate. It will be how these issues and hurdles are resolved, including the weighing-up of benefits and costs, that will determine the future path of regulation and the banking business environment.

International standards and codes

In recent times, significant effort has been devoted to the adoption and implementation of international standards. Many of the international standards have been adopted by the IMF and World Bank, which measure countries against them as part of their regular assessments. Australia has been a participant in and supporter of this process. These standards have an important influence on harmonising cross-border regulation.

In Treasury, we have begun thinking about two high-level issues relating to ensuring that international standards are of the best quality possible.

The first is, how appropriate are the processes and mechanisms for setting international standards?

A number of international standards — including the Basel Core Principles and capital accord — have been developed by international committees of national regulators. In many cases these committees were formed to consider a small number of specific issues and from that grew into a role in developing and promulgating standards to their members and other similar organisations. These committees clearly have expert

knowledge in their fields and a worldwide range of experiences to draw on in developing standards.

But given the importance that these international standards are assuming in domestic policy formulation, there is a question of whether policy makers — financial policy agencies like the Treasury and finance ministries — might add value to the process of determining international standards. At the domestic level, policy makers have a key role in developing and deciding on legislation.

The IMF (2004) paper *Financial Sector Regulation: Issues and Gaps* covers the state of implementation of international standards and raises issues with respect to the design of standards. One policy challenge raised by the IMF is that standard setters can have a narrow or specific focus, rather than financial system-wide view. We think that there is scope to increase the role of policy makers in the specific standards setting bodies — including where bodies of regulators set rules. This would bring a broader perspective — not just financial system-wide view but economy-wide — of the standards and should ultimately help to develop better standards.

The second high-level issue is the goal of the various international standards. In our view there are two main goals: setting out good regulatory practice to facilitate well-functioning markets (and confidence in those markets); and improving consistency in regulation across countries to assist cross-border business and flows, to reduce opportunities for regulatory arbitrage and to monitor contagion risks.

In general, these goals work in the same direction. However, some tensions have been recognised between the two objectives. The IMF, in the same paper mentioned previously, has noted that some standards can assume certain legal, policy and institutional conditions for financial sector regulation. These conditions may not be present in all countries and therefore the practices suggested may not be most appropriate. One response to this has been that standards often allow flexibility in implementation so that countries can adapt the standards to their own circumstances. However, as the IMF points out, there is a tension between allowing flexibility and the goal of international harmonisation.

We do not have answers to these tensions. However we consider that it is important for standard setters when determining international standards, and for national governments when adopting them, to address these issues thoroughly to ensure that the ultimate objectives are clear and that the correct balance is struck between the objectives.

For example, in Australia's implementation of International Financial Reporting Standards, a strategic decision was made that the Australian Accounting Standards Board be permitted to adapt an international standard if it is in the national interest to

do so. Judging when a domestic concern is weighty enough to warrant a deviation from the international standards is not always an easy task. Too many domestic deviations would undermine the benefits that flow from implementing the international rules.

Practical integration issues

There are also more 'hands on' or practical issues that arise in any circumstance where we wish to achieve greater integration of banking regulation across borders — particularly if the end goal is complete integration, such as one set of rules or one supervisory approach or, perhaps, one regulator.

Any international regulatory harmonisation encounters the issue of governments wanting to protect their sovereignty and national interests. Consequently, regulatory models that require governments to forego independent rule-making ability and independent responses to regulatory matters may not be attractive, and it is often difficult to convince constituents in all participating countries of the benefits (and, indeed, every country may not benefit from particular proposals). This is particularly so in an area such as banking regulation where the costs associated with a crisis can be substantial. It is here that those with an interest in achieving greater regulatory harmonisation have a role in advancing arguments for it and building support. Australia and New Zealand, being only two countries and having similar characteristics, should have a greater chance of achieving agreement than larger country groupings.

The issues of sovereignty and national interest often arise because of existing differences between countries, including their political structures and regulatory frameworks and philosophies. For example, in the trans-Tasman context, depositor preference plays an important role in determining the approach to supervision in Australia but New Zealand is not attracted to models that provide preference to national depositors over other bank creditors. To achieve one set of rules there would need to be compromises, on the balance of overall objectives where these differ in existing regulatory frameworks and on the instruments to achieve those objectives.

Even if these issues were overcome, implementing the same rules the same way in different countries can often be a challenge. Any differences that arise in implementation can reduce the benefits achieved from having the same rules. As was noted earlier, this has been an issue in the EU member states.

One method of encouraging consistent implementation is a single multi-country regulator or an overarching body above national regulators. This would require even closer cooperation and commitment between countries than a single set of rules and may only have limited practical applicability — such as in an economic and political

union like the EU and, possibly, Australia and New Zealand. Indeed, Australia and New Zealand have started down this path in other areas of regulation with the formation of the Trans-Tasman Accounting Standards Advisory Group and negotiations for a single regulator for therapeutic goods.

Then there are issues regarding governance, accountability and funding. A single set of rules or single regulator raises the governance questions of who the standard setting bodies or regulators are, who the members of the bodies are such that they fairly protect the interests of all countries, who appoints the members, and who resolves disputes. Accountability raises questions of who the bodies are answerable to — that is, can a single body function well if it answers to multiple parliaments or if individual members answer to different parliaments? The funding issues involve deciding who pays for the running costs of the standard setter or supervisor and who bears the potential costs of any crisis intervention or failure.

It is also the case that banking, and its regulation, do not operate in a vacuum. Other laws, such as taxation, insolvency, corporations and financial reporting, can have a large influence on the operation of banks. It may be that differences in these laws between countries can prevent banking prudential regulation from converging. Requiring other areas of law to converge before you can agree on one set of prudential rules for banking adds substantial complexity to the task.

Conclusion

These are difficult policy issues that pose challenges for decision makers and legislators. The European experience suggests that full integration can be a slow process and any efficiency and other gains may take time to materialise. Other areas of the trans-Tasman relationship show what might be possible.

The degree of business integration in the banking sector and the potential benefits of regulatory integration suggest that work to underpin a vision of a supervisory framework that reflects the level of interdependence of banking markets should continue. And indeed, with the Trans-Tasman Council on Banking Supervision still having major parts of its work programme ahead of it, we will continue to work with our New Zealand colleagues to ensure that our countries achieve the goal of a 'seamless regulatory environment'.

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2005-06 in review: high terms-of-trade, low unemployment

The Australian economy grew by 2.8 per cent in 2005-06, reflecting strong growth in business investment and moderate growth in consumption.[1] High export prices have continued to be a major influence on the economy, particularly through stimulating mining and construction investment. The unemployment rate fell to 30-year lows, reflecting robust employment growth, while the participation rate rose to record highs. The Consumer Price Index rose by 3.2 per cent in 2005-06, partly due to the temporary impacts of higher fuel and fruit prices.

1 This article is based on economic data released prior to 2 November 2006, including the Annual National Accounts for 2005-06.

Overview

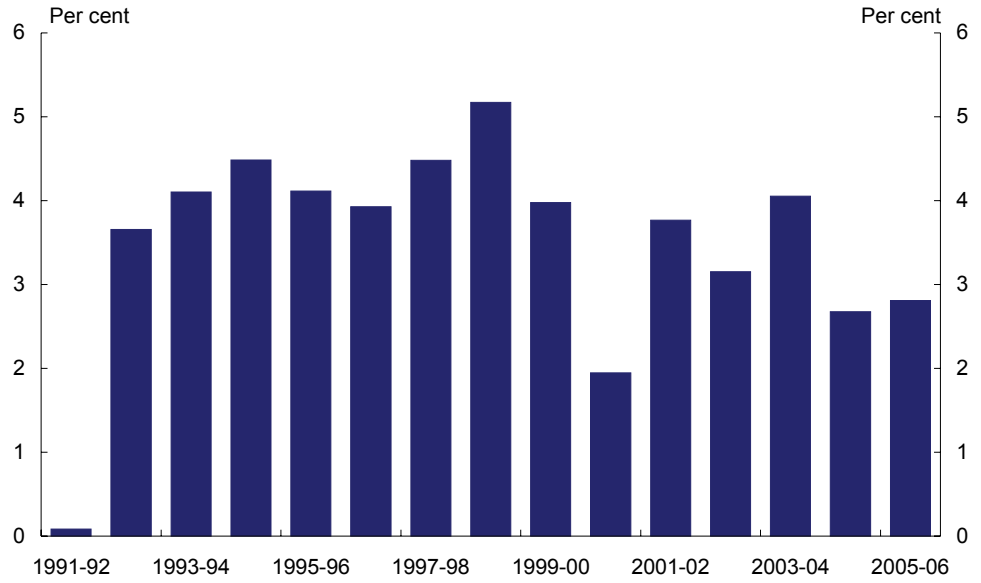
Real GDP grew moderately in 2005-06, but more slowly than in the first few years of this decade. Sharp increases in the prices of key export commodities such as iron ore and coal were important influences on the economy.

Strong demand for non-rural commodities, particularly from China, has boosted non-rural commodity prices and as a result Australia's terms-of-trade is currently around 30-year highs. This has contributed to very strong investment growth, particularly for the mining sector, but has not yet translated into stronger export volumes, although some non-rural commodity exports have grown strongly.

While GDP growth remains moderate, labour market outcomes have been strong, with robust employment growth contributing to further reductions in the unemployment rate. Household consumption continued to grow moderately following strong growth in recent years, while dwelling investment fell and continued the mild downturn begun in 2004-05.

Inflation rose in 2005-06, partly driven by specific shocks from higher fuel prices and the effects of Cyclone Larry on fruit production and prices. Wage growth was strong, particularly in those sectors experiencing rapid expansion, but improved relative wage flexibility has limited a more generalised wage acceleration.

Chart 1: Real GDP growth



Source: ABS 5204.0.

The world economy

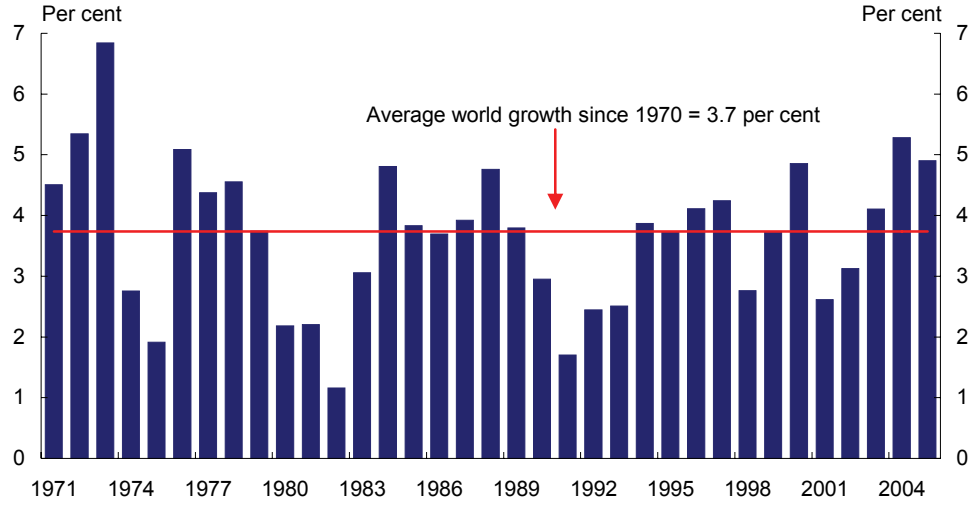
The world economy grew by a strong 4.9 per cent in 2005, after expanding by 5.3 per cent in 2004 (a 30-year high). This outcome exceeded both the 2005-06 Budget and MYEFO forecasts of 4¼ and 4½ per cent respectively, and occurred despite higher oil prices and the gradual withdrawal of monetary policy stimulus. Growth was underpinned by benign financial market conditions and strong corporate balance sheets.

The world economy continued to expand strongly over the first half of 2006, with a number of countries, in particular China, growing at a faster-than-expected-pace. The pattern of growth across countries became more broadly based, with the pick-up in the Euro area maintaining momentum, Japan's expansion continuing, and the emerging regions of East Asia and Latin America maintaining impressive growth rates.

Headline inflation rose beyond central bank comfort zones in a number of countries, due largely to the first-round effects of higher oil prices. While the pass-through of higher energy prices to core inflation was generally limited, emergent capacity constraints in both labour and product markets led to a pick-up in core inflation rates in the major economies. In response, monetary policy settings were tightened in a range of countries.

Non-rural commodity prices continued to rise strongly over 2005-06, reflecting robust demand growth associated with the global economic expansion. Energy prices, and particularly oil prices, increased strongly in this period. More recently, prices for base metals have risen strongly.

Chart 2: World GDP growth[(a)]



(a) World GDP growth rates are calculated using GDP weights based on purchasing power parity.
Source: International Monetary Fund.

Developments in key economies

In the United States (US), GDP grew by 3.4 per cent in 2005-06. Private consumption and business investment were the major drivers of growth, while a widening in the US trade deficit saw net exports subtract from growth. The US current account deficit increased over the year, reaching a record US$840 billion or 6.5 per cent of GDP. Employment growth was robust over 2005-06, while strong corporate profits resulted in higher corporate tax receipts. This revenue buoyancy assisted in decreasing the US fiscal deficit, which fell to 1.9 per cent of GDP in the 2006 fiscal year, from 2.6 per cent in 2005.[2]

Further monetary tightening by the Federal Reserve occurred in 2005-06, with interest rates rising by 200 basis points to 5.25 per cent, following increases of 225 basis points in the previous year. The year also saw signs of a softening in the US housing market. Growth in house prices fell from the previous year's near-record pace and the contribution of residential investment to GDP growth over the year turned negative in the June quarter 2006.

China's GDP grew by a faster-than-expected 10.3 per cent in 2005-06, the fastest rate of growth since 1995-96. This strong performance was largely driven by an acceleration in investment growth, with investment in transport infrastructure and real estate particularly strong. Surging net exports also made a strong contribution to growth. The Chinese Government revalued the Renminbi by 2 per cent against the US dollar in July 2005, and announced that it would no longer be pegged to the dollar but would be managed with reference to a basket of currencies. By the end of 2005-06 the Renminbi had appreciated by a further 1.4 per cent.

The Japanese economy continued its recovery over the course of 2005-06, with growth becoming increasingly broad-based. Japan's GDP grew by 3.2 per cent in 2005-06, after growth of 1.6 per cent in 2004-05. The labour market continued to make modest gains, with the unemployment rate reaching an 8-year low of 4.0 per cent in May 2006. Following signs that the economy had emerged from an extended period of deflation, the Bank of Japan ended its policy of quantitative easing in March 2006 and adopted a new monetary policy framework focused on the overnight interest rate.

The rest of East Asia grew by 5.4 per cent in 2005-06, after growing by 4.8 per cent in 2004-05. Growth in the region remained export-led but was also supported by solid growth in domestic demand. Buoyant domestic demand, coupled with growing oil import bills, resulted in a diminishing of current account surpluses in most countries. Investment as a share of GDP generally remained well below levels experienced prior to the Asian financial crisis. Rising inflation emerged as a major concern across the

2 The US fiscal year runs from 1 October to 30 September.

region, mainly due to increases in non-rural commodity prices and the reduction of fuel subsidies. As a result, monetary policy generally maintained a tightening bias throughout the year.

Euro-area GDP growth strengthened to 2.1 per cent in 2005-06 following growth of 1.4 per cent in 2004-05. This outcome was the strongest since 2000-01, with domestic demand the major contributor. The European Central Bank raised official interest rates due to a pick-up in economic activity and inflation persisting above its medium-term target range. Growth in the United Kingdom in 2005-06 matched Euro-area growth, at 2.1 per cent, following growth of 2.4 per cent in 2004-05. Weaker private consumption was largely responsible for the easing in growth, partially offset by stronger exports.

Higher oil and non-rural commodity prices were again a significant factor behind the performance of many developing and emerging market economies. Robust economic growth continued in Latin America over 2005 and picked up over the first half of 2006, with many countries benefiting from the strong global demand for commodities. Higher non-rural commodity prices also benefited the economies of sub-Saharan Africa, with the region experiencing one of its strongest periods of sustained economic expansion since the early 1970s. In emerging Europe, regional economic growth remained robust, despite moderating from the exceptional pace recorded in 2004.

China's demand for commodities and the terms-of-trade

China has had a dramatic impact on a number of globally traded commodities in recent years. As shown by Chart 3, China now accounts for over 40 per cent of the world's seaborne trade in iron ore, around 30 per cent of the world's consumption of zinc and steel, and around a quarter of the world's consumption of copper, aluminium and nickel. In the last few years, the prices of many of these commodities have risen substantially.

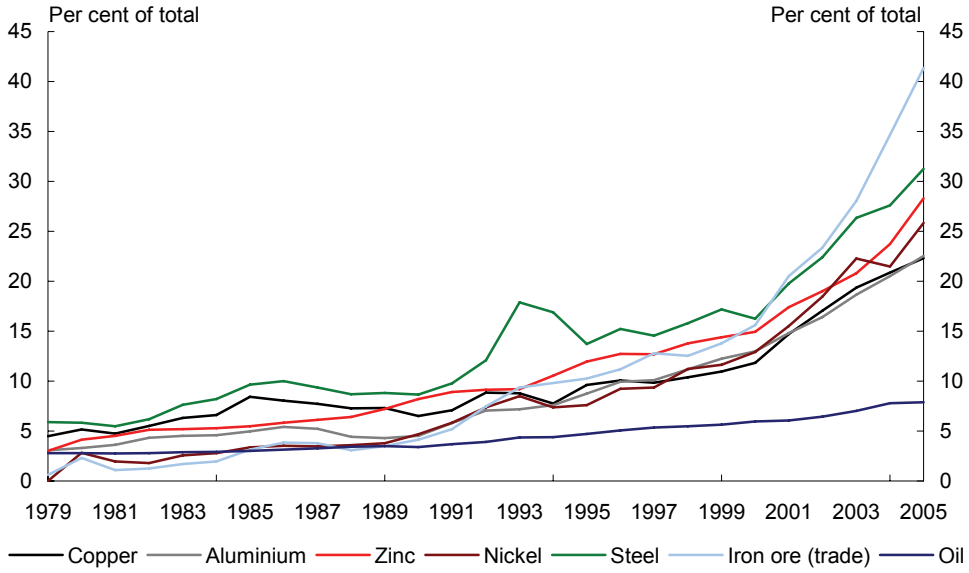
The increase in China's demand for these commodities is being driven by strong economic growth, and in particular, rapid investment growth. Investment in turn is being driven by a number of factors, including: extremely high rates of national saving; a strong comparative advantage in manufacturing; and the continuing process of urbanisation across China, which is leading to a large increase in the demand for housing and infrastructure. China's urban population has grown by an average of 20 million people each year over the past decade.

These factors have led to a rapid increase in China's demand for construction materials. This demand has outpaced the growth in China's production of construction

materials, leading to a substantial increase in China's imports of many of these materials in recent years.[3]

China's demand for non-rural commodities, combined with the long lag time between investment and new capacity coming on stream, has contributed to the sharp price rises in these resources over 2005-06. Through the year to June 2006 the price of base metals increased by 66 per cent, with zinc and copper prices rising by 160 and 112 per cent respectively. Coal and iron ore prices also rose significantly in 2005-06 after also increasing sharply in 2004-05.

Chart 3: China's share of world materials demand (1979-2005)



Source: Macquarie Research.

The Australian economy

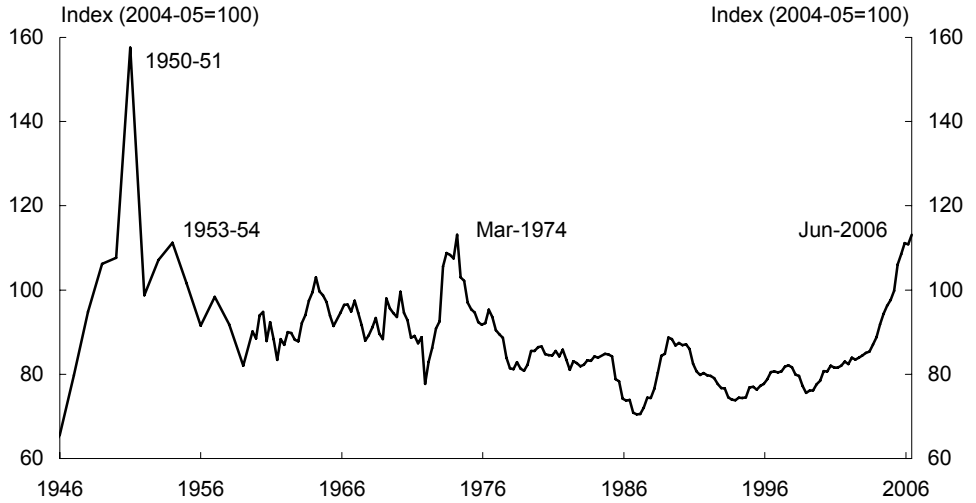
The sharp rise in non-rural commodity prices in 2005-06 has contributed to a sharp increase in Australia's terms-of-trade, driven by a 14.7 per cent increase in export prices and a 3.5 per cent rise in import prices.

The significant increase in the terms-of-trade has boosted national income and generated benefits for the economy. The improved terms-of-trade has also contributed

3 The Chinese investment boom is further discussed in 'Reflections on the global economy and the Australian mining boom' by David Gruen and Steven Kennedy in this issue of *Economic Roundup*.

to a healthy environment for business investment, along with strong corporate balance sheets and a low cost of capital.

Chart 4: Australia's terms-of-trade



Dates indicate the timing of the peaks in the terms-of-trade.
Source: From September 1959: ABS National Accounts (cat. no. 5206.0), prior to September 1959: MW Butlin (1977) 'A Preliminary Annual Database', RBA Discussion Paper 7701.

Net exports

Net exports subtracted around 1.1 percentage points from GDP growth in 2005-06. Import volumes grew strongly, reflecting strong business investment, while export volumes grew by less than expected.

Non-rural commodity exports grew by 2.5 per cent in 2005-06, following similar growth in 2004-05. These exports were affected by adverse weather conditions, particularly the impact of Cyclone Clare, in the first half of 2006. Growth in non-rural commodity exports was weaker than expected, reflecting longer lead times associated with mining investment than anticipated at 2005-06 Budget. Farm production increased by 4.5 per cent in 2005-06.

Exports of elaborately transformed manufactures grew by 5.4 per cent in 2005-06, but continued to face competitive pressures from low-cost economies such as China and a relatively high exchange rate.

Service exports remained weak over 2005-06, suffering from continued competitive pressures from Asia and Europe and a sustained higher cost of air travel to Australia.

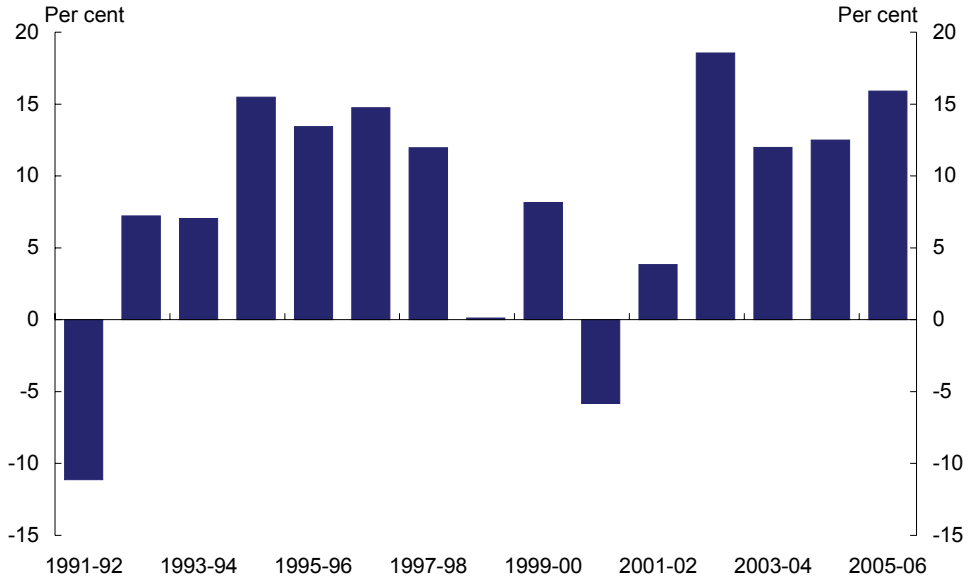
Imports increased by 6.9 per cent in 2005-06, slightly weaker than the 2005-06 Budget forecast. This result was led by strong growth in capital goods imports, reflecting sustained growth in mining investment.

The current account deficit narrowed from 6.2 per cent of GDP in 2004-05 to 5.4 per cent of GDP in 2005-06, reflecting a substantial narrowing in Australia's trade balance, attributable to the improved terms-of-trade position. The improvement in the trade balance was partially offset by a widening in the net income deficit.

Business investment

Business investment grew strongly in 2005-06, increasing by 16 per cent after robust growth in the previous four years. Business investment was the largest contributor to GDP growth in 2005-06. Investment growth was broadly based but particularly strong in the mining industry and in related parts of the manufacturing, construction and transport industries. Strong corporate profitability, a low cost of capital and high capacity utilisation have been important factors in the recent strength of investment.

Chart 5: Private business investment growth



Source: ABS 5204.0.

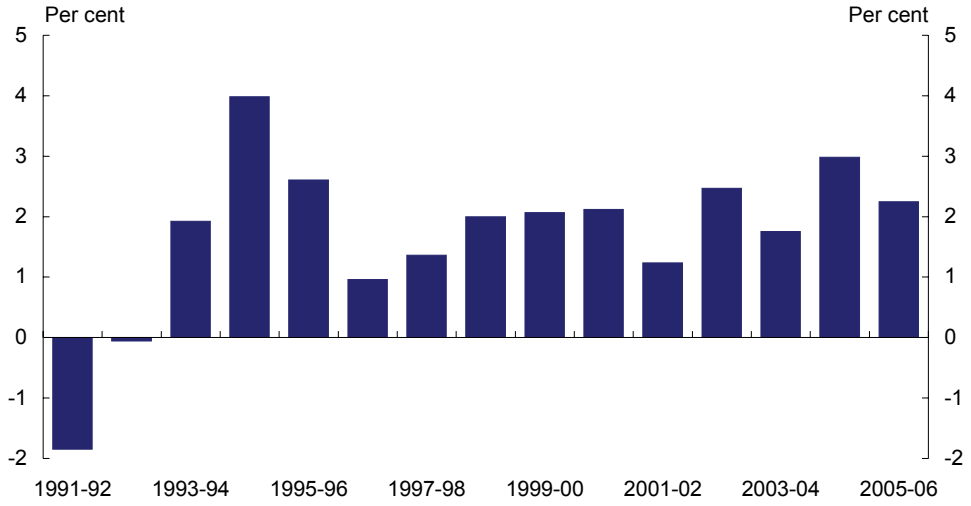
In response to high prices for non-rural commodities, mining investment has grown strongly in recent years. Mining companies invested more than $37 billion over the last three years, with much of this investment directed towards projects in Western Australia and Queensland.

Labour market and wages

Employment continued to grow strongly in 2005-06, with the unemployment rate reaching its lowest level since 1976 (see Box). Total employment grew by 2.2 per cent in 2005-06, following growth of 3.0 per cent in 2004-05. The number of people in full-time employment rose by 107,000 between June 2005 and June 2006, while part-time employment rose by 71,100.

Total employment increased in all States and Territories through 2005-06. Western Australia had the strongest growth, with employment increasing by 4.6 per cent. Queensland also grew strongly, with total employment increasing by 2.9 per cent. The employment growth in these States is mainly a result of the high export prices, and the resulting increase in investment and incomes in those States.[4]

Chart 6: Employment growth



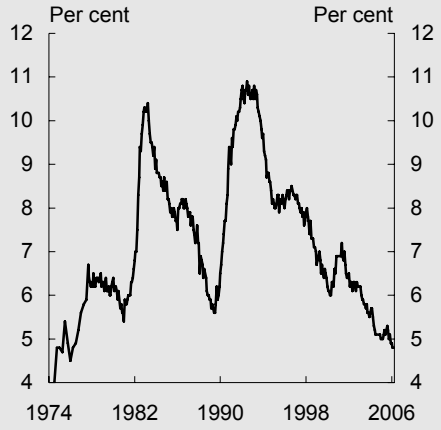
Source: ABS 6202.0.

4 See 'Reflections on the global economy and the Australian mining boom' by David Gruen and Steven Kennedy in this issue of *Economic Roundup*.

Box: Lowest unemployment rate in 30 years

The strong performance of employment growth in 2005-06 helped to push the unemployment rate to 4.9 per cent in May 2006, the lowest rate since the December quarter 1976.

Chart B1: Unemployment rate

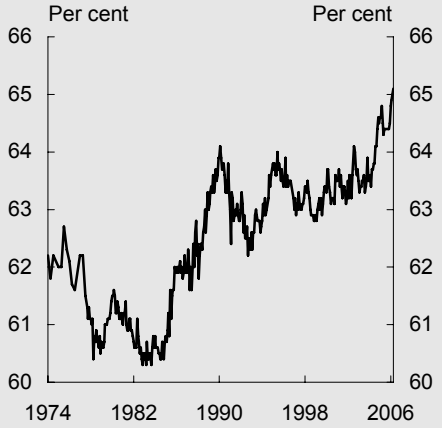


Source: ABS 6202.0.

While the unemployment rate was the same as that of 30 years ago, a greater proportion of the population has a job. The employment-to-population ratio has risen from 59.3 per cent in 1975-76 to 61.2 per cent in 2005-06.

This increase reflects the substantial rise in the participation rate over the past 30 years.

Chart B2: Participation rate



Source: ABS 6202.0.

While all States and Territories experienced solid employment growth in 2005-06, changes in the unemployment rate were more diverse, with Western Australia experiencing the largest fall.

Table B2: State unemployment rates

	2004-05	2005-06	Jun-06
NSW	5.3	5.3	5.5
VIC	5.6	5.3	5.1
QLD	4.9	5.0	4.6
SA	5.5	5.0	4.7
WA	4.7	4.1	3.6
TAS	6.1	6.5	6.5
NT	6.3	5.7	4.9
ACT	3.6	3.2	3.0
Australia	5.3	5.1	4.9

Source: ABS 6202.0. Trend figures are used for NT and ACT for the Jun-06 level.

The influence of the high export prices can also be seen in the industry composition of employment. Employment in the mining industry grew by 21.9 per cent in 2005-06. However, as the mining sector is a relatively small employer, this contributed only slightly to total employment growth, and the larger contribution has come through the associated growth in the construction and business services industries. Strong employment growth was experienced in Construction (growing by 4.7 per cent in 2005-06) and Property & Business Services (5.8 per cent). Employment growth was also strong in Education (6.5 per cent) and Health (5.0 per cent).

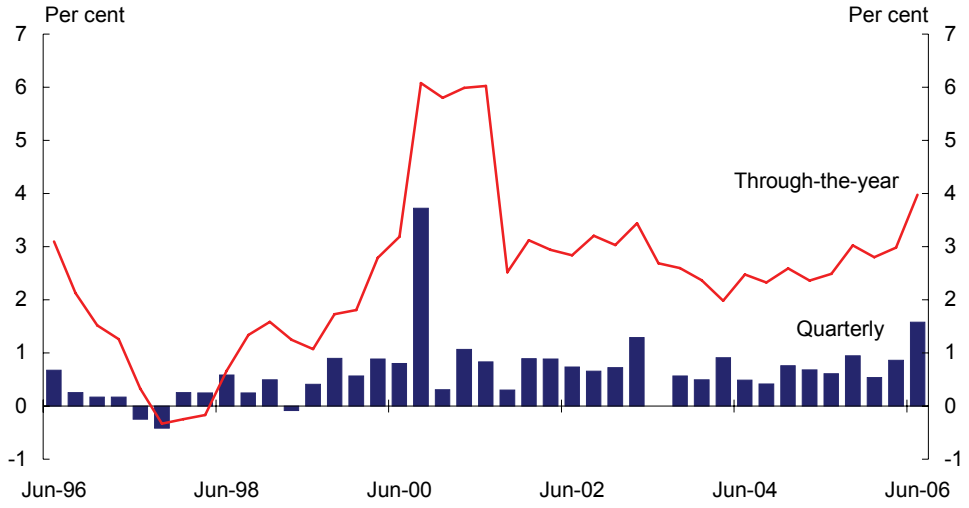
Wages grew strongly in 2005-06, partly as a result of the tighter labour market in 2004-05 and 2005-06. The Wage Price Index grew by 4.1 per cent in 2005-06, up from 3.8 per cent growth in 2004-05. The acceleration in wages was particularly pronounced in the Mining sector (growing by 5.0 per cent in 2005-06) and Electricity, Gas & Water (5.5 per cent). However, strong wage growth in these sectors has not resulted in broader wage rises.

Prices

The Consumer Price Index (CPI) showed relatively strong growth of 3.2 per cent in 2005-06, in part reflecting temporary factors such as rises in fuel and fruit prices.

Through the year to the June quarter 2006 the CPI grew by 4.0 per cent, which (excluding the one-off step when the GST was introduced) is the highest rate since 1995. However, other measures of prices show lower rates of growth. The Reserve Bank of Australia's weighted median and trimmed mean measures of inflation grew by 3.0 and 2.8 per cent respectively.

Chart 7: Consumer Price Index: quarterly and through-the-year growth



Source: ABS 6401.0.

Fruit prices rose by a record 52 per cent in the June quarter 2006, primarily due to a 250 per cent increase in banana prices, and contributed around 0.5 of a percentage point to the quarterly increase in the CPI. Banana prices increased sharply due to the impact of Cyclone Larry. Fuel prices rose in 2005-06 as world oil prices rose, with automotive fuel prices rising by 24.6 per cent through the year to the June quarter 2006. Excluding the direct impact of these two factors, the CPI grew by 2.6 per cent through the year to the June quarter 2006.

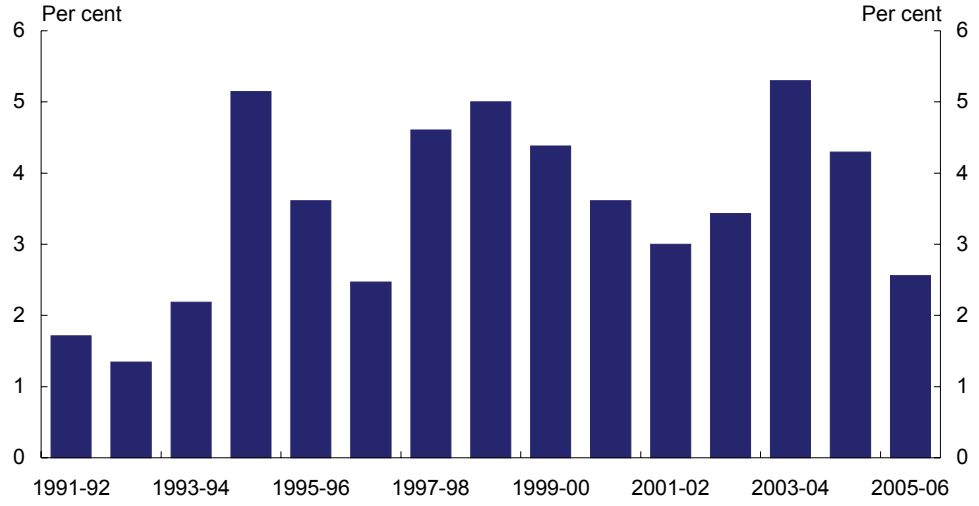
Household consumption and dwelling investment

Household consumption expenditure moderated in 2005-06, while dwelling investment fell and continued the mild downturn begun in 2004-05.

Household consumption growth moderated to 2.6 per cent in 2005-06, following strong growth in 2003-04 and 2004-05. The moderation in household consumption reflected sharp increases in petrol prices and an easing in growth of household dwelling wealth (reflecting the continued slow pace of house price growth), which were partly offset by strong household income growth.

Strong growth in household incomes and moderate consumption growth have seen households begin to strengthen their balance sheets. Budget measures in 2005-06, particularly changes to income tax, appear to have largely been saved by households rather than used to increase consumption.

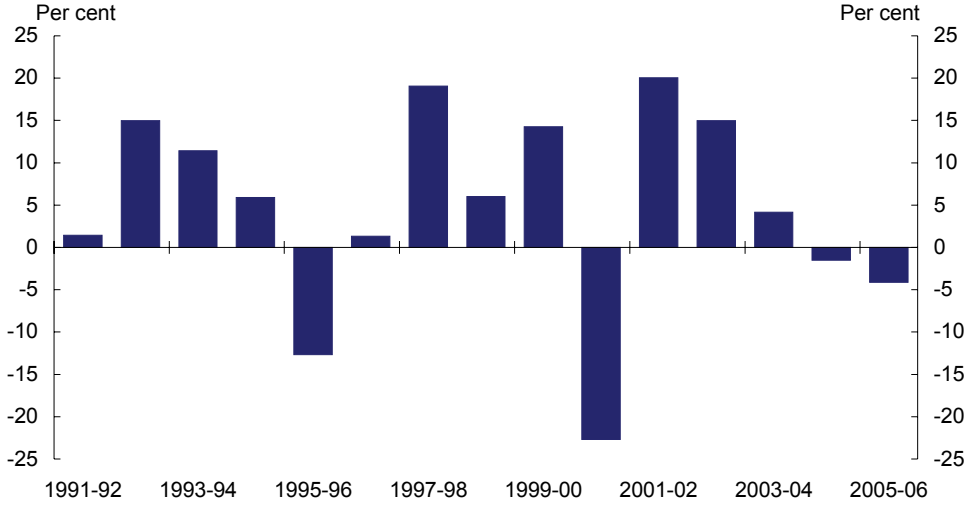
Chart 8: Household consumption growth



Source: ABS 5204.0.

Dwelling investment fell by 4.1 per cent of 2005-06 compared to the Budget forecast fall of 3.0 per cent. This is a continuation in the mild downturn that began in 2004-05 after very strong growth in the early years of the decade. This downturn contrasts favourably with previous housing cycles, where downturns of over 10 per cent were common. Within the components of dwelling investment, both construction of new dwellings and alterations and additions fell in 2005-06.

Chart 9: Dwelling investment growth



Source: ABS 5204.0.

Forecasts and outcomes

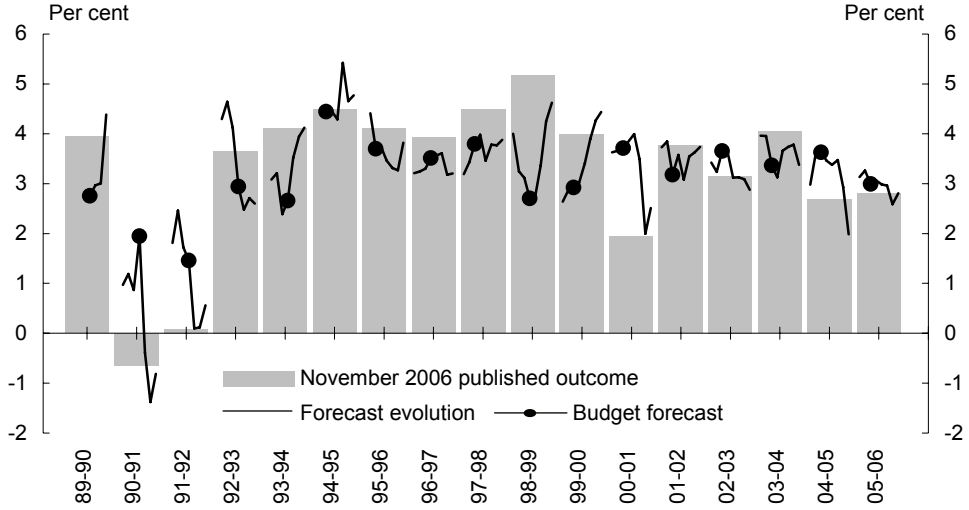
The 2005-06 Budget and MYEFO forecasts for real GDP were for growth of 3 per cent, compared to an outcome of 2.8 per cent. The forecast error of 0.2 per cent compares favourably with the average absolute error in Budget real GDP forecasts of 0.9 per cent between 1995-96 and 2003-04.[5] Chart 10 compares the evolution of the forecasts for 2005-06 with past years.

Table 1 shows the full details of the forecast performance. The key differences between the forecasts and outcomes for domestic demand and output are in the forecasts for consumption, business investment and exports.

Consumption moderated by more than expected in the 2005-06 Budget forecast, growing by 2.6 per cent compared to the forecast for growth of 3¼ per cent. However, while the absolute difference was small compared to other forecasts, the contribution to the overall error in the GDP forecast was significant.

5 See Ewing, Gruen and Hawkins 'Forecasting the macroeconomy', *Economic Roundup*, Autumn 2005 for further details on Treasury's macroeconomic forecasting performance.

Chart 10: Evolution of forecasts of growth of real GDP



Source: ABS 5204.0, Treasury forecasts.

Table 1: Domestic economy forecasts and outcomes for 2005-06[(a)]

	2004-05 Outcomes(b)	2005-06 Budget forecasts	2005-06 MYEFO forecasts	2005-06 Outcomes(b)
Panel A - Demand and output(c)				
Household consumption	4.3	3 1/4	2 3/4	2.6
Private investment				
Dwellings	-1.5	-2	0	-4.1
Total business investment(d)	12.3	6	11	15.4
Non-dwelling construction(d)	8.8	2	8	19.7
Machinery and equipment(d)	15.4	7	13	14.3
Private final demand(d)	4.6	3 1/2	3 3/4	4.2
Public final demand(d)	4.7	4	3	3.9
Total final demand	4.6	3 1/2	3 1/2	4.2
Change in inventories(e)	-0.1			
Private non-farm	0.1	1/4	0	-0.5
Farm and public authorities(f)	-0.2	0	0	0.2
Gross national expenditure	4.5	3 3/4	3 1/2	3.9
Exports of goods and services	3.1	7	4	2.1
Imports of goods and services	12.1	8	7	6.9
Net exports(e)	-1.8	-1	- 3/4	-1.1
Gross domestic product	2.7	3	3	2.8
Non-farm product	2.8	3	3	2.8
Farm product	-0.4	5	0	4.5
Panel B - Other selected economic measures				
External accounts				
Terms-of-trade	9.9	12 1/4	9 1/2	10.8
Current account balance				
$billion	-55.5	-48	-51 1/2	-52.3
Percentage of GDP	-6.2	-5 1/4	-5 1/2	-5.4
Labour market				
Employment (labour force survey basis)	3.0	1 3/4	2	2.2
Unemployment rate (per cent)	5.3	5	5 1/4	5.1
Participation rate (per cent)	64.0	63 3/4	64 1/4	64.5
Prices and wages				
Consumer Price Index	2.4	2 3/4	3	3.2
Gross non-farm product deflator	3.9	4 1/2	4	5.0
Wage Price Index	3.8	4	4 1/4	4.1

(a) Percentage change on preceding year unless otherwise indicated.
(b) Calculated using original (that is, not seasonally adjusted) data.
(c) Chain volume measure.
(d) Excluding second-hand asset sales.
(e) Percentage point contribution to growth in GDP.
(f) Changes in inventories held by privatised marketing authorities are included with the inventories of the farm sector and public marketing authorities.

Source: Australian Bureau of Statistics (ABS) cat. no. 5204.0, 5302.0, 6202.0, 6345.0, 6401.0, unpublished ABS data and Treasury.

The boost to business investment from the high prices for mining commodities was considerably larger than that anticipated in the forecasts, driving a significant portion of the overall divergence. The difference between the export forecasts and outcomes was due in part to the impact of cyclones on the exports of non-rural commodities.

The forecast for the CPI was significantly lower than the outcome, which largely reflects unanticipated higher fuel and fruit prices. The Budget forecasts also underestimated the strength of the labour market, particularly the participation rate.

Index of *Economic Roundup* feature articles, speeches and submissions by topic, 1988-2006

speeches in italics, with initials

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Balance of payments and international trade

Banking and finance

Banking and finance (continued)

Business income and investment

Capital markets

Corporate regulation

Economic Forecasting

Economic Policy

Education and health

Environment

Fiscal Federalism

Fiscal policy

Foreign aid and debt relief

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Labour market and demographics

Labour market and demographics (continued)

The relationship between vacancies and employment growth	Winter 1996
Labour standards (submission)	Spring 1995
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100th Economic Roundup	Spring 2006
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Australia's century since Federation at a glance	Centenary 2001
Eulogy for Robert J. Whitelaw (TE)	Winter 2000
The measurement of saving in Australia	Spring 1999
Treatment of census forms (submission)	Spring 1997
Heritage access (submission)	Autumn 1997
Fair trading (submission)	Autumn 1997
Sir Roland Wilson: eulogy by Ian Castles	Summer 1997
Sir Roland Wilson: eulogy (JS)	Summer 1997
Sir Roland Wilson: obituary by Ian Castles	Spring 1996
Economic role of copyright	Autumn 1996
Strategies for Darwin (submission)	Winter 1994
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Poverty and income distribution

Poverty, inequality and the distribution of income in G-20	Autumn 2003
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Productivity

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Well-being

AJ: Andrew Johnson, AP: Alan Preston, DG: David Gruen, DP: David Parker, JF: John Fraser, JS: John Stone, KH: Ken Henry, MC: Michael Carnahan, MCL: Michael Clark-Lewis; MP: Martin Parkinson, NH: Neil Hyden, PC: Hon Peter Costello, PM: Peter McCray, RS: R Shorgen, RW: Richard Wood, SF: Steve French, TE: Ted Evans.

What's new on the Treasury website

The Treasury's website, www.treasury.gov.au, includes past issues of the *Economic Roundup*. Some of the other items posted on the website since the previous issue of *Roundup* that may be of interest to readers are listed below.

Working papers

2006-04: Perspectives on Australia's productivity prospects

http://www.treasury.gov.au/contentitem.asp?NavId=049&ContentID=1157

Graeme Davis and Jyoti Rahman

Productivity is the key determinant of economic growth and prosperity over the long run. Productivity can increase by Australia catching up to the global technological frontier, and from an outward movement of the frontier. Over the past four decades, Australia's productivity has been mostly between 75 and 85 per cent of that of the US. This gap can, at least in part, be explained by differences in: capital per worker; educational attainment; microeconomic policies; and differing geographic and historical contexts. Economic reforms have helped narrow the productivity gap and additional reforms could help narrow it further.

Background papers

Background Papers for G-20 Workshop on Global Energy and Minerals Markets

http://www.treasury.gov.au/contentitem.asp?NavId=&ContentID=1150

The background papers were prepared for the Australian delegation to the G-20 workshop on global energy and minerals markets which was hosted by Canada in June 2006. The papers assemble potentially useful background information and identify key points for discussion.

Background Papers for G-20 Workshop on Demography and Financial Markets

http://www.treasury.gov.au/contentitem.asp?NavId=035&ContentID=1174

This G-20 workshop, jointly hosted by the Reserve Bank and the Australian Treasury in July 2006, brought together academics, policy advisors, private sector participants and representatives from the participating G-20 nations. The workshop examined the impact of demographic trends on macroeconomic factors relevant to financial markets, particularly saving and investment, capital flows and asset prices, as well as on the structure and operation of financial markets. The participants also placed considerable focus on policy issues, identifying the nature and extent of possible market imperfections and impediments, and the scope for policy makers to address these.

Annual report

Treasury Annual Report 2005-06

http://www.treasury.gov.au/contentitem.asp?NavId=002&ContentID=1175

The 2005-06 Treasury Annual Report outlines performance against outcomes, outputs and performance information contained in the 2004-05 Portfolio Budget Statements. It also includes the reporting requirements and financial accounts for the Royal Australian Mint, Australian Government Actuary and Foreign Investment Review Board.

Speeches

'Economic Policies to Address Global Pressures' (August 2006). Address to the Australian Industry Group National Forum 2006, by Dr Ken Henry, Secretary to the Treasury.

http://www.treasury.gov.au/contentitem.asp?NavId=&ContentID=1140

Global macroeconomic performance is playing out against, and is being very heavily affected by, three historic medium- to long-term developments: the ICT 'revolution'; the economic emergence of China and India; and population ageing.

'Global Economic Trends and the Role of Well-Functioning Markets' (August 2006). Address to the 59th International Banking Summer School in Melbourne, by Dr Martin Parkinson, Executive Director (Macroeconomic Group) and Nathan Dal Bon, Manager (Asia Policy Unit).

http://www.treasury.gov.au/contentitem.asp?NavId=&ContentID=1154

Four key global trends are the rise of Asia; demographic change; developments in commodity markets; and continuing global and regional financial integration. Well-functioning markets, supported by sound economic policy frameworks, are critical for the effective management of the challenges posed by these global trends.

'The Macro Settings: What IFSA Members Need to Know' (August 2006). Address to the 2006 Investment and Financial Services Association Conference, by Mike Callaghan, Executive Director (Revenue Group).

http://www.treasury.gov.au/contentitem.asp?NavId=008&ContentID=1133

A strongly growing economy provides opportunities for funds managers to lift their returns. Also helpful is the progressive lengthening of the time horizon for policy from the annual budget to the intergenerational report. While the population is ageing, policy is being directed to lifting productivity and participation.

'Informing Markets: Statistical Challenges Facing The Global Economy' (September 2006). Address to the Annual Meeting of the World Bank Group and the International Monetary Fund as part of the 2006 Programme of Seminars: The World in Asia, Asia in the World, by Dr Martin Parkinson, Executive Director (Macroeconomic Group).

http://www.treasury.gov.au/contentitem.asp?NavId=&ContentID=1164

Greater global economic integration over the past few decades is a commonly accepted phenomenon, but it is not easily measured. At the same time, there is a growing demand to quantify and understand the impact of globalisation as more and more businesses conduct their activities internationally rather than within national boundaries. This can present opportunities, as well as challenges, for statisticians in measuring and reporting economic phenomena.

'The Role of the G-20 in the Global Financial Architecture' (October 2006). Address to the Lowy Institute and Monash University Faculty of Business and Economics, by Dr Martin Parkinson, Executive Director (Macroeconomic Group).

http://www.treasury.gov.au/contentitem.asp?NavId=&ContentID=1171

The balance of global economic activity and influence is changing rapidly. While the G7 economies remain economically important, it is clear that emerging market countries have become significant players in the international economy. The G-20's structure and institutional features give it a unique degree of legitimacy and influence over the management of the global economy.

'The G-20 — Addressing Global Challenges' (November 2006). Address to the Australian Business Economists, by Dr Martin Parkinson, Executive Director (Macroeconomic Group).

http://www.treasury.gov.au/contentitem.asp?NavId=008&ContentID=1185

The Group of Twenty Finance Ministers and Central Bank Governors meeting in Melbourne will discuss key challenges facing the global economy, such as reform of the IMF and the World Bank, demographic change and resource security.

Sources of economic data

The following table provides sources for key economic data. Australian Bureau of Statistics (ABS) data can be obtained over the internet at http://www.abs.gov.au. The Reserve Bank of Australia information is available at http://www.rba.gov.au. Similarly, OECD information is available at http://www.oecd.org. Information on individual economies is also available via the IMF at http://www.imf.org.

International economy	
Output, current account balance and interest rates	OECD Main Economic Indicators
Consumer price inflation	ABS cat. no. 6401.0
National accounts	
Components of GDP, contributions to change in GDP	ABS cat. no. 5206.0
Incomes, costs and prices	
Real household income	ABS cat. nos. 5204.0 and 5206.0
Wages, labour costs and company income	ABS cat. nos. 5204.0, 5206.0 and 6302.0
Prices	ABS cat. nos. 6401.0 and 5206.0
Labour market	ABS cat. no. 6202.0
External sector	
Australia's current account, external liabilities and income flows	ABS cat. nos. 5368.0, 5302.0 and 5206.0