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CONTENTS

Alternative methodologies for projecting defence spending

Christine Duke and Cameron McKean[1]

This paper is based on research done for the *Intergenerational Report 2007*. A brief discussion of alternative methodologies for projecting defence spending was included in the appendix of the report. This paper provides a more detailed discussion of the alternative methodologies explored and shows the projections that were done, updated for current defence spending data. Other longer-term economic projections for Australia are consistent with those used for the *Intergenerational Report 2007*.

1 The authors are or were previously from the Industry, Environment and Defence Division, of the Australian Treasury. This article has benefited from comments and suggestions provided by James Kelly, Robert Ewing, Geoff Francis, Ruth Moore, Maryanne Mrakovcic, Michelle Stone and Michael Xanthis. The views in this article are those of the authors and not necessarily those of the Australian Treasury.

Introduction

The second intergenerational report was released in 2007. The report provides a basis for considering the fiscal outlook over the longer term and the sustainability of economic growth in light of Australia's ageing population and other factors.

In the report, several areas of Australian Government spending — including defence — were not projected separately. They were assumed to remain, as a group, constant as a share of GDP. The underlying assumption was that spending in these areas is not linked strongly with demographic change and future uncertainties make reliable projections elusive. This article explores potential projection methods for defence spending. It is based on current defence spending data but with other longer-term economic projections for Australia, consistent with those used for the intergenerational report.

History

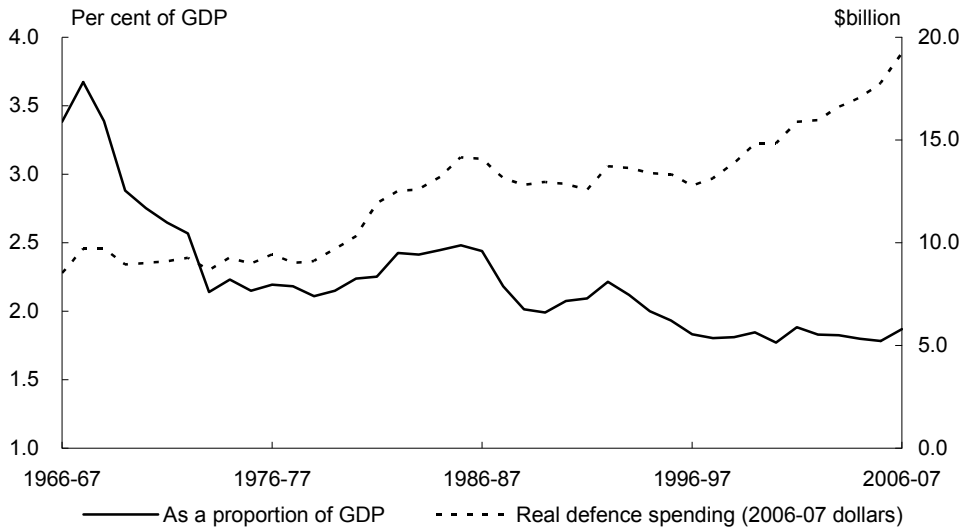
The defence of Australia and its interests is an essential function of government. In recent years, the Australian Defence Force (ADF) has been engaged in numerous commitments overseas, while continuing to invest in current and future capability. Australian Government defence spending is estimated to be 1.9 per cent of GDP in 2008-09.

The 2000 Defence White Paper, *Defence 2000 — Our Future Defence Force*, provided a funding commitment equivalent to an average 3 per cent annual real growth for the decade to 2010-11, which was subsequently extended out to 2015-16. In the 2008-09 Budget, the Government extended its commitment to growing the underlying Defence funding base on average by 3 per cent per annum in real terms beyond 2015-16 to 2017-18. Defence spending has also been supplemented above this funding envelope for some discrete measures (for example, military operations and some large capital equipment acquisitions).

Key trends and drivers

Over most of the past four decades, while defence spending has increased in real terms, it has fallen gradually as a proportion of GDP. This is because the economy has grown at a faster rate than defence spending (Chart 1). In recent years, this declining trend has levelled out due to significant growth in defence spending accompanying the strong growth in nominal GDP over that period.

Chart 1: Historical defence spending



Source: Australian Bureau of Statistics data, Department of Defence annual reports, various years.

Unlike many other government functions, the demand for defence spending will not be directly influenced by domestic demographic factors. An increase in population does not increase the cost of defence directly, although it can strengthen the capacity of governments to pay for defence over time.

Future defence spending will depend on a wide range of factors, including the strategic environment, the community's tolerance of risk and the cost of inputs into defence capability. As with all government spending, these factors will be balanced against fiscal constraints. Future trends in these individual factors can be difficult to discern, as can any precise view of how they would interact.

Future defence spending

Four methods for projecting defence spending are explored in this article.[2,3] Two of the projection methods assume potential trends in defence spending as a whole: continuation of the historical trend rate of real growth, and 3 per cent annual real growth to 2046-47. The other methods focus on particular factors that can be expected to influence future defence spending: the cost of inputs, and trends in international economic growth.

Only some of these factors influencing defence spending can be quantified individually. Projection methods that consider only one or a few factors will not provide for a comprehensive assessment of potential trends in defence spending.

The long-run projections apply from the end of the current forward estimates, from 2012-13 onwards. The defence spending data is current to the 2008-09 Budget. Other longer-term economic projections for Australia are those used in the intergenerational report.

A scenario that maintains defence spending as a constant share of GDP has been included, in line with the assumption used in the intergenerational report that 'other spending' (which included defence spending) remains constant as a share of GDP. This scenario is shown in each of the charts to provide a reference point when presenting the alternative scenarios.

Trends in overall defence spending: historical decline and 3 per cent growth

A simple method for projecting future defence spending is to extend the long-run (40-year) historical trend real growth rate (around 1.7 per cent per year) beyond the forward estimates. If this historical trend continued, defence would fall as a share of GDP in the long term, ending the projection period at around 1.6 per cent. This is because the historical trend growth in defence spending of 1.7 per cent is smaller than the projected average GDP growth in the second intergenerational report, of

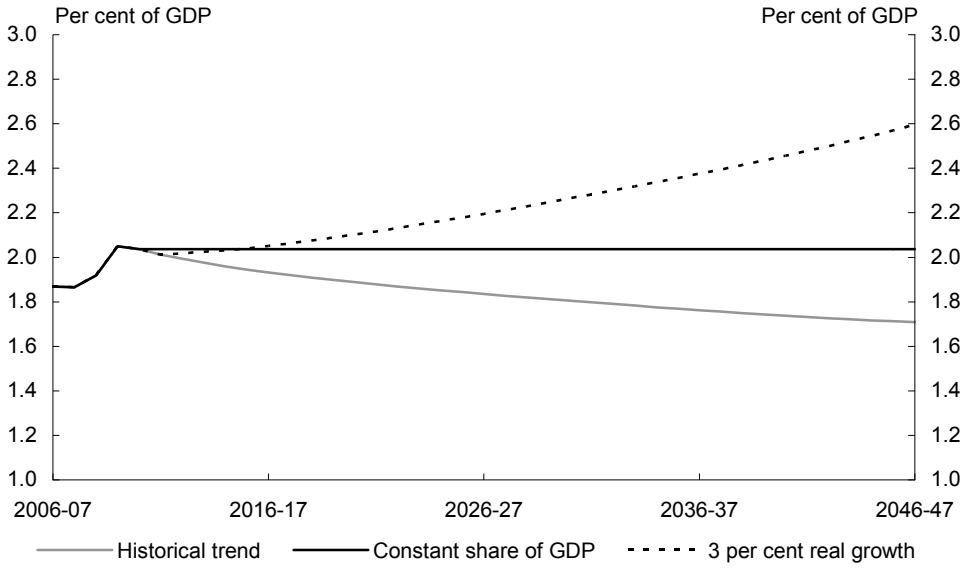
2 The projections are based on the revenue from Government received by Defence, which is a measure of the resources provided to Defence.

3 The projections are not directly comparable with those presented in the *Intergenerational Report 2007*. Furthermore, a number of factors add together to present defence spending as a higher proportion of GDP. The defence spending data has been updated for decisions up to and including the 2008-09 Budget. In the intergenerational report, military superannuation was modelled separately from defence spending. However, this article includes superannuation as part of defence spending in line with the usual aggregate amounts presented by Defence. Last, GDP data has not been updated, which further increases defence spending as a proportion of GDP.

2.4 per cent over the projection period. The pace of economic growth is a critical driver of the overall movement in defence spending as a share of GDP.

Alternatively, the Government's commitment to 3 per cent real growth in base funding could be assumed to extend beyond its current expiry in 2017-18. Extending 3 per cent real defence spending growth throughout the projection period would put defence spending as a share of GDP on an expanding path (Chart 2). This would provide an additional pressure to add to the demographic-related pressures affecting the budget in the longer run.

Chart 2: Defence projections — historical decline and 3 per cent growth



Maintaining the current force structure

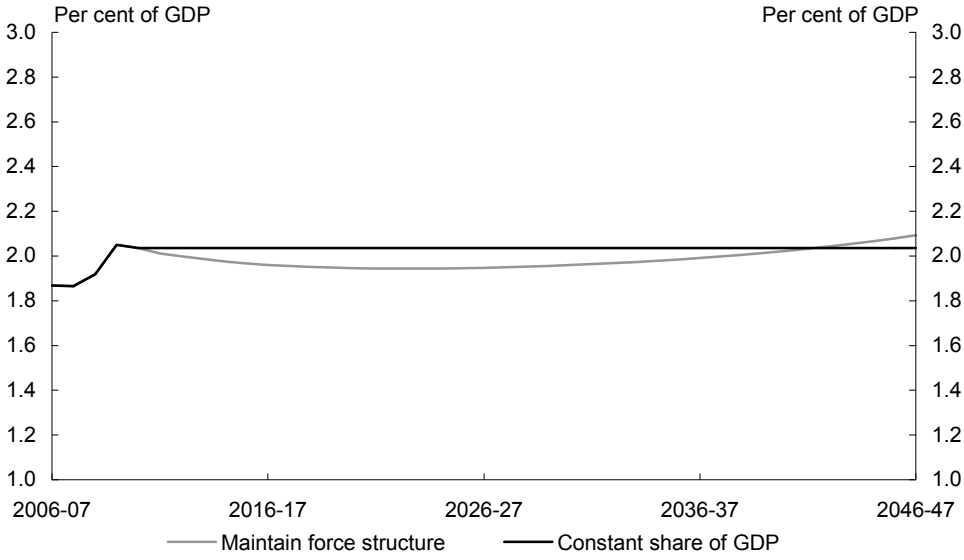
An alternative projection method is to extrapolate the cost of maintaining the current force structure. This method takes given quantities of military equipment, personnel and other inputs and applies assumed rates of cost growth to each. This follows the approach taken by the Australian Strategic Policy Institute (ASPI) in its projections of long-term defence spending (Thomson 2004).

Under reasonable assumptions, such a projection sees little change in defence spending as a share of GDP over the next forty years (Chart 3). The assumed underlying annual rates of real cost growth are:

- 4 per cent for acquiring new military equipment (following ASPI's assumption based on research by the Department of Defence — see also Box 1);
- 3 per cent for sustaining equipment in service (following ASPI's assumption);

- 1¾ per cent for personnel expenses, reflecting projected productivity and hence wage growth in the general economy; and
- zero for other inputs (including property expenditure, garrison support and other supplies). These expenses would grow in line with general inflation.

Chart 3: Defence projections — maintaining the current force structure



A projection based on maintaining the current force structure assumes a continuation of historical per-unit growth in costs of successive generations of military equipment (see Box 1). In the past, Australia and other countries have reduced their physical stock of military equipment to offset this cost trend. The projection assumes no further reduction. This allows for the possibility that Australia may have reached a natural limit in reducing equipment numbers; and for the likelihood that new types of equipment will be introduced. If equipment stocks were reduced, projected spending growth would be lower than otherwise.

This method also assumes that sustainment costs (the cost of operating equipment once it enters service) will grow at 75 per cent of the rate of growth in acquisition costs, in line with a study by ASPI (Thomson 2004, p 22). There is some debate about the appropriate correlation between acquisition and sustainment costs. Research into the relationship has been limited. A United States Congressional Budget Office (2003) study also supports an outcome of less than a one-to-one correlation. Furthermore, some recent acquisition trends in Australia would support a less than one-for-one relationship, for example sustainment cost reduction is increasingly a capability objective at acquisition, and possible reduced costs from economies of scale in global

partnership support arrangements. While it seems a correlation of less than 100 per cent is appropriate, it is not possible to be definitive.

Box 1: Cost growth in military equipment

Historical trends show that the per-unit costs of successive generations of military equipment have been rising in real terms. A range of research, including recent studies by the Defence Materiel Organisation, indicates this growth translates to annualised real cost increases of at least 4 per cent per year across a range of equipment types. However, the analysis of cost trends has shown that the increased cost also reflects an improvement in capability (Kirkpatrick 2004, p 261).

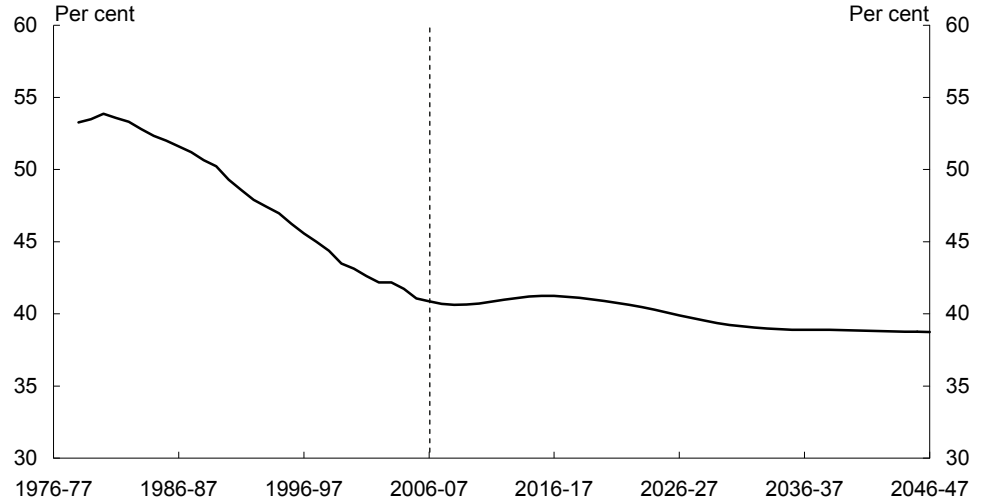
Technological advancements and productivity reduce the cost of a given good over time. In the civilian sector, the cost of high-technology products tends to fall over time as underlying technology matures. However, in the case of military equipment, such savings tend to be re-invested into capability improvements, as nations seek the decisive military advantage over their rivals that technology can provide. The overall effect has been increased per-unit costs (Kirkpatrick 2004, p 259).

It is not clear what drives the rate of capability growth. Strategic developments that raised the intensity of international military competition might be expected to increase the rate of capability growth, but it is difficult to find evidence that this has occurred. Similarly, economic conditions should have an impact, as the rate of economic growth influences the rate at which governments can afford to invest in new capabilities. For Australia, retaining interoperability with the United States and maintaining existing capability relative to other countries are important factors.

For military and civilian personnel, the assumed rate of expenditure growth conforms to the standard assumption in the intergenerational report for wage growth in the economy as a whole. This approach discounts possible arguments that Defence's personnel costs will rise relative to general wages as the proportion of the workforce in the military's preferred younger age cohort declines; or as Defence's military and civilian workforce becomes more skilled relative to the general workforce.

Around 75 per cent of the permanent ADF is aged 35 or less. However, the ADF's natural preference for relatively young recruits does not provide a basis for assuming faster growth in the ADF's labour costs relative to the rest of the economy, even as the overall population ages. First, the proportion of the workforce aged less than 35 will decline slowly, if at all, compared to its decline in the past three decades (Chart 4). If this past trend had created any youth-related wage premium, it should already be built into the ADF's labour costs.

Chart 4: Workforce aged 15 to 34 as a share of total workforce

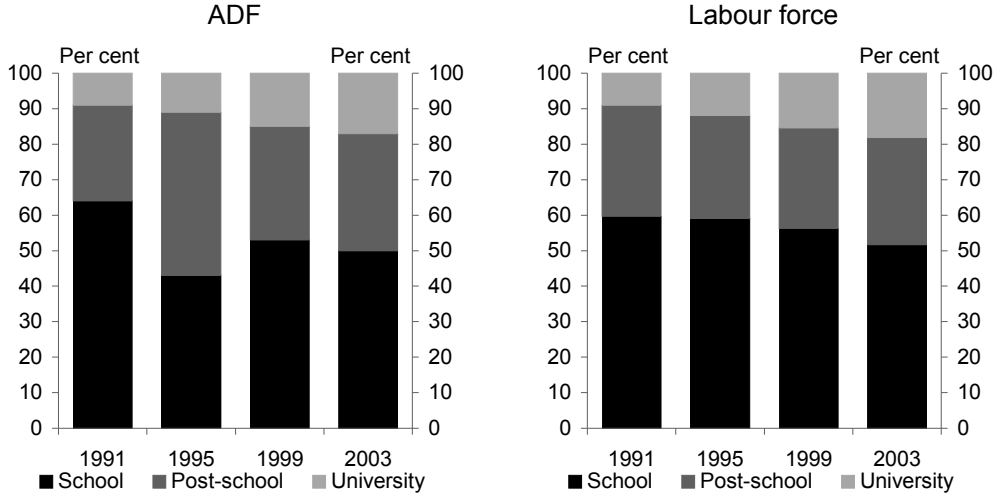


Source: Treasury projections for the second intergenerational report.

Furthermore, even if a wage premium for younger workers began to arise, it would prompt a demand response in the labour market as employers substituted older workers for younger ones. Some employers, such as the ADF, may have a constrained ability to make this substitution. However, the ADF workforce is relatively small compared to the overall size of the workforce aged 15 to 34 (which should reach 5½ million people by 2046-47) and would benefit from adjustments made by other employers.

For any skills-related premium to increase the growth in Defence's personnel costs, it would be necessary for the skill base in Defence to grow more quickly than in the general workforce. Although Defence's military and civilian workforce appears to have become more skilled in recent years (Chart 5), the available evidence does not suggest this trend has been stronger than the corresponding trend in the Australian workforce as a whole, or is likely to be so over the next 40 years.

Chart 5: Education levels of the ADF and the total labour forces



Source: Australian Bureau of Statistics data, Defence Census, various years.

Future labour costs will also be influenced by the ability of Australia to access the growing global labour market in various ways. Given the increasing freedom of international flows of capital and labour, developments in the global labour market may have more impact on Australian wage outcomes than demographic changes (Freeman 2006).

Maintaining relative capability

Military capability is best understood, in many respects, as relative rather than absolute. The capability required to achieve given defence goals will depend on the capabilities of allies and potential adversaries. Focusing on the cost of maintaining a fixed force structure ignores the prevalence of similar input cost pressures in other countries.

To the extent that relative capabilities matter, input cost pressures felt by all countries are less relevant. Rather, changes in relative capabilities will depend on relative changes in total military spending (assuming the relative cost efficiency of spending between countries remains constant).

Global GDP is projected to grow more strongly than Australian GDP over the next four decades, primarily as a result of the emergence of developing countries. (In contrast, in the last four decades Australia has grown at roughly the same rate as global GDP.) If both we and other countries were to maintain military spending as a constant share of GDP, other countries' higher growth rates would lead their military capability to grow more rapidly than our own. However, balanced against this is that Australia has the advantage of starting from a relatively higher starting position, in

terms of military capability. In practice, relative capability will be dependent upon the decisions made by national governments about the allocation of scarce budgetary resources between defence and other competing priorities.

Conclusion

It is difficult to project defence spending over the long term, given the influence of unpredictable factors such as the strategic environment, the community's tolerance to risk and the cost of inputs into defence capability. Our alternative methods provide some different ways of thinking about future defence spending trends.

The forthcoming Defence White Paper will consider a range of strategic drivers of the defence force to be used to protect Australia. Underpinning these will be the ability of the economy to fund defence spending into the future. This article provides some insights into the future affordability of, and trends in, defence spending.

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Investment in East Asia since the Asian financial crisis[1]

Elisha Houston, Julia Minty and Nathan Dal Bon[2]

Investment in many East Asian economies fell dramatically following the Asian financial crisis and has remained relatively weak since then. This is despite improved economic conditions and strong underlying investment needs typical for developing economies.

This so-called 'investment puzzle' is the subject of considerable commentary, which has largely sought to explain the reasons for such a decline and whether lower investment rates are 'optimal'. On this latter point, there is a concern that East Asia's future growth trajectory may be impaired given the linkages between investment and economic growth.

The consensus appears to be that investment is too low for a number of regional economies and that a key contributing factor has been the apparent deterioration in 'institutional factors', such as regulation and governance. This underscores the need for continued domestic and regional initiatives to further strengthen the investment environment.

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1 East Asia includes: Indonesia, Thailand, the Philippines, Malaysia (ASEAN-4), and Korea, Taiwan, Singapore and Hong Kong (Newly Industrialised Economies (NIEs)).

2 The authors are from International Economy Division, the Australian Treasury. This article has benefited from comments and suggestions provided by Milovan Lucich. The views in this article are those of the authors and not necessarily those of the Australian Treasury.

Introduction

Eleven years after the Asian financial crisis (henceforth 'the crisis'), economic conditions in East Asia have vastly improved. The region has averaged over 5 per cent growth for the last six years. The dramatic declines in living standards experienced in the wake of the crisis have been reversed, with Indonesia being the last country to return (in 2005) to per capita GDP levels that existed before the crisis.

The improving economic situation reflects the broader recovery in corporate, government and financial sectors. Most of the constraints that afflicted these sectors have lessened. For example, the corporate sector has rebuilt its balance sheets, and capacity utilisation and profitability have improved; the government sector has made large advances improving budget balances and reducing debt; and the financial sector has reduced bad loans and lifted capital adequacy ratios. Furthermore, savings rates have remained high.

Despite these favourable developments, investment has continued to languish. Focusing on two sub-regions in East Asia, the NIEs and ASEAN-4, investment rates have fallen and remain relatively weak (see Charts 1 and 2). This decline has raised a number of questions about the sustainability of growth in the region over the longer term.

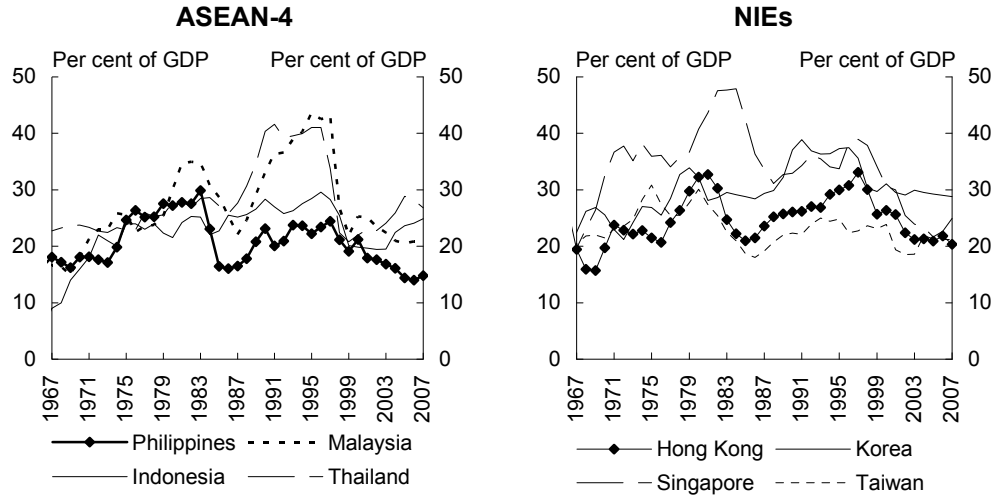
In attempting to explain the relative weakness in investment, attention has focused on: factors influencing the investment climate, such as governance and transparency; a changing global environment, including the emergence of China and possibly a heightened perception of risk; and whether there was overinvestment prior to the crisis with the implication that current rates of investment might simply be a reflection of investment returning to more sustainable levels.

Against this background, the first section of this paper reviews the investment performance in East Asia since the crisis, the second section examines the reasons for lower rates of investment, and the final section outlines country and regional initiatives to improve investment.

Trends in investment since the crisis

As shown by Charts 1 and 2, investment rates have fallen in both the NIEs and the ASEAN-4 economies. While the magnitude of the fall has varied across countries, all countries have experienced a decline in investment rates since the crisis. The sharpest declines were initially within the ASEAN-4 which also had the largest acceleration of investment rates in the lead-up to the crisis. The NIEs have experienced similar declines, but over a longer time period.

Charts 1 and 2: Gross fixed capital formation



Source: CEIC, EcoWin and World Development Indicators (WDI) databases.

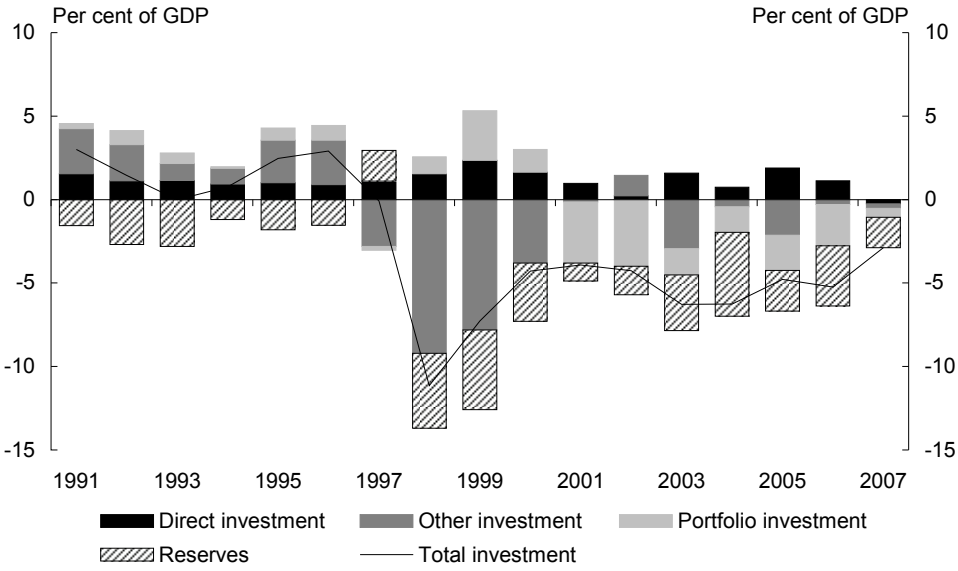
The decline in investment in East Asia has been predominantly driven by private investment, which has accounted for about 90 per cent of the total decline. Of this, approximately two-thirds is attributable to falling investment in the construction sector. Much of the construction investment that took place before the crisis turned out to be excessive, leading to an over-supply of real estate which has gradually been unwound as reflected in falling vacancy rates.

Corporate investment also fell dramatically after the crisis, with plant and equipment investment declining in absolute terms in a number of East Asian economies. This was partly because, as the stock market value of existing firms fell more sharply than the replacement cost of capital, it became more attractive to purchase an existing firm than to invest in new plant and equipment. In addition, the crisis generated large deteriorations in balance sheets, creating a need for major corporate and financial sector restructuring. Companies therefore concentrated on reducing debt and strengthening balance sheets, rather than investing in capital.

Public investment rates also fell after the crisis as governments were faced with fiscal pressures and the need for fiscal consolidation, largely due to: costs associated with the recapitalisation of insolvent banks; weakening revenue collections due to slower economic growth; and an increase in public sector debt as contingent liabilities were realised. In Thailand and the Philippines the decline in public investment was particularly pronounced, accounting for between 35 and 40 per cent of the decline in aggregate investment.

Prior to the crisis, the region was also an important destination for foreign investment. As Chart 3 shows, the region was a substantial net importer of capital prior to the crisis but this is no longer the case. Net private capital inflows to the region have partially recovered but capital is still flowing out of the region in net terms. This net export of capital reflects the fact that saving in the region exceeds domestic investment and for most economies the key factor driving this result has been the large fall in investment rates since the crisis. Some have argued that the fall in investment is the by-product of policies aimed at maximising current account surpluses and minimising risk.

Chart 3: Net capital flows, East Asia (excluding Taiwan)



Source: IMF International Financial Statistics database.

Why has investment remained weak?

There are a number of possible reasons why investment has remained subdued since the crisis, including: investment returning to more sustainable levels; the emergence of China; increased risk aversion; and a weak investment climate.

Was investment too high prior to the crisis?

A simple explanation for subdued investment is that it is returning to more sustainable levels. As referred to earlier, there was a rapid rise in investment in the lead-up to the crisis, much of which proved to be speculative and of poor quality. However, given improving fundamentals and the passage of time since the crisis, one would have expected cyclical factors to have receded by now. Yet investment continues to be lower than suggested by fundamentals.

This raises the question, what is the 'optimal' level of investment? The 'optimal' level is influenced by a number of factors, and therefore may change over time in response to changes in any of these factors. The first factor we consider here is the price of capital. As capital goods have become relatively less expensive, nominal investment rates have declined. This is partly due to the process of capital deepening in information technology, and productivity growth in sectors that produce capital goods. As a result, a given level of investment can be achieved at a lower price (IMF 2005). However, the Asian Development Bank (ADB) finds that it is unlikely that falling capital goods prices explain the decline in investment rates because this effect has been small.[3]

A second factor relates to the efficiency of investment. A number of possibilities — such as corporate restructuring, increased competition and more efficient allocation of capital by financial institutions — may have increased the efficiency of investment since the crisis, which would imply that a given rate of growth is now achievable at lower rates of investment (ADB 2007a). One commonly used measure to assess the efficiency of investment is the incremental capital output ratio (ICOR). The economy-wide ICOR is measured by the ratio of the level of investment in a given period to the change in GDP in that period (a lower ICOR represents greater investment efficiency). Between 1995-97 and 2003-05 the ICOR fell for most countries in East Asia, suggesting increasing investment efficiency. It must be noted, however, that the use of the ICOR as an indicator of investment efficiency is limited by the fact that the ICOR can change for reasons other than a change in investment efficiency (such as an increase in output by utilising spare capacity).

Notwithstanding the plausibility of the argument that changes in the price of capital and the efficiency of investment may have lowered the optimal rate of investment since the crisis, a number of studies suggest that investment may still be too low. For example, a recent IMF study compares the investment and capital-output ratios of a number of East Asian economies to estimates of their long-run equilibrium levels (IMF 2005). The basic premise is that developing economies typically have higher investment needs associated with building infrastructure and upgrading capital stock, which means that investment rates should be above their long-run level. As economies mature and per capita incomes rise, investment rates tend to fall as the capital-output ratio approaches its long-run level. The IMF study finds that investment rates in East Asia were above their long-run level in 1996. However, investment rates since the crisis have remained below their long-run level, particularly in Indonesia, the Philippines and Thailand.

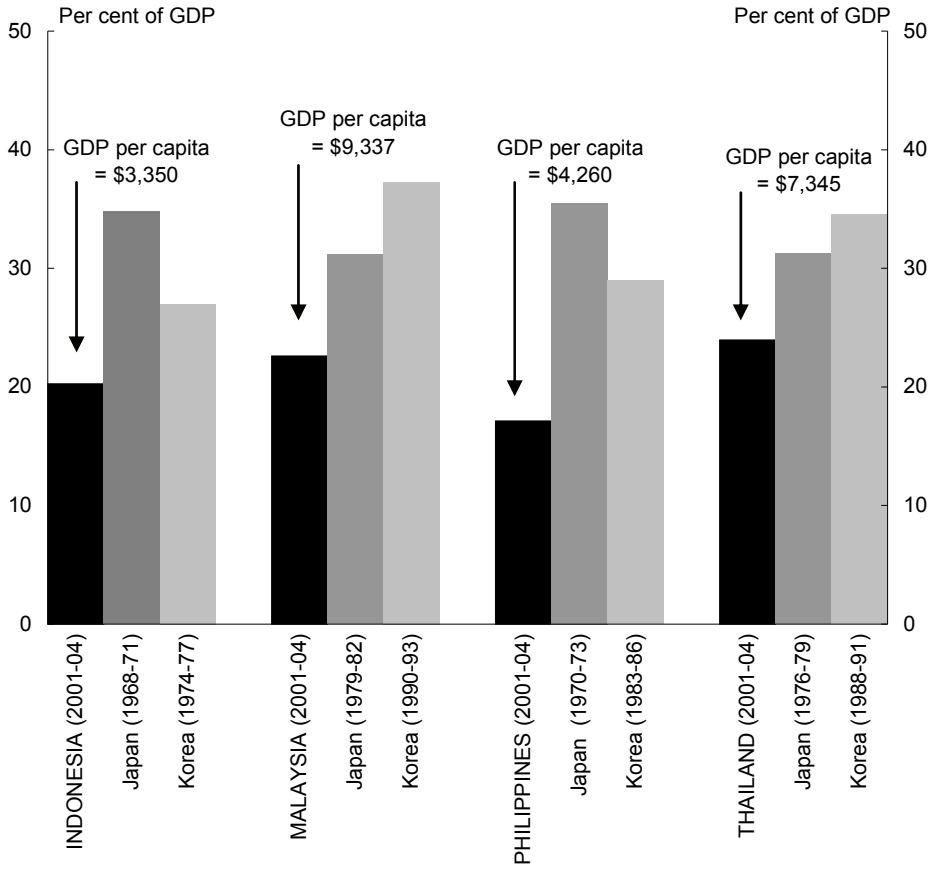
3 'Investment rates still drop sharply post-crisis after controlling for changes in relative prices' ; ADB, 2007b.

Eichengreen (2006) looks at the broader issue of global savings and investment imbalances and explores possible explanations for the existence of such imbalances. One aspect of global imbalances relates to the sizable current account surpluses being achieved in East Asia and how these surpluses have largely arisen because of falling investment. Eichengreen argues that temporary factors (such as the sharp economic downturn, domestic financial sector disruptions and political uncertainties) that had an adverse impact on investment following the crisis have largely retreated. He attributes ongoing lower investment to East Asian governments becoming more risk-averse, preferring less dependence on capital inflows, and current account surpluses to deficits.

Another study by Chinn and Ito (2005) examining the determinants of current account balances, also finds that investment rates in East Asia remain lower than predicted by their model, particularly since the 1996-2000 period. Their study investigates the medium-term determinants of investment and saving, using a model that controls for factors related to institutional development, such as the degree of financial openness and the extent of legal development.

Another way to look at whether investment is currently too low is to compare recent investment rates in emerging economies to those typical of other regional economies when they were at a similar stage of development (as measured by GDP per capita in purchasing power parity terms). Chart 4 shows that investment rates in each of the ASEAN-4 economies were substantially lower in 2001–04, when compared to investment rates in Japan and Korea at equivalent levels of GDP per capita.

Chart 4: Comparison of investment rates at similar per capita income levels



Source: CEIC, EcoWin, World Development Indicators, Penn World Tables.

The emergence of China

Another possible explanation for weak investment relates to greater competition from China and the associated diversion of investment. Since the crisis China's economy has continued to strengthen, and combined with its ascension to the World Trade Organization (WTO) in December 2001, China has become a more desirable investment destination. Furthermore, China's relatively large pool of labour and resulting cost advantages have led to the formation of regional supply networks centred on China. Such networks have caused the relocation of many manufacturing businesses from a number of East Asian economies to China. As a result, these economies are experiencing a period of structural adjustment, which it is claimed is generating some uncertainty and a likely delay in investment decisions.[4]

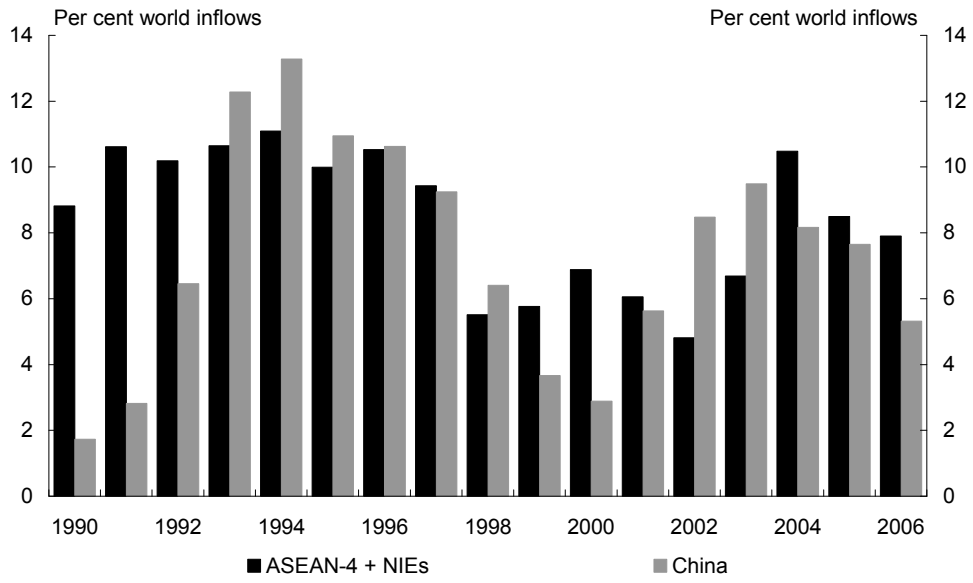
However, the evidence on whether the rise of China has been detrimental to investment rates in East Asia is mixed. According to the IMF there is some anecdotal evidence to suggest a link between the relocation of production facilities from emerging Asian countries to China and lower investment rates across East Asia. However, it also notes that it is impossible to draw any definitive quantitative conclusions. McKibbin and Woo (2003), in modelling the potential consequences of China's 2001 WTO accession on its Asian neighbours, point to some partial evidence of foreign direct investment (FDI) diversion occurring.[5]

Another study by the ADB Institute assessed FDI shares across East Asia and found that as FDI into China rises, East Asia's share of FDI as a proportion of FDI to all developing countries declines (Chantasasawat et al. 2005). However, this does not imply that China is diverting FDI away from the rest of East Asia. Indeed, the ADB Institute finds a positive correlation through time between the levels of FDI into East Asia and China (see Chart 5). Indeed, in their 2003 study, McKibbin and Woo noted that it is possible that China's WTO accession could encourage the world to save more and thereby produce a larger stock of global capital, which would mean that China receives a larger share of a growing stock of capital rather than diverting capital from other countries in an absolute sense.

4 Further, while causation is difficult to determine, it appears that productivity growth (one effect of structural adjustment) in East Asia has indeed slowed in the post-crisis period (Groningen Growth and Development Centre and the Conference Board, Total Economy Database, January 2007, http://www.ggdc.net).

5 McKibbin and Woo (2003) modelled the potential consequences of China's 2001 WTO accession on its neighbours and found that China's accession could lead to diversion of FDI if countries did not adapt to the emergence of China through stronger policy settings.

Chart 5: FDI flows to East Asia and China



Source: UNCTAD database.

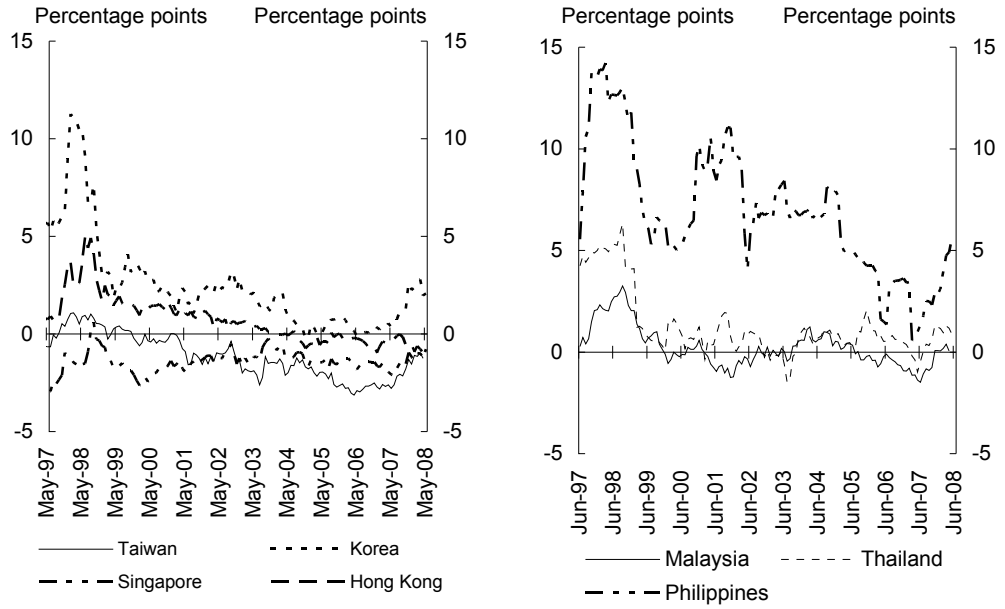
Increased risk aversion

It has also been suggested that the crisis triggered a fundamental reassessment of risk by investors in emerging Asia. The general notion is that investors underestimated risk prior to the crisis and were subsequently punished as economic conditions worsened. This experience led to increased investor wariness, which continues to linger despite improving economic conditions in the region. This proposition of increased uncertainty about the region's macroeconomic environment is supported by the findings of a study by Kramer (2006), which uses Consensus surveys to show a 60 per cent increase in the dispersion of GDP growth forecasts for a number of countries in the region between 1996-99 and 2003-05.

Drawing such a link between greater uncertainty and a greater dispersion of forecasts may be somewhat tenuous; however Kramer goes on to argue that the perceived increases in risks may not necessarily be just an artefact of the crisis. Rather they could be related to factors independent of the crisis, such as structural changes in trade and production that have resulted from the changing global environment. In particular, some East Asian economies have shifted towards the production and export of higher-end electronics, a sector characterised by changing technology and consumer tastes. Furthermore, it is also conceivable that investors are not only more uncertain and risk-averse, but have lowered their expected rates of return on investment in the region. This could be the result of increased uncertainty about the growth outlook, or as the ADB (2007b) notes, a consequence of other factors that influence expected returns, such as competitive pressures, productivity levels and institutional factors.

In contrast, there is also some evidence to suggest that some perceptions of risk have declined since the crisis. While attempting to measure risk is difficult, there are proxies which can provide an insight into how perceived risks vary over time. One possible measure is the yield spreads between government bonds in the US and in the East Asian economies. As is clear from Charts 6 and 7, yield spreads increased for most countries, particularly Korea and the Philippines, during the crisis but have gradually narrowed. This could be due to a number of factors, including convergence of inflation expectations, but it is also possible that the perceived risk associated with investing in these countries has declined relative to the US.

Charts 6 and 7: Yield spread differentials (10-year)[(a)]



(a) Philippines data uses two-year yields; Korea data uses five-year yields; Singapore data uses seven-year yields.
Source: IMF and Ecowin.

It would appear that there is conflicting evidence on whether investor perceptions of risk have increased since the crisis. On the one hand, the increased dispersion of growth forecasts since the crisis suggests that investors are now more uncertain about the region's macroeconomic outlook. However, the fact that risk premiums — as measured by yield spread differentials — have declined over time since the crisis suggests that investors consider that risk has diminished in individual countries. That is, while investors may be less certain about the region's macroeconomic outlook, they now have a greater degree of confidence in policy settings by governments in the region. As the next section shows, it also appears that there is now a greater perception

of microeconomic risk, as measured by a number of indicators of the investment climate.

The investment climate

The final factor we explore in explaining why investment has remained relatively weak is the investment climate. The investment climate is influenced by many tangible and intangible factors; however, key determinants are: macroeconomic stability; economic frameworks and policies, including policies affecting labour, financial and product markets; and governance frameworks. Macroeconomic stability and economic growth are fostered by sound fiscal, monetary and exchange rate policies, robust economic and financial institutions and strong regulatory frameworks, while strong governance frameworks have an important influence on the investment environment because they promote transparency and clear standards, which assist to minimise risk and uncertainty.[6] Labour and product market regulations that promote flexible markets also help, as flexible markets allow resources to flow to their most valuable uses.

A number of surveys note that while most economies have improved their macroeconomic stability, governance frameworks remain a substantial impediment to investment. However, trying to ascertain whether a country is making progress on governance is difficult because of the complexities associated with measuring governance. Notwithstanding these qualifications, Table 1 summarises some of the key governance indicators from various sources. The results suggest that crisis-affected countries have not performed well against governance and broader competitiveness measures. Many of these indicators are relative measures, which do not necessarily indicate that governance is deteriorating in an absolute sense; however, relative performance is likely to be important in attracting foreign investment.

- Most of the crisis-affected economies (except Malaysia) have experienced a deterioration in their overall competitiveness ranking since 1996. This is attributed to poorer performance in one or more of the following areas: the quality of infrastructure; the level of technological readiness; and the extent to which government policies are conducive to investment. In particular, inadequate infrastructure has been identified as one of the major factors constraining business operations.

6 Macroeconomic settings help to improve resource allocation within the economy, thereby making an economy more attractive to investors. Since the Asian financial crisis, most countries in the region have actively pursued policies that have enhanced macroeconomic stability (this is also reflected in Table 1). For example, government fiscal positions are generally sound, including lower levels of public debt; a number of countries have adopted inflation targeting; most countries have built a sizable buffer of foreign reserves; and there has been a trend towards more flexible exchange rate regimes.

- Surveys by *The Economist* and World Bank point to a deterioration in a number of areas critical to the investment climate. Most notably, all crisis-affected countries are now performing worse across a range of categories, in particular, 'control of corruption' and 'financing'. The development of deeper and broader financial systems and capital markets should allow for improved management and diversification of investment risks, while also increasing the overall risk-bearing capacity of the economy.

- The most recent World Bank Doing Business Indicators shows that the costs of doing business in crisis-affected countries remain relatively high. For example, in Indonesia, despite some improvement in recent years, it still takes 105 days to start a business, 570 days to enforce contracts and 5½ years to close a business. The Philippines and Thailand also perform poorly, particularly in the number of days to enforce a contract, taking 842 and 479, respectively.

Table 1: Investment climate indicators

	Indonesia		Korea		Malaysia		Philippines		Thailand	
World Competitiveness Yearbook - IMD	**1996**	**2007**	**1996**	**2007**	**1996**	**2007**	**1996**	**2007**	**1996**	**2007**
Overall ranking	41	54	27	29	23	23	31	45	30	33
The Global Competitiveness Report - World Economic Forum	**1998**	**2007**	**1998**	**2007**	**1998**	**2007**	**1998**	**2007**	**1998**	**2007**
Overall ranking	31	54	19	11	17	21	33	71	21	28
Business Environment Ratings - Economist Intelligence Unit	**1995**	**2002**	**1995**	**2002**	**1995**	**2002**	**1995**	**2002**	**1995**	**2002**
Overall business environment	6.4	5.5	6.6	6.7	6.5	6.8	5.9	5.8	6.5	6.7
Market opportunities	7.0	6.6	7.9	7.9	6.7	6.3	8.2	5.5	7.0	6.9
Macroeconomic environment	5.8	7.9	6.7	9.3	6.4	8.1	5.6	6.9	6.2	9.4
Labour market	6.2	5.6	5.7	5.7	6.5	6.2	5.7	6.9	6.0	6.6
Political environment	5.2	3.9	6.7	6.5	5.7	6.9	4.7	4.9	5.2	6.3
Infrastructure	4.3	3.9	5.9	6.2	4.8	5.1	3.6	2.8	4.6	4.4
Policy towards private enterprise	7.8	3.5	8.4	6.3	6.9	5.8	6.5	5.2	7.5	5.2
Tax regime	8.6	6.1	5.8	6.8	7.0	7.6	5.9	6.9	7.5	7.2
Financing	7.8	4.4	7.4	5.5	7.1	7.0	6.6	5.5	6.9	5.9
Environment for foreign investment	4.3	4.9	6.6	6.1	5.7	7.2	5.5	6.1	5.6	7.2
Governance Indicators - World Bank	**1996**	**2006**	**1996**	**2006**	**1996**	**2006**	**1996**	**2006**	**1996**	**2006**
Voice and Accountability	15.8	41.3	61.2	70.7	39.2	38.0	55.5	44.2	58.9	32.2
Political Stability	21.6	14.9	47.1	60.1	65.4	58.7	29.8	11.1	44.7	16.3
Government Effectiveness	64.0	40.8	80.6	82.9	79.6	80.6	59.7	55.0	72.5	64.9
Regulatory Quality	63.9	43.4	65.9	70.7	80.0	69.8	72.2	52.2	69.8	62.4
Rule of Law	39.5	23.3	71.4	72.9	71.0	65.7	54.3	41.9	68.1	55.2
Control of Corruption	31.1	23.3	73.8	64.6	73.3	68.0	35.4	27.2	38.3	50.5
Doing Business Indicators - World Bank	**2004**	**2008**	**2004**	**2008**	**2004**	**2008**	**2004**	**2008**	**2004**	**2008**
Starting a business (days)	168	105	17	17	30	24	60	52	33	33
Rigidity of Employment Index	44	44	37	37	10	10	35	35	18	18
Enforcing contracts (days)	570	570	230	230	600	600	982	842	479	479
Closing a business (years)	6.0	5.5	1.5	1.5	2.3	2.3	5.7	5.7	2.7	2.7

Note: Shaded cells indicate deterioration in rankings between time periods.
Sources: World Bank Governance Indicators database; *World Bank Doing Business Report 2008*.

Policy measures to support investment

Investment is important because it is a key ingredient for economic growth. Furthermore, investment in infrastructure is needed to support urbanisation, as well as responding to rising demands for services (like health services) associated with higher income levels.

There is a large body of evidence that investment in physical capital is one of the main sources of economic growth (Ahn and Hemmings 2000) and that certain forms of physical investment matter more for growth than others. In particular, investments in equipment and information and communication technology are important for developing economies because the embodiment of technology in capital enables facilitation of technology transfer to developing economies (De Long and Summers 1993).

Evidence on the relationship between public investment and economic growth is mixed, with some studies indicating that infrastructure improves growth while others indicate that growth creates the demand for public investment (Ahn and Hemmings 2000). There is, however, general agreement that movement toward market-based mechanisms (such as competition policy) combined with the rigorous application of investment evaluation techniques (such as cost-benefit analysis) assists in creating clear signals for decisions on the level and nature of public investment.

The literature indicates that a high level of human capital is one of the key ingredients for improving economic growth (OECD 2004) and for attracting FDI (Miyamoto 2003). Two key elements in building human capital are investments in health and education.

The previous sections explored a number of potential reasons why investment has remained relatively weak in the region since the crisis. Of these, it seems that the deterioration in some aspects of the investment environment has been an important factor. While there seems to be more confidence in the macroeconomic policy settings, there remain a number of institutional and regulatory challenges.

Addressing these challenges is crucial to lifting investment in both physical and human capital, and requires both domestic and regional reforms. Drawing largely on a series of World Bank investment climate assessments, the section below outlines a range of behind-the-border reforms being pursued by countries in the region, and various regional initiatives aimed at lifting investment.

Policy measures — ASEAN-4 and Korea

Malaysia

Malaysia's investment climate compares favourably to many other East Asian economies, although there are a number of areas that could be improved. For example, World Bank and IMF reports have found that shortages of skilled workers and regulatory burdens need to be addressed to improve the performance of the services sector, which makes up around 50 per cent of Malaysia's GDP and employs nearly half the labour force. In addition, reforms to the labour market, taxation and customs, and streamlining bureaucratic processes, are crucial.

The Government's Ninth Malaysia Plan (2006-10) addresses a number of these concerns. The plan focuses on increasing the productivity and competitiveness of the services sector by addressing skills shortages through education and training. It also plans to: encourage the private sector as a driver of growth by supporting private financing initiatives and public-private partnerships; improve governance; and streamline administrative processes.

The Philippines

The Philippines' poor fiscal position has been cited as the key factor affecting the investment climate. Non-financial public sector debt in the Philippines is around 60 per cent of GDP, and has been identified as the most significant cause of concern amongst investors. Both the World Bank and IMF strongly encourage further fiscal consolidation, in combination with a range of reforms to enhance the quality of infrastructure, reduce the vulnerability of the banking sector, and improve the overall governance environment.

The Philippines Government has developed a comprehensive Medium-Term Development Plan (MDP) that outlines the Government's fiscal consolidation plan — which aims to balance the national budget by 2010 through a series of revenue initiatives. Additional funds will also be used to support public infrastructure, and public services. The MDP also aims to develop a stronger banking system by encouraging banks to dispose of non-performing loans.

Indonesia

Despite improvements to Indonesia's macroeconomic environment since the crisis, the investment climate remains characterised by: structural weaknesses in the economy; inadequate levels of physical infrastructure; systemic corruption; and excessive bureaucratic delays. As such, a range of measures are needed to: strengthen and diversify the financial sector; improve taxation and customs procedures; enhance labour market flexibility; promote small and medium enterprises; and improve corporate governance and the legal and judicial framework.

Policy measures — ASEAN-4 and Korea (continued)

Indonesia (continued)

In 2006, the Government announced an investment climate reform package, which aims to streamline business licensing procedures, simplify customs procedures, revise labour laws and reform taxation arrangements. The Government has also announced an infrastructure reform package and a financial sector reform package.[7]

To date, there has been some progress, including: passage of a new investment law, which stipulates equal treatment of foreign and domestic investment and measures to reduce bureaucratic delays in processing investment applications; a commitment by the Government to increase infrastructure spending and seek private sector funding of infrastructure through public-private partnerships; and the establishment of a financial sector safety net.

Thailand

There are a number of constraints to conducting business in Thailand, including: skills shortages and mismatch; regulatory burdens; and poor infrastructure. In addition, there are many low-skilled underemployed rural workers in the manufacturing sector and, as global competition in low-skill manufacturing grows, workers' skills will need to improve. In this context, improving the education system and increasing firms' access to information and communication technology are important.

The Government is addressing regulatory burdens through public sector reform. For example, government agencies have been streamlining work processes and establishing one-stop government service centres. In addition, the Government is addressing infrastructure bottlenecks through plans to build nine mass transit lines. The Government has also recently drafted a number of Acts to improve supervision of financial institutions to enhance transparency and flexibility.

Korea

The focus in Korea is on promoting FDI, recognising its importance for increasing Korea's openness to the world economy, and lifting productivity. Key ways to increase FDI include: reducing barriers to entry of foreign firms by relaxing FDI restrictions (notably foreign ownership ceilings), particularly in the telecoms and electricity sectors, as well as increasing the transparency of tax and regulatory policies.

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7 The infrastructure reform package aims to accelerate infrastructure development, including through promoting public-private partnerships. The financial sector reform package aims to strengthen coordination between fiscal and monetary authorities, implement regulatory changes to enable state-owned banks to offload their non-performing loans, and improve the liquidity, efficiency and integrity of capital markets.

Policy measures — ASEAN-4 and Korea (continued)

Korea (continued)

The Government's Vision 2030 plan aims to make Korea more attractive to foreign investors and less protectionist through measures such as: expanding the number of free trade agreements; developing economic zones that offer tax incentives and preferential regulatory treatment to foreign investors; improving regulations to attract foreign workers in order to ease labour shortages in certain sectors; and boosting spending on infrastructure.

Regional initiatives

Domestic reforms to strengthen the investment environment have been complemented by regional initiatives. The broader regional landscape has changed markedly since the crisis, with considerably stronger economic linkages and cooperation. For example, trade within ASEAN has tripled in the past decade, rising to over US$300 billion.[8] However, financial flows within the region remain much more limited despite the region amassing substantial foreign reserves. This has undoubtedly reduced external vulnerability, but at the expense of investing a considerable part of the region's savings in relatively low-yielding US bonds and foregoing opportunities to boost development and domestic investment.

One particular issue this raises is how much the underdevelopment of financial markets has contributed to this situation. One can think of this in two ways. The first is that underdeveloped financial markets may have directly contributed to high rates of saving and/or low rates of investment, by limiting access to finance and risk management opportunities. The second is that financial fragility may have caused regional policymakers to pursue macroeconomic policies designed to keep current accounts in surplus and, hence, avoid reliance on foreign capital.

In light of these developments, a number of forums have focused on promoting greater regional financial linkages. Key initiatives include the ASEAN+3 Chiang Mai Initiative, which is a network of bilateral foreign exchange swaps designed to provide funding in the event of a financial crisis in the region, and initiatives to promote bond market development, including the ASEAN+3 Asian Bond Market Initiative and the EMEAP Asian Bond Funds.[9] Furthermore, the fledgling East Asia Summit also has 'finance' as one of its five key themes.

8 Bloomberg (2007a).

9 EMEAP is the Executives' Meeting of East Asia-Pacific Central Banks.

In addition, APEC supports the facilitation of capital flows by improving the efficiency of capital markets, broad regulatory reform to address structural impediments and the identification and removal of behind-the-border barriers. The APEC Finance Ministers' Process, for example, provides an important platform for officials and ministers to engage in substantive policy discussions that lead to the development and implementation of capacity building initiatives to support financial sector development and integration in the region.

In 2004, APEC Leaders adopted the *Leaders' Agenda to Implement Structural Reform* (LAISR), which identified, inter alia, competition policy, regulatory reform, governance, and economic and legal infrastructure as priority work areas to address. LAISR will, through policy dialogues and capacity building, seek to strengthen government policies, governance arrangements, regulatory frameworks, business operating systems and institutions that underpin the functioning of domestic markets, productivity levels and commercial activities. A ministerial-level meeting to address the priorities for structural reform will be convened in 2008 and is expected to intensify regional cooperation on structural reform.[10]

The APEC Investment Experts Group (currently chaired by the Australian Treasury) has undertaken substantial analytical and survey work in collaboration with the APEC Business Advisory Council (ABAC) to identify barriers to investment in the region. In June 2008, APEC's Ministers Responsible for Trade adopted an Investment Facilitation Action Plan (IFAP) to provide a comprehensive policy response by APEC to investment policy reform. This will involve significant cooperation with ABAC, the World Bank, the United Nations Conference on Trade and Development (UNCTAD) and the OECD. Effectively, the IFAP places investment policy reform on a par with trade policy reform which comes under APEC's Trade Facilitation Action Plan.

Conclusion

The subdued recovery of investment since the crisis is somewhat surprising, given that economic conditions in the region have improved significantly. In addition, a number of key constraints affecting the corporate, government and financial sectors have receded, and there is evidence to suggest that investors have a greater degree of confidence in macroeconomic policy settings.

However, it appears that a number of institutional and regulatory factors are negatively affecting the investment climate, and reforms to address these should assist in lifting investment rates in the region. This is particularly important for the

10 The meeting is being organised by the Australian Treasury through the APEC Economic Committee.

sustainability of long-term growth in the region, given the crucial role that investment plays in enhancing economic performance. In this context, it is encouraging that governments are pursuing practical initiatives — both individually and on a regional level — aimed at targeting these weaknesses and thereby improving the overall investment climate.

Of course, the ultimate policy objective is to improve GDP per capita and wellbeing. Better economic frameworks and policies will result in better signals to investors and, more broadly, improve the allocation of resources in the economy. For example, more flexible labour markets could improve employment outcomes and the matching of workers to jobs, lifting GDP per capita. Hence, the focus needs to be on policy frameworks that promote both the right level and mix of investment, as well as the right level and mix of economic activity more broadly.

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Revisiting the policy requirements of the terms-of-trade boom

Address to the Australian Business Economists, Sydney, 20 May 2008

Ken Henry, Secretary to the Treasury

The global increase in food and energy prices is best thought of as a positive demand shock rather than a negative supply shock for the Australian economy. This is evident in a substantial increase in our terms-of-trade through large rises in export prices. This positive shock is contributing to strong domestic demand growth in an economy operating at close to full capacity. This income effect is being offset to a significant, but not complete, extent by an appreciating Australian dollar. The appreciation is also putting downward pressure on import prices, contributing to a moderation in consumer prices. That is, the exchange rate appreciation is helping to dampen the inflationary consequences of the higher terms-of-trade. The effects of this positive demand shock to the Australian economy can be accommodated by the sensible implementation of our inflation targeting framework, combined with allowing the automatic fiscal stabilisers to work.

Introduction

A couple of years ago in addressing this group I spoke at some length about the macroeconomic and structural adjustments that might confront the Australian economy if the terms-of-trade boom we were then observing turned out to be sustained for some meaningful period of time.

Today, I think we can agree that the period of time over which we have been experiencing heightened terms-of-trade is meaningful in both a macroeconomic and structural sense. Moreover, the terms-of-trade are considerably higher today than they were when I addressed that topic a couple of years ago.

Today, I want to return to a discussion of the policy requirements of our terms-of-trade boom. While I will have something to say about structural, or microeconomic, policy requirements, I will spend most of my time today on macroeconomic policy, and quite a lot of that on monetary policy.

One reason for this focus is that there has been some questioning in recent times of the appropriateness of the inflation targeting regime for monetary policy that was adopted by the Reserve Bank in the early 1990s; that is, the policy rule that targets inflation of two to three per cent on average over the cycle. Given the significant contribution that the conduct of monetary policy has made to our relatively strong macroeconomic performance in the period since the adoption of that particular monetary policy framework, the fact of this questioning is quite peculiar. And today I want to explain why it is seriously misguided.

1. Imported inflation

Those arguing that the inflation targeting regime has outlived its usefulness draw attention to what is often called 'imported inflation': strong increases in global food, energy and minerals prices are contributing to inflationary pressures in all countries; there is little that the Reserve Bank of Australia can do to reduce global inflationary pressures; and efforts to reduce domestic demand to 'compensate' for imported inflation, and so achieve the inflation target, will simply drive the domestic economy into recession. That language puts the argument in rather stark terms, but I don't think it does it any injustice.[1]

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1 A confusion about policy rules has appeared in some recent press commentary on inflation targeting. Our framework is a framework of constrained discretion. It is not an instrument rule; it is not a Taylor rule, or indeed any other sort of instrument rule. In implementing the target, there is no attempt to derive, in a mechanical way, an optimal setting for the policy interest rate.

Indeed, some commentators and analysts are speculating that the world might currently be experiencing precisely the sort of supply-shock that will not only put an end to the relatively benign period of low inflation and strong growth that has characterised the period since emergence from the recession of the early 1990s, but also put an end to inflation targeting.

This somewhat iconoclastic speculation is a serious matter for macro policy people.

In a very readable overview of the state of inflation targeting presented to the August 2004 RBA conference, Ken Kuttner[2] referred to Olivier Blanchard's observation[3] that the intellectual basis for inflation targeting 'rests on the "divine coincidence" that stabilising inflation is equivalent to stabilising output around its natural level'. Thus, inflation targeting is valuable not simply because it encourages a focus on price stability, but because macroeconomic price stability is associated with desirable real economy outcomes, notably in respect of output and employment.

In pondering the future of inflation targeting, Kuttner had this to say: '(Inflation targeters) have … been lucky. Aside from the occasional financial panic, the 1990s were a relatively quiescent decade, more or less free of supply-side disturbances such as the persistent oil price shocks and productivity slowdowns of the 1970s. Moreover, to the extent there *have* been supply shifts, they have generally been favourable, combining higher growth and lower inflation. Thus, a benign economic environment has allowed (inflation targeters) to finesse the more difficult policy issues. Reality has obeyed Blanchard's 'divine coincidence', in other words. The good luck will inevitably run out, however, and adverse cost-push shocks are sure to appear at some point.'[4]

Is that what the world is now experiencing? Is the developed world looking at a 1970s style supply shock? And is this the sort of shock that will put an end to the efficacy of inflation targeting?

Well, it is certainly true that global prices have been rising quite strongly, as Chart 1 shows.

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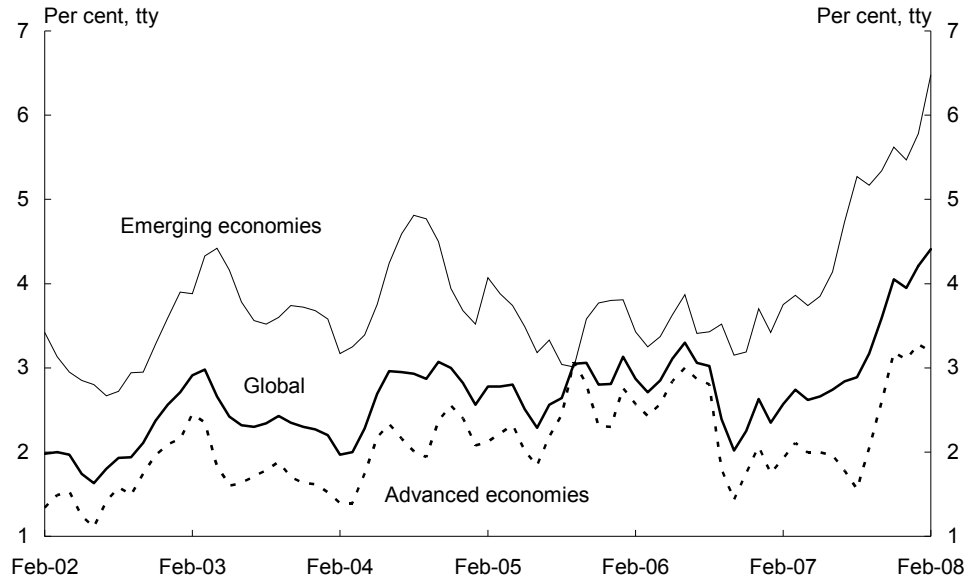
2 Kenneth N Kuttner (2004), 'A snapshot of inflation targeting in its adolescence', *Proceedings of a Conference on The Future of Inflation Targeting*, Economic Group, Reserve Bank of Australia, Sydney, pp.6-42.

3 Olivier Blanchard (2003), 'Comments on Jiri Jonas and Frederic Mishkin's "Inflation targeting in transition economies: experience and prospects"', paper presented at the NBER Conference on Inflation Targeting, Florida, 25 January. Cited in Kuttnet (2004), op. cit.

4 Kuttner (2004), p. 38.

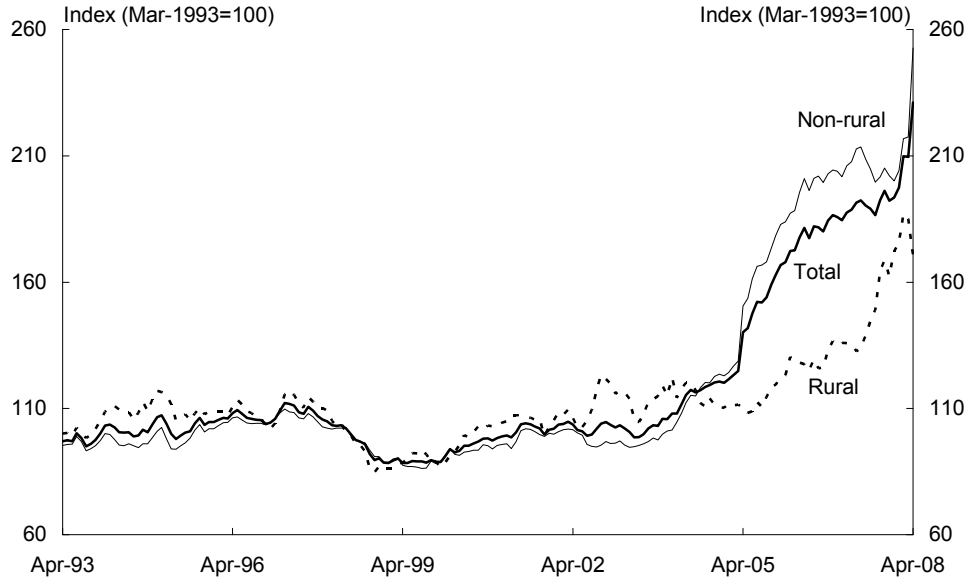
Chart 1: Global inflation



Source: IMF World Economic Outlook, April 2008.

Global increases in the prices of food, energy and minerals, in particular, have been reflected in strong growth in the foreign currency prices of our commodity exports (see Chart 2, which records the average price of our commodity exports in SDR units).

Chart 2: Commodity price inflation

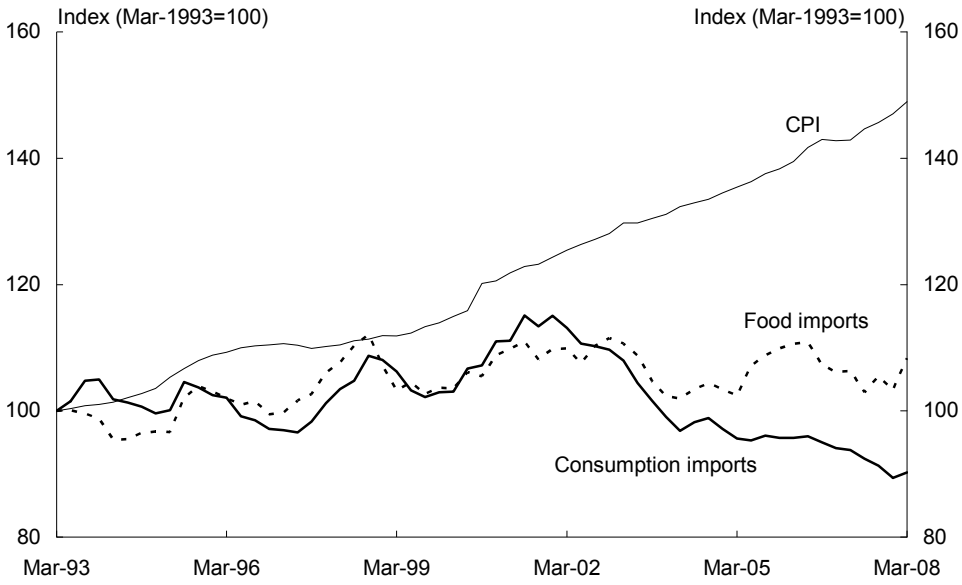


Source: Reserve Bank of Australia.

To state a tautology, those price increases are the consequence of global demand growth outstripping global supply growth at prevailing prices. Principal among the various demand factors is the continuing rapid growth of China and India. Among the more important supply factors, one could list our own prolonged drought and the United States' biofuel subsidies affecting global grain supplies; and, perversely, flooding in a number of countries, including our own, affecting global coal supplies. My guess is that the supply side factors at play here are rather less structural — that is, rather less permanent — than the demand side factors, although the United States biofuel program has some worrying signs of structural policy misadventure. If that is the case, then the present global price pressure is more the consequence of strong growth than, as in the 1970s, a negative, growth-destroying, shock to the cost base of the developed world.

But the iconoclasts certainly are correct to note that global prices are rising. And it may also be true that these global price increases are exerting upward pressure on Australian prices. That effect does not appear to be coming through strongly in import prices, however. Chart 3 presents, for the period from the March Quarter 1993 to the March Quarter 2008, the CPI and the $A import price indices for food and beverages and for consumption goods. In the last quarter, the prices of food imports have increased strongly, but that has not been the experience of imports of consumption goods in general. Clearly, the behaviour of the CPI cannot be explained by higher prices of consumption goods imports.

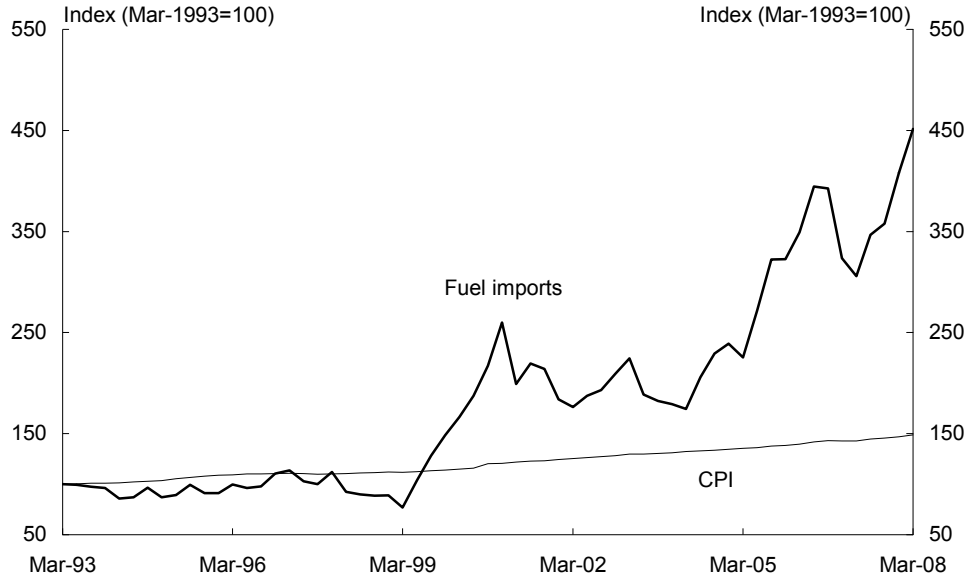
Chart 3: Prices of consumer imports and the CPI



Note: Import price data are implicit price deflators from the Balance of Payments. March quarter 2008 import price data are estimates based on the International Trade Price Indexes.
Source: ABS cat. nos. 5302.0, 6401.0, 6457.0 and Treasury.

Of course, higher global prices are feeding through into domestic consumer prices in other ways. For example, the prices of fuels and lubricants affect just about all consumer prices indirectly. And, as Chart 4 shows, the prices of imported fuels and lubricants have been growing at a much faster rate than the CPI in recent years. I'll say more about these effects in a moment.

Chart 4: Prices of fuel imports and the CPI



Note: Import price data are implicit price deflators from the Balance of Payments. March quarter 2008 import price data are estimates based on the International Trade Price Indexes.
Source: ABS cat. nos. 5302.0, 6401.0, 6457.0 and Treasury.

Finally, those questioning the appropriateness of our inflation targeting regime are right in saying that there is very little that the RBA could do to address the various demand and supply factors that are affecting global prices.

In summary then, it is that case that commodity prices globally are increasing, those price increases may be feeding into domestic consumer prices (though the evidence for this is weak), and there is nothing the RBA can do to affect global demand and supply.

But those observations do not constitute a case for discarding our inflation targeting regime.

2. The case for having an inflation target

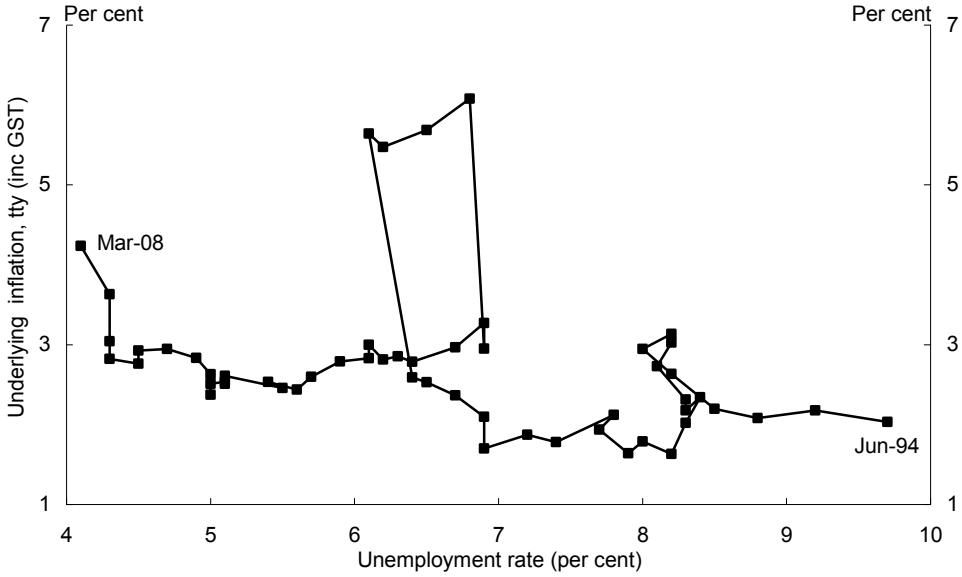
Our inflation target permits non-negligible prices growth over time, it allows for cyclical variability, and it has 'soft edges'. These design features are deliberate. They were not adopted lightly. Australian authorities recognised that the Australian

economy would, from time to time, be subject to external shocks that could, over time, undermine the value of tighter, harder edged targets. It is undoubtedly the case that the current acceleration in global commodity prices is out in the tail of the distributions of probable shocks that were in the minds of those authorities in the early 1990s. But it is also true, I would suggest, that the inflation targeting regime has handled, far better than they might have imagined, other external shocks, including the Asian financial crisis and a pronounced economic downturn in the early years of this decade in much of the industrialised northern hemisphere.

The case for having a medium-term monetary policy target is that it helps to anchor inflation expectations. Anchoring inflation expectations is especially important when the economy is growing strongly and when it is being hit by external shocks to domestic prices. Without a secure anchor, an increase in the level of consumer prices, for whatever reason, might feed into wage claims and generate a costly wage-price spiral; we've seen such things before.

The benefit of having well anchored inflation expectations is illustrated in Chart 5, which presents a naïve Phillips Curve for the period from the June quarter 1994 to the March quarter 2008. The recovery from the early 1990s recession was slow to emerge, but by 1994 the economy was growing strongly. And that strong growth was fuelling inflation. The acceleration in consumer prices evident from the June quarter 1994 was halted by a monetary tightening that saw the cash rate lifted from 4.75 per cent to 7.5 per cent by December 1994; by 275 basis points in four months. The extent to which that decisive action helped to anchor inflation expectations is illustrated by the fact that the increase in consumer prices associated with the introduction of the GST in mid-2000 was only temporary. As this decade has unfolded, the unemployment rate has continued to fall without the inflationary consequences of earlier decades.

Chart 5: Phillips curve



Source: ABS cat. nos. 6202.0, 6401.0, Reserve Bank of Australia and Treasury.

Our inflation targeting regime has served us well.

It is possible that its critics would concede this much: the history is pretty good; it's the future we should be worried about. And there is a bit to be worried about. Present macroeconomic circumstances are as testing as anything we've seen since the mid to late 1980s. But frameworks designed to anchor expectations will not be successful if they are put aside the moment they are tested. It is in testing times that they do their work. That much should be self-evident.

So the argument for discarding our inflation targeting regime can't just be that things are getting tough; it must be that, in present circumstances, the framework prescribes the wrong monetary policy settings.

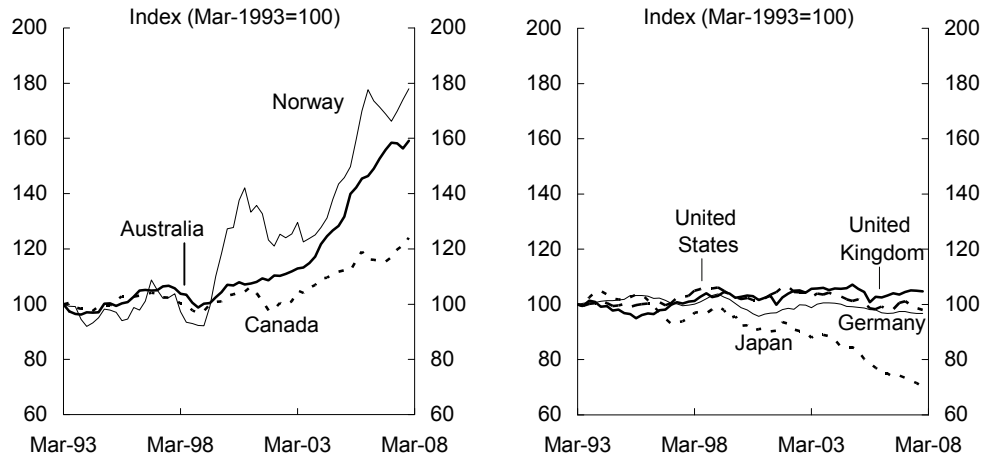
This argument should be rejected.

3. The shock hitting the Australian economy

It is somewhat misleading to describe as 'imported inflation' the impact on Australian prices of higher global prices for cereal grains, coal and iron ore. Were that a natural description of the impact of those higher prices, we would be experiencing a worsening of our terms-of-trade. Certainly, as Chart 6 shows, that has been the experience of most industrial economies. But as Chart 6 also shows, Australia, like

Norway, and to a much lesser extent Canada, is living with an extraordinary terms-of-trade boom.

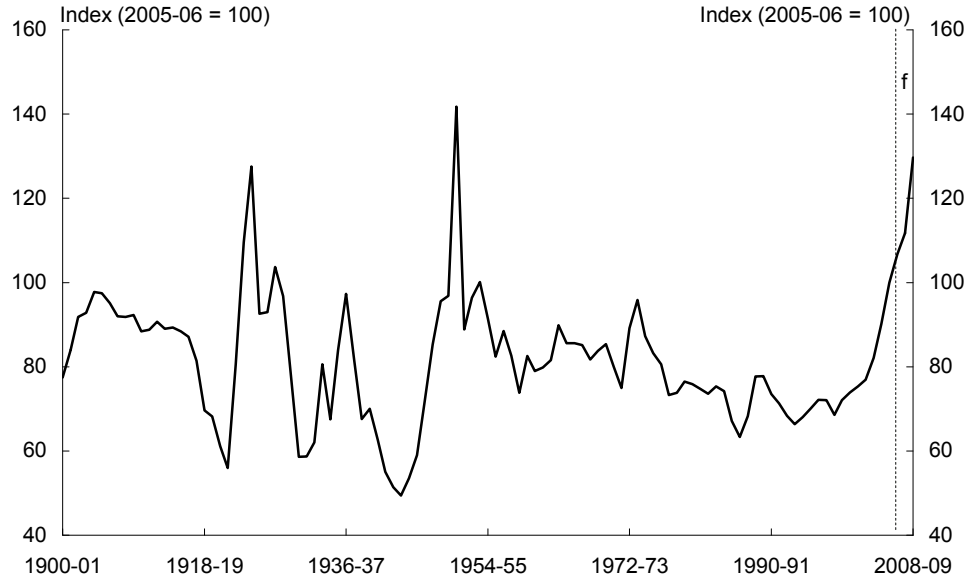
Chart 6: Terms of trade: selected industrialised economies



Note: December quarter 2007 data are forecasts.
Source: OECD Economic Outlook No. 82.

Indeed, as Chart 7 shows, it is a boom that is beginning to rival that associated with the Korean War when wool prices almost tripled in two years.

Chart 7: Terms of trade (Australia)



Source: ABS cat. no. 5302.0, Reserve Bank of Australia and Treasury.

In the case of most industrial economies, cereal grains, energy and minerals are net imports and therefore feature in the *denominator* of their terms-of-trade. In Australia's case, however, these things are largely net exports, and therefore feature in the *numerator* of our terms-of-trade. Now, ignoring for the moment any change in the exchange rate and any impact of induced changes in domestic supply and demand conditions, an increase in the global prices of these products, whether they appear in the numerator or denominator of the terms-of-trade, will generally have an autonomous positive impact on domestic prices. But in respect of the risks posed for inflation, it matters quite a lot whether the price increases are coming through the numerator or denominator of the terms-of-trade.

4. Direct price impacts

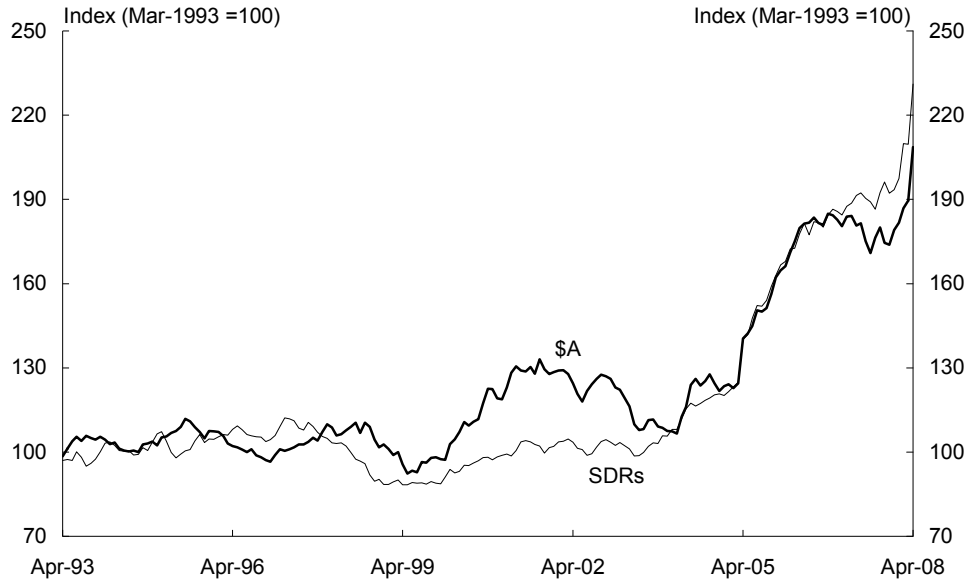
In national accounting terms, imports enter into consumption directly and they feed into the consumer prices of domestically produced goods and services to the extent they are used as intermediate inputs. By definition, exports can do neither of these things. But 'exportables' can. And, in the absence of export taxes and similar interventions, the domestic prices of exportables (that is, goods and services of which at least part of the output is exported) will match their global prices expressed in the same currency. Hence, ignoring exchange rate and other induced effects, to the extent these goods and services are used as intermediate inputs to domestic production, an increase in their global prices will also raise the consumer prices of domestically produced goods and services.

These price effects are fairly mechanical. There are other, less mechanical, but no less important, effects that need also to be considered. These effects relate to the exchange rate, the rewards to the primary factors of production, especially labour, and the impact on domestic final demand.

5. Exchange rate adjustment

When global prices of our imports rise, the nominal exchange rate might normally be expected to depreciate, amplifying the impact on domestic prices. But when the global prices of our exports rise, the capital account of the balance of payments will usually strengthen on an expectation of a higher yield on $A denominated assets. The nominal exchange rate will appreciate. And that exchange rate appreciation will attenuate the domestic price impact of the higher export prices referred to above. This has been our experience (see Chart 8): especially in the last two years, the gap between global commodity prices and commodity prices in $A terms has been widening. Even so, the exchange rate appreciation has not been nearly large enough to prevent the $A price of our commodity exports from increasing strongly.

Chart 8: Commodity prices in international and domestic prices



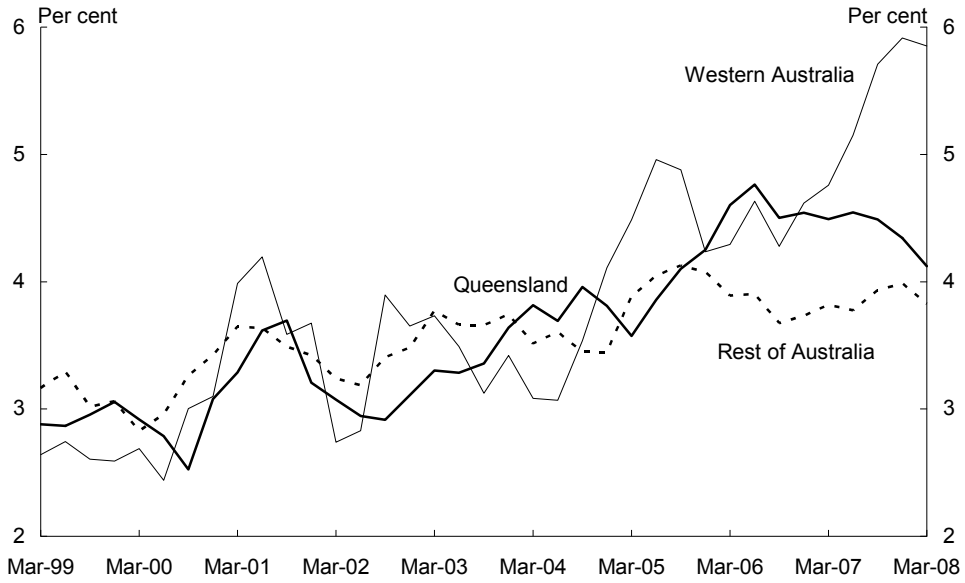
Source: Reserve Bank of Australia.

The appreciation of the $A has, however, put downward pressure on the price of imports, including (as Chart 3 illustrated) imports of consumption goods. This is one way in which a floating currency redistributes, from shareholders in resource companies to Australian households, some of the real income effect of higher export prices. I'll come to those real income effects in a moment.

6. Labour market adjustments

The increase in the $A price of commodity exports permits higher wages to be offered in the commodity exporting sectors of the economy, and also in sectors complementary with commodity exporting; principally mining construction, mining services and mining-related manufacturing. Given that our resource endowments are not uniformly distributed across the Australian continent, there will be a geographic dimension to wages growth. Chart 9 shows that, over the period in which commodity prices have grown strongly, the resource-rich states of Queensland and Western Australia have experienced considerably stronger wages growth.

Chart 9: Wage price index growth



Source: ABS cat. no. 6345.0.

Wage increases for labour that is of value to enterprises in the mining and construction sectors help facilitate the sectoral reallocation of labour: these sectors, having benefited from output price increases, can afford to pay the higher wage rate, and they draw labour away from those sectors that have not had output price increases.[5] This is a straightforward instance of the price mechanism allocating a scarce resource. On this topic, it's worth recalling the 1929 comment of Professor Edward Shann, then of the University of Western Australia, who said that '… the higgling of the market is a sanction of economic wisdom more prompt, delicate and potent in its operation than any rewards or penalties that are within the slow reach of an over-burdened judge or commission.'[6] Shann was, of course, taking a less than subtle swipe at the decisions of the Commonwealth Court of Conciliation and Arbitration which had laid the groundwork for Australia's highly centralised wage setting system, but his point that flexible relative wages are a necessary ingredient in an economy's ability to adjust successfully to shocks is correct.

As a general rule, macroeconomic policy should not compromise the price mechanism, including in labour markets, playing such a role. But large structural adjustments can pose risks for macroeconomic policy. This was especially the case when we had

5 Employment in those other sectors has to fall in order that the marginal product of labour increases to match the higher real wage rate (assuming a diminishing marginal product of labour, of course). For simplicity, this discussion ignores the general equilibrium impacts on capital intensities that act to reduce labour's marginal product in all sectors.

6 Edward Shann (1930), 'Economic control', *Bond or Free?*, Angus & Robertson, Sydney, p 36.

significant structural rigidities in our labour markets. The most problematic labour market rigidities were those that pre-dated enterprise bargaining, operating through judicial or administrative mechanisms to spread wage increases generally across the economy, to occupational categories for which aggregate demand had not increased (more accurately, for which there had been no increase in the value of marginal product), and to regions from which labour was slow to move. The consequence was not only inflation, but also unemployment.

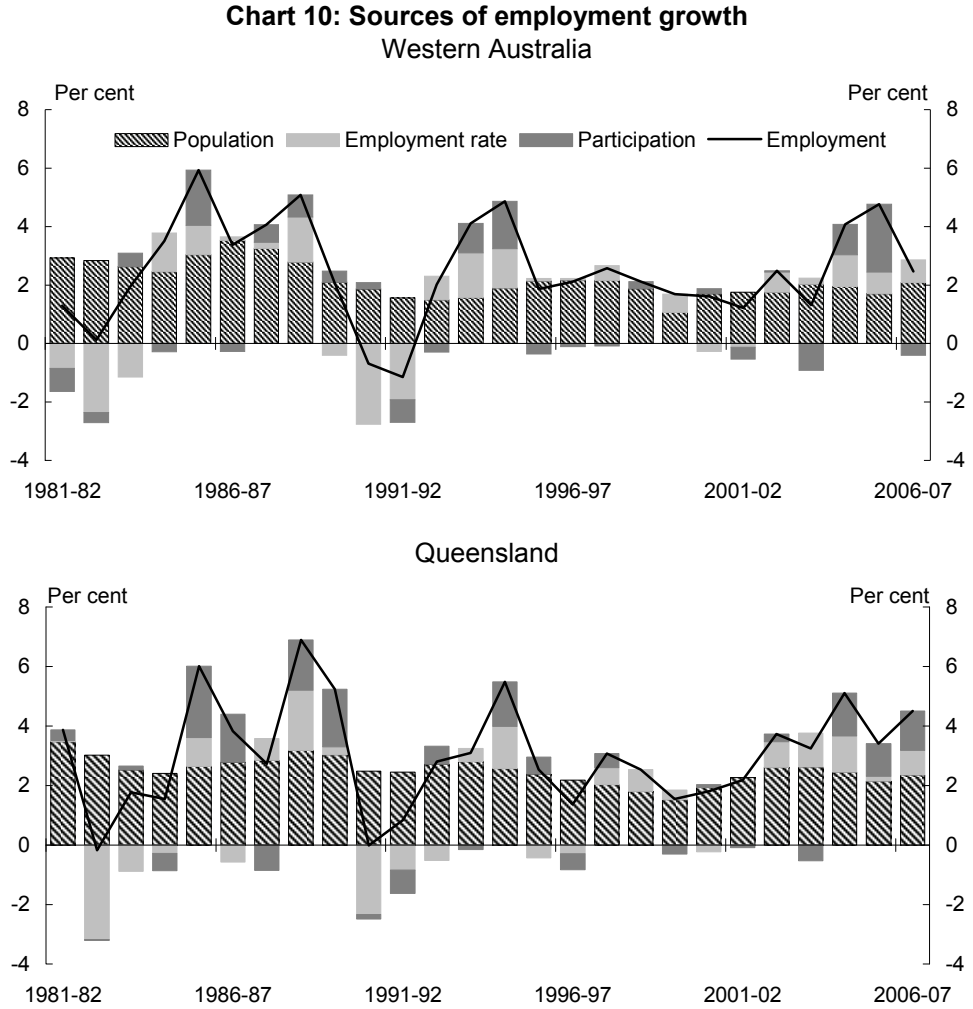
It might seem perverse that a positive demand shock can produce unemployment. If the labour market is highly flexible, and labour is highly mobile geographically, it shouldn't. But we know that it can happen if wage setting arrangements are overly centralised, as they were in the 1970s when we last had a significant increase in our terms-of-trade.

Fortunately, the Australian labour market today is very different from that of the 1970s. But the poor macroeconomic outcomes of that earlier period provide a potent reminder of the importance of maintaining flexible, enterprise-based bargaining arrangements that are sensitive to occupational and regional differences in labour demand.

The importance of relative wage flexibility among occupational groups is well accepted these days. But what about regional wage differentials? What matters here, as I have noted already, is the degree of labour mobility. Eventually, labour of a particular quality that is inter-sectorally mobile should command the same reward in all places — with appropriate adjustment for sector-specific 'disutilities', of course. But there is some evidence that Australian labour is not sufficiently mobile to compress regional wage differentials within a period of several years.

Chart 10 shows that much of the pick-up in average rates of employment growth in Western Australia and Queensland over the past three years has come from higher rates of labour force participation and lower unemployment rates, rather than from faster growth in state populations.

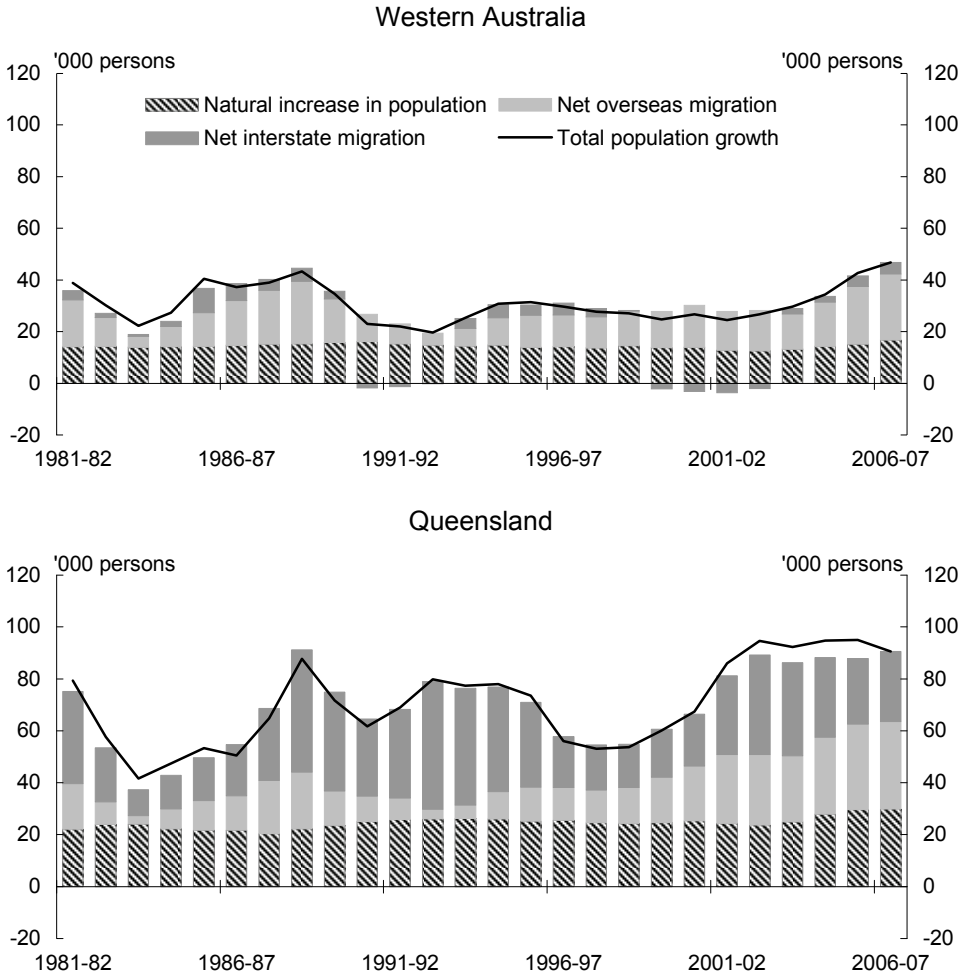
Chart 10: Sources of employment growth



Source: ABS cat. no. 6202.0 and Treasury.

Chart 11 looks closer at the sources of population growth in the resource-rich states.

Chart 11: Sources of population growth



Note: These Net Overseas Migration estimates contain a break in time series. Estimates for September quarter 2006 onwards use an improved methodology and are not comparable with Net Overseas Migration estimates from earlier periods. Differences between total growth and the sum of natural increase and net migration between census years are due to intercensal discrepancy.
Source: ABS cat. no. 3101.0.

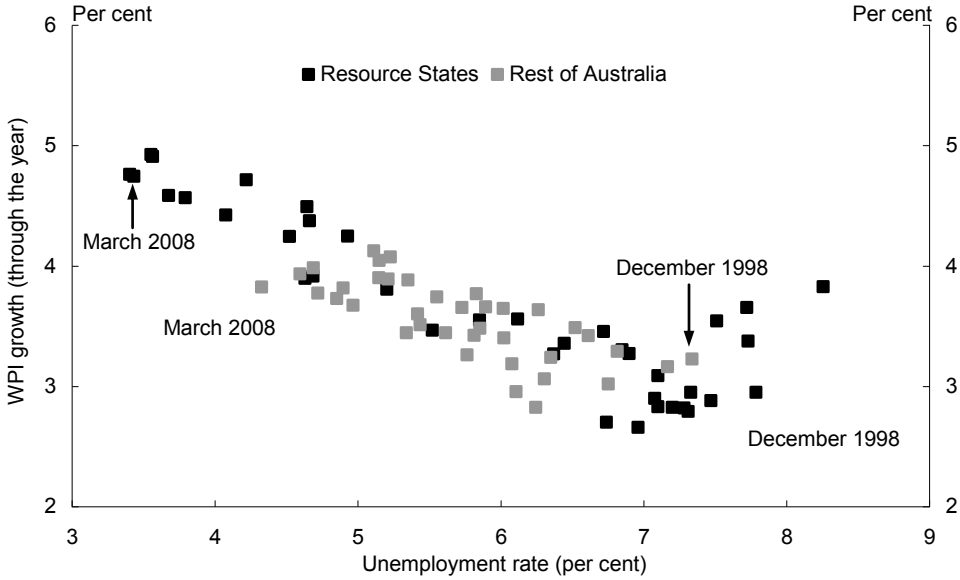
Natural population increase, as you would expect, has not changed significantly in recent years, although there may be some upward drift observable in Queensland. The other two components — net interstate migration and net overseas migration — are more interesting. In Western Australia, the net inflow of people from other states appears to have increased, but it is still only a small component of total population growth. In Queensland, which traditionally has had a higher net interstate migration inflow, there has been no step-up in growth in recent years. For both Western Australia and Queensland, the net overseas migration inflow, however, does appear to have increased in recent years. This trend is also evident in other states.

The low sensitivity of interstate migration flows to the wage growth that we have seen in Western Australia and Queensland might seem surprising. But the decision to move interstate is based on many factors, of which the remuneration opportunity is only one.

To date, net overseas migration seems able to respond more quickly to employment opportunities. The immigration programme provides mechanisms by which particular skills can be targeted. And it might be easier to encourage immigrants to consider settling in areas where labour is needed than it is to induce an established Australian resident to move interstate.

Labour market outcomes in the various states are summarised in Chart 12 which shows combinations of wage price inflation and unemployment rates for the resource states of Queensland and Western Australia and for the rest of the country. The former are now experiencing higher wage growth and lower unemployment rates than the rest of the country, a reversal of the situation a decade ago.

Chart 12: Wage inflation and unemployment



Source: ABS cat. nos. 6202.0 and 6345.0.

Labour market flexibility, then, is quite important to the operation of monetary policy when the economy is hit by a large terms-of-trade shock. But even when labour markets are very flexible, there remains a significant risk for monetary policy; specifically, that a large increase in wages hoists the anchor on inflation expectations.

Before moving on from a consideration of labour market matters, it is worth noting that labour market impacts would be equally challenging for macro-policy if global price increases were reflected in the $A prices of our imports rather than our exports.

As we saw in the mid-1980s, in this case, it is import-competing producers — encouraged by a depreciating nominal exchange rate — who have the capacity to pay higher wages to attract labour. Many of you will recall that the Government of the time was concerned to ensure — through both fiscal policy and the prices and incomes Accord with the trade union movement — that the *nominal* exchange rate depreciation was also a *real* exchange rate depreciation.

In the case of an increase in export prices, the induced increase in $A wages adds to the real exchange rate appreciation, of which the nominal appreciation is also a part. The real exchange rate appreciation is an important shock absorber, attenuating both the macroeconomic and structural consequences of the terms-of-trade improvement.[7] Monetary policy plays an important role here in determining, at least in the short run, how much of the real exchange rate appreciation occurs through the nominal exchange rate, and how much occurs through an increase in the domestic primary factor cost base.

7. Real income and substitution effects

There are also complex income and substitution effects to consider. And these can be, from a macroeconomic policy perspective, by far the most important.

When $A export prices increase there is an addition to national income. The associated exchange rate appreciation also reduces the price of imports relative to domestically produced goods and services, encouraging demand substitution away from domestic product. As discussed in my presentation to this group three years ago, these attenuating exchange rate effects can be quite substantial. Even so, it will generally be the case that the net impact on domestic demand of an increase in the global prices of our exports is positive.

When import prices increase, there are both income and substitution effects impacting on the demand for domestic product also. Two income effects — one positive and the other negative — need to be considered. First, producers of import-competing product benefit from an increase in real income. And second, consumers of imports suffer a real income reduction. It is necessarily the case that the second effect is the larger; that is, overall, there is a negative real income effect. On the other hand, there is a positive substitution effect: as the relative price of imports rise, consumers switch to domestic

7 Gruen and Dwyer (1995) show that, if the real exchange rate appreciation is sufficiently large, the net impact of an increase in the terms of trade on domestic inflation (especially after taking account of the lower prices of imports and 'importables' included in the consumption basket) is negative. Gruen, D. and Dwyer. J (1995), *Are terms of trade inflationary?*, Reserve Bank of Australia, Research Discussion Paper (RDP 9508), November.

product. It is conceivable that this positive substitution effect dominates the negative real income effect. However, when the imports that are increasing in price are things like food and energy, I would say that such an outcome is extremely improbable.[8] Thus, economies that are large net importers of these products are experiencing strongly negative real income shocks that should be expected to have a negative impact on the demand for domestic product, notwithstanding some degree of positive demand substitution.

This is why some analysts suggest that an increase in import prices should be treated as a 'negative supply shock', and argue that it would be inappropriate to tighten monetary policy in response: in such circumstances, the real macroeconomic consequences of achieving price stabilization in some short-term time period will be unacceptably high.

But when it is export prices that are increasing, we do not have a negative supply shock; rather, we have a positive demand shock. The implications for macroeconomic policy are quite different.

8. Is it time to ditch our inflation targeting regime?

In summary, from an Australian economy perspective, the global increase in food and energy prices is best thought of as an export price shock, evident in a substantial increase in our terms-of-trade. That shock is producing an increase in income that is contributing to strong domestic demand growth in an economy operating at close to full capacity. The size of the income effect is being offset to a significant, but not complete, extent by an appreciating $A. This appreciation is also putting downward pressure on import prices, contributing directly and, through substitution effects, indirectly to a moderation in consumer prices. In these three ways, the exchange rate appreciation is helping to dampen the inflationary consequences of the higher terms-of-trade. What remains should not be thought of as the consequence of a negative supply shock; instead, it reflects a positive demand shock to the Australian economy. But there is no reason to think that it is the sort of shock that cannot be accommodated by the sensible implementation of our inflation targeting framework.

9. The role for fiscal policy

Fiscal policy can play a supportive role. Indeed, the *Charter of Budget Honesty Act 1998* mandates that it do so. The second of the 'principles of sound fiscal management' says

8 Note that in Slutsky-Hicks terms, what matters here is the degree of (compensated) substitutability between the imports that are increasing strongly in price and 'aggregate' domestic product.

that 'the Government is to ensure that its fiscal policy contributes to achieving adequate national saving and to moderating cyclical fluctuations in economic activity, as appropriate, taking account of the economic risks facing the nation and the impact of those risks on the Government's fiscal position'.

As I have observed previously[9], ill disciplined fiscal policy can set up problems for monetary policy in two ways: by impacting the trajectory of consumer prices in a way that forces a monetary response or tests monetary policy credibility; or by generating destabilising volatility in the real economy through which the monetary transmission process operates. Disciplined fiscal policy, on the other hand, relaxes constraints on the effective operation of monetary policy. A credible, medium-term fiscal strategy, in particular, provides room for an effective monetary policy.

On that earlier occasion, I noted that activist counter-cyclical fiscal policy might be frustrated by lags of recognition, implementation and transmission. And its effectiveness might be compromised by Ricardian equivalence, the permanent income hypothesis or import leakages. I noted that these lags and questions of effectiveness pose real challenges for the use of counter-cyclical fiscal policy. But I also noted that they do not rule out such use.

And, obviously, they do not rule out allowing the so-called automatic stabilisers to work. That's probably how the fiscal stance contained in this budget should be interpreted. With respect to the current year, 2007-08, the *Pre-Election Economic and Fiscal Outlook* (PEFO) published in the November 2007 election period estimated an underlying cash surplus of 1.3 per cent of GDP. Last week's budget reveals parameter and other variations since PEFO that would have added $5.2 billion, or about 0.5 per cent of GDP, to the underlying cash balance. Of this, more than 0.3 per cent of GDP is additional tax revenue. Most of that upward revision to tax revenue has been 'saved', to achieve a 2007-08 surplus estimated now to be 1.5 per cent of GDP. For the budget year, 2008-09, the government has targeted an underlying cash balance excluding tax revenue revisions of the same proportion of GDP — that is, 1.5 per cent. Adding the revisions to tax revenue since PEFO, the estimated surplus for 2008-09 is 1.8 per cent of GDP.

As all of you would know, that figure of 1.8 per cent of GDP does not include Future Fund earnings. If those were included, in order to obtain a consistent historical series, the forecast cash surplus would be 2.1 per cent of GDP — the largest budget surplus as a proportion of GDP since 1970-71.

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9 Henry (2003), Fiscal policy in Australia, Address to the Australian Conference of Economists Business Symposium, Canberra, 2 October 2003, available at: http://www.treasury.gov.au/contentitem.asp?NavId=&ContentID=699.

10. Structural policy requirements

I will conclude with some remarks on structural policy requirements. I've already emphasised the critical importance of labour market flexibility in present macroeconomic circumstances. But, important as that is, it is only one element of a much larger set of structural policy requirements if this terms-of-trade boom, unlike several that have preceded it, is to have a happy ending. And while our current labour market arrangements are in pretty good shape, it is unfortunately the case that in many other areas the structural reform task is still in front of us.

In presenting the Ian Little Memorial Lecture in Melbourne in March I emphasised the need for policy makers to develop institutional arrangements to support the operation of efficient markets and, in particular, to allow the price mechanism to determine the allocation of our scarce resources. I illustrated the argument with some observations about the Soviet-style arrangements presently operating to allocate water in this driest inhabited continent on earth. And, as on other occasions, I noted that the most significant obstacle to structural policy reform is a political sensitivity — intolerance even — to the logic of markets.

With the extraordinarily rich COAG agenda being developed by Australian governments this calendar year there is cause for being optimistic that this will be a relatively enlightened period for microeconomic reform.

But consider this.

In 1992, COAG agreed to a notional road user charge for heavy vehicles. The charge was struck at an initial level of 18 cents per litre of diesel and collected as a notional component of the diesel excise, which was then around 26 cents a litre and subject to periodic indexation in line with the CPI. COAG agreed that the charge would be reviewed periodically by the National Road Transport Commission (NRTC), now the National Transport Commission (NTC). By 2000, the diesel fuel excise had been indexed to 44 cents a litre. With the introduction of the GST in that year, the Howard Government decided that the notional road user charge should be the total effective excise payable by heavy vehicle operators. Acting on the NRTC's second determination, the Government increased the notional road user charge to 20 cents a litre. And it then introduced arrangements so that the difference between the 44 cents a litre excise and the notional road user charge was refunded.

Thus, in 2000 the effective diesel excise payable by heavy vehicle operators was cut from around 44 cents a litre to 20 cents a litre, all of which represented a notional road user charge. In March 2001, automatic fuel excise indexation was terminated, the fuel excise rates were cut by 1.5 cents per litre, and the road-user charge was cut from 20 cents a litre to 19.633 cents per litre.

In 2005, the NTC completed its third determination. It found that the road user charge should be increased (from 19.633 cents a litre to 22.1 cents a litre). That recommendation was not endorsed by the former Government.

Instead, in 2007 COAG directed the NTC to undertake a new determination. The NTC recommended that the road user charge be increased to 21 cents per litre, along with a range of changes to registration charges.

On 29 February 2008, the Australian Transport Council (comprising State, Territory and Commonwealth Transport Ministers) endorsed the NTC recommendations. And on 13 March 2008, the Rudd Government tabled a regulation in the Parliament to implement the increase in the road user charge with effect from 1 January 2009.

But on Wednesday of last week, following the Budget, and before the Leader of the Opposition had delivered his speech in reply, Opposition Senators disallowed the regulation.

This should have been front page news. But it wasn't. In fact, I have been able to find only one reference to it in the nation's print media: a tiny side-bar piece of 52 words with an AAP by-line buried on page 26 of Friday's *Australian Financial Review*.

The road user charge for heavy vehicles is not the most important structural policy matter likely to confront the nation's parliaments this year. But it would be one of the easiest. And it is a pre-condition for other, more important, land transport reforms.

If this terms-of-trade boom is going to have a happy ending, we are going to have to do better than this — a lot better.

Australia's experience in the sub-prime crisis

Address to Flinders University International Expert Symposium on 'The Sub-Prime Mortgage Meltdown: Origins, Trajectories and Regional Implications', Adelaide, 16 May 2008[1]

John Edwards, Chief Adviser, Macroeconomic Group[2]

1 The charts in this article are selected updated versions of those presented at the Symposium.

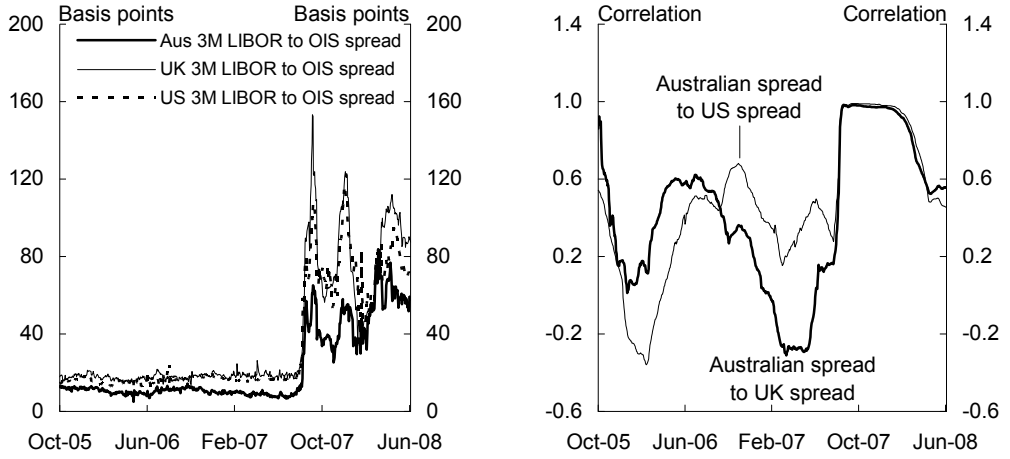
2 Thanks to Treasury colleagues Blake Ford for statistical work and preparing the charts for this paper, and Dong Zhang for preparing the chronology which lies behind it.

The manifestation of the crisis in Australia

Sydney is about as far from New York as it is possible to be on the surface of this planet, and while there are many similarities between the Australian economy and financial systems and those of the UK and the US, there are also important differences. The distance, the dissimilarities, however, did not prevent the manifestation in Australia of some aspects of what we have come to call the sub-prime financial crisis soon after its eruption in the United States towards the end of July last year.

The spread between three month bank bill swap rates and cash, for example, increased almost immediately, revealing that Australian banks had become as eager to increase their liquidity and as reluctant to part with it as banks in the US, Europe and the UK.

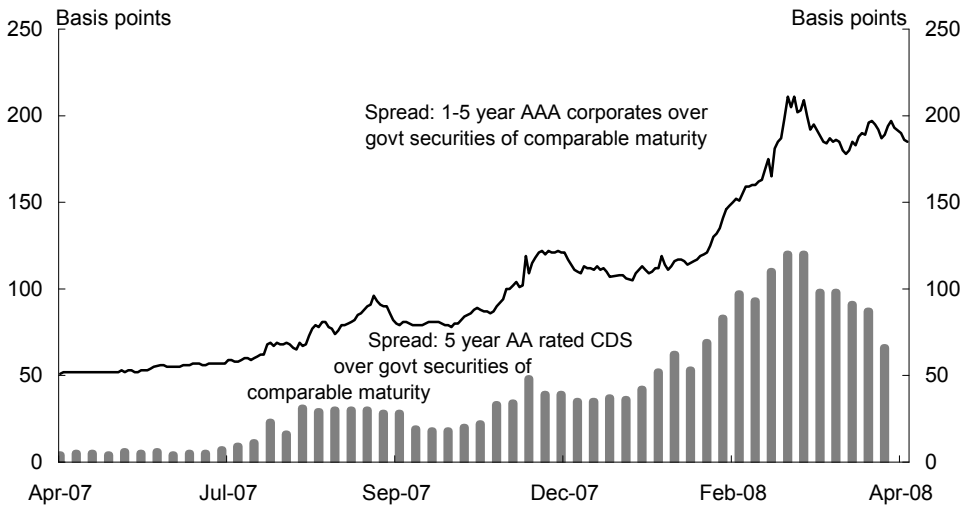
Charts 1 and 2: International credit spreads and correlations



Note: Correlations refer to 180-day rolling correlations.
Source: Reuters and Treasury.

The spread did not increase as much as elsewhere, an early sign that Australia's experience would be relatively mild, but it was enough to signal that the Australian financial system would not be immune. Spreads on Australian AAA corporate paper blew out as high quality paper spreads blew out elsewhere, and the market in corporate bonds faltered in Australia as it did in other advanced economies.

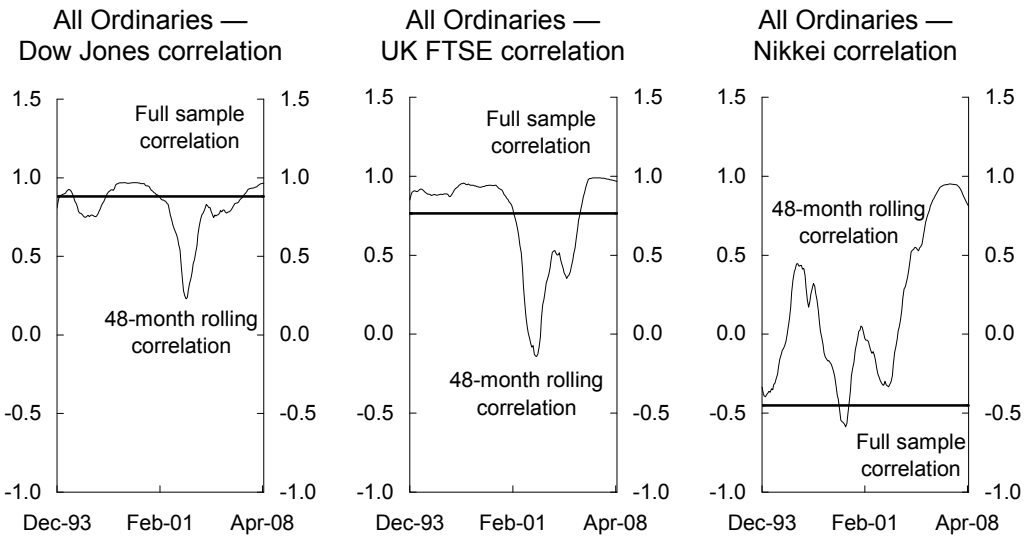
Chart 3: Australian corporate credit spreads



Source: Reserve Bank of Australia.

The market for Australian residential mortgage backed securities is largely offshore. By November, it had folded. After a prolonged period in which the connexion between the performance of the Australian equity market and equity markets abroad had become quite tenuous, the Australian equity market began to be more influenced by movements in the US and Europe.

Chart 4: International stock indices – correlations



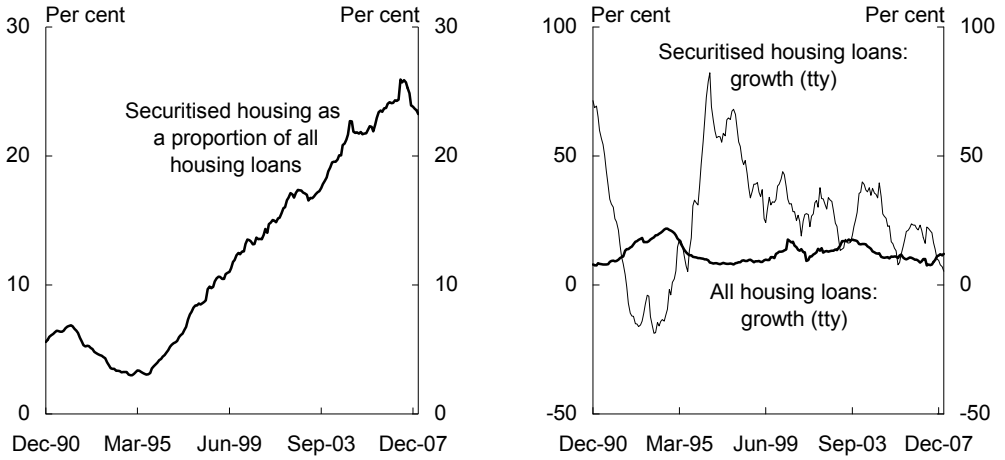
Source: Reuters and Treasury.

Nor was the manifestation in Australia limited to a similarity of movements in yields and some financial asset prices. Within weeks of the onset of the crisis in late July last year, Australian banks were faced with some of the same pressures on liability side of their balance sheets which bothered their offshore counterparts.

The attenuation of the corporate bond market encouraged many business borrowers to look to banks as an alternative source of funding. This was good business for banks, but it happened to coincide with a period in which their funding requirement had anyway increased.

Australia's major banks were not as dependent on the Residential Mortgage Backed Securities (RMBS) market as many offshore institutions, but securitisation had become very much more important in recent years.

Charts 5 and 6: Securitised mortgages in Australia



Source: Reserve Bank of Australia.

While the majors used the RMBS market opportunistically to secure term funding, the smaller players in the home mortgage market depended on securitisation as a relatively cheap source of funds in the absence of a retail deposit base. When that market closed, as it did in November, it left a considerable hole in the funding of Australian household demand for mortgages. The mortgage providers dependent on that market had no alternative but to batten down, or in the case of RAMS, to sell their physical assets and brand. The major banks picked up home mortgage business, while the regional banks held market share.

Though to a much lesser extent than in the US and the UK, some Australian banks had taken some home mortgage assets off their balance sheets, and placed them in vehicles financed with short term paper. As was the case with banks in the US Europe and the UK, there was suddenly no market for the paper backed by mortgages — or at least

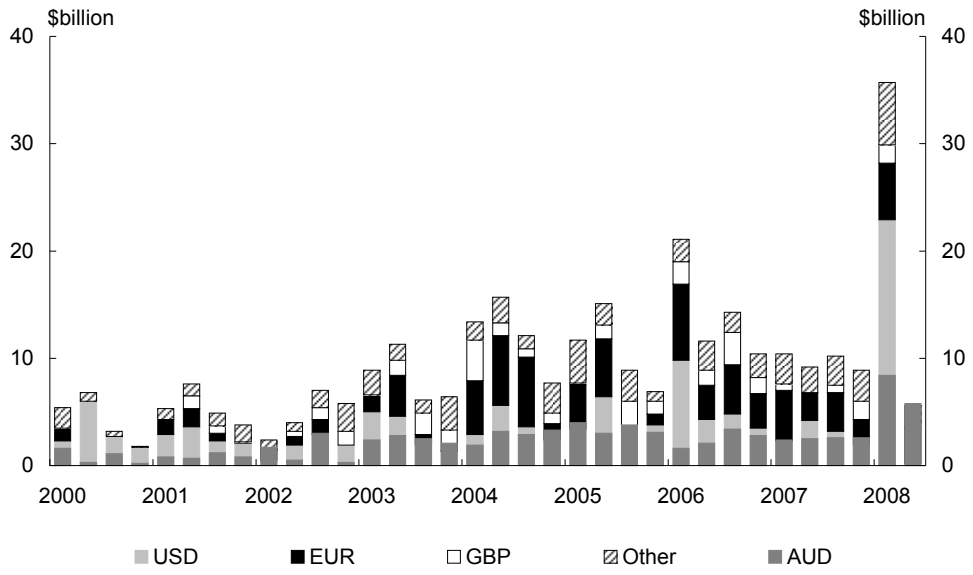
not at yields which made these vehicles smart business. The mortgage securities in these vehicles were then in some instances brought back onto the sponsoring bank's balance sheet, obliging them to pay out the corresponding debt.

By late last year there were thus three additional sources of demand for bank lending — households which might have formerly have used smaller lenders which funded their lending by securitisation, bigger businesses denied access to the bond market, and (to a much more limited extent than in the US and the UK) the banks own assumption of assets formerly held in conduits.

These sources of additional demand for bank lending coincided with stress in funding.

Australian banks raise most of their liabilities onshore, but there is an important role for offshore borrowing as well. In recent years Australian banks have become accustomed to rely upon the deep capital markets of Europe, the United States and Japan to supply most of their term funding.

Chart 7: Australian banks' offshore bond issuance



Note: Data as at 6 May 2008.
Source: Reserve Bank of Australia.

In the second half of last year, and particularly severely in the early months of the crisis, the global market for bank paper suddenly became extremely expensive and difficult to access. This was of course because lenders were uncertain about the extent of losses in all banks, and were meanwhile seeing the value of their existing portfolios of term bank paper decline. While Australian banks would willingly pay a higher spread for short term funding, they were reluctant to pay what to them were

unusually high spreads to borrow term until they were convinced the higher term spreads were enduring.

With the RMBS and other asset backed paper markets closed or trading only thinly, the offshore market for Australian bank term paper suddenly difficult to access, the onshore market for short term funding became unusually expensive. All this was occurring at a time when the Australian banks demand for liabilities was rising, to match the increased supply of assets being offered to the banking system.

It is important to note at this point that these sudden pressures on the both the asset and liability sides of banks' balance sheets could and did occur without any change in the default rate in Australian bank assets or those in the financial system more widely, without any needed increase in the provision for bad and doubtful debts, without blemish in Australian financial institutions. It could and did occur despite the fact that Australian financial institutions owned only insignificant amounts of US sub-prime mortgage paper, and had relatively little exposure to any of the major classes of financial assets where default occurred.

The response of the RBA and financial institutions

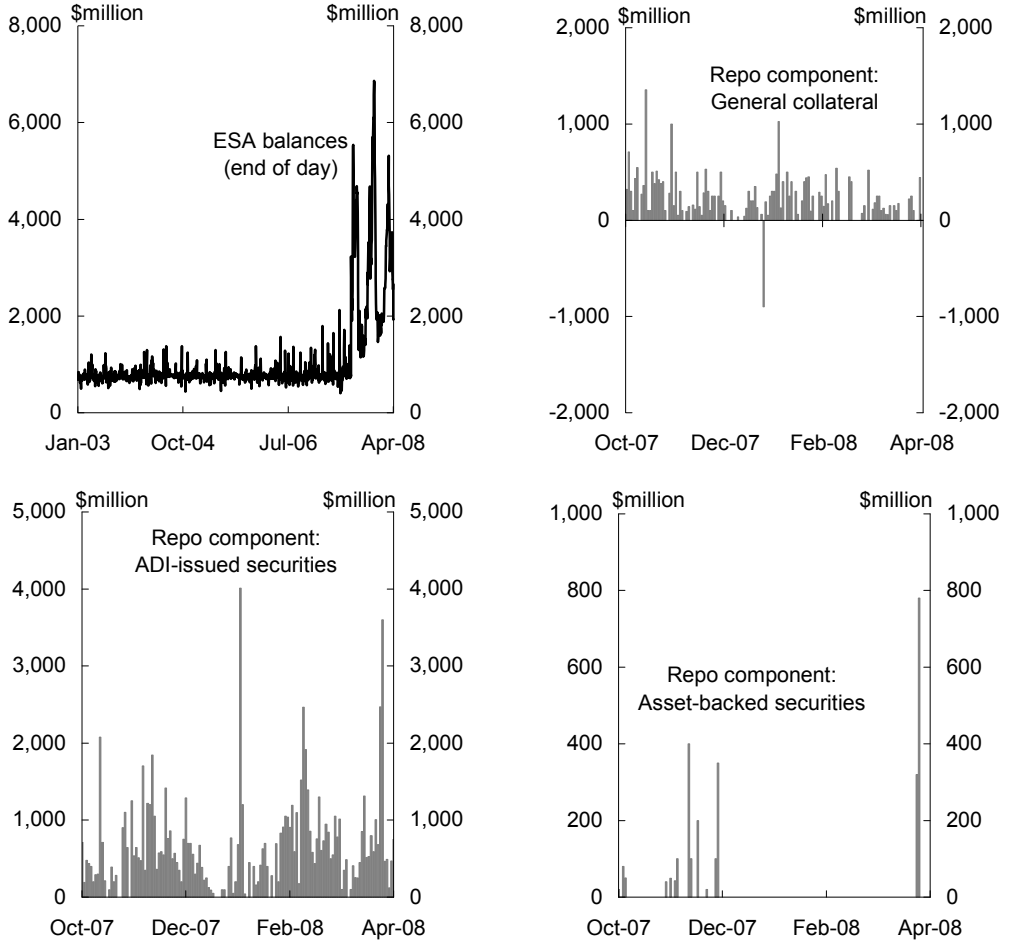
The manifestation of the global sub-prime crisis in Australia was thus first and foremost a liquidity issue, and then over ensuing months a funding issue. It was not an issue of the credit soundness of Australian banks or other major financial institutions, though of course it could have become so if the liquidity issue had not been addressed. Because losses arising from credit default remained relatively minor and major financial institutions did not hold large trading books of financial assets with diminished credit quality, Australian financial institutions capital positions did not significantly deteriorate — unlike the circumstances of some financial institutions banks in the US, the UK and Europe. The need for additional capital as opposed to additional liabilities to lend was relatively minor. The only strain on capital arose from the increase in assets and could be met mainly by enhanced dividend reinvestment programs.

The manifestation of the sub-prime crisis in Australia thus required from the central bank, from the regulator and from the Australian government a set of responses that would sustain confidence in the Australian financial system, meet its immediate liquidity needs, and support an expansion in liabilities. It did not require a large new infusion of capital.

The Reserve Bank of Australia (RBA) met the liquidity needs promptly with a large expansion of the cash, apparent in the increase in exchange settlement account balances. Beginning in early August the average daily balance in the Exchange

Settlement Account (ESA) system rose from the customary $750 million to a peak of $6.5 billion in March. This provision of short term liquidity was not an unusual response to a crisis of confidence affecting financial markets. It matched the operations during the Asia financial crisis in 1997 and the terrorist attack on the US in September 2001.

Chart 8: RBA balance sheet



Source: Reserve Bank of Australia.

Immediate liquidity was not the only issue in this episode, however. There was also the need to assure funding. The European Central Bank (ECB) already accepted broader collateral but in early September the RBA moved before the US Federal Reserve and the Bank of England to widen the set of financial assets it would accept in repurchase agreements to include bills and certificates of deposit issued by depositary institutions with exchange settlement accounts. Later the RBA extended the repo

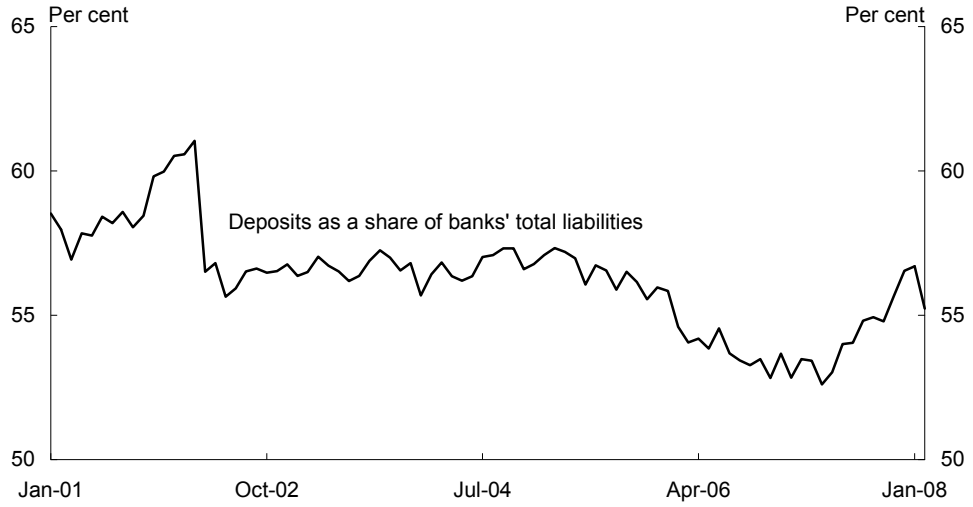
facility to include high quality RMBS. There was no need to extend the terms of the facilities, which had long been at the discretion of the central bank.

Though Australian banks have large offshore liabilities, they routinely swap their foreign exchange exposure into Australian dollars. Through the second half of last year the banks were able to close out existing foreign exchange swaps with the RBA and other counterparties to meet foreign currency obligations at a time offshore borrowing was temporarily difficult.

While the RBA was very active in supporting bank funding in the early months of the crisis, the banks themselves also responded quickly to the change in the funding pattern.

This was most immediately evidently in the increased competition for new retail deposits, which have usually contributed about half of bank funding in Australia. After declining for some time as a share of bank liabilities, deposits bounced back towards the end of last year.

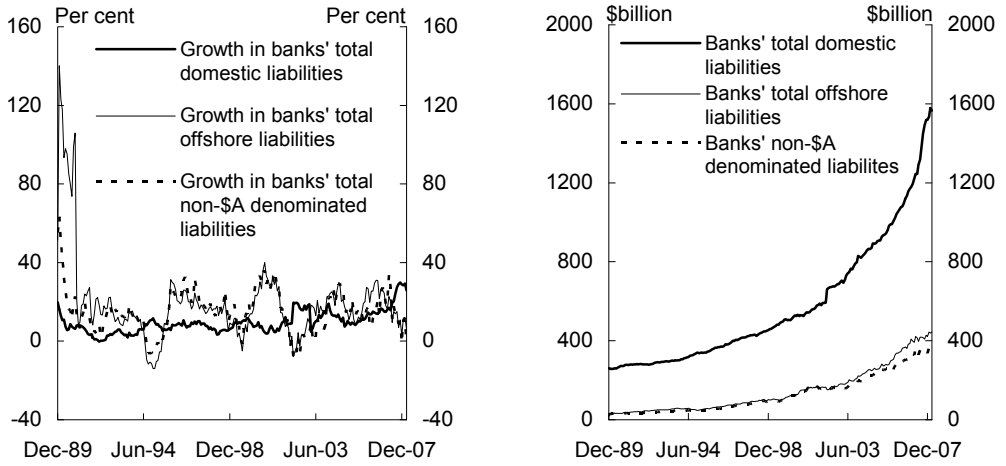
Chart 9: Deposits as a share of banks' liabilities



Source: Reserve Bank of Australia.

By the end of 2007 and the beginning of this year the banks had evidently decided that higher rates would prevail for some time to come. They were also finding new pockets of term funding offshore. Because major global banks were winding back asset growth and were more interested in supporting their capital base than their lending, demand in offshore funding markets had retreated. By the end of last year it had also become more evident to offshore funding markets that the Australian banks had very little exposure to distressed assets. In the first quarter of this year the Australian banks borrowed more offshore than in any quarter on record.

Charts 10 and 11: Australian banks' offshore borrowing



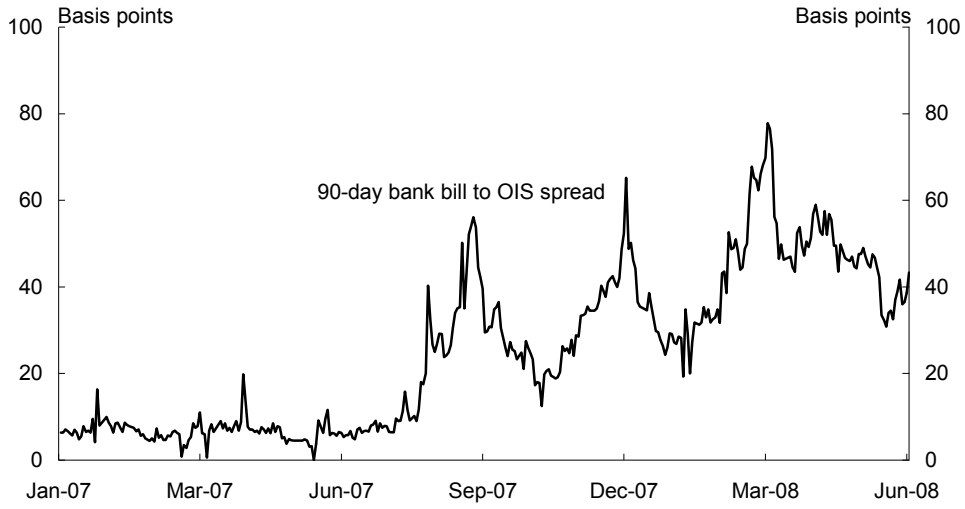
Source: Reserve Bank of Australia.

Through a combination of prompt RBA support and the banks own programs to increase their retail deposits and seize opportunities to borrow offshore, the immediate pressure on bank funding began to fade towards the end of the first quarter of this year.

Stabilisation

Credit spreads are still elevated, the RMBS market remains difficult, the growth of bank assets has slowed and there has been a corresponding slowdown in the growth of liabilities, the capital to assets ratio has come down a touch, but there is no doubt that the immediate difficulties the global sub-prime crisis posed for the Australian financial system have begun to fade. While still wide, for example, credit spreads are markedly narrower than they were at the end of last year and have been stable over the last two months.

Chart 12: Domestic credit spread — 90 day bank bills to OIS



Source: Reuters.

As mentioned above, Australian banks have been able to access offshore funding markets, though at higher spreads and on average shorter maturities than formerly. Global financial institutions are now again borrowing in global markets, which reduces the visibility of Australian borrowing. Limited high grade corporate paper issuance has resumed and Australian corporate spreads have begun to contract. The market for Australian RMBS remains very thin, though there have been stirrings. Credit growth has slowed, but not at this point more than is anyway consistent with the slowdown in nominal domestic demand growth explicitly sought by the RBA. Most of the majors have updated their financial results, and the reported losses on their portfolios of financial instruments have not been large relative to the losses reported elsewhere.

To some extent the stabilisation of the financial pattern in Australia is a reflection of its stabilisation elsewhere. Since the US Federal reserve intervened to help Bear Stearns' incorporation into J P Morgan Chase, global markets have become more confident that while plenty of problems remain the global financial system is not hurtling towards destruction.

Explaining Australia's experience — Australia's points of vulnerability

There may well be a deeper than expected economic slowdown in the US and the UK because of the sub-prime crisis, which may then produce further losses in already weakened financial institutions. It is certainly too early to say that the global crisis is over. But there is no doubt Australian financial markets are less stressed than they

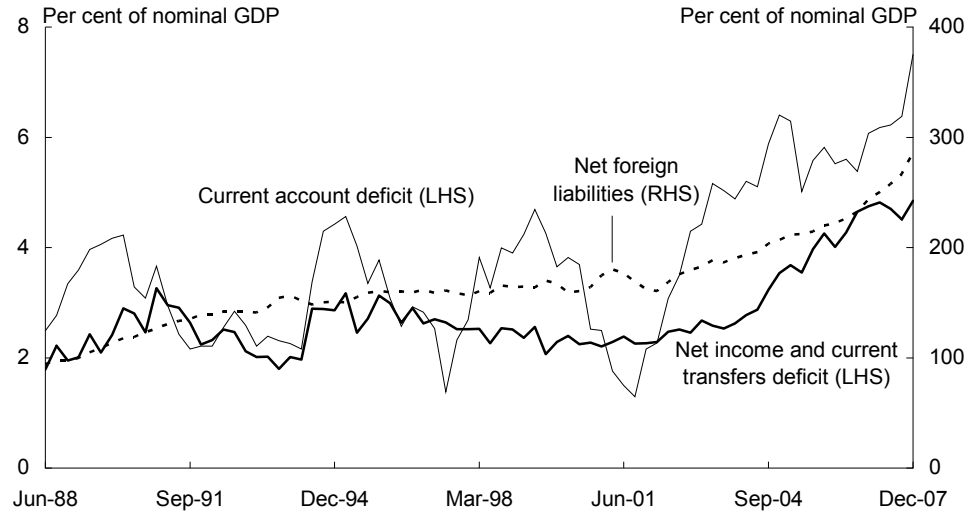
were at the beginning of the year, that major Australian financial institutions have got through without significant damage, and that the prospective impact of the financial crisis on output growth has not been sufficient, in the judgement of the RBA, to discourage it from tightening four times since the crisis became apparent at the beginning of August.

The question then is why the Australian financial system was so little affected by a financial crisis which has had considerable impact elsewhere, and which manifested in Australia in some of the same ways it manifested elsewhere.

Australia's mild experience is certainly not explained by domestic barriers against the transmission of financial shocks. On the contrary, the Australian financial system is quite open. There are no foreign exchange controls, no controls over the cross border transfer of funds, and no controls over financial market prices other than the cash rate. Cross border financial flows have substantially increased over the last decade.

Australia does not run a large current account surplus or accumulate substantial foreign exchange reserves. On the contrary, it runs a larger and more persistent current account deficit than the United States, its net foreign liabilities as a share of GDP are three times those of the United States, and the net income deficit is a larger share of the current account deficit than it is in the United States.

Chart 13: Australia's external position



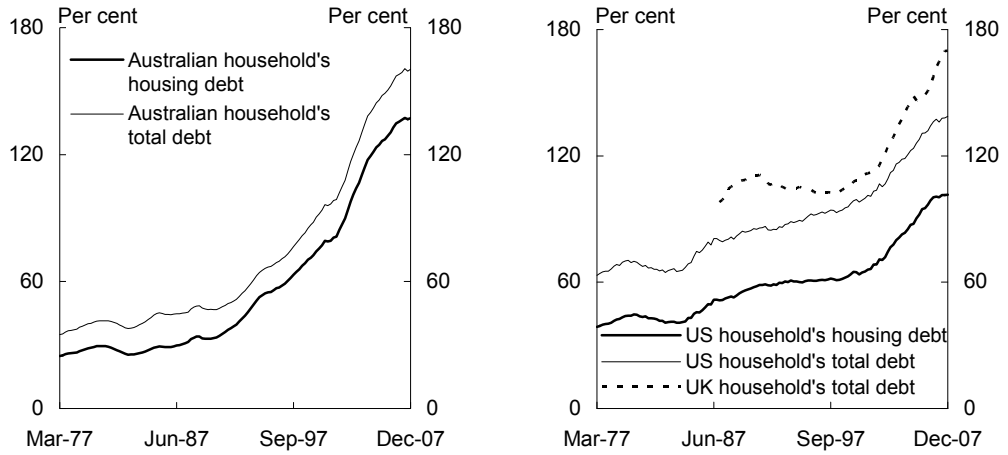
Source: Reserve Bank of Australia.

Furthermore, the capital account surplus which matches the current account deficit is usually roughly equal to the increase in the stock of the offshore indebtedness of Australia banks. Were Australian banks to cease borrowing abroad to the extent they do, Australia would have to run a substantially smaller current account deficit or find

some other source of capital inflow. Prior to August 2007 a rising share of that stock of offshore liabilities took the form of borrowing against asset backed securities, mainly domestic mortgages — a form of financing only sporadically available after August last year.

Nor can it be said that the structure of household balance sheets is markedly different in Australia from the households balance sheets of the US and the UK, the two economies so far hit hardest by the financial crisis. On the contrary, from holding substantially less debt than UK and US households a decade ago, Australian households have increased their borrowing (though not as fast as the growth in their assets) to the point where the ratio of household debt to household disposable income is comparable to those in the US or the UK.

Charts 14 and 15: Household debt to disposable income — an international comparison

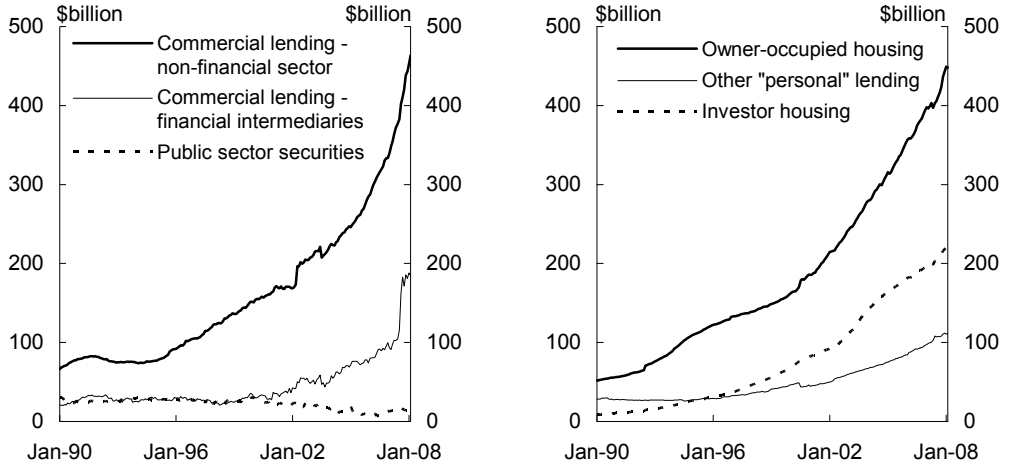


Source: Reserve Bank of Australia and Bloomberg.

Share prices measured by the ASX 200 index have doubled in the last three years, even taking recent falls into account. House prices have increased 30 per cent over the last three years, and roughly doubled since the beginning of the decade.

In constructing measures of vulnerability to financial crisis researchers often cite a current account deficit, a rapid increase in credit growth, extensive offshore borrowing, high household debt, a period of rapidly rising asset prices, and rising inflation as indicators of risk. Any measure constructed using those indicators for Australia in August 2007 would have predicted an entirely different outcome to the actual — reminding us once again the difficulty of selecting any plausible set of leading indicators of financial crisis.

Charts 16 and 17: Domestic credit growth



Source: Reserve Bank of Australia.

Explaining Australia's experience — the strengths of the regulatory arrangements, the financial system and the economy

It is evident that despite the apparent vulnerability of the Australian financial system to precisely the kind of crisis which began in August, and despite the fact that many of its manifestations were apparent in Australian markets as soon as they become apparent in the US, there must have been powerful offsetting forces which protected the Australian financial system from serious injury.

There is little doubt that the readiness of the RBA to support liquidity in the early days of the crisis and to assist funding by accepting repos on a wider range of assets over the ensuing months was critical to maintaining confidence in the financial system. So too the diligence and care with which APRA had been scrutinising institutions in the years prior to the crisis.

But there were also other factors at work.

There were major cyclical differences between Australia and other comparable economies. The big Australian boom in house prices and sales of established houses, which was quite as formidable as the boom in the US and the UK, ended in 2003. Mortgage loan growth through 2006 and into 2007 was not much less than half the rate evident during the boom. House price growth had only just resumed, after several years of sluggish movement in median house prices. After a period of sharp decline associated with the housing boom, household savings as a share of GDP were rising through 2006 and into 2007. The credit crisis hit Australia after a period of household

balance sheet consolidation. Much the same is true of the home construction industry. House construction was also quite weak through 2006 and into 2007, with the beginnings of a recovery only becoming evident after a sharp downturn in 2004 and 2005. By the middle of 2007 there was no Australian housing boom to puncture.

One of the causes of the housing slowdown was the gradual tightening of the Australian cash rate since 2002. By the middle of 2007 the variable mortgage lending rate was 200 basis points higher than it has been in 2002. Unlike the US market (and for reasons not entirely clear), Australian mortgages are typically variable rate. The Australian market does feature introductory rates, not unlike the US pattern of an introductory rate with a reset period — but the gap between the introductory rate and the standard rate is much narrower than was usual in the US. The predominance of variable rates and the persistent upward trend in the cash rate, together with the evident slow growth in national median house prices, meant that by 2007 borrowers had already been discouraged from taking on loans they would not over time be able to service.

By the middle of 2007, when the crisis struck, Australia had been experiencing for several years a boom in business investment. Some of this upswing was related to markedly higher prices for energy, metals and minerals, but much arose from the fact that by the middle of 2007 Australia was close the beginning the seventeenth year of an uninterrupted economic expansion which had seen profits persistently increase as a share of income, and had fully stretched the existing capital stock. On average in the six financial years through to and including 2006/07 business investment accounted for just under half of GDP growth. It was one of the components of growth least likely to be discouraged by even a quite substantial increase in borrowing costs.

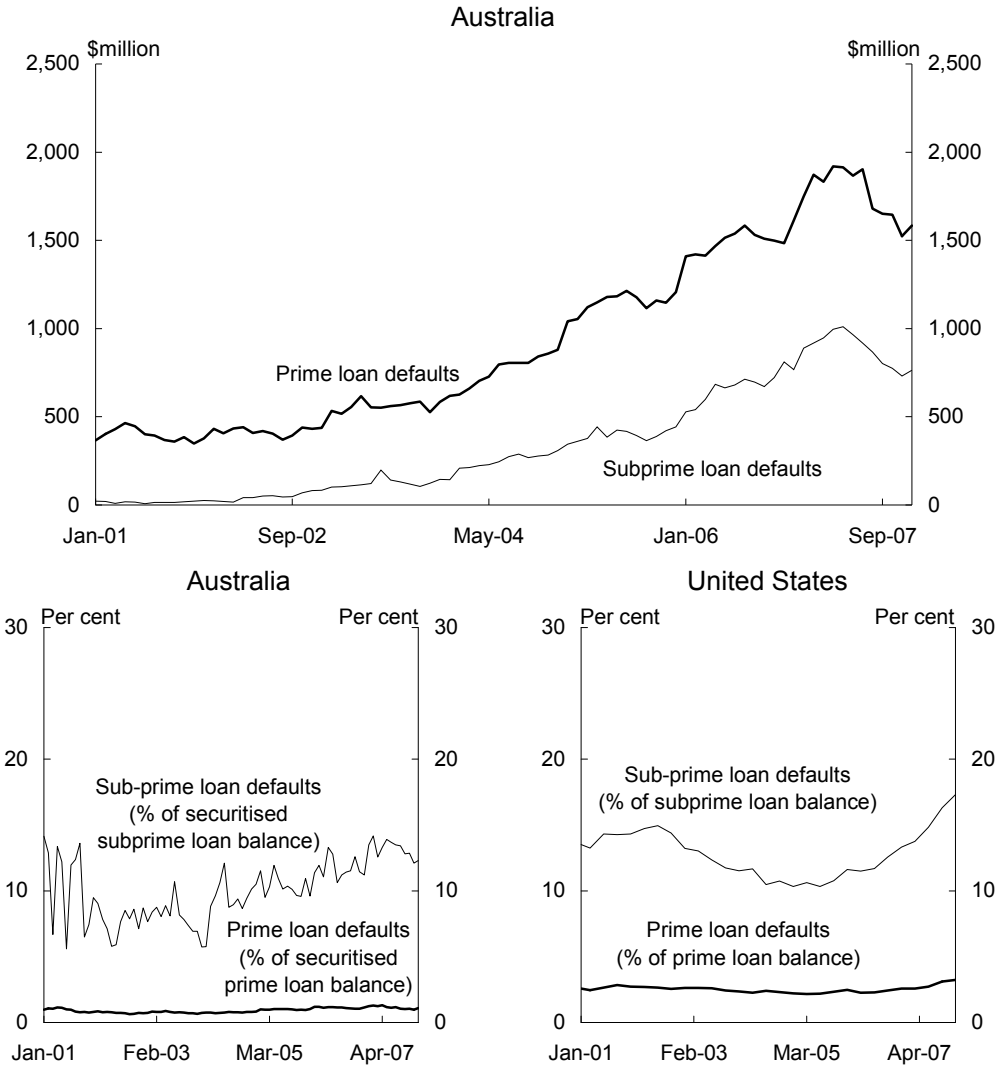
The durability of the investment upswing was underpinned by the unusual incidence of the credit crisis. It began in the US rather than in a less developed economy, and had little impact in North Asia or India, the two biggest sources of additional commodity demand. Driven by its own industrialisation, a capital exporter rather than importer, and with a sheltered financial system, China's growth was unaffected. So too, therefore, were the prospects for higher prices for Australian metals minerals and energy exports.

Because of strength and durability of output growth, employment growth was quite strong and the unemployment rate had reached and then fallen under a 30 year low. Household incomes were rising quite firmly.

The risk management practices and prudential soundness of the Australian financial system were clearly helpful in minimising the Australian impact of the global credit crisis. Lending to valuation ratios has increased over time, but not wildly. Sub-prime lending as a proportion of all lending had increased, but not to the extent it had in the

US market. Sub-prime defaults had increased, but not remarkably — suggesting that lending standards remained fairly rigorous.

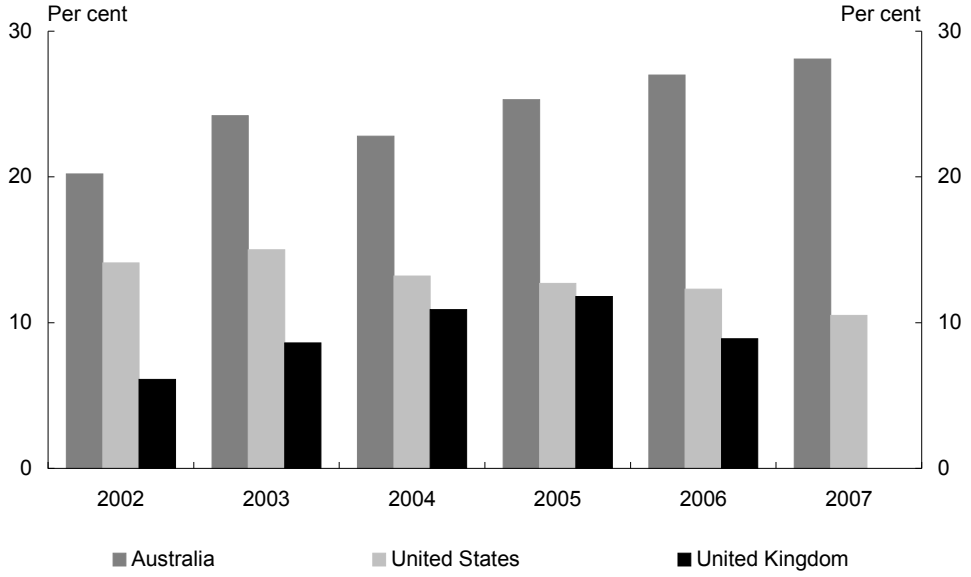
Charts 18 and 19: Residential loans defaults — Australia and the United States



Source: Standard and Poor's and Mortgage Bankers Association.

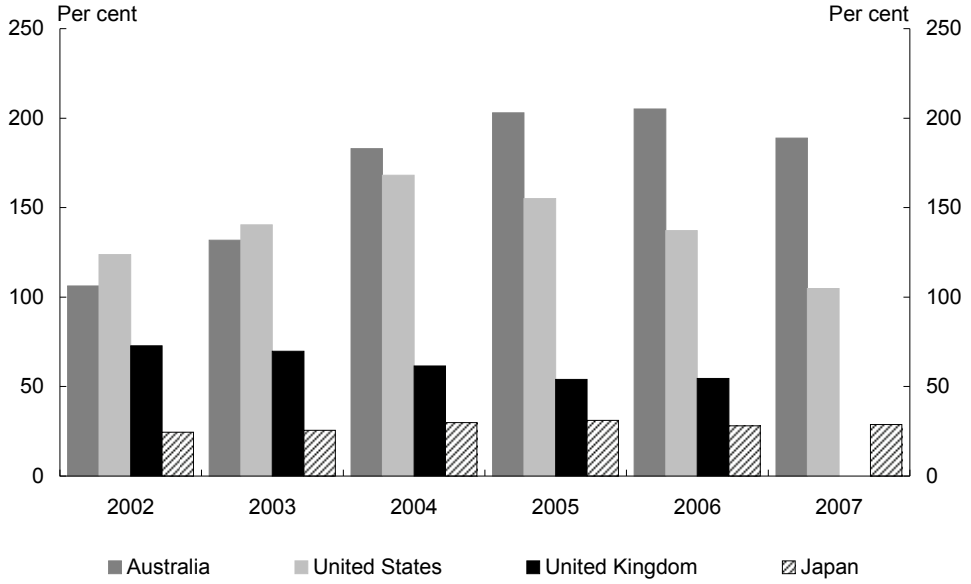
Throughout the crisis the resilience of Australia's financial system has been underpinned by the balance sheet strength of Australian banks. As the data in the IMF's recent Financial Stability Report demonstrate, the Australian banks persistently have one of the highest returns on equity in the developed world, and have very low bad debt and relatively high provisioning.

Chart 20: International banks' return on equity



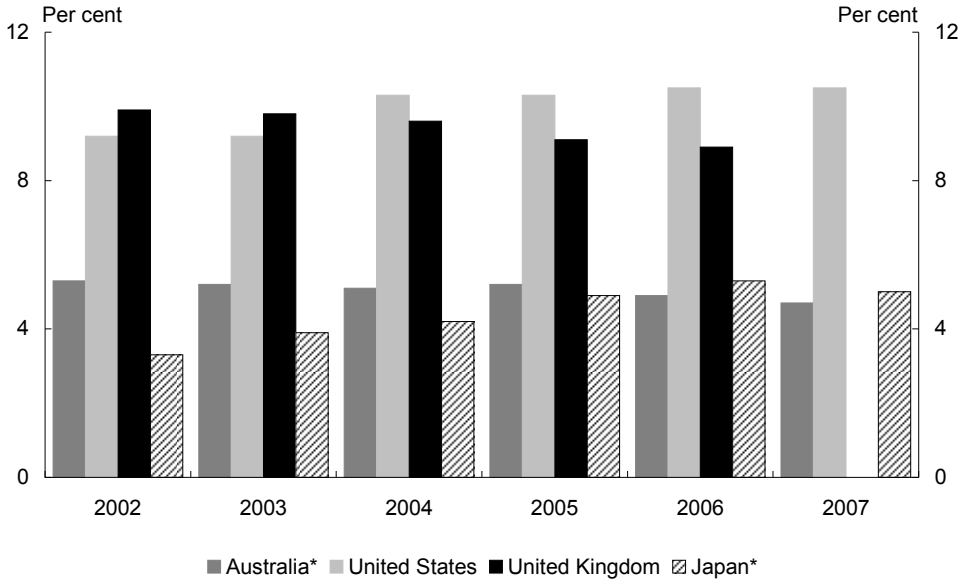
Source: International Monetary Fund.

Chart 21: International banks' provisions to non-performing loans



Source: International Monetary Fund.

Chart 22: International banks' capital to assets



Note: *Tier 1 capital.
Source: International Monetary Fund.

As evident in the decline over time in risk weighted assets to total assets, Australian banks do not engage in trading activities to the same extent as the major global banks. They are closer to the model of the traditional balance sheet bank than the combined commercial and investment banking model which has sustained the biggest losses in the sub-prime crisis.

Australia's wealth and income distribution is different from the US. Partly because of minimum wage laws, targeted welfare benefits, a quite progressive income tax system, skills based immigration and a tenacious egalitarian culture, Australia does not have a very large class of working poor families. The demographic basis for a rapid and vast expansion into mortgage lending to families with low incomes and poor credit records is much narrower in Australia than the US.

At a deeper level the resilience of the Australian financial system and economy in the face of a shock which was communicated to it so quickly and pervasively is also a reflection of decades of economic reform which have made more the economy more flexible at the same time as it has made it more open.

The transition to a different framework for the Australian economy was not been without pain. At the end of the nineteen eighties and the beginning of the nineteen nineties Australia had its own credit crisis, particularly in the corporate sector and specifically in property development. Australian banks took large losses. Australian businesses rebuilt their balance sheets, and even now remain on average

conservatively geared. Banks changed management and became more conscious of risk management. Sixteen years later, the salutary lessons of Australia's last deep recession still influenced the conduct of major banks, corporations, and to a lesser extent households, and protected the financial system from some of the problems elsewhere.

Assessing the economic impact

It is too early to assess the final impact of the financial shock on the real economy, but some features are already apparent.

The primary channel of influence of a financial shock on the real economy is often the exchange rate, but in this instance the exchange rate against the US dollar has continued the upward trend apparent well before July of last year. There were a couple of episodes of weakness, usually arising in periods of high volatility when the risks yen carry trade and long positions in high yield currencies were particularly acute, but the clear trend has been appreciation against the US dollar. Much of this Australian dollar strength has reflected US dollar weakness, but even against Euro the Australian dollar remained fairly stable around EUR0.60, in the range between an end month low of EUR0.58 and a high of EUR0.63. That range of values is not unusual over 10 months in the calmest markets. Evidently, the impact of the credit crisis in Australia was not big enough to dramatically alter the exchange rate or exert influence through that channel.

The credit crisis has certainly exerted influence through the interest rate channel, though it needs to be borne in mind that the RBA has been increasing the cash rate through the episode, now by a total of 100 basis points. Since the most recent RBA increase was at the beginning of March this year, we must assume that it did not assess the impact of the credit crisis on market interest rates to that point as sufficient to achieve the slowdown it sought. The increase in market rates are significant, but not nearly as significant as the increase in the policy rate controlled by the RBA. From the beginning of the episode to now the yield on AAA 1 to 5 year notes has increased by around 120 basis points and the spread over government bonds by a similar amount. The standard variable home loan rate has increased 150 basis points, so two thirds of the increase was anyway explicitly sought by policy — and the RBA would no doubt have taken the 'independent' increases into account in determining the tightening necessary for its objectives.

There may well be some channel of influence through business and consumer confidence, both of which have fallen since July last year. Declining consumer confidence corresponds to the weakness of retail spending volumes in the first quarter of this year, and perhaps the decline in demand for housing lending and the

slowdown in established house price growth in the March quarter. Employment growth has held up, however, suggesting that the impact on business confidence is only moderate. Again, however, it is impossible to separate out the influence of the credit turmoil from the impact of central bank tightening.

The sharpest financial market impact has turned out to be in the equity market, which in the first few months of this year fell more sharply than the US equity market. This is partly explained by the fact that the Australian market had increased markedly faster than the US market in recent years. Financial, mining and property stocks are relatively more important in the Australian market than the US market, and all three sectors were hit by concerns arising from the credit crisis. Highly leveraged businesses with solid but illiquid assets were also hit hard, particularly where dividend growth depended on borrowing against revalued assets.

In their 1995 paper on the Credit Channel of Monetary Policy Transmission, Bernanke and Gertler suggest that financial shocks may be communicated to the real economy through the impact of declining collateral values on the balance sheets of borrowers, and through a reduction in the supply of bank credit in relation to other forms of credit. These channels may well be important in the US and the UK, but are unlikely to have had much influence in the Australian experience of the sub-prime episode so far. Bank credit growth has slowed, but not more than one would expect given the increase in market interest rates. Bank capital positions are not stressed, as they have been for some institutions elsewhere. The market value of listed Australian corporations as measured by equity values has declined, but since corporations overall gearing is not high there is unlikely to be a collateral constraint on borrowing overall.

Remaining concerns, including domestic and international regulatory issues

While the immediate crisis is fading, there are a number of continuing issues which warrant interest.

Borrowing spreads remain elevated, and the whole of the impact from the additional 'independent' increases in household mortgage rates is yet to be felt. Since Australians customarily borrow using variable rate mortgages, most households with a mortgage are affected by higher mortgage interest rates — not just new borrowers.

Though there have been some recent signs of revival, by and large the RMBS market remains dormant. The major banks are not much affected by this but it has made it much tougher for smaller mortgage originators to compete. Since there has been no increase in the default rate in the Australian AAA mortgages which constitute most of the securitisation stock, the market is likely to revive over time.

The overall maturity of offshore bank liabilities have shortened somewhat, marginally increasing Australia's vulnerability to further global or local shocks. The recent experience demonstrates, however, that the pattern of Australian offshore financing is not fragile.

There has been some discussion over whether the slowdown in bank lending is in response to higher interest rates, or whether there is also some credit rationing. If in response to higher interest rates alone, we can conceptualise it as a straightforward leftward shift in the banks' credit supply curve in response to higher spreads. The policy decision is then one of whether the new level of interest rates is appropriate for the current monetary policy objectives.

Given the market dominance of banks, however, and the at least temporary attenuation of other forms of financing, the slowdown in credit growth might reflect a quantity constraint. There is no doubt that banks are becoming a little more rigorous in their lending decisions, which is unsurprising given the losses sustained by some highly leveraged businesses and in share trading portfolios. This is part of the general reassessment of risk that usually follows a prolonged period of dwindling returns, relatively low global interest rates and easy credit. There is no compelling evidence at this point that the credit slowdown reflects more than this normal reassessment together with the effect of higher market rates, though the trajectory of credit growth certainly bears watching.

There are some useful enhancements possible, but the experience of the credit crisis episode in Australia so far suggests that that the regulatory framework for banks and major financial institutions works fairly well. Any potential difficulty arising from the institutional separateness of the Reserve Bank and APRA has evidently been minimised by the strength of their working relationship. Unexpectedly, to the extent holes in the regulatory framework became apparent during the episode they were in equity markets rather than debt or foreign exchange markets or major financial institutions. The episode disclosed holes in respect of market knowledge of short selling of securities, particularly using derivatives. It disclosed that some investors were apparently unaware that the form of margin loan over securities they held transferred the ownership of their securities to the lender. These issues are now being addressed.

This account began by remarking that some manifestations of the US sub-prime credit crisis were immediately apparent in Australia, though the Australian financial system had very little exposure to the instruments and none of the problems which were at the origin of the crisis in the United States. No surprise there of course — this was true also of the initial impact of the Asian financial crisis in 1997, the Russia and Long-Term Capital Management (LTCM) crises of 1998, and so on. What it does underline, however, is that it is not enough for Australia to regulate its own financial system well.

It is also in Australia's interests to work towards forms of global coordination, global monitoring and global crisis response which lessen the frequency and duration of these financial shocks. Most of the obvious necessary measures, including more searching IMF oversight, changes to ratings agencies practices, enhancements in balance sheet transparency, stronger national oversight, greater cross border co-ordination among central banks and regulatory agencies and so forth, have already been recommended in recent months either by international agencies or national governments. It remains to be seen whether the shock the sub-prime crisis has been enough to encourage international agreement.

The economic outlook

Address to the Australian Business Economists, Sydney, 2 April 2008

David Gruen, Executive Director, Macroeconomic Group[1]

Macroeconomic management of the Australian economy may be more challenging over the next couple of years than it has been at any time in the current economic expansion, now in its seventeenth year.

The key domestic policy challenge is to apply sufficient monetary and fiscal restraint to address near-term inflationary pressures without generating too severe a slowdown. The task is being complicated by the powerful international economic forces that are pushing the Australian economy in opposing directions. On the one hand is the worsening economic outlook in the US, and the associated financial turmoil, which is yet to show any convincing signs of abating. On the other hand is the continuing economic strength in much of the developing world, particularly China, which is supercharging resource prices, and which benefits Australia's terms of trade more than those of any other developed country.

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1 I am grateful to Jim Thomson for much help in preparing this talk, and to Gerry Antioch, John Edwards, Tony McDonald, Adam McKissack, Steve Morling and Bruce Paine for helpful comments. The views expressed are those of the author and not necessarily those of the Australian Treasury or the Australian Government.

Introduction

Thank you for the opportunity to speak to you today.

It is a pleasure to be again addressing the Australian Business Economists. I am reminded of the last time I spoke to you, at the Australian Business Economists Forecasting Conference in October 2006, about eighteen months ago.

At that time, the topics I addressed were the rapid cooling of the US housing market, and the continuing strong growth in China and its implications for Australia's resource sector and terms of trade. Sound familiar? I am also going to talk about those topics today.

I have found it instructive to re-read the speech I gave eighteen months ago. At that time I was reasonably optimistic that the rapid cooling of the US housing market that was underway would probably not lead to anything worse than a slowing in US economic growth. That is not my assessment today.

And it is particularly revealing, and humbling, to note that my speech 18 months ago does not contain the term 'sub-prime'. While there were some wise heads at the time warning about developments in the US sub-prime mortgage market (most notably Ned Gramlich, Governor at the Board of the US Federal Reserve from 1997 to 2005) those warnings were not yet prominent in the mainstream analysis of the US macroeconomic outlook that I had read.

At the risk of plagiarising Donald Rumsfeld, it is sometimes the things you don't know you don't know that turn out to be of crucial importance. And it is also what makes macroeconomic forecasting as difficult, and as fascinating, as it is.

Today, my task is to give a broad overview of the developments likely to have a material impact on the Australian macroeconomy, and macroeconomic policy, over the next year or so.

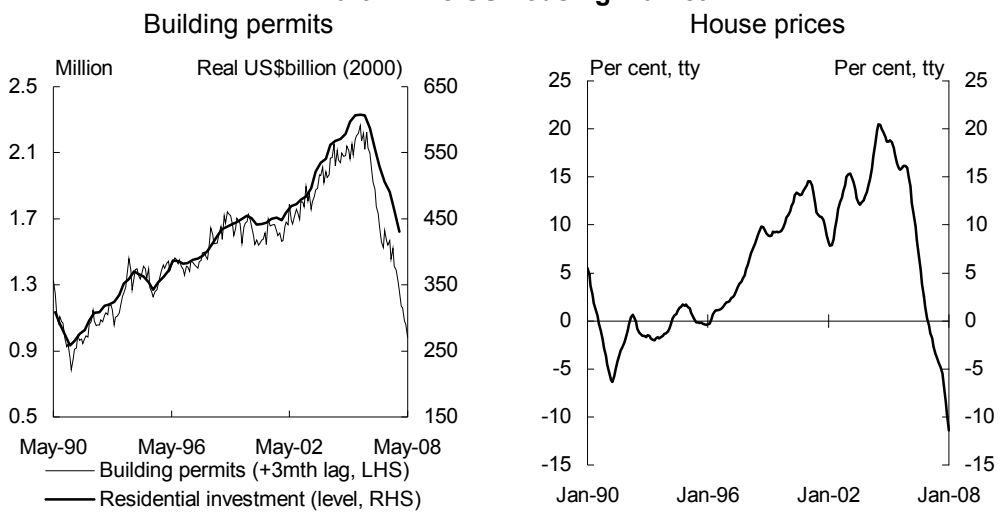
Let me begin with international developments.

The slowdown in the United States

World economic growth is expected to slow from the high rates experienced in 2007, reflecting the sharp slowdown in the US economy, and the associated slowing in the rest of the developed world. The outlook for 2008 is for global growth around or a little below trend, supported by continuing strength in the large developing economies. This is a relatively benign central forecast, but global economic risks have obviously become more pronounced and represent a clear risk for the Australian economy.

Thus far, the major dampening influence on US growth has been the huge contraction in housing construction, reflecting the unwinding of an oversupply of houses. Data on building permits (Chart 1) as well as housing starts and new home sales all suggest that residential investment has yet to bottom out.

Chart 1: The US housing market

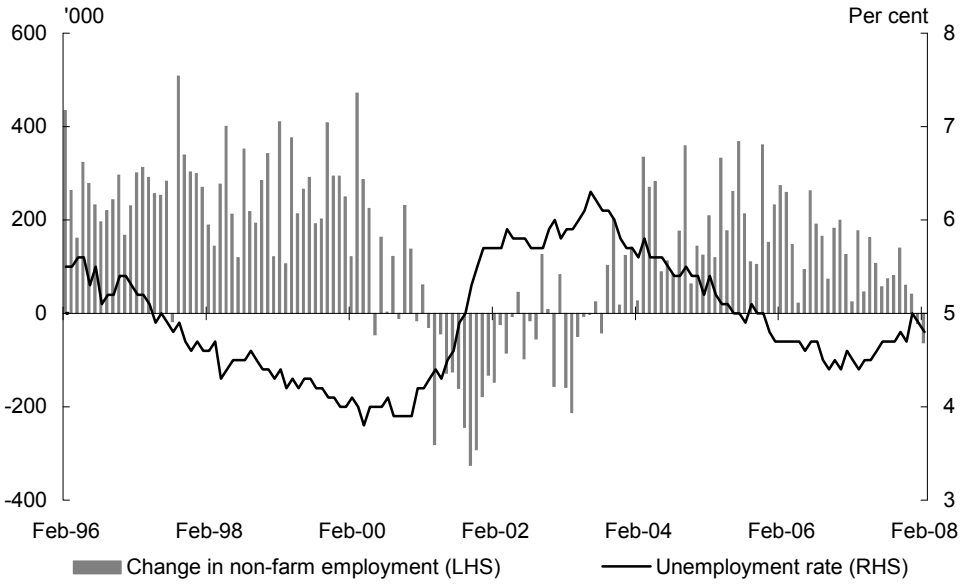


Source: Bureau of Economic Analysis, Census Bureau, and Case-Shiller 10-City House Price Index.

The construction downturn is being exacerbated by rising mortgage default rates, particularly in the sub-prime sector, and house prices that are now falling quite rapidly (Chart 1). This, along with other adverse developments, is feeding into a significant slowing in consumption growth.

Non-farm employment in the US has started to fall in recent months, and the unemployment rate has been rising since the middle of 2007. At least thus far, the deterioration in the US labour market appears to be occurring more gradually than in the early 2000s (Chart 2). Notwithstanding this, it is clear that US economic growth has slowed sharply and many commentators think that the US is currently either in recession or close to it. The question is now: for how long is this sharp slowdown likely to persist?

Chart 2: The US labour market

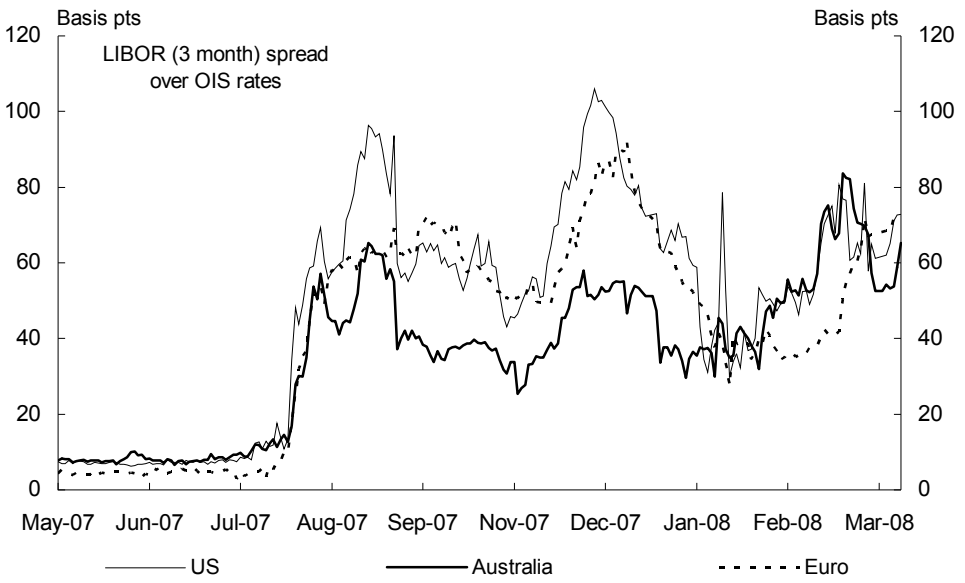


Source: Bureau of Labor Statistics and Ecowin.

None of us can give a confident answer to that question, but we can at least examine the factors that will have a material influence on the outcome.

The factor most likely to prolong the slowdown is the spread of problems associated with rising defaults in the US sub-prime mortgage market to credit markets around the developed world, and the extent to which this leads to quantitative restrictions on the availability of credit. The Federal Reserve's Senior Loan Officer's Survey on Bank Lending Practices suggests that there had already been a substantial tightening of credit standards in the US by the middle of January, not only for sub-prime and non-traditional mortgages, but also for prime mortgages and commercial loans to medium and large firms.

Chart 3: Inter-bank lending spreads
(As at close 31 March 2008)



Source: Reuters.

The drying up of liquidity in financial markets, and the associated sharp rise in spreads, which began in earnest in July-August of last year, is yet to show any convincing signs of abating (Chart 3). Furthermore, the historical record suggests that economic slowdowns that involve significant disruptions to the financial system and big falls in house prices tend to last longer than those that do not (see Reinhart and Rogoff, 2008).

On the more optimistic side, however, is the energetic response of US policymakers to the gathering economic and financial market problems. With almost unprecedented speed, Congress enacted, and the Administration approved, a fiscal stimulus package equivalent to about 1 per cent of GDP. While counter-cyclical fiscal policy is often viewed with scepticism, this example appears to be both big enough to make a material difference and particularly well-timed.

Having spent much of his distinguished academic career studying the Great Depression, the Federal Reserve Chairman, Ben Bernanke, is acutely aware of the dangers that a serious weakening of the financial system pose for the wider economy. Chairman Bernanke's intellectual background has undoubtedly contributed to the Federal Reserve's determination to move decisively, on a range of fronts, in response to the worsening conditions. The Federal Reserve has cut the Fed funds rate quickly, by 3 percentage points since September 2007, from a cyclical peak of 5¼ per cent to 2¼ per cent. The only time the Fed funds rate has been lower in recent history was

following the bursting of the dot-com bubble at the start of the decade, when there were fears of deflation.

As well, the Federal Reserve has taken a series of steps to maintain liquidity in financial markets, and to demonstrate its willingness to prevent the collapse of any financial institution that it judges to be systemically important, even those, like Bear Stearns, beyond the usual purview of financial regulators.

And it is as well to remember that not all parts of the US economy are doing poorly. The continuing depreciation of the US dollar has generated a boom in US exports which, even with the relatively low US export share, is currently contributing about 1 percentage point to through-the-year US economic growth.

China, the terms of trade and inflation

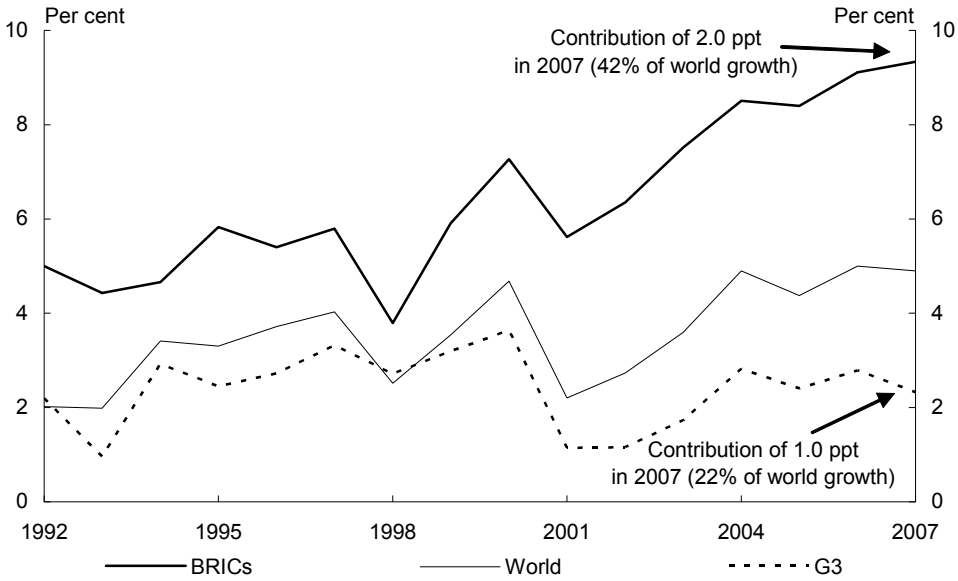
At the same time that economic growth has been slowing sharply in the US, China recorded its fastest growth in over a decade in 2007. Urbanisation and infrastructure development are continuing apace, driving rising demand for energy and raw materials. With rising incomes, consumption growth in China is accelerating.

China is facing an intensification of domestic inflationary pressures, and the authorities are acting to moderate economic growth. Nevertheless, continued strong growth in China is a political imperative, and the Chinese government has ample financial resources to support domestic growth should the US slowdown have a more serious adverse impact than is currently anticipated. Furthermore, the absence of highly sophisticated financial markets in China, as well as the relatively closed capital account, provides considerable insulation from the current financial turmoil, although China will not remain immune from spill-overs that arise from trade linkages with the developed world.

The rapid growth in China has fuelled a global boom in energy and raw materials prices that has benefited major commodity-exporting emerging economies such as Brazil and Russia. India is also expected to continue to grow strongly with strong net foreign investment supporting investment growth and the services sector continuing to expand.

It is a striking illustration of how much the world has changed over the past few decades that the contribution to world growth in 2007 from these four developing economies, Brazil, Russia, India and China (the BRICs) was roughly double the combined contribution from the three largest economic blocks in the developed world: the US, Japan and the Euro area (Chart 4). At this stage, there is every indication that this pattern of relative contributions to world growth will be repeated in 2008.

Chart 4: Economic growth
(Annual per cent change)



Note: G3 is US, Japan and Euro area; BRICs is Brazil, Russia, India and China. Growth rates use the new World Bank weights released in the IMF January WEO update.
Source: International Monetary Fund.

Australia has benefited more than any other developed country from the global boom in energy and raw materials prices. Ranking the 30 OECD countries in order of the size of their terms of trade gains over the past five years, Australia is at the top of the list with a rise of 41 per cent, closely followed by Norway, with 37.4 per cent, and then by Canada and New Zealand with rises between 10 and 20 per cent. At the bottom of the list are the commodity importers, South Korea and Japan, who have suffered quite sizeable falls in their terms of trade (Table 1).

It should be little wonder, then, that Australia's macroeconomic circumstances differ so substantially from those of most of the developed world.

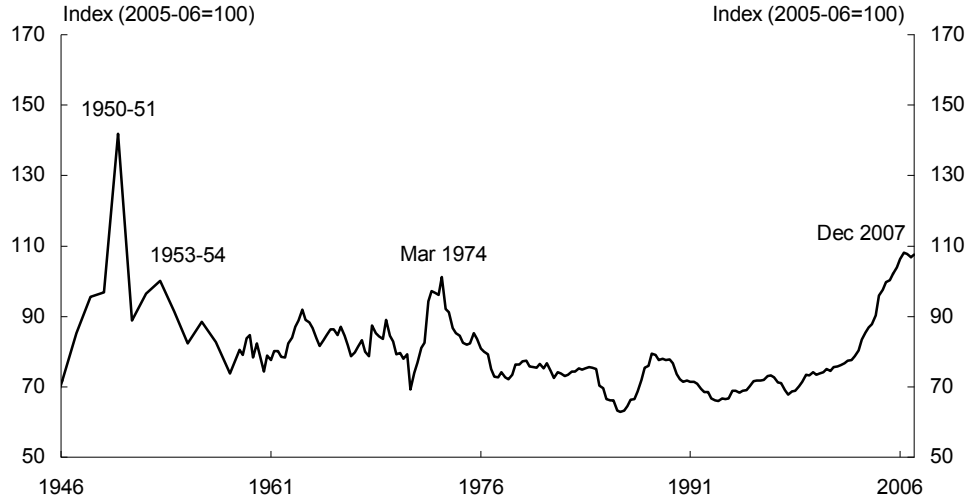
Table 1: OECD countries ranked by the size of their terms of trade gains over the past five years (March quarter 2003 to December quarter 2007)

	Percentage change in terms of trade
Australia	41.0
Norway	37.4
Canada	18.3
New Zealand	12.7
…	…
South Korea	-13.3
Japan	-20.2
Mean for all OECD countries	2.0

Source: OECD Economic Outlook, Export and Import Deflators.

As a consequence of the big rises over the past five years, Australia's terms of trade are now at their highest level since the wool boom associated with the Korean War at the start of the 1950s (Chart 5).

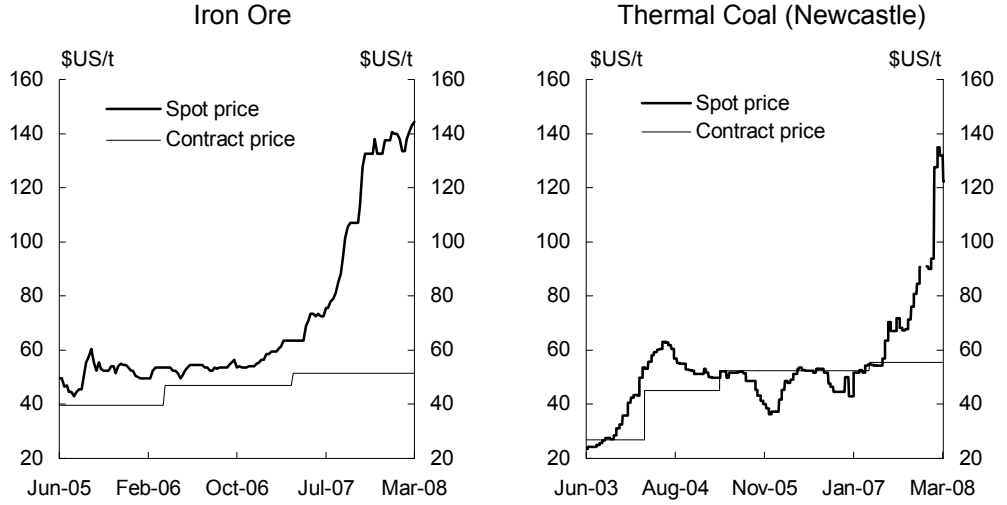
Chart 5: Australia's terms of trade



Source: ABS cat. no. 5206.0 and Reserve Bank of Australia.

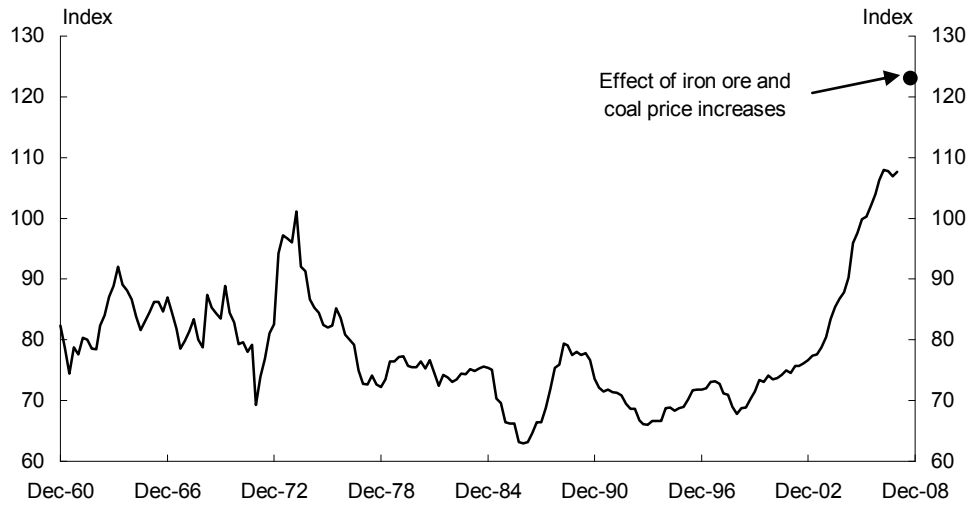
And there is significantly more to come. Huge rises in bulk commodity prices are now in prospect for mid 2008. Spot prices for iron ore and coal have risen sharply to be well above contract prices (Chart 6). Recent overseas contract prices settled for iron ore have involved $US price increases of around 65 per cent, and market analysts are predicting something like a further doubling of $US coal prices. New Australian contracts for both iron ore and coal are likely to be settled sometime between now and the end of June, and will apply from the beginning of April. By themselves, these could add more than 10 per cent to the terms of trade by the end of the year (Chart 7).

Chart 6: Contract and spot prices for bulk commodities



Note: Spot price represents CCCMC spot price for Indian imports.
Source: ABARE, CCCMC and Ecowin.

Chart 7: Estimated impact of new iron ore and coal contract prices on Australia's terms of trade



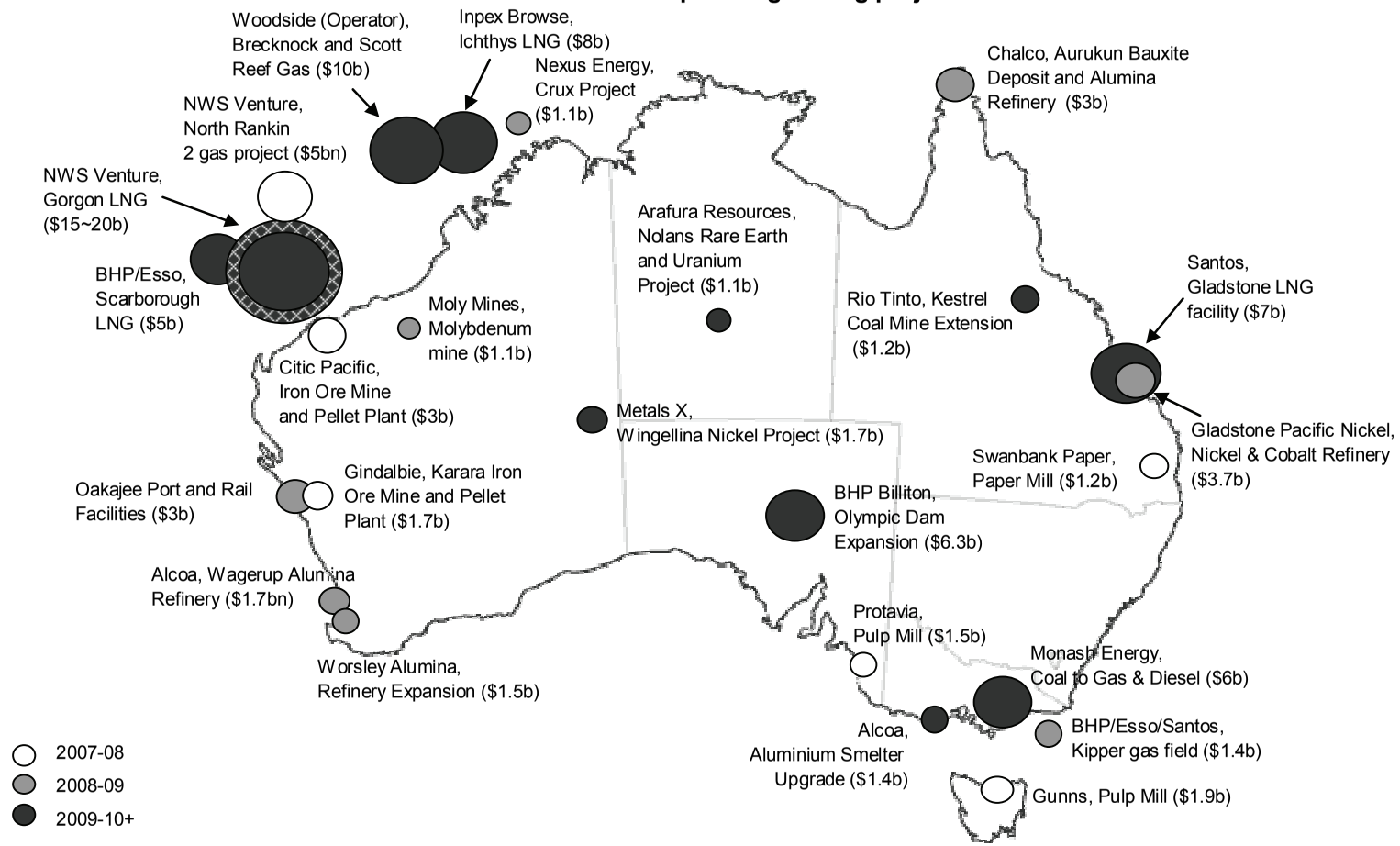
Note: Incorporates a doubling in the $US price of coal and a 65 per cent increase in the $US price of iron ore.
Source: ABS cat. no. 5302.0 and Treasury.

Rises in the terms of trade have contributed to rising capital inflow (and hence a larger current account deficit) and a higher exchange rate. The higher exchange rate plays a shock-absorber role for the domestic economy, imposing restraint on the non-mining export and import-competing sectors of the economy — manufacturing, services and agriculture (though the agricultural sector has been cushioned by rural commodity

prices rising faster than non-rural commodity prices over the past year). The higher exchange rate also facilitates the reallocation of labour and capital to higher value uses in the economy.

Even with the higher exchange rate, the further terms-of-trade rises are likely to provide significant stimulus to the Australian economy. They will have direct impacts on the mining sector — leading to even higher profits and a firming up of commitments to investments that are currently in the planning stage.

Chart 8: Selected upcoming mining projects



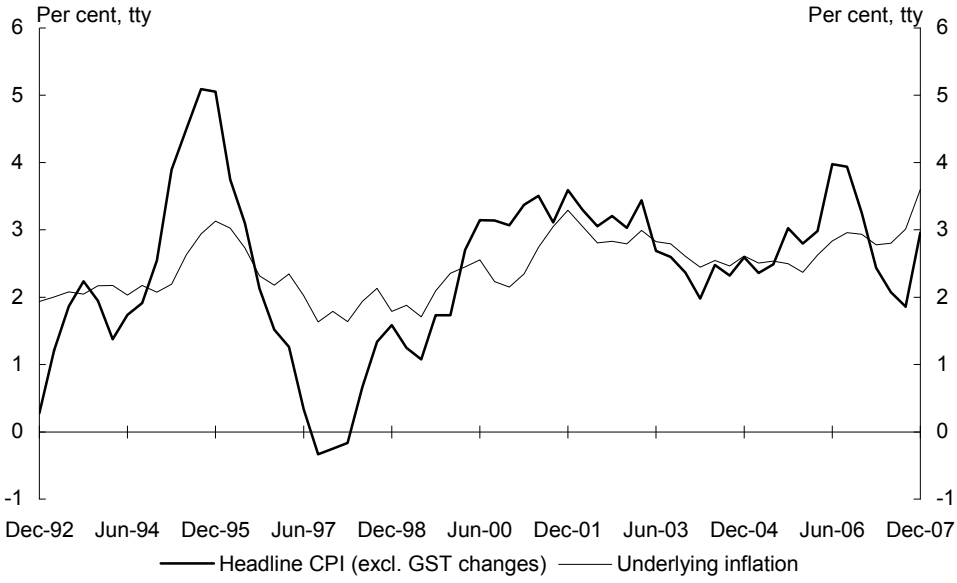
Source: December 2007 Access Economics Investment Monitor (where possible a check has been undertaken).

A feeling for the vast scale of these projects is given in Chart 8. The Chart shows only those projects that have yet to enter the construction phase. Some of the projects are due to be completed over the next couple of years, but some will not begin until early in the next decade. Of course, the continued strength in the terms of trade will act to bring further projects onto the drawing board and, over time, from the drawing board to the construction phase, at which time they will make the most intensive demands on labour and capital as inputs into the projects.

There will be broader effects on the economy as higher investment stimulates employment and wages in a tight labour market. These stimulatory effects will occur even with the Government's commitment to bank any increases in government revenue associated with the stronger terms of trade. The stimulus will come at a time when inflationary pressures have been building.

Under the medium-term inflation target, the Reserve Bank and the Government agree on the objective of keeping (headline) CPI inflation between 2 and 3 per cent, on average, over the cycle. As is widely understood, headline CPI inflation is subject to considerable short-run fluctuations due to one-off factors, and so the RBA looks to other measures to get a better feel for the rate of core or underlying inflation, particularly the trimmed mean and weighted median, which abstract from the largest price rises and falls in the component series that make up the CPI. Chart 9 shows headline inflation and the average of these two underlying measures over the low-inflation period that began in the aftermath of the early 1990s recession.

Chart 9: Headline and underlying inflation



Note: Underlying inflation is an average of the RBA's trimmed mean and weighted median measures.
Source: ABS cat. no. 6401.0, Reserve Bank of Australia and Treasury.

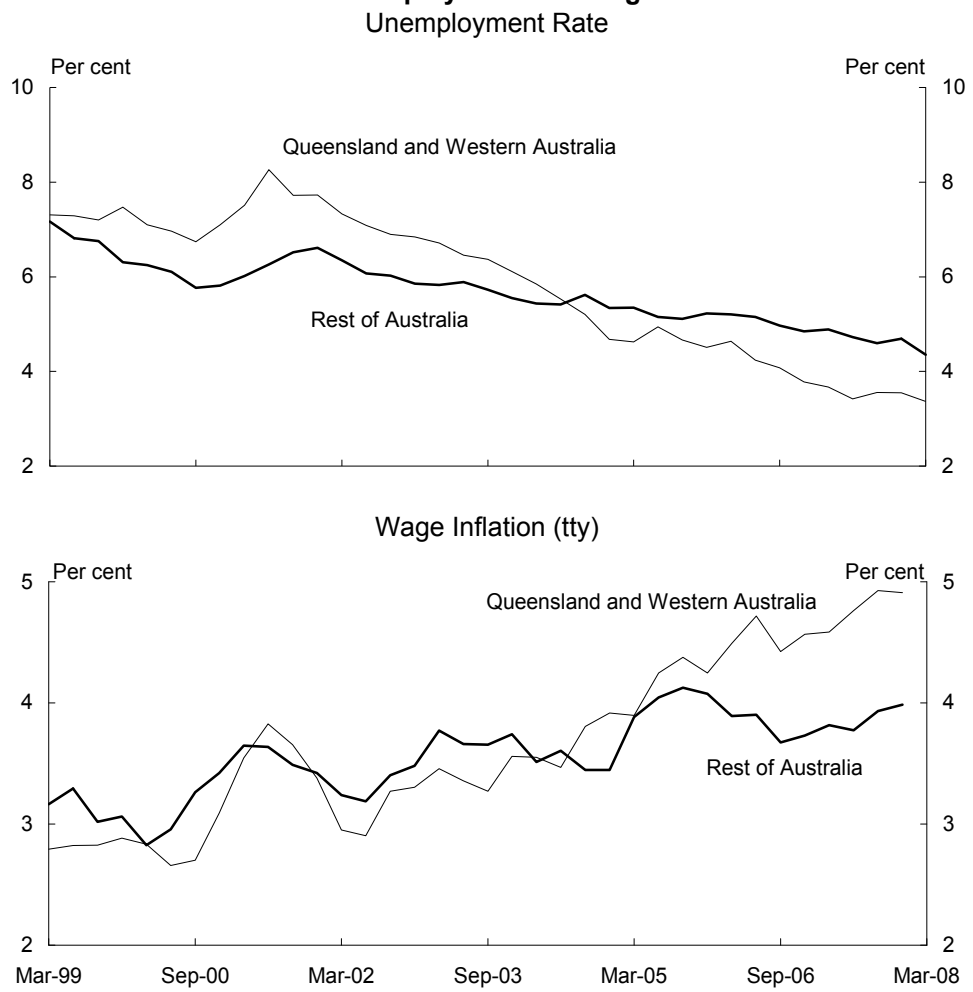
With the benefit of the most recent data, it is now clear that underlying inflationary pressures have been building for some time. Over the year-and-a-half from December 2003 to June 2005, underlying inflation (the average of the two measures) was running at an annual rate of 2½ per cent; over the subsequent year-and-a-half from June 2005 to December 2006, it was running at 2¾ per cent, while over the latest year, it has been running at 3.6 per cent.

Inflationary pressures reflect strong demand in the economy, and are currently also being exacerbated by a range of others factors including high oil, food, and financial services prices. Strong demand in the economy is broadly based, with particular strength in business investment (which is near 33-year highs as a proportion of nominal GDP) led by the mining sector. Continuing rises in the terms of trade are contributing to strong domestic demand and strong growth in disposable incomes. This is providing firm support for household consumption, although household saving is also rising. Strong income growth is also supporting strong growth in government revenues, which has been generating strong growth in demand from the public sector.

Strong investment is obviously a favourable development for the economy — additional capacity is being built that will raise the economy's growth potential. This will eventually take pressure off inflation, although the current strength of demand and the prospect of further rises in the terms of trade mean that demand pressures are likely to dominate in the near term.

Sustained economic growth has seen the national unemployment rate fall to 4.0 per cent in February this year, its lowest level in 33 years. In the resource-rich states, unemployment has fallen faster and further — to 2.8 per cent in WA and 3.6 per cent in Queensland, but these unemployment rates have been accompanied by unsustainably rapid wage growth in those states (Chart 10).

Chart 10: Unemployment and Wage Inflation



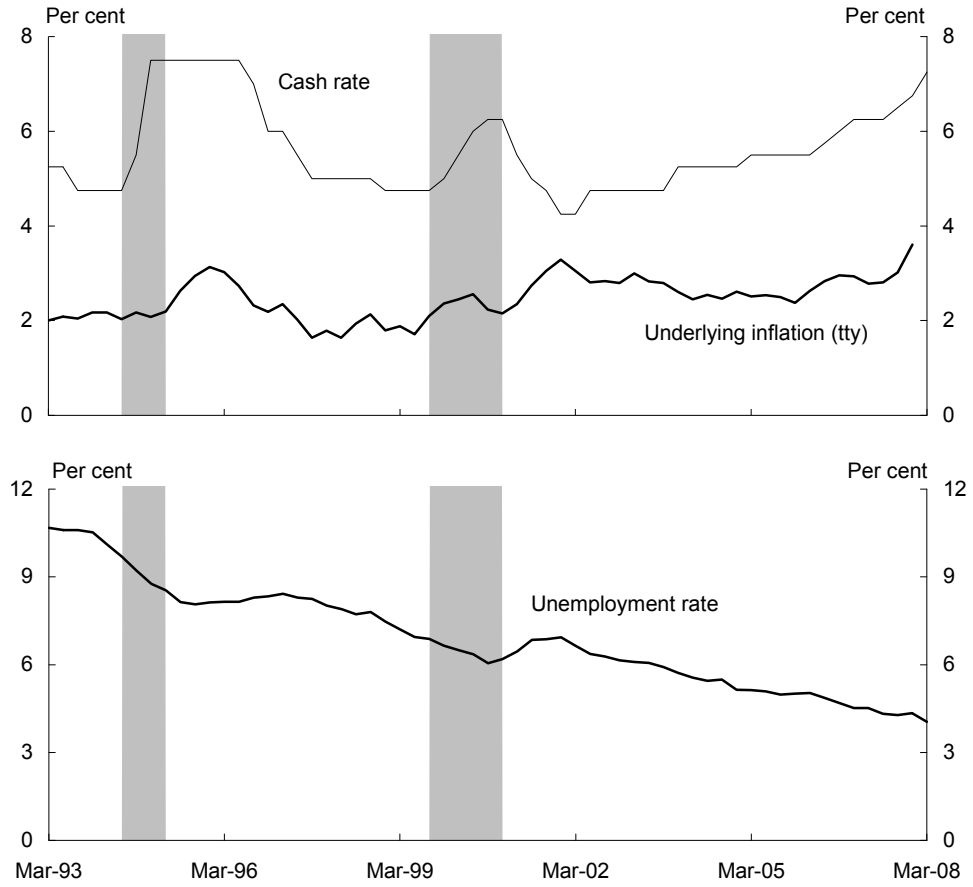
Note: The March quarter 2008 unemployment rate is an estimate based on January and February outcomes.
Wage inflation is measured by the Wage Price Index.
Source: ABS cat. nos. 6202.0 and 6345.0.

To meet rising labour demand, immigration has become an increasingly important source of labour supply. Rapid increases in the number of immigrants in the skill stream have taken some pressure off wages and continued immigration flows will help to meet future labour demand. There are limits, however, to how quickly these migrants can be absorbed into the economy given the associated pressures on demand for housing and public infrastructure. Net overseas migration has added more than 650,000 people to the population in the past five years and on our projections a further 350,000 will be added in the next two years — a net addition of more than one million migrants to a total population of 21 million.

Implications for macro policy

The gathering strength in inflationary pressures has prompted a series of interest rate rises by the RBA (Chart 11). Including the rise in the spread between official rates and borrowing rates imposed by Australian financial institutions in response to rises in their borrowing costs, borrowing rates for households and businesses have risen by around 1.3 to 1.4 percentage points since the beginning of August 2007.

Chart 11: Interest rates, inflation and unemployment



Note: The March quarter 2008 unemployment rate is an estimate based on January and February outcomes. Underlying inflation is an average of the RBA's trimmed mean and weighted median measures. The shading shows the previous two tightening phases.
Source: ABS cat. nos. 6401.0, 6202.0, Reserve Bank of Australia and Treasury.

This is a significant rise in borrowing rates, especially at a time when households are more highly indebted than ever before, which raises the potency of any given rise in borrowing rates. The ratio of household debt to annual disposable income is now around 160 per cent, up from around 100 per cent at the time of the 1999–2000 tightening, and around 65 per cent when interest rates were being raised in 1994.

Monetary policy is often described as a blunt instrument, but in many ways 'blunt' is not a particularly informative adjective. 'Blunt' might lead one to think that monetary policy acts across the economy in a roughly even fashion. In reality, however, monetary policy acts disproportionately on heavily indebted households and firms, and on housing investment. In the current environment, it also acts disproportionately on the non-resource export and import-competing sectors, via the higher exchange rate that goes with higher interest rates.

While monetary policy plays the primary counter-cyclical role in managing the macroeconomy, in the current environment, with a once-in-fifty-year surge in the terms of trade, fiscal policy also has a role to play. Tightening fiscal policy does not reduce the total amount of restraint required across the economy to contain inflationary pressures, but it can spread the necessary restraint more widely, and hence more evenly, taking some pressure off interest rates and the exchange rate. The Government's commitment to a surplus of at least 1.5 per cent of GDP and the banking of revenue surprises represents a discretionary tightening relative to last year's MYEFO of at least 0.3 per cent of GDP, which will assist monetary policy in managing demand pressures and spread some of the adjustment more broadly across the economy.

The aim of this tightening of macroeconomic policy is to slow the economy from its recent pace of growth — which has seen the unemployment rate fall at an average rate of about ½ a percentage point per annum over the past four years — in order to return inflation gradually to the 2–3 per cent medium-term target band.

Even with tighter macroeconomic policy, we can expect to see the mining sector continue to boom on the back of strong commodity prices, with flow-on benefits to other sectors, particularly construction. Furthermore, recent rains improve the prospect that the farm sector will bounce back from drought. With these sectors expanding briskly, the rest of the economy — that is, the non-mining non-farm economy — will need to grow quite slowly.

The aim, of course, is to achieve a soft landing for the economy overall. Soft landings require careful judgement, but achieving them should not be regarded as beyond the wit of policymakers. In the decade and a half since the introduction of the inflation targeting regime in the early 1990s, there have been two occasions when monetary policy tightening has led to a soft landing. These two occasions were in the periods following the 2¾ percentage point tightening over four months in 1994, and the 1½ percentage point tightening over nine months in 1999–2000.

On the first of these occasions, the unemployment rate, having fallen by about 2¼ percentage points over 1994 and the first half of 1995, rose by about ⅓ of a percentage point over the next eighteen months before beginning to decline again

(Chart 11). On the second occasion, the unemployment rate, having fallen at an average rate of about ¾ percentage points per annum between mid-1997 and mid-2000, rose by about ¾ of a percentage point over the next year. In this case, this was partly due to other factors, including the end of construction for the Sydney Olympic Games and the whipsawing of dwelling investment in 2000 associated with the introduction of the GST in July of that year.

Conclusion

So, how can we sum up the economic outlook?

As a result of wide-ranging economic reforms over the past quarter-century to both the microeconomic structure of the economy and the macroeconomic policy frameworks, the Australian economy is probably more flexible and more resilient to economic shocks than it has ever been.

Notwithstanding this improved flexibility and resilience, however, I think it is fair to say that macroeconomic management of the Australian economy may be more challenging over the next couple of years than it has been at any time in the current economic expansion, now in its seventeenth year.

The key domestic policy challenge is to apply sufficient monetary and fiscal restraint to address the near-term inflationary pressures without generating too severe a slowdown. This requires careful judgement at the best of times, and these are not the best of times. The task is being complicated by the powerful international economic forces that are pushing the Australian economy in opposing directions. On the one hand is the worsening economic outlook in the US, and the associated financial turmoil, which is yet to show any convincing signs of abating. On the other hand is the continuing economic strength in much of the developing world, particularly China, which is supercharging resource prices, and which benefits Australia's terms of trade more than those of any other developed country.

These are indeed challenging times for domestic macroeconomic policy.

Reference

Reinhart, Carmen M and Rogoff, Kenneth S 2008, 'Is the 2007 U.S. Sub-Prime Financial Crisis So Different? An International Historical Comparison', *NBER Working Paper Series* No. 13761, January.

Key themes from the Treasury Business Liaison Program — February 2008

As part of Treasury's Business Liaison Program, Treasury officials met with more than 40 businesses, and some industry and government organisations, in Sydney, Melbourne, Bathurst and Orange in February 2008.[1] Collectively the firms interviewed directly employed or represented the employers of over 1 million Australians. An additional round of telephone interviews was conducted with retail firms in mid-April, with follow-up consultations in late May.

Most retailers had experienced very strong sales in late 2007 and early 2008, and were still anticipating solid outcomes, although there was wariness about the prospective impact of higher interest rates and weak consumer confidence. During March there was a significant slowdown in sales. Sales were better than expected in April, before slowing again through May.

More broadly, the strongest part of the economy continued to be the mining sector and associated construction activity. Manufacturers were concerned about the effect of the appreciation of the Australian dollar, though many benefited from lower input costs. Companies indicated the labour market remained tight and there were shortages of workers with key skills, but they anticipated this to cause only a modest acceleration in wages. The appreciation of the dollar, and competitive pressures, were limiting the impact of strong demand on inflation.

Treasury greatly appreciates the time and effort committed by the businesses, industry associations and government agencies that participated in the program.[2]

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1 A detailed explanation of the Treasury Business Liaison Program is provided in the Treasury *Economic Roundup*, Spring 2001.

2 This summary reflects the views and opinions of participants, which are not necessarily shared by Treasury. While Treasury's evaluation of the economic outlook is informed by findings from business liaison, a much wider range of information and data is utilised to ensure a rigorous assessment of the Australian economy.

Retail sales

Retailers reported very strong trading conditions through the end of 2007. However, there were growing expectations that the pace of sales growth would moderate over the course of 2008. Expectations of a softening were based on negative news reports regarding international financial and economic conditions, tighter domestic monetary policy, and weak consumer sentiment.

Many retailers reported that the strength of sales suggested that there was no evidence of any slowing in economic activity. Despite high levels of household debts and high interest rates, sales of 'big ticket' electrical goods were reported to be very strong, driven by price falls arising from rapid product development and exchange rate appreciation. Retailers spoke of continuing strong sales growth in Western Australia, the Northern Territory and south-east Queensland, reflecting the mining boom and strong population growth. Outcomes in South Australia had surprised on the upside, whilst slightly weaker than expected sales growth was reported in Victoria. Sales in New South Wales, and particularly Sydney, were mixed, with strength in the northern and eastern areas of Sydney offset by flat to falling sales in western Sydney.

Treasury's business liaison meetings were held following the increase in interest rates in February, but prior to the increase in March. Many contacts were anticipating the additional increase. Treasury conducted telephone interviews with a number of retail contacts following the increase in official interest rates in March, and additional increases in bank lending rates.

Intelligence from retailers indicated that retail sales dropped in a sharp and uncharacteristically abrupt fashion in March. Many retailers, who had been experiencing 5-7 per cent annual increases in sales, noted that sales were flat or up only slightly compared to the previous year. Retailers attributed the slowdown in spending to the confidence impacts of volatile financial market conditions and associated uncertainties.

Easter fell during March in 2008, clouding comparisons with previous years' sales data. Treasury conducted follow-up interviews with retail contacts in late May to ascertain how sales over the March/April period had performed. Some retail contacts were able to provide early indications of May sales outcomes.

Liaison contacts reported better-than-expected sales in April, though there was little change in the composition of goods sold during the month. Where available, sales were again weak through to the latter half of May, though not as significantly as the March downturn. State-by-state performances remained relatively comparable to recent history through March and April, with sales in Western Australia and Queensland growing strongly, and New South Wales and the ACT performing poorly.

However, a number of national retailers reported that sales in Queensland and Western Australia were weak during May, converging to around the national average in comparison to previous high rates of growth.

Retailers reported that though overall sales were down, it was still possible to move goods if priced correctly. Anecdotal evidence suggests many smaller retailers conducted unscheduled sales, and were prepared to take out advertising at premium rates. A number of larger retailers had anticipated some slowing and had factored this in to forward orders. These retailers were less encumbered by unplanned inventories, and suffered less of a contraction in gross margins.

Consumer demand for electronic goods such as plasma Televisions, entertainment consoles and accessories remained strong. Sales of grocery and food items remained solid, with food retailers reporting no evidence of consumers substituting higher end products for lower end goods (for example, moving down from steak to sausages and mince or name brand to cheaper home brand goods).

Sales of non-electrical big ticket items, such as furniture, were well down. Apparel sales were down, particularly children's wear and youth apparel which numerous retailers reported were down substantially.

Retailers' expectations were for weakness to continue through the coming quarters, with a number expecting possibly negative comparable sales growth. There was some concern that a range of smaller retailers had not experienced a significant downturn before, and this inexperience, combined with tighter access to financing, might see a number of smaller traders close.

Manufacturing

It was noted that the impacts of the ongoing appreciation of the Australian dollar were being managed well by most manufacturers. Though many manufacturers described the increased competition faced from importers and the challenges the higher Australian dollar presented when exporting, most noted the offsetting benefits of lower input costs. This was particularly the case for those importing agricultural commodities — especially dairy — where raw input prices have reached record levels in US dollar terms due to global shortages, but have increased by less in Australian dollar terms.

Some manufacturers noted that in a number of cases, rather than increasing margins, importers had taken advantage of the higher Australian dollar to increase the quality of and features included in their products. This was having an impact on the attractiveness of imported products, particularly in the automotive sector.

Housing

Reports of marked divergences continued to feature across the Australian housing market. House prices performed strongly in areas that had experienced rapid growth due to mining or minerals and energy-related projects. Contacts reported that housing markets on the outskirts of major capital cities, particularly Sydney, continued to attract little interest. Demand for larger houses in these areas remained weak, with downward pressure on prices.

Developers reported exceptionally strong demand for apartments. Demand for these dwellings was holding up given their usual location in more desirable inner-city neighbourhoods that are closer to jobs, services and major infrastructure. Weak demand for new dwellings in outlying markets was being driven by high petrol prices, lack of adequate public transport and the high cost relative to existing dwellings due to construction costs and urban infrastructure charges.

Contacts suggested that it was too soon to see significant evidence of investors rotating out of equities and into residential property as has occurred in previous cycles. There was suggestion that such behaviour may be more muted given increased financial literacy of households and the higher proportion of household assets held in superannuation accounts. An end to the current monetary policy tightening cycle, and potentially a return to looser policy, was suggested by contacts as a probable catalyst for the return of household investors to residential property markets.

As a result of continued weakness in housing construction, contacts expected that rents would continue to rise strongly in the short term. Vacancy rates remain tight across major capitals, and acute in more preferred regional sub-markets. Contacts expected this to result in increased reports of prospective tenants offering to pay higher rents to secure tenancies.

Low vacancy rates, and rising prices in some areas, had led to a growing recognition amongst developers and real estate agents of the present imbalance between supply and demand for housing. The costs, uncertainties and delays in approval processes, along with urban infrastructure charges, were cited as factors hampering the ability of the market to respond adequately.

Contacts remained concerned about the capacity of the housing industry to respond to what many expect could be a rapid pick-up in activity in the latter half of 2009. Skills shortages were expected to be exacerbated by demographic trends in the housing construction workforce, with major retirements anticipated at the same time as the expected resumption in housing activity. Lower levels of apprentice completions in building trades, relative to the number of skilled personnel exiting the industry, were expected to result in stretched-out completion times and lower build quality.

Business investment

With business activity strong, a number of firms were planning to increase capital expenditure. While some investment projects are designed to reduce the need for workers, a shortage of skilled workers was often stated as a reason that some of these projects were being deferred. This is because whilst some investments reduce the required number of relatively low skilled workers, they create a requirement for ongoing high-skilled maintenance and technical personnel. A large number of firms were undertaking investments to reduce their energy costs and water usage. These decisions were being driven by recent cost increases, and expectations of future rises.

Many contacts reported that they were not yet experiencing significant impacts from recent developments in financial markets. This was because many firms have long-term financing agreements with their lenders, and had locked in funding terms prior to developments in the middle of 2007. However, contacts reported they would have been paying higher financing costs and may have faced borrowing constraints if they negotiated these same agreements in February 2008. Those firms that are active in capital markets had modified their borrowing patterns to diversify risks and reduce costs. This included conducting smaller, more frequent capital raisings across a broader range of markets.

Firms reported that financing conditions were not having an impact on investment decisions already taken, but would be a consideration in future decisions and could thus begin to impact investment activity commencing from early 2009.

Consistent with reports from previous rounds, production and exports continued to be constrained by capacity in rail and ports, and considerable investment was continuing in these areas. A number of contacts mentioned they would like to make more use of rail transport (and noted that it is environmentally preferable) but reported that links between major centres were inadequate as there has been insufficient investment over many years.

Employment

Most firms indicated that they planned to increase employment over the coming year. Many said they would expand employment more if there were more workers available.

Highly skilled tradespeople remained difficult to find given general skills shortages and demand from the resources sector. Shortages of experienced employees were noted in highly skilled professional fields, particularly engineering, finance and project management. Firms also reported that the major accounting firms had raised prices and in some cases had rejected work due to personnel constraints.

Contacts reported that they were adapting their human resource management practices in response to increased turnover and competition from regions and industries benefiting from the resources boom. Contacts had identified and improved career development opportunities to retain existing staff, and had increased staff training in response to turnover and less experienced recruits.

Mining and associated activities continued to attract employees from other sectors of the economy. Farmers and rural towns near mining areas faced particular difficulty in retaining workers. Some firms had concerns about the ageing workforces in some trades such as bricklaying. The use of '457' visas was reported as becoming more widespread, though some smaller employers continued to claim that the scheme was administratively difficult.

Wages and other costs

Notwithstanding the tight labour market, there were no suggestions of a generalised surge in wages, but a gentle pick-up in expectations of wage increases.[3] Some firms scheduled to recommence wage negotiations had reported concern that the initial bargaining positions of employee groups were higher than previous negotiations, due to increased inflation expectations. However, other firms reported that they were feeling less pressure than they otherwise would have for wage increases because of increases in after-tax incomes driven by recent tax cuts.

Companies continued to report instances of 'grade inflation' — paying people at a higher grade for the same duties — and a tendency to promote people faster than their experience would normally warrant in order to attract new recruits and retain workers. A small number of firms reported that they were keeping some personnel on special projects whilst they did not have specific roles given the difficulties in finding suitable replacement staff when workflows pick up.

Though not widespread, contacts described cases of significant increases in electricity prices following the expiration of contracts. This may reflect some of the impacts of the drought and higher coal prices on generators, however the extent to which price rises represented catch-up by suppliers after long periods of price stability was unclear. Peak pricing of electricity loads was leading some firms to modify operations to reduce costs. Higher water prices, along with higher electricity costs, were driving some firms to reduce usage.

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3 Overall, the median increase in wages over the previous year reported by the companies interviewed in February was 4.0 per cent, with the same increase expected to be paid over the coming year. Weighting by employment, the mean wage increase was 4.7 per cent and the expected increase was 4.9 per cent.

Prices

Underlying inflationary pressures were rising, although the exchange rate appreciation was containing import prices. Companies suggested that competitive pressures were limiting price increases. This was compressing margins, although profits generally remained strong.

New car prices were static, with importers instead incorporating more features as 'standard' inclusions, while used car prices were falling.

Contacts reported that significant price increases in basic food commodities and inputs for producing those commodities domestically were being absorbed in upstream production processes. Rather than passing on significant price rises to consumers, retailers were reported to be pressuring processors and producers to absorb costs by reducing margins.

Reports of significant increases in food prices, and particularly dairy products, continued. Price rises were not solely due to the impacts of drought in Australia — increased climate variability has been having an adverse impact on agricultural output across a range of producing areas globally. Further, according to the contacts, global prices of food have increased as farmland is increasingly used to produce biofuels, subsidies have been removed, and global inventories have been run down. Contacts also noted that demand increases from emerging markets in Asia were driving a boom in agricultural product prices. In the midst of a strong outlook for demand in the future, production was not expected to return to previous levels across many Australian farming regions because of the exit of farmers from the industry.

Regional areas

Recent rains had boosted confidence in those areas that had received them. Improved seasonal conditions were expected to lead to increased plantings. Prices for many agricultural commodities had risen substantially, given climate variability and increased demands on food crops as alternative energy feedstocks. Contacts reported unprecedented strong demand for agricultural products — particularly beef and lamb — driven by strong employment and wages growth domestically, and income growth in emerging markets. Higher prices for many commodities and strong demand have reduced the adverse impacts of the appreciation of the Australian dollar.

The February business liaison round included meetings in Bathurst and Orange. Both towns have diversified economic bases which have insulated local economies from the impacts of drought to some degree. Orange has been experiencing some impacts from the mining boom due to expansions of the nearby Cadia gold and copper mine. Contacts reported the impact of the mine on the availability of skilled labour in the

town, and on wages. The wine industry and manufacturing also remain important in Orange's economy.

Charles Sturt University has campuses in both cities, with around 2,500 students in Bathurst. The relatively large student population, including international students, has been helping drive the local economy, though this did have an impact on the availability of rental accommodation. Food processing operations have become increasingly important to Bathurst's economy, though there have been some reductions in operations due to rises in the Australian dollar. Robust employment in both cities has helped many rural families in the region survive the drought through supplementing farm income with other employment.

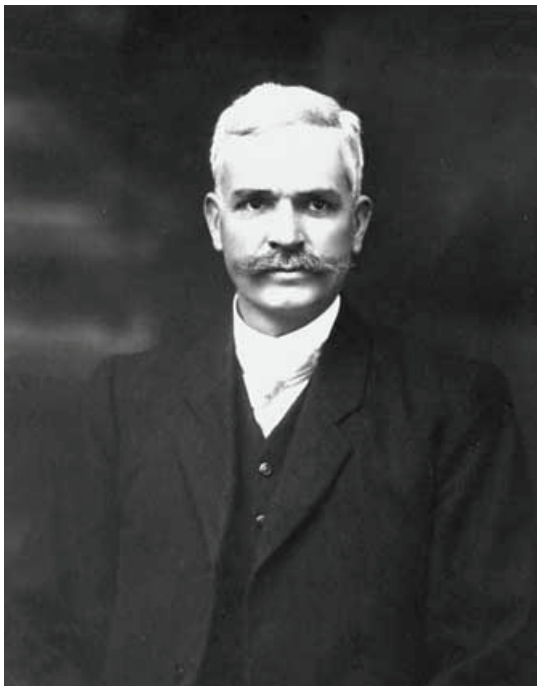
Carbon pricing and trading

Many companies supported a prompt introduction of an emissions trading or carbon pricing scheme to enable better business planning. The preparedness of firms varied, though most larger enterprises were aware of the reporting obligations that have been announced. Following ratification of the Kyoto Protocol many firms were commencing programs to meet their obligations and initiate reductions. A number of firms already had efficiency and reduction programs and investments in place.

Andrew Fisher: a reforming treasurer

John Hawkins[1]

Andrew Fisher rose from the coal pit to serve three times as Australia's treasurer, and simultaneously prime minister. During his time as treasurer the Commonwealth Bank was founded, Australian banknotes first issued, a land tax introduced and fiscal federalism rearranged. Fisher also put the economy on a war footing for the first time. His referenda to increase the economic powers of the Australian government were narrowly defeated.



National Archives of Australia : A1200, L11177A

1 At the time of writing, the author was in the Domestic Economy Division, the Australian Treasury. The views in the article are those of the author and not necessarily those of the Australian Treasury.

Introduction

The Right Honourable Andrew Fisher served as Australia's treasurer and simultaneously prime minister in three stints. For a long while he was somewhat overshadowed in histories by his prime ministerial predecessor Deakin and successor Hughes who both shone more brightly as orators and characters. But more recently his substantial body of achievement has become better recognised.[2] He was one of the most reforming treasurers of Australia's first few decades.

And even those who downplay his achievements seem to agree about his good character; sincere, compassionate and modest. Always a keen reader, and a teetotaller, Fisher had great self-discipline but 'in private life he was a charming companion'.[3]

Fisher's early career

Andrew Fisher was born on 29 August 1862 at Crosshouse in Ayrshire, Scotland. His father, Robert Fisher, a coalminer, helped establish a co-operative society which set up a library which the young Andy used to supplement his primary school education. From the minimum age of twelve, or perhaps earlier, Andy was also working in the coal mines. Robert Fisher's work had left him with 'black lung' and the family needed the income. Conditions were harsh and working hours long; in winter miners never saw daylight between Sundays. Both Robert and Andy were ardent unionists and blacklisted for their activism.

While his family life was warm, economic prospects were poor, and both Andy and his younger brother James migrated to Australia. They arrived in Queensland in 1885 and found work at the Burrum coal fields. Andrew soon became a manager. He moved to the Gympie goldfields but when he went on strike was dismissed. He obtained an

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2 As Humphreys (2005, p 2) comments, 'invariably he is presented as handsome in appearance and manner, with his neat moustache and fetching Ayrshire burr, but as a man of modest abilities, pragmatic and even plodding'. Bernays (1919, pp 139-40), Broinowski (1949), Cockerill (1943) and Serle (1949) are good examples of this tendency to damn Fisher with faint praise. This seems unfair. Boote (1928), who knew him well, recalls an intellectual able to discourse on philosophy, metaphysics and literary classics. Shepherd (1958, p 275), his private secretary, recalls his support for Australian art and literature. Good examples of the more recent re-evaluation of Fisher's achievements are Murdoch (1998), Anderson (2001), Lloyd (2000), Scates (2001), Edwards (2004) and Galligan and Abdiel (2007). Many writers also seem to downplay Fisher's political skills. Yet he held together a fractious Labor Party, which split just over a year after he left. He held the seat of Wide Bay from 1901 until his retirement in 1915 but Labor did not win it again until 1961.

3 Shepherd (1958, p 175) and Murphy (1983) say he was particularly fond of the famous poet from his native Ayrshire, Robert Burns. Like Fisher, Burns rose from poverty to prominence and expressed radical sentiments.

engine driver's certificate and gained another position. He also taught himself shorthand and read widely on social sciences and economics.[4]

Fisher became involved with trade unionism early, sparking a lifelong friendship with the pioneering UK labour leader Keir Hardie. By 1879, though only seventeen, he was secretary of the Crosshouse branch of the Ayrshire Miners' Union. After arriving in Australia he joined the Amalgamated Miners' Association and by 1890 was secretary and in 1891 president of its Gympie branch. In 1891 he became secretary of the Gympie Joint Labor Committee and then president of the Gympie branch of the newly formed Labor Party. He represented Gympie at a Labor-in-Politics conference.

Parliamentary apprenticeship

Fisher was the successful Labor candidate for Gympie at the 1893 Queensland Legislative Assembly elections and became vice-president of the parliamentary party, but was defeated in 1896. After his election loss, Fisher worked as an engine driver and municipal council auditor while awaiting the next election, and helped journalist Henry Boote found the *Gympie Truth*, concentrating on its financial management. He was a delegate to the June 1898 Queensland Labor convention which adopted a platform including establishment of a government bank.

He returned to the Queensland parliament in 1899. He served under Dawson as minister for railways and public works in the world's first labour government, but as it only lasted a week, obtained no real experience. He twice unsuccessfully introduced bills to establish a scheme for workers' compensation.

Fisher campaigned enthusiastically for Federation, and easily won the federal seat of Wide Bay, which encompassed his state seat of Gympie. In 1901 he married Margaret Irvine, his landlady's daughter, and already the mother of his son. In 1902 he represented the Australian Labour Party at the coronation of Edward VII. He was appointed to the Labour caucus' economics committee in 1903.

In 1904, he served as minister for trade and customs (ranking fifth in the cabinet) in the Watson government. While longer lasting than Dawson's, it also lacked a majority and was out of office after four months. Fisher respected and liked Deakin but did not share Watson's enthusiasm for a formal alliance with Deakin's party. In August 1905 Fisher was elected to the new post of deputy leader, beating Hughes by a single vote.

4 One obituary refers to his 'omnivorous reading, especially in economics, industrial movements and social sciences'; *The Age* 23 October 1928, p 9.

In March 1907 Fisher successfully moved in the House that old age pensions be introduced. Deakin's minority government introduced a bill setting it up using a trust fund to get around the problem that the Constitution specified that for the first 10 years any unexpended monies must be returned to the States. The High Court upheld the scheme against a challenge from the NSW government. Male recipients were required to be 65 years or over and women 60 years or over, have been resident in Australia for over 25 years and have an annual income of less than £52. The scheme was estimated to cost £1½ million.

When Watson resigned in October 1907, Fisher beat Hughes and Spence for the ALP leadership. It is claimed that one factor was that Fisher was 'more competent in economic matters'.[5] He used to gather with some colleagues on Sundays to read and discuss theoretical economics.[6]

At the 1908 Federal Conference Fisher argued for better social statistics. The conference also called for the 'nationalisation of monopolies' and considered King O'Malley's scheme for a Commonwealth Bank (see box).

Fisher combined a utopian socialism with a belief in practical measures, but a distaste for forming coalitions to carry them out.[7] He distinguished between the 'speculating' and 'labouring' classes and sought the greatest opportunity for the latter to rise in life. But we have no less than Lenin's word that he was no communist.[8]

Fisher's first term as treasurer

In the parliament elected in 1906 Deakin's party with between 16 and 20 members governed with the support of the Labor Party's 26 members. The Labor Party succeeded in having legislation passed but some members were unhappy about not being in office. Fisher characteristically urged caution on his colleagues but in late 1908 caucus voted to end its support for Deakin. In November 1908 Fisher became prime minister in a minority government (supported by the Deakinites).

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5 Murphy (1981).

6 Higgins, who served in Watson's cabinet although not a Labor member, was surprised to observe this; Crisp (1949, p 95).

7 Attard (1995, p 116). A much-quoted statement of Fisher was that 'No [Labor] Party worthy of the name can deny that its objective is socialism, but no socialist with any parliamentary experience can hope to get anything for many years to come — other than practical legislation of a socialist nature'; Crisp (1955, p 275).

8 Lenin described Fisher's Labor Party as 'a liberal-bourgeois party … the leaders of the Australian Labor Party are trade union officials, an element which is everywhere most moderate and capitalist-serving, but which in Australia is altogether peaceful and purely liberal'; Pravda, 26 July 1913, cited by Crisp (1949, p 83).

Fisher followed Watson's practice of also serving as treasurer. He attached importance to 'keeping the books', perhaps a legacy of his father's work as treasurer of the co-operative.[9] He had specialised in finance in parliament; 'modestly well off in his private life he had acquired an understanding of banking and finance through the management of his own investments'.[10]

The same month Fisher made an important policy speech in Gympie. Given his lack of a majority, it was essentially a platform for the next election. He foreshadowed a land tax to fund old age pensions, pay interest on states' debts, and build an Australian fleet and the transcontinental railway. He also referred to a plan to nationalise the iron industry and issue a federal currency.[11]

Fisher's government was defeated on the floor of the House by a 'fusion' of most of Deakin's followers with those of Forrest and the free traders now led by Cook. When Deakin derided objecting Labor members as 'like a lot of unruly urchins dragged screaming from a tart shop'[12], he created much ill will, and ended his friendship with Fisher, given how long Labor had supported Deakin in government. Fisher posed on the hustings the question 'What can you do with a man like that?' and the electorate's answer was to remove him from office.[13]

Fisher's second term as treasurer

Fisher won the April 1910 election convincingly on a platform that included land tax, a Commonwealth Bank and a note issue, but the character of Fisher was also important. This was the first federal election to change the government and Fisher's was the first Australian government to have clear control over both Houses. It was also the world's first majority labour government. It was a very active government, passing 113 acts in its term. Unsurprisingly, Fisher was re-elected ALP leader unopposed.

Arguably the economic act of his administration with the greatest repercussions, albeit not to be fully realised for many years, was the founding of the Commonwealth Bank of Australia. There are conflicting accounts of how this came about, and particularly the role played by the legendary King O'Malley in its founding.[14] It certainly lacked many of the features that O'Malley wanted. Fisher introduced Australian government

9 Murdoch (1998, p 17).
10 Murphy (undated, p 16).
11 La Nauze (1965, pp 557-8).
12 Cited by Smith (p 108).
13 Lloyd (2000, p 80).
14 O'Malley claimed to have forced it through a caucus meeting against the opposition of Fisher and Hughes using various wiles; Catts (1938). Kim Beazley Snr (1963) dismisses this as a fantasy, but Hawkins (2008) shows that there are corroborating accounts.

banknotes, called by his critics 'Fisher's flimsies', backed 25 per cent by gold and effectively gave them a monopoly by introducing a 10 per cent tax on private banknotes.

Fisher introduced a tax on unimproved land value of 3d-6d per pound. It was not just aimed at raising revenue but at breaking up large estates. Fisher described the creation of more small landowners as 'my kind of socialism'.[15] Despite vociferous objections by the Liberals they did not repeal it when they gained office, but the rate was gradually lowered.

Fisher opened his first budget speech, for 1910-11, by noting that the previous financial year was the first not subject to the Braddon clause, which required three-quarters of federal revenue to be passed to the states. In discussing spending, most attention was paid to military expenditure and pensions. In the speech for 1911-12 he was able to point to strong growth in revenues from a growing economy.

Among many other measures, Fisher introduced a 25 shillings per capita payment to the states. Maternity allowances and workers' compensation were introduced. The Australian navy and the Inter-state Commission were established. Fisher's government acquired the Northern Territory from South Australia and the Australian (then 'Federal') Capital Territory from New South Wales, and chose the name 'Canberra' for the national capital. Fisher created a prime minister's department, headed by Malcolm Shepherd, a long-time secretary to prime ministers. He 'trusted completely his permanent officials'.[16]

Fisher conducted two referendum campaigns aimed at giving the federal government greater economic powers.[17] The first set in April 1911 included two propositions. The first was four amendments to section 51 of the Constitution to extend commonwealth authority to *all* rather than just *interstate* trade and commerce; expand the corporations power; give the parliament power to control wages and conditions of employment; and add a new power to control combinations and monopolies. The second proposal would have empowered the commonwealth to nationalise monopolies. Both proposals were decisively rejected in all states other than WA, in part due to insufficient campaigning (Fisher was in the UK for much of the time) and division in Labor ranks. Prominent Labor identities such as Holman in NSW opposed giving more power to the

15 Sykes (2006, p 8). A progressive land tax had been advocated by Thomas Paine (1792), a likely influence on Fisher's thinking.
16 Murdoch (1998, p 69) and Cook (1958, p 117).
17 Sawer (1956, pp 98-9).

federal government. Fisher divided the proposals into six separate referenda when resubmitting them in May 1913 but they were all narrowly defeated.[18]

In May 1911 Fisher visited London for the Imperial Conference and the coronation of George V. He received a hero's welcome when he returned to his birthplace.[19]

Fisher tended to underestimate his revenue in his budgets, as buoyant economic conditions lifted customs revenue, and the land tax, note issue and Commonwealth Bank profits brought in more revenue, while the changed arrangements limited the growth in payments to the states. Fisher expanded payments for pensions and defence, and for the trans-continental railway.

Tariffs had long been viewed by at least one party in parliament as a means of protecting industry as well as a means of raising revenue. Fisher had another revenue-raiser which also had a social and economic goal. He commented in his 1912-13 budget speech that 'the land tax, while making a substantial contribution to revenue, has operated beneficially in inducing some owners to subdivide their large estates, providing homes for more settlers and adding to the productiveness of the land'.[20]

At the 1913 election, Labor lost government by a single seat due to a swing against it in rural areas. Joseph Cook's liberals formed the new government but Labor retained control of the Senate. Fisher defeated challenges to his leadership from Higgs (who represented the more radical wing of the Labor Party, and became his successor as treasurer) and Hughes.

1913-14 was a hectic year, with the closely balanced parliament likely to face an early election at any time. By now Fisher was the father of six young children and showing some signs of strain. Fisher's policy speech in July 1914 was largely a restatement of that of 1913. When World War I broke out, Fisher famously promised to support the United Kingdom 'to the last man and the last shilling', essentially the same policy as Cook, neutralising the war as an election issue.[21] Fisher won a strong victory at this first double dissolution election.

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18 Sawer (1956, pp 99-100). There were majorities in support of all six referenda in three states. They were subsequently reintroduced into parliament in 1915 but after Fisher retired, his successor Hughes cancelled plans to resubmit them. Most referenda in Australia have been rejected; Fisher's came closer to passing than most.

19 Kilmarnock Standard, 8 July 1911.

20 Hansard, 1 August 1912, p 1582.

21 Fisher's letter to the editor, *Sydney Morning Herald*, 10 August 1914, p 11.

Fisher's final term as treasurer

Regaining office in 1914, Fisher had to concentrate on mobilising for war rather than social or economic reforms. In early 1915 he passed legislation enabling the federal government to raise war loans. The war disorganised parliamentary procedures; Fisher presented a budget on 3 December 1914 but there was no budget in 1915.[22]

War expenditure drove the budget into a deficit of unprecedented magnitude. This was despite Fisher trying to raise revenue by increasing the rate of land tax and imposing probate on deceased estates. In July 1915 Fisher told caucus the government intended to impose the first income tax.[23] It raised nearly £4 million in 1915-16.

Fisher had a deep-seated abhorrence of debt, perhaps reflecting his working class upbringing and his experience of political corruption involving borrowing in Queensland politics. During the War Fisher borrowed from the British government and the Australian banks with great reluctance.

Fisher's health deteriorated as he was attacked by both conscriptionists and Labor radicals. He delegated piloting of the income tax bill through parliament to Hughes. A holiday in New Zealand, disguised as inter-government negotiations, was insufficient for him to regain his health. In October 1915 he resigned the prime ministership to become High Commissioner in London, taking over from another former prime minister, George Reid. Accounts vary about whether he jumped due to ill health, was pushed out by Hughes or was seeking to avoid a coming Labor split.[24]

His later years

Fisher served his five-year term as High Commissioner diligently, but his dislike of protocol and his informality meant that it was not a role for which he was well suited. And needing to defer to Hughes when he visited the United Kingdom must surely have grated.

In 1921 Fisher returned to Australia for a year. There were attempts to secure him a federal seat and possibly restore him to the Labor leadership but he appeared not really interested. He returned to London in 1922 and unsuccessfully sought Labour preselection for the Scottish seat of Kilmarnock in the House of Commons. His physical and mental health deteriorated gradually and he died on 22 October 1928.

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22 Sawer (1956, p 145).

23 Weller (1975, p 416). This was despite a proposal for an income tax being defeated at Labor's Adelaide conference.

24 Hawkins (2008) summarises the alternative explanations. There is likely an element of truth in all, but health seems the main reason.

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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.

Speeches

'Realising the Vision' (March 2008). Address to the Ian Little Memorial Lecture by Dr Ken Henry, Secretary to the Treasury

http://www.treasury.gov.au/contentitem.asp?NavId=002&ContentID=1351

Ian Little's legacy lives on most strongly through his efforts to develop an ambitious, comprehensive, program of economic reform to boost future productivity and workforce participation. As secretary of the Victorian Department for Treasury and Finance, Ian Little worked with the Heads of Treasuries on a vast range of issues, including implementing initiatives of the ten year National Competition Policy developed in the mid 1990s. Less than a month after the November 2007 federal election, the Council of Australian Governments (COAG) met to reinvigorate the National Reform Agenda, with heads of government recognised they had a unique opportunity to put behind them the tensions of the past, and deliver a substantial national reform effort. COAG has identified seven areas for its 2008 work program: health and ageing; education and training; climate change and water; infrastructure; business regulation and competition; housing; and indigenous reform. Ian Little would have wanted to make sure that the nation's reformers appreciate the uncommon opportunity that presently confronts them.

'Mutual Recognition of Financial Services Regulation: Opportunities and Challenges for Australia' (February 2008). Address to the ASIC Summer School 'Our Financial Markets: The big issues' by Dr Ken Henry, Secretary to the Treasury

http://www.treasury.gov.au/contentitem.asp?NavId=002&ContentID=1345

Mutual recognition of securities regulation between Australia and other countries offers both opportunities and challenges. It offers the opportunity to reduce the regulatory burden on business and, other things equal, it should lower the cost of capital, underwriting faster capital-deepening and productivity growth. There is also a real opportunity to strengthen the position and influence of the Australian finance industry in the region and globally. Most of the challenges arising from mutual recognition relate to more intense competition, which is generally to be encouraged; but it is something that should be done 'eyes open'.

Keynote Address to the ASIC Summer School 'Our Financial Markets: The big issues' (February 2008). Delivered by Dr Ken Henry, Secretary to the Treasury, on behalf of Senator The Hon Nick Sherry.

http://www.treasury.gov.au/contentitem.asp?NavId=002&ContentID=1346

This speech was delivered by Dr Henry on behalf of Senator The Hon Nick Sherry, Minister for Superannuation and Corporate law. It discusses the Government's policy priorities in the areas of superannuation, corporate governance, financial reporting and financial services disclosure.

Consultations

http://www.treasury.gov.au/content/consultations.asp?ContentID=1013&titl=Reviews,%20Inquiries%20%26%20Consultations

Treasury conducts many consultations on behalf of the Government. The following consultations are open for public comment:

- Taxation of Financial Arrangements - Stages 3 & 4
- Distributions of Managed Investment Trust Income to Foreign Residents – Draft Regulations
- Green Paper on Financial Services and Credit Reform
- Simple Superannuation Advice - Consultation Paper
- Regulation of Direct Offshore Foreign Insurers – Draft Regulations
- Australia's Future Tax System

Other

Australia and the International Financial Institutions 2006-2007 (June 2008)

http://www.treasury.gov.au/contentitem.asp?NavId=002&ContentID=1386

This publication reports on Australia's interaction with the International Monetary Fund, Asian Development Bank and the World Bank during the 2006-2007 financial year. It combines three publications previously titled Australia and the IMF, Australia and the World Bank and Australian and the Asian Development Bank.

Pocket brief to the Australian tax system (May 2008)

http://www.treasury.gov.au/contentitem.asp?NavId=035&ContentID=866

The brief provides notes on the breakdown between Commonwealth Government, State and Local Government tax revenue, the tax breakdown, major tax expenditures, history of tax instruments, income tax rates, GST and excise rates.

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 6345.0
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

Past editions of *Economic Roundup*

A full index to articles published in *Economic Roundup* was included in the Spring 2006 edition. Details of articles published in recent editions are listed below:

Summer 2008

Venture capital in Australia

Measuring entrepreneurship

A perspective on trends in Australian Government spending

Australian household net worth

William Lyne: social reformer

Spring 2007

Addressing extreme disadvantage through investment in capability development

Challenges confronting economic policy advisers

Conceptual challenges on the road to the second Intergenerational Report

Transparency and sustainability of the public balance sheet: perspectives from APEC

The role of education in enhancing intergenerational income mobility

Comparing the net foreign liability dynamics of Australia and the United States

A few sovereigns more: the rise of sovereign wealth funds

John Forrest: Four times Treasurer

Key themes from the Treasury Business Liaison Programme — October 2007

Copies of these articles are available from the Treasury. Written requests should be sent to Manager, Domestic Economy Division, The Treasury, Langton Crescent, Parkes, ACT, 2600. Telephone requests should be directed to Mr Chris McLennan on (02) 6263 2756. Copies may be downloaded from the Treasury web site http://www.treasury.gov.au.