
Financial Stability Review

March 2004

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Foreword

As part of its longstanding responsibility for the stability of the Australian financial system, the Reserve Bank has periodically outlined its assessment of the state of the financial system, including in its Annual Report. This *Financial Stability Review* is the first occasion on which a more detailed assessment has been published in a stand-alone publication – a practice that will be continued half-yearly from now on.

In publishing the *Financial Stability Review*, the Reserve Bank has joined a growing number of central banks that are addressing their stability mandates through publishing a formal report. In some cases, including that of Australia, the introduction of such reports partly reflects changes in the structure of financial regulation that have thrown the role of central banks in safeguarding financial stability into sharper relief. In Australia's case, the supervision of individual financial institutions was transferred to the Australian Prudential Regulation Authority (APRA) in 1998, with the Reserve Bank maintaining its responsibility for the overall stability of the financial system.

The *Financial Stability Review* will be tabled at the March and September meetings of the Council of Financial Regulators, and published shortly thereafter. The Council, which is chaired by the Reserve Bank, was established in 1998 to promote co-operation between the main financial regulators in Australia – the Reserve Bank, APRA and the Australian Securities and Investments Commission. Its charter was revised in June last year to provide for a stronger focus on stability issues, including the promotion of co-ordination arrangements between regulators for handling any episodes of financial instability. At the same time the Commonwealth Treasury became a member of the Council.

This inaugural issue of the *Financial Stability Review* has three main parts. The first provides an assessment of the macroeconomic environment in which the financial system is currently operating, concentrating on the balance sheets and net income flows of the household and business sectors. The second provides a reading on the strength of the financial system itself. The third summarises some of the initiatives underway in Australia and overseas to improve the regulatory infrastructure of the financial system. The *Review* also contains two articles.

Overview

The Reserve Bank's overall assessment is that the Australian financial system is currently in good shape. Banks – the most important financial intermediaries from a systemic risk perspective – are in a particularly strong financial position: they are profitable, carry few bad debts and hold capital considerably in excess of their minimum regulatory requirements. This outcome is largely the legacy of the long-running expansion of the domestic economy, now in its thirteenth consecutive year of growth, but it also reflects improvements in banks' systems for managing credit risks following problems in the early 1990s.

Over this period there has been a significant shift in banks' assets away from business lending towards lending to households – traditionally a much lower risk activity for financial intermediaries. Both demand and supply factors have been at work here. On the demand side, the shift to a low-inflation, low-interest-rate economy has increased the capacity of households to borrow, with many households willingly taking up this extra capacity. On the supply side, financial intermediaries have been keen to increase their portfolios of relatively low-risk residential mortgages and are providing cheaper, more innovative mortgage products, including those specifically tailored for investor housing.

These developments have resulted in striking growth in both residential property prices and household indebtedness since the mid 1990s. House prices have risen at an average annual rate of 12 per cent since the beginning of 1996 and growth in household debt has been similarly rapid. Over recent years, prices and indebtedness have increased at even faster rates. Although the pace of growth is now slowing, it is too soon to know whether it will return to a sustainable rate within a reasonable time.

One consequence of these changes is that the overall riskiness of the mortgage portfolios of financial institutions is likely to have increased. Residential property prices are high relative to historical benchmarks, household debt levels are much higher relative to income than they have been in the past, borrowing by investors has grown rapidly, competition for loan origination has been very strong, and some borrowers who previously would not have been able to obtain mortgages can now do so. These developments raise the possibility that future default rates may not be as benign as those in the past. Notwithstanding this, there are currently few signs that households are having difficulty meeting their financial obligations, with default rates on residential mortgages at very low levels despite the aggregate debt-servicing burden standing at a record high.

While there are indications of an increase in risk in mortgage portfolios, it remains difficult to envisage scenarios in which developments in the housing market alone could cause major difficulties for the Australian financial system. Recent work by APRA indicates that even if house prices fell by 30 per cent and mortgage default rates increased dramatically, more than 90 per cent of authorised deposit-taking institutions would continue to meet minimum regulatory capital requirements. For the small number of institutions that fell below the minimum, the breach is estimated to be small.

Taking a somewhat broader perspective, a more medium-term risk is that, after borrowing heavily for a number of years, the household sector will decide to consolidate its balance sheet. If that were prompted by a deterioration in economic conditions it could amplify what might otherwise have been a relatively mild downturn – an outcome that, in turn, would increase the credit risk in the balance sheets of financial institutions. Assessing the likelihood of such an outcome is complicated by the fact that there have been few instances, either in Australia or elsewhere, in which balance-sheet adjustment by the household sector has been a major factor shaping an economic downturn. In previous episodes, it has been

adjustments by the corporate sector and by financial institutions that typically have been the source of difficulties – and the risks of problems emanating from that front currently look quite small on this occasion.

Looking beyond Australia, global financial markets are currently subject to some unusual forces. Nominal interest rates in all the key financial centres are at very low levels and have been so over an extended period. Official capital flows from Asia to the United States, motivated not so much by underlying rates of return but by exchange rate considerations, have been unusually strong. The search for yield by private investors has pushed down risk spreads for corporate and emerging market borrowers alike, to levels last seen before the 1998 crisis.

While this combination has doubtless acted to spur growth in the world economy, which is welcome, several questions hang over the outlook. Not least among them is whether global investors have accurately priced the risk to which they are exposed, and how this constellation of yields, capital flows and exchange rates will respond when international short-term interest rates begin, at some stage, to rise to levels more in line with historical experience.

These issues, together with those closer to home arising from the changed financial behaviour of households described above, will bear close watching over the period ahead.

1. The Macroeconomic Environment

1.1 The Global Environment

The period since mid 2003 has been marked by a significant pick-up in the global economy which, in turn, is bolstering the strength of the Australian economy.¹ This is welcome news from a financial stability perspective, given the strong historical link between economic conditions and the health of financial institutions. The improved economic environment is also having a favourable effect on household and business balance sheets in a number of countries.

The pick-up in economic conditions has been most pronounced in the United States but conditions have also improved, to varying degrees, in other major regions. Consensus forecasts for GDP growth in 2004 in key economic areas have generally been revised up again in recent months and overall, Australia’s trading partners are forecast to grow by over 4 per cent (Table 1).

A more optimistic tone has also been evident in financial markets. Major equity markets have rallied over the past half year, and spreads on corporate and emerging market bonds have fallen to their lowest levels for several years (Graph 1).

Notwithstanding the more buoyant mood, short-term interest rates have remained at exceptionally low levels – at an average of one per cent in the US, Germany and Japan, which is the lowest level in more than one hundred years (Graph 2). To a considerable extent, this reflects the low rates of goods and services price inflation in the major economies and few signs that consumer price inflation is picking up materially.

The low interest rates in the major financial centres are, in turn, tending to anchor interest rates globally at historically low levels – an outcome which is not without some medium-term risk to the global financial system. On one hand, low nominal rates are stimulating demand and providing a welcome boost to those economies where there is excess capacity.

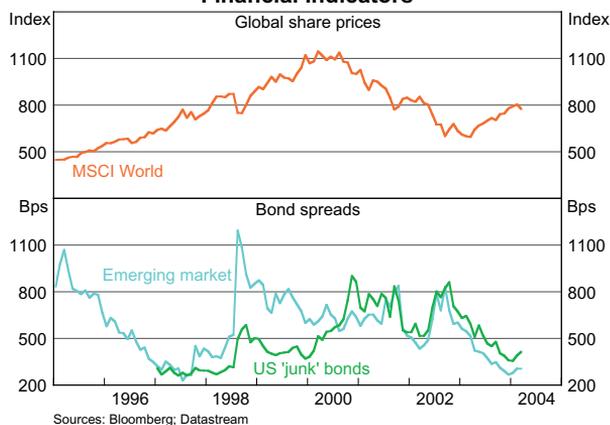
Table 1: Consensus Forecasts
Year-average, per cent

<i>Date published</i>	2003	2004	
		Sep 2003	Mar 2004
United States	3.1	3.9	4.6
Euro area	0.4	1.7	1.7
Japan	2.7	1.2	2.8
China	9.1	7.6	8.3
Other east Asia	3.6	4.8	5.4
G7	2.2	2.8	3.4
Australia’s major trading partners	3.4	3.6	4.3

Source: Consensus Economics

Graph 1

Financial Indicators



1 For further detail on international economic and financial market conditions refer to the *Statement on Monetary Policy*, Reserve Bank of Australia, February 2004.

On the other hand, there is a danger, particularly in those countries where economic growth is already well established, that low interest rates could fuel excessive borrowing and unsustainably high asset prices. If this were to occur, adjustments in private-sector balance sheets would ultimately be required to put them on a firmer footing. This could pose difficulties both for financial institutions and the global economy.

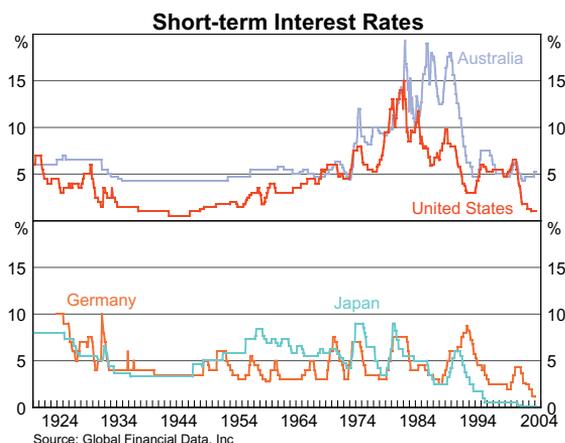
The low-interest-rate environment also seems to be increasing the appetite of investors for risk – manifesting itself as a search for yield. The result has been a pronounced narrowing of credit spreads in global financial markets with investors willing to substantially discount the risk they attach to the borrowings of both sovereigns and corporates, even those with low credit ratings. This is giving rise to concerns about the possibility of the mispricing of global credit risk and a misallocation of global capital. If this were to occur it would be a worrying outcome from a longer-run financial stability perspective.

The low level of interest rates in the US, combined with the large US current account deficit, is also fuelling a major realignment of exchange rates, with the US dollar depreciating by 22 per cent on a major-currency trade-weighted basis over the past two years (Graph 3). With a number of countries, notably in Asia, resisting the appreciation of their own currencies against the US dollar, exchange rate adjustment has been most pronounced against those countries that have freely floating currencies, such as the Euro area, the UK, Canada, Australia and New Zealand. While these exchange rate adjustments have been very large, the foreign exchange markets have remained orderly throughout.

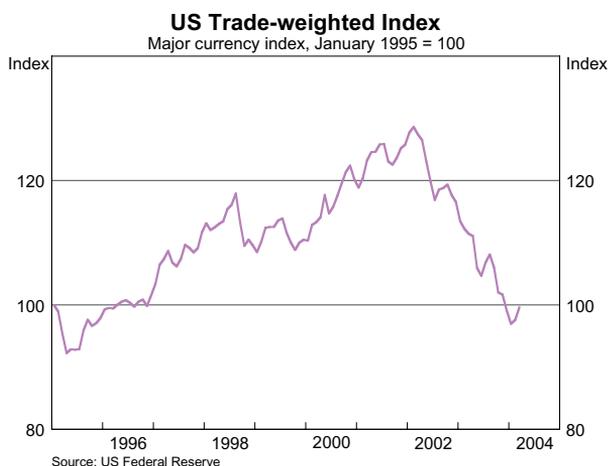
1.2 Australia

In line with the improvement in global conditions, the Australian economy has picked-up significantly since around the middle of last year, with GDP increasing at an annualised rate of 5½ per cent over the second half of 2003. The economy is in its thirteenth consecutive year of expansion without experiencing a recession, with growth averaging 3¾ per cent per year since mid 1991.

Graph 2



Graph 3



The strong growth outcomes have, since the mid 1990s, been associated with significant gains in residential property prices and rapid growth in borrowing by the household sector. In contrast, business borrowing has been restrained and commercial property prices have grown only modestly, in many cases remaining below their peaks of the late 1980s. In assessing risks to financial stability, it is important to understand developments in both household and corporate balance sheets and how these developments are affecting the risk profiles of the two sectors.

Household Sector

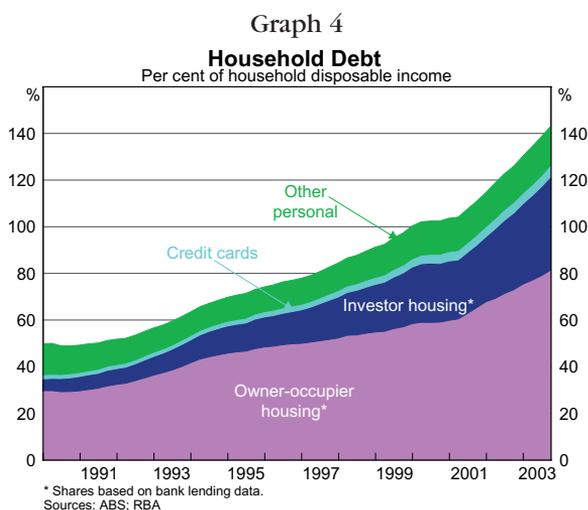
Balance sheets

A striking feature of the household sector's balance sheet over recent years has been the rapid growth in borrowing. Since 1996, the level of household credit outstanding has risen at an average annual rate of 15 per cent and an even faster 22 per cent over the year to January 2004. This run-up in debt has taken the debt-to-income ratio in Australia from a level that was low by international standards a decade ago, to a level that is now in the top end of the range seen in most other countries.

This shift is largely explained by the move to a low-inflation/low-interest-rate environment, which significantly increased the capacity of households to borrow. At the same time, financial deregulation and the associated competition among lenders has made cheaper, more innovative mortgage products available, including those specifically tailored for investor housing.²

Most components of household borrowing have grown strongly, although the bulk of the increase in debt has been in loans for the purchase of housing, which now account for 85 per cent of total household debt (Graph 4). Borrowing for owner-occupier housing is still the largest component of household debt, although borrowing to invest in rental housing has been growing much more quickly over recent years. Since 1996, the value of investor housing loans outstanding has grown at an average annual rate of 23 per cent, with the pace of growth accelerating in recent years, to be currently around 31 per cent.

Besides housing purchases, households appear to be using debt secured against housing to support strong growth in spending. Borrowing for housing has grown much more quickly than the value of dwelling investment – a phenomenon known as housing equity withdrawal. Since late 2000, housing equity withdrawal has amounted to an average of around 4½ per cent



2 For further discussions see 'Household Debt: What the Data Show', Reserve Bank of Australia *Bulletin*, March 2003, pp 1-11; IJ Macfarlane, 'Do Australian Households Borrow Too Much', Reserve Bank of Australia *Bulletin*, April 2003, pp 7-16; and *Submission to the Productivity Commission Inquiry on First Home Ownership*, Reserve Bank of Australia, Occasional Paper No. 16, November 2003.

of household disposable income; prior to this, the usual pattern was for the household sector to inject equity into the housing stock (Graph 5).

The rise in household debt has been associated with strong growth in household asset values (Table 2). This largely reflects higher house prices, which have risen at an average annual rate of 12 per cent since 1996 (Graph 6). An important feature of the current upswing is that it has continued over a more prolonged period, and over a broader geographic range, than has been typical in the past, and has occurred at a time when the general

inflation rate has been low. As a result, the cumulative increase in house prices in real terms is the largest recorded during the period for which reliable data are available.

Graph 5

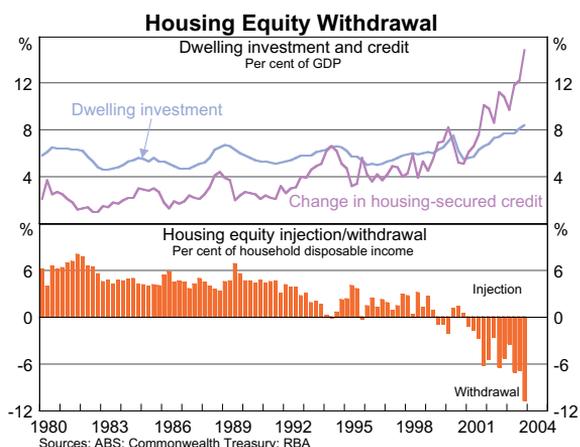


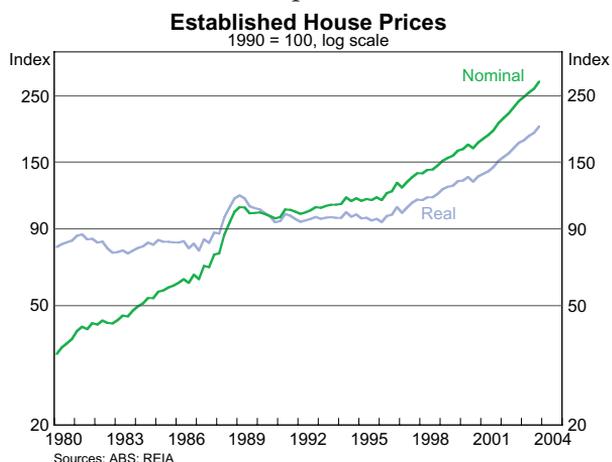
Table 2: Household Assets

	Share of total				Average annual growth
	Per cent				Per cent
	Dec 1990	Dec 1995	Dec 2000	Sep 2003	Dec 2000 - Sep 2003
Housing	55	53	55	65	23
Consumer durables	7	6	4	3	6
Financial assets	39	41	41	32	6
– Superannuation and life offices	18	21	22	16	4
– Equities and unit trusts	4	5	8	6	3
– Currency and deposits	12	11	9	8	10
– Other	4	4	2	2	12
Total	100	100	100	100	16

Sources: ABS; RBA

With the value of the housing stock having risen at around the same rate as housing-related debt since the mid 1990s, the housing gearing ratio has remained broadly unchanged since 1996. This follows a significant increase in this ratio over the first half of the 1990s, when gains in residential property prices were modest and debt levels were rising solidly. A broader measure of household gearing is the ratio of the household sector's total debts to its assets. This measure has drifted up over recent years, as the household sector's holdings of financial

Graph 6



assets have not risen as quickly as its debt levels (Graph 7). Currently, household debt outstanding is equivalent to 14½ per cent of the value of the household sector's assets.

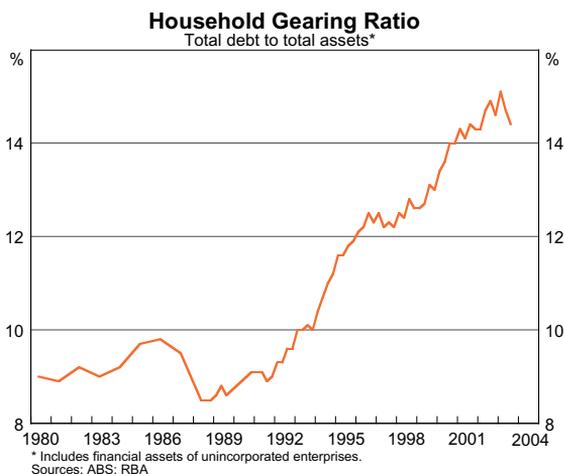
With housing prices growing much more quickly than incomes over a number of years, the ratio of house prices to household disposable income has more than doubled since the mid 1980s. In addition, the house-price-to-income ratio is at a record level and considerably above its previous peak (Graph 8). While international comparisons of house prices are difficult, the available evidence suggests that housing prices in Australia relative to income are higher than in many other countries. In part this reflects the tendency for Australians to live in large urban centres and in detached housing.

These aggregate data on the household sector's balance sheet obviously hide considerable variation across households. Owner-occupier housing debt is concentrated in less than a third of Australian households, and this degree of concentration has not significantly changed in the past decade, despite strong growth in housing debt since the early 1990s. Census data for 2001 show that

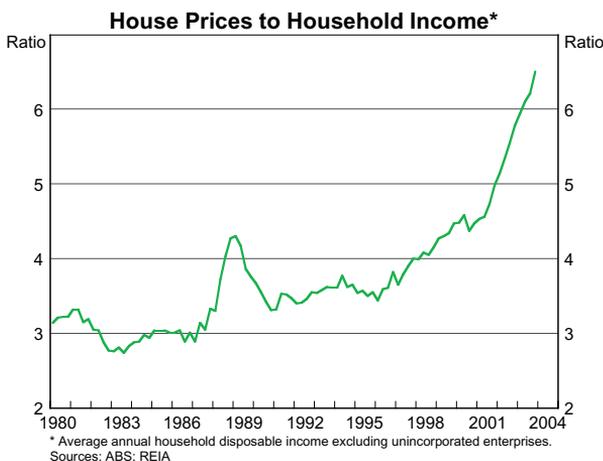
29 per cent of households owned their home with a mortgage, 43 per cent owned their home outright and the remaining 28 per cent lived in rental accommodation, proportions broadly unchanged since the early 1990s.

Data on the distribution and characteristics of individuals owning investment property are available from the Australian Taxation Office. These data indicate that in 2000/01, the latest year for which detailed data are available, around 12½ per cent of taxpayers received rental income with the bulk of these investors financing the property with some debt.³ Ownership rates increase with income, with around 20 per cent of taxpayers with incomes in the range of \$50 000 to \$100 000 owning a rental property, and around 80 per cent of these financing the property with at least some debt (see Box A for more details). The data also suggest that, over the 1990s, both the share of taxpayers with an investment property and the share of investors with debt have increased significantly.

Graph 7



Graph 8



3 Data from the 2002 Household Income and Labour Dynamics in Australia (HILDA) Survey show that around 10 per cent of households invested in property (i.e. they both owned a property other than their primary residence and received rental income).

Debt servicing

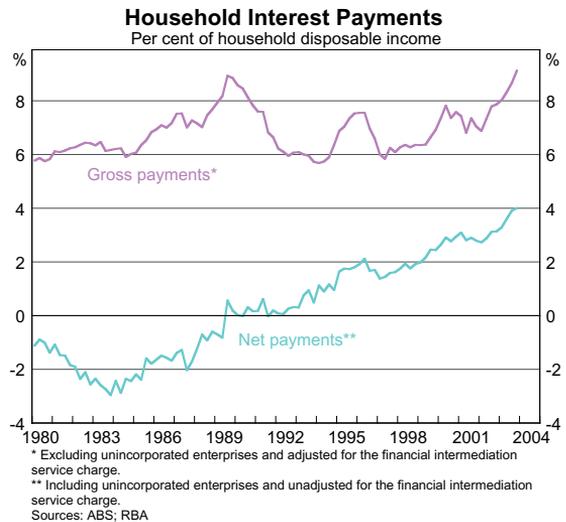
The rapid increase in debt levels relative to income has seen the debt-servicing ratio – the ratio of interest payments to disposable income – trend up over recent years, although the increase has been muted considerably by the fall in nominal borrowing rates (Graph 9). Mortgage interest payments now represent almost 7½ per cent of household disposable income, a level that exceeds the peak of nearly 5½ per cent in the mid 1990s.⁴ The total interest costs of the household sector (i.e. including interest on other forms of household borrowing) are also above the previous peak in the late 1980s at just over 9 per cent of household income.

ABS data suggest that, after a lengthy period as a net interest recipient, the household sector has been a net payer of interest over the past decade. The rising trend in net interest payments reflects both the growing indebtedness of the household sector, and a shift among households toward assets other than interest-bearing instruments.

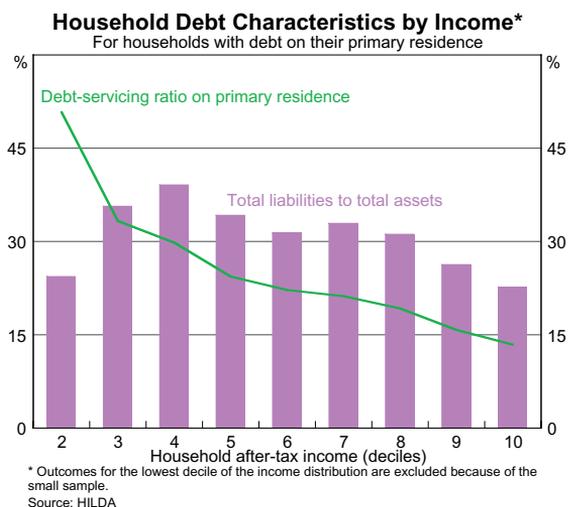
Again, these aggregate figures hide considerable variation across households. According to the Household Income and Labour Dynamics in Australia (HILDA) Survey, the median total servicing payment (interest plus repayment of principal) on owner-occupier housing debt is 20 per cent of disposable income. For households in the lower income ranges, the ratio is considerably higher (Graph 10). Many households are, however, repaying their mortgages more quickly than required, with the Survey suggesting that around 60 per cent of households are ahead of required repayments on their primary mortgage.

The HILDA Survey does not record interest payments on loans on investor property, which according to the taxation data, are considerable for many middle-income households. For those households with both an owner-occupier and an investor loan, the debt-servicing ratio is likely to be above 30 per cent in many cases.

Graph 9



Graph 10

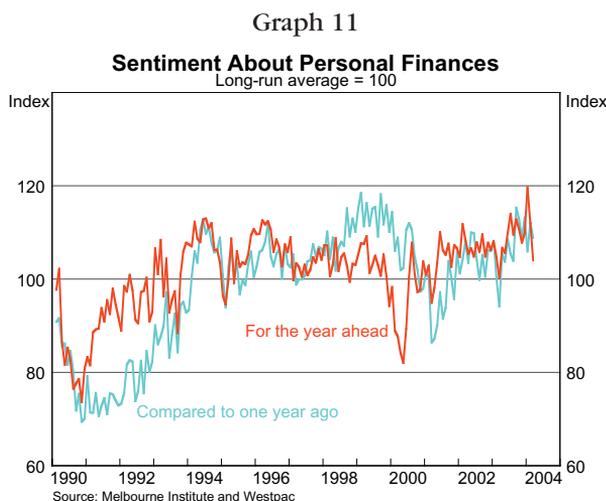


⁴ Repayment of principal is estimated to amount to a further 2½ per cent of income.

Despite servicing burdens that have increased and are high by historical standards, there are currently few signs that households are having difficulty meeting their interest payments. This reflects a number of factors. One is that the increase in the debt-servicing ratio has been driven by household decisions to increase their level of debt, and not by a large and unexpected increase in interest rates as was the case in the late 1980s. In that episode, there was considerable mortgage stress even though, in aggregate, interest payments accounted for a smaller share of household disposable income than is currently the case. Another difference between current conditions and that period is that household incomes have not been disrupted by rising unemployment. Over the past five years, employment has grown at an average annual rate of around 2 per cent, and the unemployment rate is currently around the lowest levels in two decades.

Reflecting the strong macroeconomic environment, housing-loan arrears have recently fallen slightly and are now at a very low level at less than 0.2 per cent of total housing loans. Credit-card-arrears – a potentially useful leading indicator of financial stress in the household sector – have also fallen over the past two years, both in absolute terms and as a percentage of total balances. Growth in credit card cash advances – another potential leading indicator of stress – has been subdued. The number of personal bankruptcies has also declined, although this has been partly offset by the growing use of debt agreements as an alternative to bankruptcy (see Box B for more details).

Survey data also suggest that, in aggregate, households are comfortable with their financial position both in terms of the current period and looking ahead (Graph 11). Survey data show that consumers are more positive about their personal finances than a year ago, and sentiment for the year ahead is also above the long-run average.



Assessment of vulnerabilities

While there are currently few signs of stress in the household sector, an important issue is whether the run-up in debt and housing prices over recent years poses a risk to the stability of the financial system, and the macroeconomy more generally.

As discussed in the chapter on Financial Intermediaries, the Australian financial system is currently in good shape. It is difficult to envisage scenarios in which developments in the housing market alone could cause losses on a sufficient scale to result in major difficulties for the Australian financial system. Notwithstanding this, the emergence of an active mortgage market in loans to borrowers with lower credit quality, the development of new ways of originating housing loans, and the strong growth in loans to investors carry the risk that any downturn in the housing market and, more importantly, the economy, could cause default rates to increase by considerably more than would be suggested by historical experience.

A more medium-term risk is that, at some point, after borrowing heavily for a number of years, the household sector will decide to undertake a period of balance-sheet restructuring. If this were prompted by a deterioration in economic conditions it could amplify what might otherwise have been a relatively mild slowdown.

The likelihood of such an outcome is difficult to quantify. There have been few instances in either Australia or elsewhere in which balance-sheet adjustment by the household sector has been a major factor amplifying an economic downturn. In previous episodes, it has typically been adjustments by the corporate sector and by financial institutions that have amplified the business cycle. Notwithstanding this, the recent run-up in household debt and residential property prices has increased the risk of such an outcome, although this risk is still likely to be relatively small, particularly given the continuing strong performance of the Australian economy.

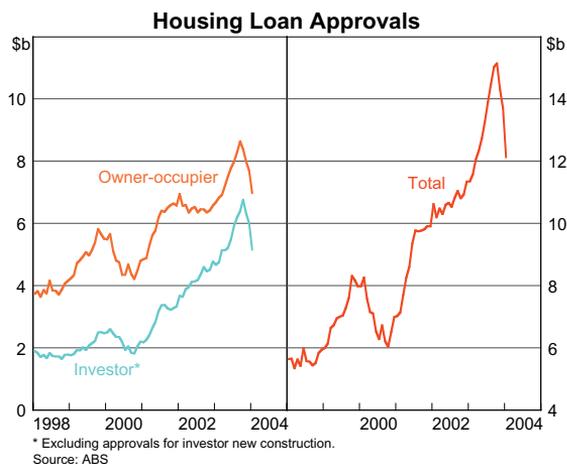
In assessing the likelihood of such adjustments, developments in the residential property market are obviously important. As the Reserve Bank has noted on previous occasions, the main reason house prices have risen so much relative to incomes is that mortgage interest rates have approximately halved since the second half of the 1980s. Another factor has been the reduced volatility of interest rates and the greater stability of the economy which together have given households the confidence to take on larger loans. It might be expected, however, that the upward movement in prices due to these effects would be tapering off by now, with house prices rising by no more than could be explained by underlying growth in incomes. While the rate of growth of house prices has slowed considerably in Sydney and Melbourne, and prices in some inner-city apartment markets have fallen, the latest data (up to the December quarter 2003) indicate that prices are, on average, still increasing.

One important impetus to house prices over the past couple of years has been the unusually strong demand by investors for rental property. This demand has been underpinned by investors seeking capital gains, ready access to finance and a taxation system that makes such investments very attractive. Demand by investors has been strong, despite the fact that rental yields have fallen to levels that are very low, both in comparison to previous experience in Australia and overseas.

Encouragingly, recent data indicate that over the past few months the demand by investors has subsided. While loan approvals to investors are still high, they have fallen by almost 24 per cent from the peak in October 2003 (Graph 12). Approvals for loans to owner-occupiers have also fallen over recent months, although they too remain at high levels. Survey evidence also suggests that residential property investment is seen as a less attractive proposition than was the case for much of 2003 (Graph 13).

It is too early to tell whether this decline in demand will be sustained, and what effect it will have on prices. Recently, there have been reports that some investors who made speculative off-the-plan purchases in the hope of reselling at a profit before settlement have failed to settle when faced with a decline in price. More generally, given

Graph 12



the evidence that many investors are middle-income earners facing relatively high debt-servicing burdens, a fall in prices, and perhaps more importantly, a fall in rents and a rise in vacancy rates, could cause financial stress for a number of households. Any attempt by a large number of investors to sell their rental properties quickly would add to the downward pressure on house prices. If this were to occur, the probability of a broader pull-back in household borrowing and spending would be higher.

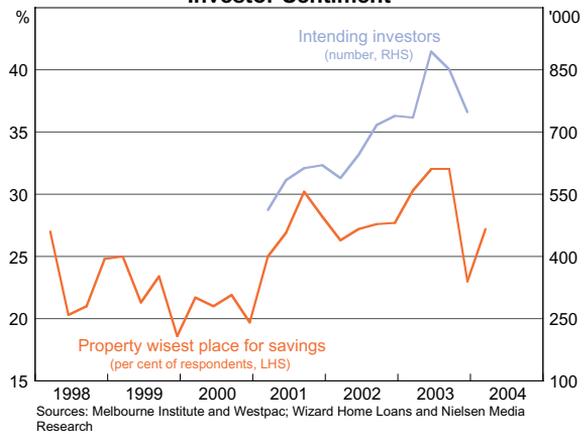
More broadly, should economic outcomes turn out to be disappointingly weak, there is considerable uncertainty about how the household sector is likely to behave, given much higher debt levels than in the past. Over recent years, the rapid growth in borrowing has underpinned growth in consumption at a faster pace than growth in household disposable income, with the saving rate falling considerably (Graph 14). If the household sector were to decide that the level of borrowing had become too high, a period of quite weak consumption might be expected, as households attempt to reduce their debt levels.

Business Sector

The Australian business sector is, overall, in a strong position, reflecting the long running expansion of the Australian economy. The level of profitability is high, gearing is relatively low and current conditions are positive.

Over the year to the December quarter, business profitability, as measured by total gross operating surplus (GOS) increased by almost 12 per cent. As a share of GDP, profits are around the peak levels seen since the early 1990s (Graph 15). After interest payments,

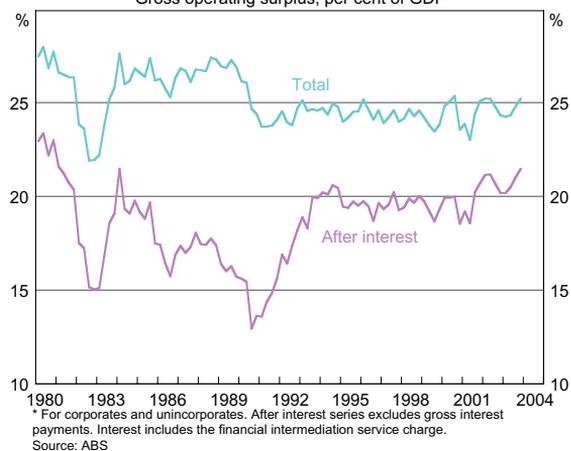
Graph 13
Investor Sentiment



Graph 14
Saving Ratio
Per cent of household disposable income



Graph 15
Business Profits*
Gross operating surplus, per cent of GDP



the profit share is at its highest level since the early 1980s, with businesses having benefited substantially from relatively low levels of gearing and the downward shift in interest rates.

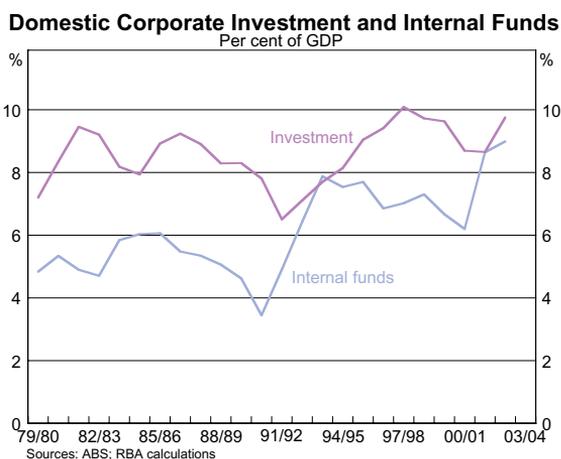
The strong growth in profits has allowed firms to use internal funding to finance increasing levels of investment. This is evident in the ‘financing gap’ – the difference between investment expenditure and available internal funds – falling to low levels by historical standards (Graph 16). A consequence of this is that the business sector has made relatively little recourse to bank lending over recent years. Since the mid 1990s, business credit has grown at an average annual rate of around 7 per cent, only slightly faster than growth in nominal GDP.

Reflecting these developments, the aggregate gearing ratio is relatively low by historical standards. For non-financial firms currently listed on the Australian Stock Exchange (ASX), the value of debt outstanding appears to be around 60 per cent of the book value of equity. This is lower than was the case for the same group of firms in the late 1980s and much lower still than for all firms listed on the ASX in the late 1980s (Graph 17).⁵ With low levels of debt and interest rates, corporates’ debt-servicing costs have fallen to the lowest level for at least a couple of decades.

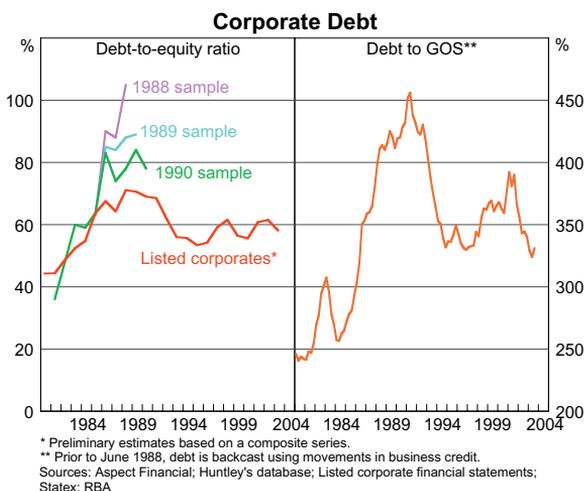
Recent months have seen the demand for external funding pick up a little, with business credit growing at an annualised rate of 11 per cent in the six months to January 2004 (Graph 18). Larger corporates also substantially increased bond issuance in 2003, taking advantage of relatively low yields and strong demand for Australian dollar debt by overseas investors. Foreign demand for Australian equities was also evident in 2003, with foreign portfolio equity inflows increasing through the year. As evidenced by very strong net equity raisings in the December quarter, and sizeable expected equity issuance in coming months, companies have taken advantage of the sharemarket reaching its highest level since mid 2002.

In the past few years, Australian firms have become more exposed to fluctuations in interest rates with a trend away from fixed-rate bank borrowing, such that only 20 per cent

Graph 16



Graph 17



5 Given the greater tendency for highly leveraged firms to fail it is not unusual for the debt-to-equity ratio for firms listed at a given point in time to exceed the ratio for the same period calculated for firms currently listed.

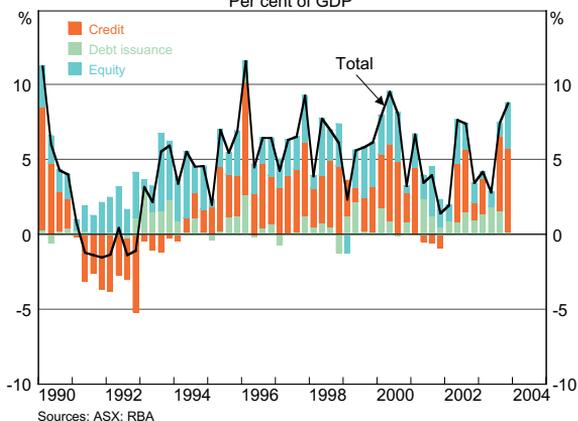
of bank-sourced funding is now at fixed rates (Graph 19). Somewhat counterbalancing this, however, larger firms with direct access to financial markets have made increased use of longer-term fixed-rate funding, issuing bonds at a much faster pace than short-term securities. Overall, at present levels of indebtedness and interest rates, vulnerability seems to be low.

Within the business sector, the commercial property market has, on occasion, been a source of vulnerability. Over recent years, however, this market, unlike the residential property market, has generally been quite subdued. In the office market, many prices remain below their peaks of over a decade ago, and the level of construction activity, while having picked up recently, is considerably lower than it was in the second half of the 1980s (Graph 20). While vacancy rates for office space have edged up over recent years, and there has been downward pressure on rents, conditions in industries employing a large number of office workers have picked up. In the retail property sector, conditions have been stronger, consistent with buoyant retail trade, with 3½ per cent growth in rents in 2003, the highest in three years. Industrial property prices increased by almost 5 per cent in the year to December 2003, though growth in rents was more subdued.

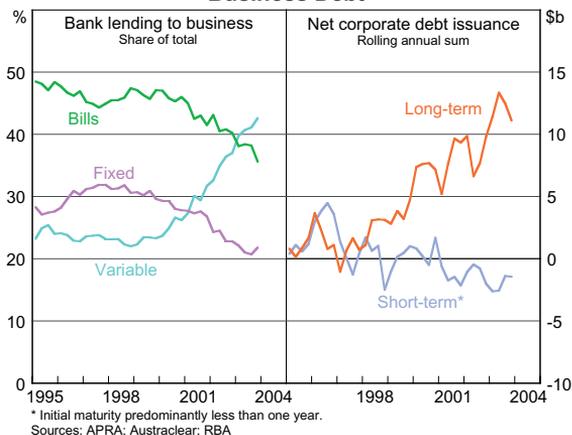
Assessment of vulnerabilities

Looking ahead, the healthy state of the business sector and the economic outlook are positive for financial stability. Forecasts gathered by *Consensus Economics* predict a positive outlook for corporate profits, with expected growth of around 7½ per cent for 2004. While recent

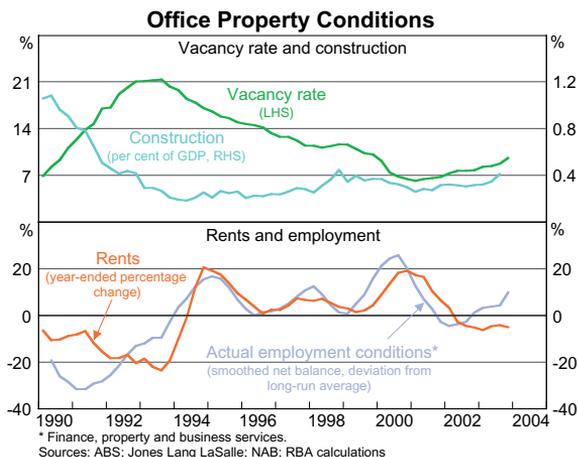
Graph 18
Net New External Funding
Per cent of GDP



Graph 19
Business Debt



Graph 20



readings of business confidence, as measured in the major business surveys, have receded from very high levels, businesses remain more confident than usual about the future.

Partly reflecting this outlook, a number of measures of corporate credit risk have fallen recently, although as elsewhere around the world, the good conditions in the corporate sector are causing investors to be less concerned about compensation for risk. Premia for credit default swaps (CDS), which measure the cost of insurance against a specific company defaulting, have fallen sharply in the past year and spreads between corporate bond and swap rates have also fallen (Graph 21). In contrast, interest rate spreads between corporate bonds and Commonwealth Government securities (CGS) have risen over the past six months, although this appears to reflect strong demand for CGS, particularly from overseas investors, rather than a judgement about credit quality in the Australian corporate sector.

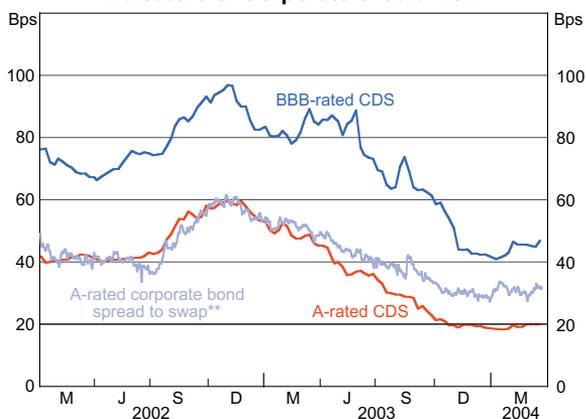
Share price movements also convey a buoyant tone, particularly for resource companies. The S&P ASX 200 has risen by 3 per cent to date in 2004, to be only 3 per cent off its 2002 peak, a strong outcome by international standards (Graph 22). The ASX 200 Resources Index has fallen slightly to date in 2004, but remains around 35 per cent higher than in mid 2003. The ASX 200 Property Trusts Index has continued to rise, partly reflecting the attraction of relatively steady rental income streams in the low-interest-rate environment.

Measures of uncertainty about the outlook for share prices are a useful adjunct to other indicators of equity market sentiment. The most commonly cited measure of such uncertainty is 'implied volatility' which, being derived from prices for equity options,

can be thought of as measuring the uncertainty investors attach to expected equity returns over the life of those options. Implied volatility is currently around historic lows, suggesting that the market is relatively comfortable with the risk outlook ahead (Graph 23).

Notwithstanding the generally favourable environment, the outlook is not without risks. In particular, if the household sector was to undertake a period of balance-sheet restructuring which amplified a slowdown in the economy, there would be negative effects on the business sector. Fluctuations in exchange rates and market interest rates also pose a risk for some firms,

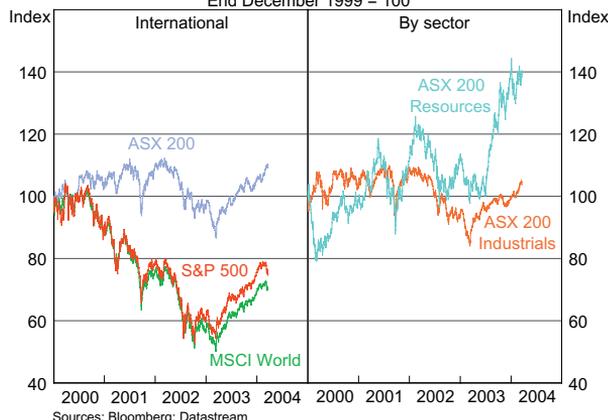
Graph 21
Indicators of Corporate Credit Risk*



* Credit default spreads are for 3-year credit default swaps.
** Spread to swap is the difference between the weighted-average yield of the corporate bonds and an interpolated swap rate equivalent to their weighted-average maturity. This is usually close to 3 years.

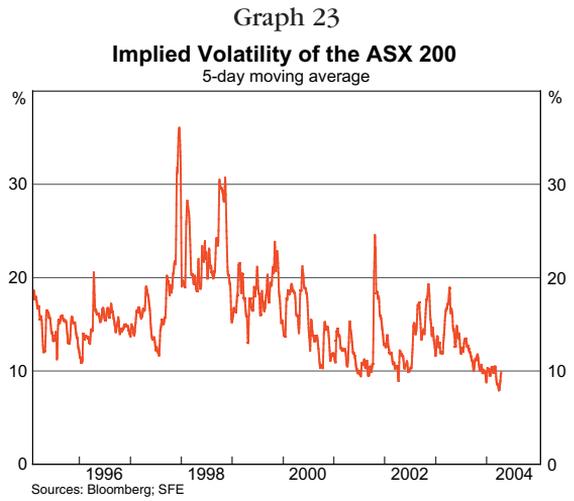
Sources: AFMA; Bloomberg; RBA; Reuters; UBS Australia Ltd

Graph 22
Share Price Indices
End December 1999 = 100



Sources: Bloomberg; Datastream

although to date, the business sector has weathered substantial swings in the exchange rate without major difficulty. Finally, a more medium-term risk arises from developments in the global economy. In the current environment of low global interest rates and reduced risk aversion, there is a possibility that investors are mispricing risk, too much borrowing takes place and misalignments develop in important asset markets. If this were to occur, the Australian business sector is unlikely to remain unaffected.



Box A: Tax Data on Households' Property Investment Exposures

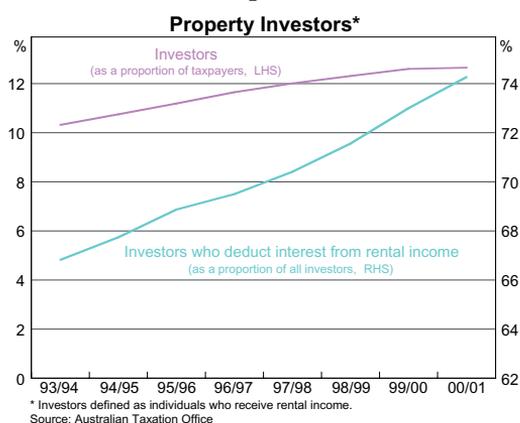
Australian Taxation Office data from 2000/01 – the latest available – show that around 12½ per cent of individual taxpayers received rental income, up from around 10 per cent in 1993/94 (Graph A1).¹ Of these, the share claiming interest deductions has also grown steadily, to 74 per cent in 2000/01 from 67 per cent in 1993/94. Given the continuation of strong growth in investor housing debt since 2000/01, these trends are likely to have continued.

Tax data give an indication of the distribution of property investors across income groups. As might be expected, the incidence and size of property investment increases with income. The data – as well as the HILDA Survey – show that higher income groups are more likely to receive rental income, and that their rental receipts are higher (Graph A2). Just over 20 per cent of individuals with a total income of between \$50 000 and \$100 000 reported rental income, while around 30 per cent of those in the next higher income group reported such income.

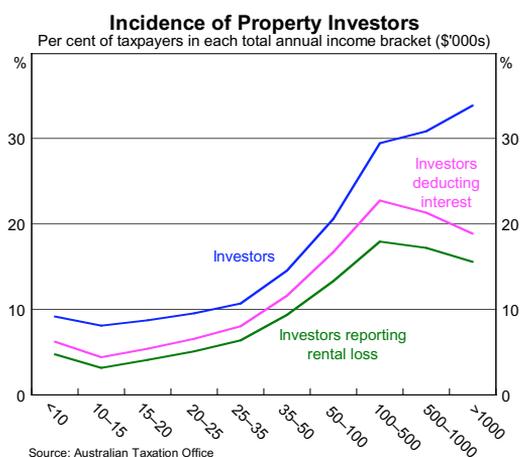
Among the investor population, however, the incidence of geared investment is highest at just above average income levels, as is the share of investors reporting rental losses (Graph A3). This suggests that middle-income investors are relatively more exposed than the higher-income investors to higher interest rates, rental vacancy or unemployment. In addition, they are likely to have fewer other assets to draw down in the event of hard times.

1 The data do not distinguish between rental receipts from residential and commercial property.

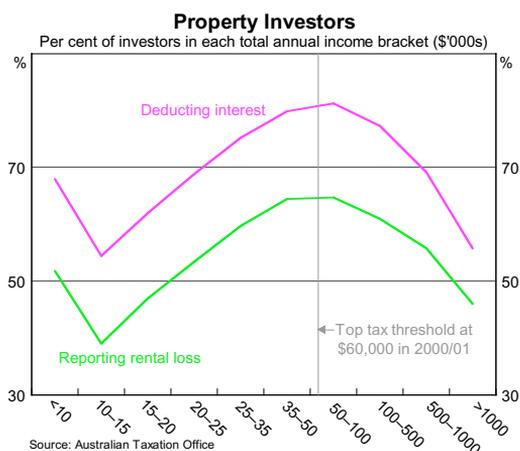
Graph A1



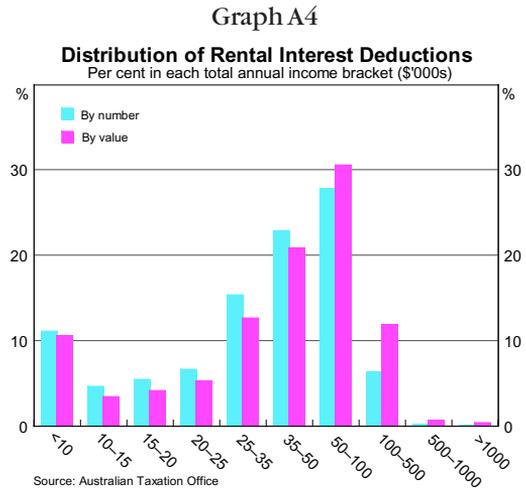
Graph A2



Graph A3



Individuals that fall in the middle-income bracket make up the bulk of geared investors in property (Graph A4). Despite the higher participation in property investment among high-income earners, the large number of individuals in the middle-income tax brackets means that these investors hold the bulk of debt associated with rental properties.



Box B: The Use of Debt Agreements as an Alternative to Personal Bankruptcy

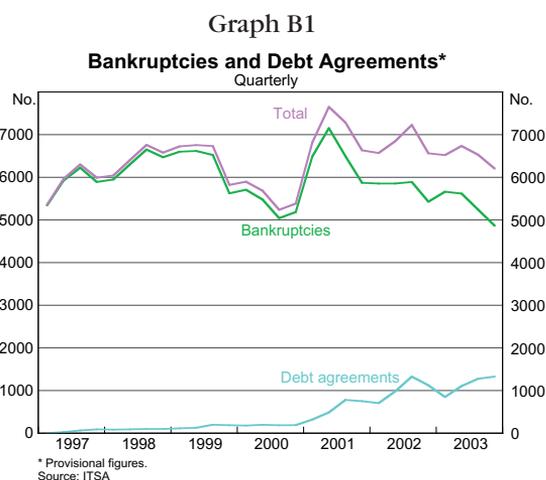
In recent years there has been growing use of debt agreements as an alternative to personal bankruptcy. A debt agreement is a statutory agreement whereby a debtor agrees with creditors to pay a specified amount over a specified period in satisfaction of the total debt. The increased use of these agreements reflects their relatively low cost and the extra flexibility they allow low-income earners with small amounts of unpaid debt, as well as their active promotion by debt-relief agencies.

Debt agreements were introduced into the *Bankruptcy Act* in 1996 to allow debtors who had a small amount of debt outstanding, a limited number of creditors, limited assets and low income to avoid bankruptcy. To arrange a debt agreement, a debtor must develop a debt agreement proposal, which may be devised in consultation with a debt agreement administrator, financial counsellor, private trustee or family friend. Together with a statement of the debtor's financial position, the proposal is then lodged with an office of the Insolvency and Trustee Service Australia (ITSA). If ITSA decides that the creditors' interests are best served by the agreement, it will arrange a meeting of the affected creditors. If the debt agreement is subsequently accepted by a majority of creditors in number and at least three-quarters in value of those voting, the debtor is released from all provable debts, and creditors – even those who voted against the proposal – cannot take any recovery action against the debtor further to that already determined by the agreement.

The number of individuals entering into debt agreements has grown substantially over the past three years, from around 200 per quarter in 2000 to around 1 300 per quarter in the second half of 2003 (Graph B1). Debt agreements are now equivalent to around one-quarter of the number of personal bankruptcies.

Debt agreements can be a better option for debtors than bankruptcy because they allow debtors to remain in charge of their own financial affairs, their credit rating is likely to be less adversely affected, and they are able to retain their assets.

Debt agreements are also usually favourable from the creditors' point of view. Creditors have typically recovered an average 80 cents in the dollar where a debt agreement is in place, as opposed to 50 cents in the dollar (or less) after an individual files for personal bankruptcy. Despite this, around 40 per cent of debt agreements are terminated early, usually because the debtor has failed to meet repayment obligations.



Data on debt agreements and bankruptcies combined show a less pronounced fall over the past few years than that in bankruptcies alone. There is some risk that increased availability of debt agreements may lead households to increase their borrowing on the view that it is less costly to walk away from their obligations. Nonetheless, by allowing a more flexible means of dealing with potential default, debt agreements may ease the resolution of household financial distress which would support overall financial stability. It remains to be seen which of these considerations will be more important.

2. Financial Intermediaries

The financial sector in Australia is in good shape, which is to be expected given the strong macroeconomic and financial conditions currently in place. Authorised deposit-taking institutions (ADIs) are experiencing strong demand for household credit, while other intermediaries such as insurance companies and superannuation funds have been able to rely on the stronger equity markets to boost their investment returns.

2.1 Deposit-taking Institutions

Current Conditions

Australian banks have enjoyed favourable conditions since the mid 1990s. In 2003, the five largest banks earned an aggregate pre-tax return on equity of 19 per cent, down slightly on recent years (Graph 24). The main driver of profit growth has been strong growth in the aggregate balance sheet, mainly due to the increase in household borrowing.

Net interest income rose solidly in 2003, but less quickly than the growth in the balance sheet, due primarily to the average interest margin falling as low-margin housing loans have come to account for an increasing share of the loan portfolio. Non-interest income has grown somewhat more quickly reflecting improvements in wealth management businesses (Table 3). Profitability has also been helped by some further improvements in asset quality, facilitating a further reduction

Graph 24

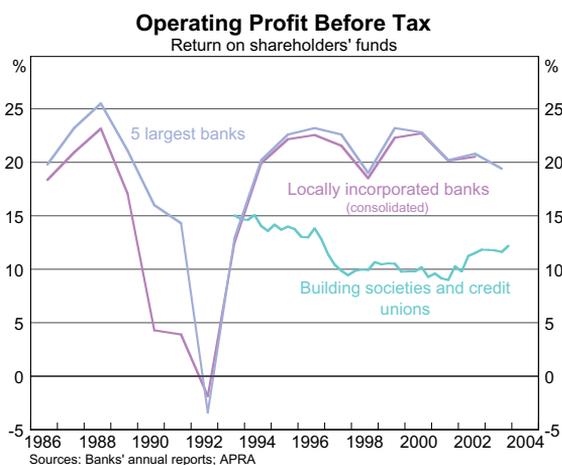


Table 3: Components of Profits – the Five Largest Banks (Consolidated)

	2003 \$b	Year-on-year growth ^(a) Per cent
Income		
Net interest income	22.6	5.3
Non-interest income ^(b)	17.3	6.5
Expenses		
Operating expenses	20.7	2.0
Provision for doubtful debts	2.1	-14.7
Goodwill amortisation ^(c)	1.2	68.8
Profit		
Net profit before tax	15.8	12.0
Net profit after tax	11.2	6.0
Return on assets (before tax)	1.38 per cent	0.05 percentage points
Return on equity (before tax)	19.37 per cent	-0.75 percentage points

(a) Excludes the impact of National Australia Bank's US subsidiary HomeSide on 2002 results.

(b) Includes profits from wealth management businesses.

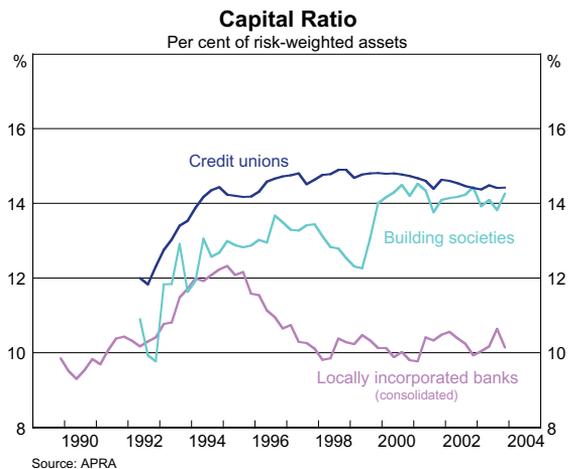
(c) Includes revaluations of wealth management businesses.

Sources: Banks' annual reports; RBA calculations

in provisioning expenses. While operating costs have risen moderately, the strong increase in income pushed the cost-to-income ratio slightly lower to 53 per cent in 2003 (well down on the peak of 68 per cent in 1992).

Regulatory capital ratios have remained broadly unchanged over recent years. For locally incorporated banks, the weighted-average ratio is 10 per cent of risk-weighted assets, and for building societies and credit unions banks it is around 14 per cent (Graph 25). By international standards, Australian banks hold a relatively high share (around two-thirds) of their regulatory capital in high-quality 'Tier 1' capital, mainly equity.

Graph 25



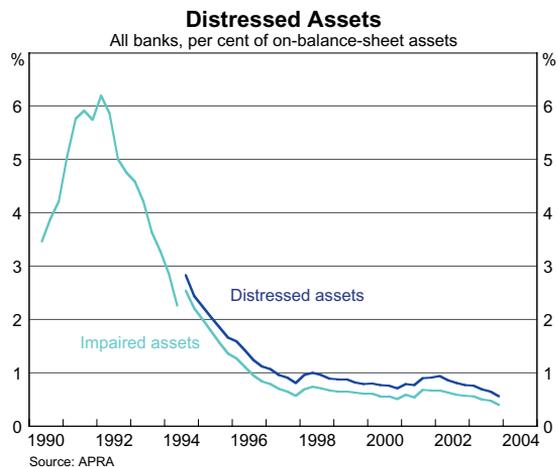
Asset Quality

Reflecting the sustained expansion of the Australian economy, the banks' holdings of distressed assets (i.e. those where borrowers are more than 90 days late in meeting payments or where for other reasons lenders doubt they will be repaid) have continued to edge lower. At 0.6 per cent of on-balance-sheet assets, they are at the lowest level in over a decade and also very low by international standards (Graph 26, Table 4).⁶

As already noted, the ongoing improvement in asset quality over the past year has facilitated a reduction in provisioning levels, with both specific and general provisions falling (Graph 27). The decline in general provisions, to their lowest level since the 1980s, has occurred despite the use of dynamic provisioning by the major banks.

One factor behind the trend decline in impaired assets over the past decade has been the shift in the composition of bank credit away from business lending towards mortgage finance (Graph 28). Residential mortgages

Graph 26



⁶ Under Australian prudential requirements, impaired assets are defined to include assets where agreed payments of interest or principal are 90 days or more past due and where the current value of security against the asset is insufficient to cover full repayment, and other assets where there is reasonable doubt over the ultimate collectibility of principal or interest. Distressed assets include both impaired assets and other assets that are more than 90 days past due (that remain well secured).

Table 4: Distressed Assets^(a)
Per cent of total loans

	2001	Latest ^(h)
Australia ^(b)	1.4	0.7
Germany ^(b)	4.9	5.0
Japan ^{(b) (c)}	7.4	7.2
New Zealand ^(d)	0.8	0.5
UK ^(e)	2.6	2.2
USA ^{(f)(g)}	0.9	0.7

(a) Includes non-accrual loans, restructured loans and loans more than 90 days in arrears

(b) All banks

(c) Includes loans to borrowers in legal bankruptcy, loans in arrears by 90 days or more and restructured loans

(d) Locally incorporated banks

(e) Large commercial banks

(f) Commercial banks with assets over US\$1 billion

(g) Excludes restructured loans

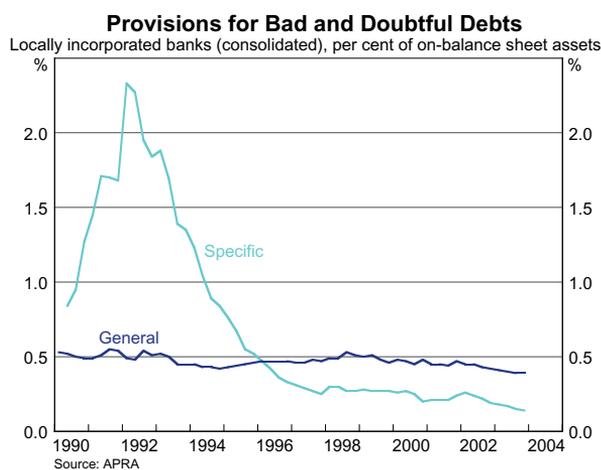
(h) Australia, Dec 2003; Germany, Dec 2002; Japan, Sep 2003; NZ, Sep 2003; UK, Jun 2003; USA, Sep 2003

Sources: APRA; IMF; National Sources

have much lower default rates than business loans, and mortgages in Australia have historically had low default rates by international standards. The rapid expansion in mortgage lending, however, raises the question of whether such low default rates will be sustained, particularly if the economic environment was to become less benign. As discussed in the chapter on The Macroeconomic Environment, the recent surge in mortgage lending has included a high share of lending to investors, the use of new mortgage products making it easier for marginal borrowers to obtain finance, and a significant increase in debt levels relative to income. Collectively, it is likely these factors have added to the overall riskiness of the banks' mortgage portfolios.

The strong growth in investor activity has meant that investment loans now account for around a third of total housing loans outstanding, up from around 15 per cent in the early 1990s (Table 5). Contrary to some industry views, Australian Prudential Regulation Authority (APRA) data confirm that, even in the benign environment of recent years, default rates on these loans have been somewhat higher than for owner-occupier loans. Partly in response to the strong growth in these loans, a number of lenders have recently tightened investment loan approval standards, particularly for inner-city apartments.

Graph 27



The introduction of new loan products, such as ‘low-doc’ and other types of non-conforming loans, has also had some effect on the overall riskiness of mortgage portfolios.⁷ While, at this stage, there is no evidence to confirm that, in Australia, default rates on these loans are higher than on other loans, overseas experience suggests that this is likely to be the case. In particular, default rates for US sub-prime mortgage borrowers (i.e. those with blemished or non-existent credit records) have shown some tendency to be more sensitive to an economic slowdown than traditional mortgages. Moreover, in the UK it appears some borrowers have overstated their income when applying for ‘self-certified’ mortgages (akin to Australian low-doc loans). Whether or not this experience is replicated in Australia remains to be seen. Any impact on overall default rates, however, is likely to be relatively small, given non-conforming loans in Australia account for only a few percentage points of overall lending for housing.

Another loan product that may perform differently from the more traditional mortgage in harsher economic conditions is interest-only loans, which have become increasingly popular over recent years. With these

loans, which are typically available with terms of between one and five years, borrowers make regular interest payments but no repayments of principal until the loan matures. Because the principal is not being reduced, any fall in the value of the property is more likely to result in the borrower having negative equity, which may increase the probability of default.

Although comprehensive data on interest-only loans in Australia are not available, liaison with a number of banks suggests approximately 14 per cent of outstanding home loans are on interest-only terms (Table 6). Interest-only loans account for a significantly higher proportion of new loans than they do of outstanding loans. Part of the difference is explained by the fact that many interest-only loans eventually convert to standard principal and interest loans. Interest-only loans are also a higher share of investment loans than owner-occupied loans, reflecting the tax advantages of maximising the proportion of loan repayments directed towards interest costs.

7 Non-conforming loans are loans provided to borrowers who do not meet the banks’ standard lending criteria. Borrowers taking out low-doc loans are unable to gain approval for traditional lending products due to insufficient documentation – particularly regarding their income or employment record.

Graph 28

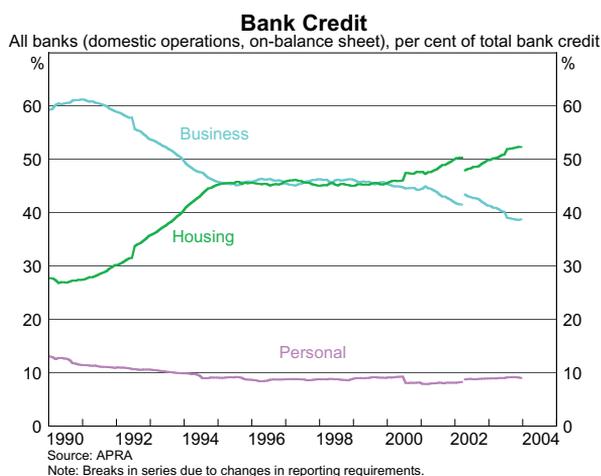


Table 5: ADIs’ Housing Lending

As at March 2003, per cent of total value of housing loans outstanding

Annual default rate ^(a)	0.2
Share of investor housing loans	33.8
Share of loans with LVR > 95%	2.1
Share of loans with age < 2 years	64.8
Share of loans with LVR > 80% and age < 2 years	13.3
Share of mortgage-insured loans	18.4
LVR > 80% <i>not</i> mortgage insured ^(b)	31.4

(a) Loans currently in default as a share of total number of loans outstanding

(b) Share of value of housing loans with LVR > 80%

Source: APRA

Table 6: Interest-only Loans
Per cent

As a share of value of:	Total	Owner-occupier	Investment
Housing loans outstanding (as at end June 2003)	13.8	4.4	31.3
Housing loan approvals (year to end June 2003)	21.4	5.6	46.9

Source: RBA

While the overall riskiness of mortgage portfolios has likely increased over recent years, the size of the change needs to be kept in perspective. Recent stress testing of ADIs' mortgage lending undertaken by APRA examined the possible impact of a 30 per cent fall in house prices.⁸ APRA estimated that even if such a fall caused the aggregate default rate on residential mortgages to increase to 3.5 per cent (more than ten times the worst single-year default rate experienced in Australia over the past 20 years), the aggregate capital ratio for ADIs would fall by around only 70 basis points to 9.6 per cent, well above the required minimum of 8 per cent. Under this scenario, more than 90 per cent of ADIs would continue to meet regulatory capital adequacy requirements, and for the small number of institutions that fell below the minimum requirements the breach would be small.

The APRA stress testing highlights the importance of two interrelated risk mitigants that support the quality of ADIs' mortgage books: loan-to-valuation ratios (LVRs) and mortgage insurance. The median LVR on loans at origination is 70 per cent, which means house prices would need to fall substantially for banks to incur widespread losses on the security backing defaulted loans. This is supported by the tendency for households to repay their loans ahead of schedule, accelerating the LVRs' decline over the life of the loans. While ADIs offer some low-deposit loans, loans with an LVR above 95 per cent account for just 2 per cent of all mortgages. Moreover, most very high LVR loans are covered by mortgage insurance, although, surprisingly around a third of loans with an LVR greater than 80 per cent have no insurance.

Overall, around a fifth of all loans are covered by lenders' mortgage insurance. For such loans, the ADIs' recourse to mortgage insurance should cover any shortfall in the value of defaulted loans' underlying security. If ADIs were forced to make a large number of claims, however, insurers would more carefully review ADI's adherence to insurance policy terms and conditions, which could see some claims declined. In addition, a very large increase in defaults could, under some scenarios, cause difficulties for the mortgage insurance industry, which is highly concentrated. The risk of this, however, currently seems quite small.

Given the current capital position and low default rates, ADIs appear well-placed to withstand a slowing in the housing market. Of more concern would be the wider economic consequences of a housing downturn associated with a pull-back in household spending. Such an outcome has the potential to affect not only home loans but also business lending.

Notwithstanding this risk, business loan portfolios look to be in sound shape. The impaired loan ratio for commercial property lending – historically the main source of credit quality problems for ADIs – is currently very low, and there are few signs of overheating in the commercial property market (Table 7).

8 J Laker, 'The Resilience of Housing Loan Portfolios – APRA's "Stress Test" Results', address to the Securities Institute of Australia, Sydney, 9 October 2003, and N Esho, 'Stress Testing Housing Loan Portfolios', *APRA Insight*, 3rd Quarter 2003, pp 6-19.

One notable development over the past year, however, has been the strong growth in banks' Australian commercial property exposures, which increased by 17 per cent over the 12 months to September 2003, and now amount to 40 per cent of loans to businesses in Australia. This growth has been due to an expansion in lending against office property and residential developments (Graph 29). One risk here is that a downturn in the residential property market could cause difficulties for some property developers, particularly if a large number of off-the-plan investors fail to settle, leaving developers to resell properties into a falling market. If this were to happen, the overall credit risk in banks' commercial loan portfolios would obviously increase.

Another aspect of credit risk is the concentration of lending to particular clients. One way of measuring this is to take account of all exposures, including both those that are on- and off-balance sheet, that are in excess of 10 per cent of a bank's capital. On this measure, in aggregate, the large exposures of the Australian banks have shown little change (as a share of capital) for some years, but are down considerably on the levels in the early 1990s (Graph 30).

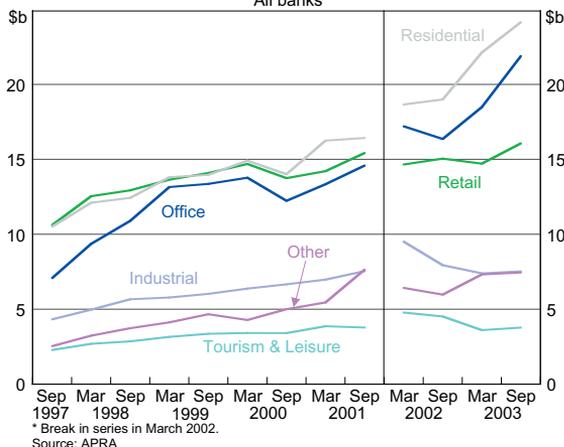
Another determinant of credit risk is the mix between banks' domestic and foreign assets. Currently, slightly less than a quarter of Australian banks' assets are held offshore (Table 8). Over recent years, there has been considerable change in the composition of these assets, with exposures in Japan and the United States declining, and those in New Zealand increasing. While exposures to credit risk in New Zealand may offer less diversification to Australian banks than exposures elsewhere in the world due to the close links between the Australian and

Table 7: Impaired Australian Commercial Property Exposures
All banks, per cent of total Australian commercial property exposures

	September 1997	September 2003
Office	2.0	0.1
Retail	0.5	0.0
Industrial	2.7	0.5
Residential	2.4	0.4
Tourism & Leisure	1.2	0.8
Other	4.6	0.7
Total	1.9	0.3

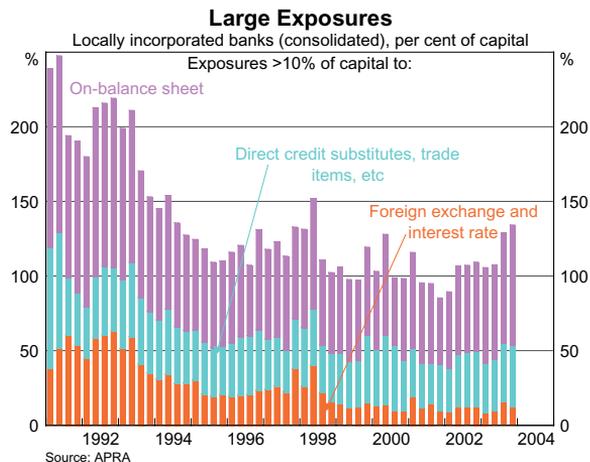
Source: APRA

Graph 29
Australian Commercial Property Exposures*
All banks



* Break in series in March 2002.
Source: APRA

Graph 30



Source: APRA

New Zealand economies, Australian banks are likely to have a better understanding of the New Zealand market than markets in some other countries. Australian banks have only relatively small exposures to emerging market economies.

Liquidity risk

Retail deposits grew strongly over the past year as households sought low-risk investments in the face of the earlier weakness in equity markets. This arrested the longer-term switch in the composition of banks' liabilities away from retail deposits in favour of wholesale funding. This switch has seen retail deposits fall from an average of 60 per cent of total bank liabilities between 1960 and 1980 to about 25 per cent currently (Graph 31). Since 1990, all of the growth in the share of wholesale funding has been accounted for by foreign borrowings. Foreign wholesale liabilities now account for 26 per cent of total liabilities.

This longer-term switch to wholesale funding has, in part, reflected increasing competition for household savings from other investment vehicles, particularly managed funds.

In response, banks have found it cost-effective to tap the offshore markets. Australian banks have been able to diversify their borrowings across a wider range of investors, securities and currencies, which has aided day-to-day liability management. While borrowing takes place in a range of maturities, almost half of outstanding offshore borrowing matures within three months. The vast bulk of the banks' foreign currency borrowing is fully hedged and hence does not carry exchange rate risk.

Traditionally, banks have balanced their liquidity needs by holding a buffer of highly liquid assets. However, in line with the abolition of various liquidity conventions and the decline in the stock of government securities on issue, holdings of highly liquid assets (public sector securities, cash and deposits with the Reserve Bank) have declined substantially. Offsetting this trend, to some extent, is the fact that new financial techniques have increased the liquidity of other assets on the balance sheet. In particular, the rapid growth of the market for asset-backed securities is allowing banks to treat their residential mortgages as a potential source of liquidity.

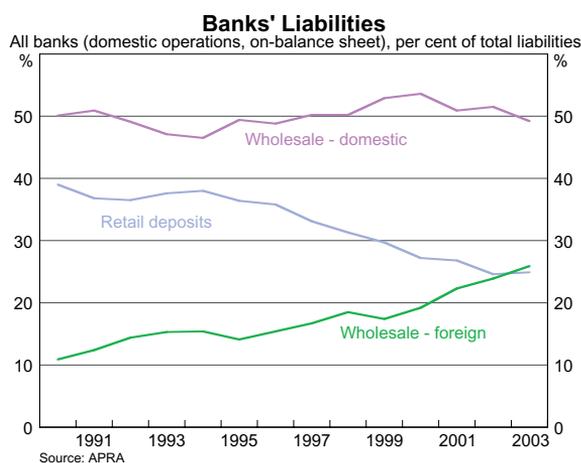
Table 8: Australian Banks' Overseas Lending – 2003
All banks, per cent of total assets

New Zealand	8.4 ^(a)
United Kingdom	5.4
Euro area	3.0
United States	1.7
Japan	0.4
Other	2.7
Total	21.7

(a) Excludes ANZ's recent acquisition of National Bank of New Zealand

Source: APRA

Graph 31



Other risks

The banks' exposure to movements in interest rates, exchange rates and other financial prices arising from their trading activities has edged up over the past year. This risk exposure, however, remains small in comparison to their credit risk exposures. This is reflected in the fact that the total regulatory capital requirement for market risk is only around 1 per cent of the requirement for credit risk. This ratio is considerably higher in a number of banking systems overseas, where commercial and investment banking is relatively more important.

In addition to the broad risks relating to credit quality, liquidity and market price movements, ADIs are also exposed to operational risk – the risk of loss arising from weaknesses in banks' internal systems or from external events such as power outages. Operational-risk losses can be large. For example, it is estimated that National Australia Bank has lost \$360 million as a result of unauthorised trading of foreign exchange options during 2003/04.

Market-based measures of bank risk

Overall, financial markets have a favourable assessment of the outlook for banks.

Buoyed by the overall strength of the economy, bank share prices have risen quite strongly so far in 2004. This has largely reversed the falls that occurred over the second half of last year as the market factored in the impact of acquisitions (in particular ANZ's takeover of National Bank of New Zealand and National Australia Bank's increased stake in AMP, which the National Australia Bank subsequently sold) and the prospect of some weakening in the demand for household credit (Graph 32).

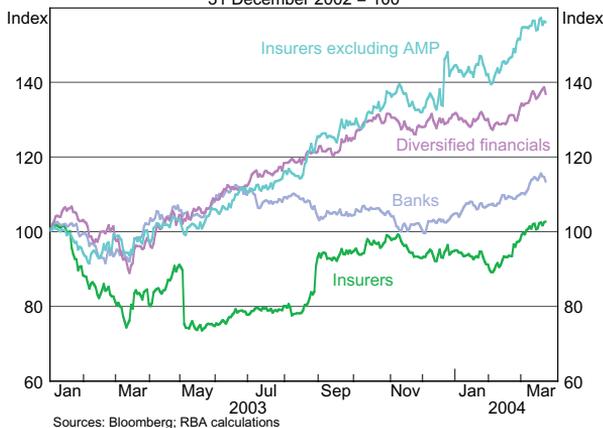
Options market valuations suggest, relative to the experience of the past five years, that the market assigns a very low probability to substantial falls in the major banks' share prices in coming months (Graph 33). For example, the market attaches only a 1 per cent probability to a more than 10 per cent fall in the average share price of the banks over the next 60 days.

The spread between the yield on bank-issued bonds and that on government bonds provides a measure of debt market participants' expectations of the likelihood banks may default on

Graph 32

Financial Sector Equity Prices

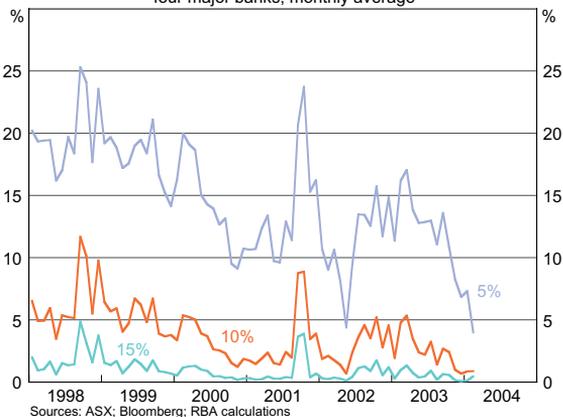
31 December 2002 = 100



Graph 33

Expected Likelihood of Price Fall

Probability of fall exceeding stated percentage, average of the four major banks, monthly average



their bond obligations. Bank bond spreads and comparable measures based on credit default swap prices have risen by around 14 basis points since end September.⁹ However, at least some of the rise in bank bond spreads reflects consideration of factors other than banks' creditworthiness.¹⁰ Despite these increases, the level of spreads suggests that debt market participants assign only a very low likelihood of bank default.

Most banks' credit ratings have remained stable over the past six months. The banks' weighted average rating is AA-/Aa3 (Table 9). In February, Fitch upgraded Bendigo Bank's rating to BBB+ from BBB in the light of its improved geographic diversity. Standard & Poor's downgraded National Australia Bank to AA- from AA in March following the bank's foreign exchange trading losses. Standard & Poor's has a negative outlook for AMP Bank. BankWest, Bendigo Bank and Adelaide Bank were assigned positive outlooks by Standard & Poor's, while Moody's put Arab Bank on positive outlook.

Table 9: Long-Term Ratings of Australian Banks

	Standard & Poor's	Moody's	Fitch
Adelaide Bank	BBB	Baa2	na
AMP Bank	BBB+	Baa1	na
Arab Bank	na	Baa3	BBB+
Australia and New Zealand Banking Group	AA-	Aa3	AA-
Bank of Queensland	BBB	Baa3	BBB
BankWest (Bank of Western Australia)	A	A1	na
Bendigo Bank	BBB	na	BBB+
Commonwealth Bank of Australia	AA-	Aa3	AA+
ING Bank (Australia)	AA-	Aa2	na
Macquarie Bank	A	A2	A+
National Australia Bank	AA-	Aa3	AA
St George Bank	A	A2	A+
Suncorp-Metway	A	A2	A
Westpac Banking Corporation	AA-	Aa3	AA-

Sources: Bloomberg; Fitch; Moody's; Standard and Poor's

2.2 Insurers

The insurance sector has been a source of concern in many countries in recent years, mainly reflecting weak investment performance – a problem that has been somewhat alleviated by the recent recovery in equity prices. The general insurance sector has also benefited from a pick-up in premium income in Australia following the collapse of HIH Insurance and an improvement in premiums globally in the wake of the terrorist attacks in the US in 2001. The major exception to the good news story for Australian insurers has been AMP, which recorded one of the largest losses in Australian corporate history of \$5.5 billion for 2003. This was attributable to AMP's troubled UK operations; there were no concerns about the viability of the Australian businesses.

9 For more detail on these risk measures see I Arsov and M Gizycki, 'New Measures of Credit Risk', Reserve Bank of Australia *Bulletin*, July 2003, pp 10-14.

10 In particular, strong overseas demand for Commonwealth Government bonds has contributed to the rise in bond spreads.

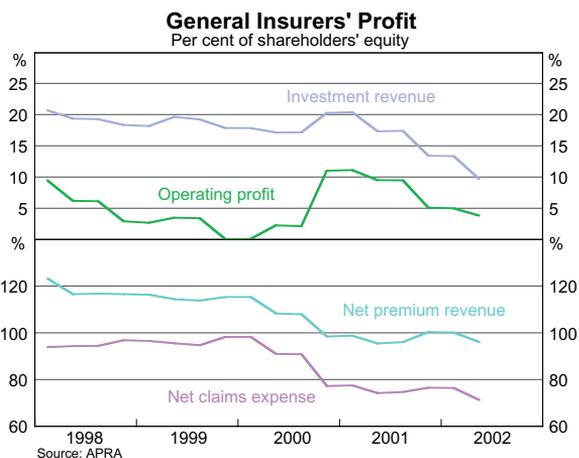
General Insurers

Declines in premium and investment revenue reduced general insurers' profitability in 2001 and 2002 (Graph 34). For the first half of the 2004 financial year, however, profitability has strengthened due to growth in premium income, stronger underwriting standards, comparatively mild claims expenses and cost efficiencies.

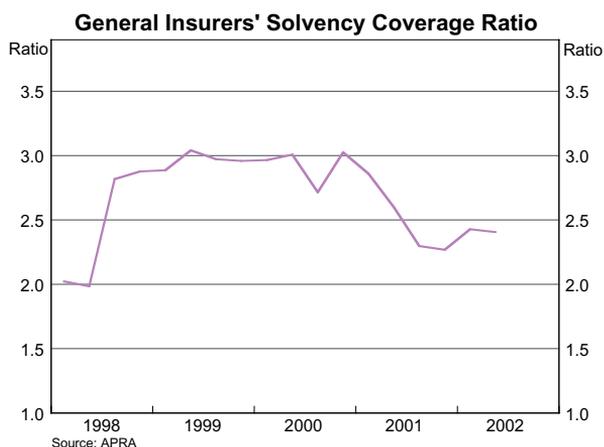
The average solvency ratio for general insurers declined between 2000 and 2002, but has since improved as insurers raised capital to comply with APRA's new capital adequacy requirements, which became effective in July 2002 (Graph 35).¹¹ This provides an important buffer against the potential for any slowdown in premium growth and pick-up in claims.

Apart from their own capital, general insurers rely on reinsurance which allows them to lay off their risk exposures to specialist reinsurers. All major reinsurers active in the Australian market are foreign owned, hence developments in the global market are of direct relevance to Australian insurers. Increases in insurance premiums, resolution of prior-year claims and the stabilisation of capital markets have improved global reinsurers' standing. Nonetheless, global reinsurers are still digesting investment losses on their equity portfolios and a number of reinsurers' credit ratings were downgraded last year (Graph 36). The share of reinsurers that are not rated has also risen, in part due to a number of companies being placed into run-off (i.e. the reinsurers are not writing any new business). Rating agencies

Graph 34

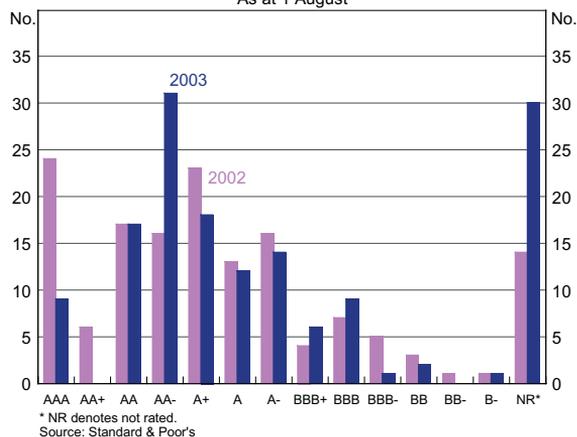


Graph 35



Graph 36

Ratings Distribution of Top 150 Global Reinsurers
As at 1 August



11 Although the calculation of the solvency ratio differs slightly between life insurers and general insurers, both ratios compare a measure of net assets to the relevant statutory solvency requirement.

currently have a negative outlook on the reinsurance sector due to concerns about the adequacy of reinsurers' reserves.

Life Insurers

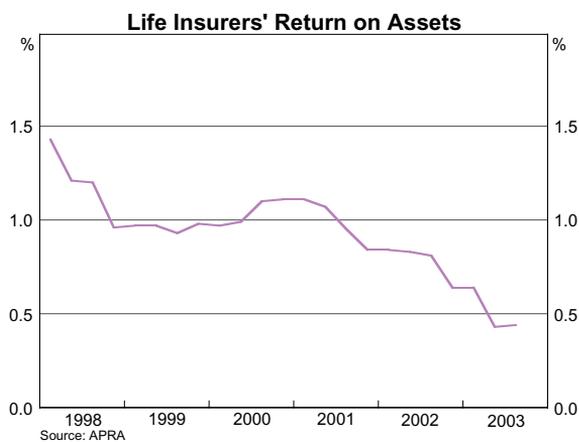
While Australian life offices' superannuation business has grown steadily in recent years, standard life insurance business has declined, with preliminary data suggesting that statutory fund assets backing ordinary life business fell by 4.5 per cent in the year to June 2003. Traditional life insurance products, such as whole-of-life insurance and annuities, are losing favour as customers move towards investment-linked funds management products, where life insurers face stiff competition from the broader funds management industry.

Life insurers in Australia are required to keep the assets that back their policies separate from other assets through the use of statutory funds. The return on assets held in the funds halved between end 2000 and mid 2003, primarily due to the weaker performance of international equity markets (Graph 37). The statutory funds are subject to both solvency requirements and capital adequacy requirements. Both the solvency and capital adequacy of life insurers have been relatively stable over the past five years, with the aggregate solvency coverage ratio currently standing at 1.8 and aggregate capital adequacy currently at 96 per cent (Graph 38).¹²

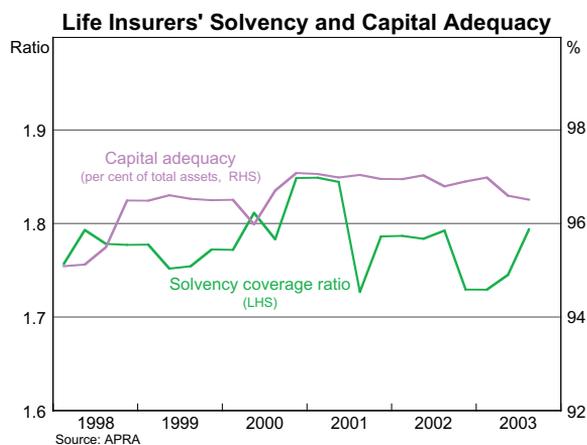
2.3 Superannuation

Like the insurance sector, superannuation fund performance has been strongly influenced by equity market developments. Total superannuation assets grew by 10 per cent to nearly \$550 billion in the year to September 2003,

Graph 37



Graph 38



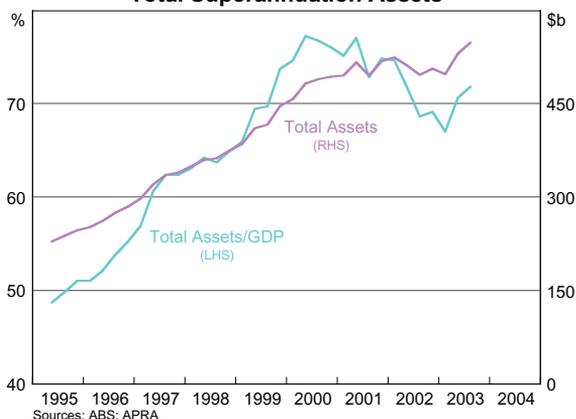
¹² The solvency ratio measures the level of capital needed under a range of adverse economic conditions if the life insurer were closed to new business. The capital adequacy ratio concerns the level of capital that is required if a life insurer is to remain a viable ongoing operation. For further details see Life Insurance Actuarial Standards Board (2002), *Actuarial Standard 2.03: Solvency Standard*, March and Life Insurance Actuarial Standards Board (2002), *Actuarial Standard 3.03: Capital Adequacy Standard*, March.

compared to annual growth rates of almost 20 per cent in the late 1990s (Graph 39).

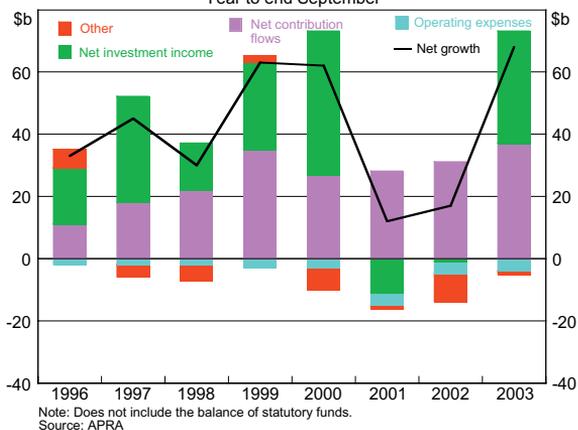
In contrast to the two previous years when investment returns were negative, in the year to September 2003 investment returns accounted for more than half the net growth in assets (Graph 40). The median return for large superannuation funds for the calendar year 2003 was around 7.6 per cent. This was the highest since 1999, and resulted from strong returns in all major asset classes in the second half of 2003, particularly equities. With most superannuation assets now held in accumulation (i.e. defined-contribution) funds rather than defined-benefit funds, households are directly affected by the funds' performance.

The allocation of superannuation funds' assets between the various asset classes strongly influences the year-to-year variability in the funds' investment returns. The proportion invested in Australian equities has risen from 40 per cent in the late 1990s to 45 per cent in 2003 (Graph 41). At the same time the share of funds invested in Australian interest-bearing securities has fallen. This suggests the potential variability of superannuation fund earnings has risen a little. Overseas assets comprised about 18 per cent of total assets in September 2003, a proportion that has been gradually falling since the end of 2001; of this, around 80 per cent is in equities. The proportion of superannuation assets held in land and buildings has been stable, at around 6 per cent.

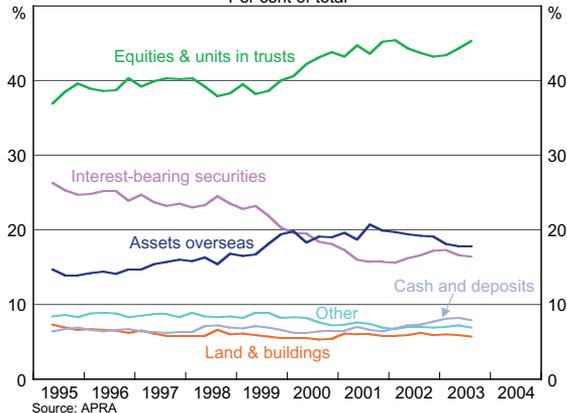
Graph 39
Total Superannuation Assets



Graph 40
Net Growth in Superannuation Assets
Year to end September



Graph 41
Composition of Superannuation Assets
Per cent of total



3. Developments in the Financial System Infrastructure

As outlined below, a number of initiatives are currently underway to improve the operation of the Australian financial system. These initiatives address various prudential requirements, the operation of financial markets, the regulation of clearing and settlement systems, and the transparency of firms' balance sheets. A number of these initiatives will be subject to a more detailed discussion in future issues of the *Financial Stability Review*.

3.1 Prudential Requirements

The New Basel Capital Accord

Financial institutions in Australia are supervised by the Australian Prudential Regulation Authority (APRA). A cornerstone of APRA's regulatory framework is a set of minimum capital requirements for banks and other authorised deposit-taking institutions (ADIs). The current arrangements date from 1988 when the Reserve Bank – which, at that time, had responsibility for the supervision of banks – implemented the risk-weighted approach to assessing minimum levels of capital established by the G10 Basel Committee on Banking Supervision, known as the Basel Capital Accord. Under this approach, banks are required to hold capital against credit risk for loans to the corporate, household, banking and government sectors. While the adoption of the Accord was an important step forward in the harmonisation of international banking regulation, the failure to distinguish between the quality of individual credits within each of these sectors was recognised as a shortcoming in the Accord from early on. This lack of differentiation means, for example, that a bank must hold the same amount of capital against all corporate exposures regardless of whether they are to a well-established 'blue-chip' company or to a firm starting up in a high-risk industry. In addition, the Accord did not explicitly address some important non-credit risks, notably operational risk – which arises from difficulties with internal processes, people and systems, or external events.

Over the past five years the Basel Committee has been working on a New Accord to address the shortcomings of the current Accord. New and considerably more sophisticated capital requirements provide two broad options for measuring credit risk, reflecting differences in the levels of sophistication among financial institutions. The first option, the standardised approach, is similar to the current Accord but allows for external credit risk assessments to be used to determine the riskiness of some credit exposures. The second option, the internal ratings-based approach, differs substantially from the current Accord in that it allows banks to make use of their own internal assessments of credit risk to determine minimum levels of capital.

The New Accord also requires banks to hold capital against operational risk. Again reflecting differences in sophistication, there are three options. Under a 'basic indicator' approach, capital is determined by a bank's gross income, while the more advanced approaches allow a bank to use its own assessment of operational risk.

In addition to the revised capital requirements, the New Accord also includes guidelines for supervisory review of risk management and capital adequacy and recommendations regarding the use of disclosure to strengthen market discipline.

The Basel Committee expects the New Accord to be implemented internationally by the end of 2006 and APRA has issued transition guidelines for its introduction in Australia. APRA expects the four largest Australian banks to adopt the internal ratings-based approach to credit risk measurement. While most other ADIs are expected to begin by using the standardised approach, any ADI will be permitted to use the internal ratings-based approach if they are

able to demonstrate to APRA that their measurement and management of risk are sufficiently rigorous. Overall, APRA estimates that the effect of the various changes on Australian ADIs will be a small reduction in minimum capital requirements.

Existing capital requirements

In light of ongoing innovation in the financial system, APRA has recently made, or proposed, a number of modifications to existing capital requirements.

- Housing loan risk weights

Under the current Accord, APRA allows ADIs to hold less capital against housing loans than most other loans. While business loans attract a 100 per cent risk weight for capital adequacy purposes, a weight of 50 per cent is currently applied for housing loans that either have a loan-to-valuation ratio of less than 80 per cent, or are fully insured with a highly rated mortgage insurer. APRA has recently proposed that if an ADI does not independently verify an applicant's income as part of the loan approval process, the loan will only qualify for the 50 per cent risk weight if the loan-to-valuation ratio is less than 60 per cent or the loan is fully insured by a highly rated mortgage insurer. This reflects the potentially higher level of credit risk for loans where such verification does not take place. APRA is currently considering comments on the proposal and intends to implement changes in July 2004.

- Capitalised expenses

Australian accounting standards allow banks to capitalise expenses such as loan and lease origination fees and commissions paid to mortgage brokers, securitisation establishment costs and costs associated with debt and capital raisings. Over the past few years, capitalised expenses have accounted for a small but increasing proportion of regulatory capital held by ADIs. However, given that capitalised expenses cannot be readily converted to liquid assets in the event of unexpected losses by the ADI, APRA has recently moved to exclude from capital those expenses associated with capital raisings, strategic business development initiatives, loan origination fees paid by institutions, and securitisation establishment costs.

The effect of this change will vary considerably across institutions. Many of the most affected ADIs have raised additional capital ahead of the new requirements coming into effect in July 2004 and, as a result, the overall impact on the average regulatory capital ratio will be small.

APRA has deferred, for now, any decisions regarding capitalised expenses associated with software development and other IT initiatives.

- Financial conglomerates

Previously, ADIs had to fully deduct their exposures to their non-banking subsidiaries when calculating capital requirements. In June 2003, APRA revised the capital adequacy standards to allow capital adequacy to be assessed at the 'full conglomerate group' level. This assessment will be in addition to the existing 'banking group' and 'stand-alone ADI' level requirements and will apply to six ADIs (Commonwealth Bank of Australia, National Australia Bank, Westpac, St George Bank, Macquarie Bank, and Suncorp-Metway). While the first phase of these arrangements came into effect in July 2003, further changes will be made when the New Basel Accord is introduced by the end of 2006.

In a related change, APRA released new standards regarding large exposures to related entities. The standards place more stringent limits on intra-group exposures, which

aim to better insulate ADIs from risks posed by non-banking companies in the same conglomerate group.

General insurance

APRA has also proposed further reforms to general insurance regulation, a number of which flow from recommendations by the Royal Commission into the collapse of HIH Insurance. These reforms deal with capital management planning, the deduction of capitalised expenses from regulatory capital, the deduction of reinsurance when calculating minimum capital requirements, intra-group reinsurance concessions, enhanced disclosure and governance. APRA has now received comments on these proposals, and intends to release revised prudential standards for general insurers later in the year.

APRA is also reconsidering the current requirement that lenders' mortgage insurers need to be separately authorised and can only provide this one type of insurance business. Relaxation of the single business line requirement is intended to increase competition in the mortgage insurance market, which is dominated by two institutions, by allowing other insurers to offer lenders' mortgage insurance.

Superannuation licensing

The Government has recently introduced legislation designed to strengthen the prudential framework that applies to the superannuation industry. The *Superannuation Safety Amendment Bill 2003*, expected to come into effect in July this year, requires all trustees of APRA-regulated superannuation funds to be licensed by APRA. To obtain a licence, trustees must meet minimum standards relating to their fitness and propriety and their ability to manage risk; existing trustees will have until July 2006 to obtain a licence. Actuaries and auditors will also be required to report certain information to APRA about superannuation funds, and APRA will have improved enforcement powers. APRA is currently seeking comments on the draft guidance material it has issued relating to these reforms.

Fit and proper requirements for responsible persons

APRA intends to introduce 'fit and proper' requirements for individuals in positions of responsibility within APRA-regulated institutions. New prudential standards will require institutions to assess whether 'responsible persons' have the technical competence and integrity to perform their duties; responsible persons include directors, senior managers, auditors and, for insurers, actuaries. APRA would have the ability to remove and possibly disqualify individuals deemed not to be fit and proper. APRA expects to implement the standards from 1 January 2005, following a period of consultation.

3.2 Financial Markets

The smooth functioning of financial markets is important to the health of the overall financial system. Recent initiatives in this area address the operation of clearing and settlement systems, insider trading and the licensing of financial services providers.

Clearing and settlement systems

An important prerequisite for financial stability is the safe operation of clearing and settlement facilities – systems that provide mechanisms for parties involved in financial transactions to meet their obligations to each other. To help achieve this, the Reserve Bank has now

determined financial stability standards (under the *Financial Services Reform Act 2001*) to which the licensees of clearing and settlement facilities must adhere. The standards apply to the central counterparties and securities settlement systems operated by the Australian Stock Exchange and the Sydney Futures Exchange, and came into force at the end of May 2003, with some transitional arrangements in place. There are separate standards for central counterparties and for securities settlement systems, reflecting differences in the nature of their businesses.

Central counterparties interpose themselves between the buyer and seller of a particular trade. They do this when a broker enters into a contract to buy shares from another broker, and the contract is replaced (or 'novated') with two separate contracts – one between the buyer and the central counterparty, and the other between the central counterparty and the seller. To complete the transaction, the seller delivers shares to the central counterparty in return for cash. The central counterparty in turn delivers the shares to the buyer who pays cash to the central counterparty. A default by participants due to deliver shares or pay cash can therefore expose the central counterparty to liquidity pressures and eventual losses. This could have implications for the financial system more generally if the solvency of the central counterparty were threatened.

The main purpose of securities settlement systems is to record changes in the ownership of securities; the system does not become a counterparty to the trades that it is recording. The SFE Corporation's Austraclear is an example of such a system for debt securities while the Australian Stock Exchange's Clearing House Electronic Subregister System provides a similar facility for shares. The main risk in such a system is that one counterparty transfers title to securities (or cash) but does not receive cash (or securities) in return. This risk can be avoided by ensuring that the system operates on a delivery-versus-payment basis, so that both legs of the transaction occur simultaneously.

The Reserve Bank's financial stability standards aim to ensure for both types of systems that: the legal framework underpinning the facility is well-founded and enforceable; participants have sufficient resources to meet their obligations and that they understand the risks to which they are exposed; clearing and settlement processes are efficient; and sources of operational risk are identified and minimised. Central counterparties must also have arrangements in place that can deal with instances of default, as well as comprehensive risk control arrangements. Similarly, securities settlement systems must have procedures in place for situations in which a participant is placed into external administration.

Insider trading

To the extent that improper practices, such as market manipulation or insider trading, discourage activity in markets and distort market prices, such practices impair financial markets' contribution to the health of the financial system. Under the *Corporations Act 2001*, anyone who possesses insider information is prohibited from trading or procuring trading, or communicating that information where the Act applies to markets in financial products. In March 2002 the range of financial products covered by insider trading prohibitions was considerably extended. In the light of these changes, the Corporations and Markets Advisory Committee prepared a review of insider trading provisions.¹³ The review made a number of recommendations dealing with reporting requirements for corporate officers, disclosure requirements for various financial markets, regulation of share issues and buy-backs and the

13 The Committee is made up of legal and financial market experts appointed by the Treasurer to provide advice on corporations law and financial markets regulation.

limited use of non-discretionary trading plans. It noted that not all of these were supported by the Australian Securities and Investments Commission, reflecting concerns based on its experience with the enforcement of insider trading provisions. The Government is currently considering the Committee's report.

Licensing of financial service providers

The *Financial Services Reform Act 2001* streamlines the regulatory regime for financial products and services, financial markets and clearing and settlement facilities. It provides a single licensing framework for financial service providers as well as licences for market operators and clearing and settlement facilities providers. The *Financial Services Reform Act* came into effect in March 2002. Most financial services providers have met the requirement to obtain a licence under the new arrangements by the deadline of March this year.

3.3 Accounting and Governance

Recent initiatives designed to revamp accounting standards and strengthen corporate governance will not only affect financial institutions directly, but indirectly through their effect on the transparency and governance of firms.

Accounting standards

Considerable work is being done by the International Accounting Standards Board to develop a comprehensive set of International Financial Reporting Standards. The adoption of common international standards will reduce costs for international companies and make cross-country comparisons by investors easier. The Standards are being adopted as Australian accounting standards, with Australian institutions required to apply them for reporting periods beginning 1 January 2005.

The new standards seek to increase the proportion of the balance sheet measured at market prices net of transaction costs, otherwise referred to as 'fair value'. In the Australian context, users of financial statements are already accustomed to valuations based on market values, particularly for insurance firms and superannuation and managed funds. Many other companies regularly revalue assets, although gains on non-current assets are generally taken directly to a reserve. By and large, the Australian experience has been that markets have quickly become accustomed to financial reports that include fair-value accounting.

Opponents of the move to a more market-based approach are concerned that it will increase the volatility of earnings, with potentially undesirable consequences for firms and possibly the wider economy. In contrast, those in favour of the approach see it as bringing company accounts more closely into line with underlying economic values and reducing the degree of subjectivity in preparing accounts. As such, it should contribute to good corporate governance and the efficiency of resource allocation.

While market-based accounting is already used throughout much of the financial services industry, there have been some concerns about the impact of the proposed new standards on banks' provisioning practices. In particular, under the proposed standards, provisions for loan impairment are only allowed once there is 'objective evidence' of impairment. Some have argued that this will restrict banks' ability to undertake forward-looking provisioning and may be at odds with the requirements of bank supervisors.

The proposed treatment of 'macro hedging' – the practice of offsetting interest-rate risk across a portfolio of assets and liabilities, rather than on an instrument-by-instrument basis – has also

attracted mention. Critics argue that these portfolio hedges may be difficult to recognise as fair-value hedges under the proposed standards, and could lead to unnecessary volatility in an institution's accounts. The International Accounting Standards Board has since proposed amendments allowing institutions to recognise such hedges in limited circumstances.

Australian insurers will be affected by the implementation of international accounting standards for insurance contracts (also being developed by the International Accounting Standards Board). The new standards will be introduced in two phases. The first phase is limited to harmonising disclosure arrangements for insurance internationally. The second phase, not expected to be implemented until 2007, will address broader issues related to insurance accounting and will require insurance assets and liabilities to be measured at fair value. The Basel Committee has expressed some concern about the implications of phasing-in the new standards for banks' insurance subsidiaries, as insurance liabilities would be valued using current national practices while the financial assets backing those liabilities would be measured at fair value. This is not anticipated to be an issue in Australia, given that Australian standards have reflected such an approach for some years.

Corporate governance initiatives

The *Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Bill 2003* aims to improve transparency and accountability and to promote shareholder activism. It focuses on issues such as auditor independence, financial reporting, the role of shareholders, continuous disclosure and managing conflicts of interest for analysts. It is expected to come into effect from July 2004. Further, listed companies are expected to disclose their compliance with the principles released last year by the Corporate Governance Council of the Australian Stock Exchange.

The Australian High-Value Payments System¹

Payment and settlement systems are important components of a modern market economy. They provide the means for consumers to make non-cash payments to businesses, payments between individuals and between businesses, and for payments associated with financial and asset markets. A robust payments infrastructure is therefore important to the functioning of the economy. The linkages between participants through payment and settlement systems mean that they can be one channel through which weakness in one participant can be transmitted to others. Such ‘systemic risk’ in payment systems can be reduced by good payment and settlement system design.

This article describes the real-time gross settlement (RTGS) system for high-value payments in Australia and explains its role in promoting the stability of the financial system.²

1. Settlement of payments in Australia

Payment obligations between financial institutions are generated by transactions directly between them or made on behalf of their customers. On an average day, around \$140 billion in payment instructions are exchanged between financial institutions in Australia. These transactions include both retail payments and wholesale payments, such as securities transactions, large or time critical payments and the Australian dollar leg of foreign exchange transactions. While the number of retail payments is large – around 9½ million retail payments are made between financial institutions every day – the 20 000 payments passing through the high-value payments system account for around 90 per cent of the total value.

Prior to June 1998, most interbank payments were settled on a net basis at the start of the business day following the exchange of payment instructions. This meant that a lag existed between the time an interbank obligation was created and the time it was settled across accounts at the Reserve Bank (known as Exchange Settlement accounts) at 9.00 am the next day. This lag exposed banks to domestic interbank settlement risk. If a bank failed in the interim, it would be unable to settle its obligations. In the meantime, other banks would have made further payments themselves. If the payments they had expected to receive were not settled, they could be subject to liquidity pressures and, potentially, large losses.

In line with practice overseas, the Reserve Bank introduced RTGS in June 1998, targeted at high-value payments. In Australia, interbank settlement of payment obligations takes place through the Reserve Bank Information and Transfer System (RITS), which is the means by which banks and other institutions approved by the Reserve Bank access their Exchange Settlement accounts. (In the remainder of this article, the term ‘bank’ is used to refer to any holder of an Exchange Settlement account with the Reserve Bank.)

RTGS payments are settled immediately, on a final and irrevocable basis, when sufficient funds are available in the Exchange Settlement account of the paying bank. Provisions in the *Payment Systems and Netting Act 1998* (see Box 1) ensure that completed RTGS transactions cannot be later unwound if a paying institution were to be declared insolvent.

1 This article was prepared by Michelle Bullock, Payments Policy Department, Nola McMillan, Payments Settlements Department and Stephanie Weston, Payments Policy Department.

2 More details can be found in *Payments Systems in Australia*, Bank for International Settlements, 1999; *Payments System Board Annual Report*, 1999, 2000, 2001, 2002, 2003; *Reserve Bank of Australia Annual Report*, 1998.

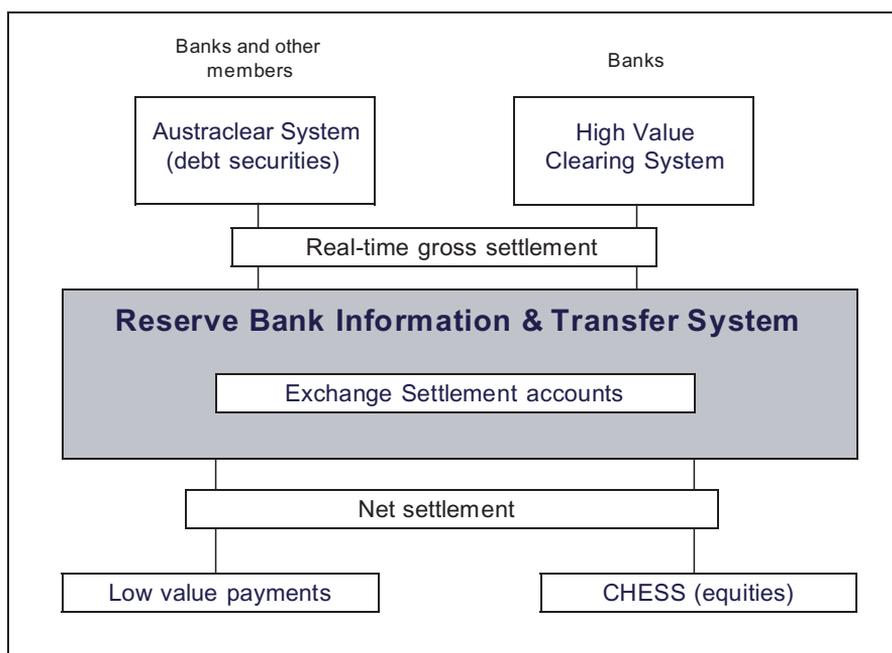
RITS is the hub of the Australian payments system, through which interbank payments are settled (Figure 1). There are two high-value payment systems that are linked to RITS and settle in real time. These are referred to as RTGS feeder systems and are:

- The *High Value Clearing System* – administered by the Australian Payments Clearing Association. This system uses the global SWIFT network to carry customer payments, correspondent banking flows and the Australian dollar leg of foreign exchange transactions. These transactions account for around 70 per cent of the value that passes through RITS.
- The *Austraclear System* – a depository and settlement system for transactions in Australian debt securities and other money market transactions, owned by SFE Corporation Limited. The payment leg of debt security transactions and cash flows connected to derivative products settle in real time through this system. Austraclear payments account for around 25 per cent of RTGS transactions.

More details on the feeder systems are given in Box 2.

The existing *Clearing House Electronic Subregister System (CHES)*, which settles equity transactions undertaken on the Australian Stock Exchange, has also been modified to provide CHES participants with the option of settling equity transactions on the Australian Stock Exchange on a real-time basis. However, the CHES-RTGS system has not yet been used.

Figure 1: Australian payments system infrastructure



In addition to payments generated by the feeder systems, some payments are made by directly entering transactions into RITS. Interbank lending and borrowing are generally settled as cash transfers between banks in this way. These transactions are a fairly small proportion – around 5 per cent – of total RITS transactions.

Finally, there are other payment systems that still settle on a net basis through RITS. These include the cheque, direct entry, debit card and ATM systems (which settle at 9.00 am on the day after payments are exchanged) as well as net settlement of equities transactions through CHESS.

2. Liquidity in the RTGS system

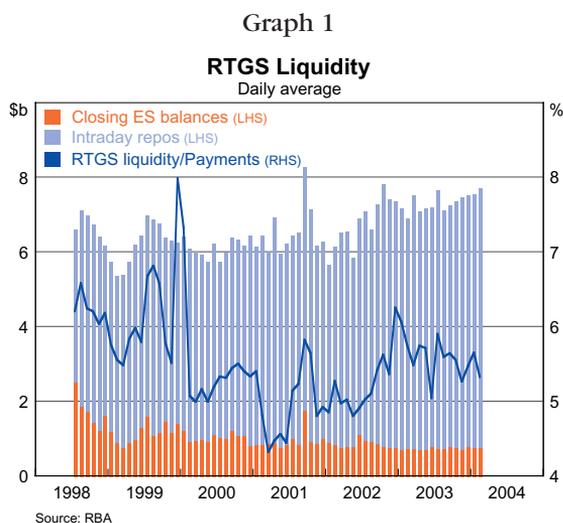
Although settlement of high-value payments through an RTGS system eliminates settlement risk for these transactions, it can potentially put liquidity pressure on financial institutions. A successful RTGS system therefore requires adequate liquidity for banks to make their payments.

For the system as a whole, liquidity available for RTGS each day comprises the total overnight balance in Exchange Settlement accounts and intra-day repurchase agreements with the Reserve Bank.

The aggregate level of overnight balances is determined by the Reserve Bank through its open market operations. These operations are designed to ensure that the aggregate supply of Exchange Settlement balances equals banks' aggregate demand at the target cash rate. The banks' demand for (end of day) balances is precautionary, in that it derives from each bank's need to be able to settle all payments with other banks and with the Reserve Bank.

At the start of the day, an individual bank's liquidity is made up of its opening Exchange Settlement account balance which includes any payments made by the Reserve Bank on behalf of its customers. Early in the day, banks estimate their liquidity needs and obtain additional liquidity by entering into intra-day repurchase agreements with the Reserve Bank and by bidding for inter-day funds in the Reserve Bank's open market operations. An intra-day repurchase agreement involves a bank selling eligible securities to the Reserve Bank in exchange for Exchange Settlement funds and agreeing to reverse this transaction by the end of the day. During the day, the payments of an individual bank will also be funded by incoming payments and loans from other banks. Overall, banks' RTGS payments are funded by liquidity of between 4 and 6 per cent of total payment values (Graph 1).

When the RTGS system was first established, liquidity demands were uncertain and banks held substantial overnight balances in their Exchange Settlement accounts as a precaution. As banks became more familiar with the system and more adept at managing their payment flows, these balances fell – quite sharply over the initial months of RTGS, and more gradually thereafter. In July 1998, immediately after the introduction of RTGS, aggregate overnight balances in Exchange Settlement accounts averaged \$2.5 billion. By 2003, these balances had fallen to an average of only \$750 million, although there are occasions on which significantly higher aggregate balances were held.



3. RITS liquidity conserving features

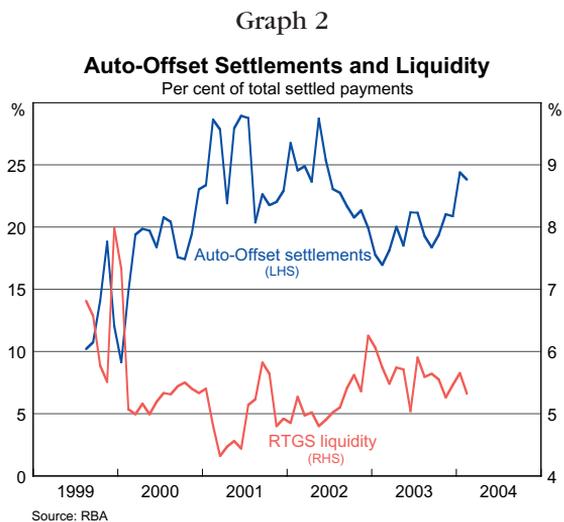
There is an opportunity cost to banks of holding balances in their Exchange Settlement accounts and other highly liquid assets that may be used for entering into intra-day repurchase agreements with the Reserve Bank. It is therefore important that a high-value payment system use liquidity efficiently.

In the Australian RTGS system, liquidity efficiency is achieved using two main features of the RITS system queue process – ‘next-down looping’ and ‘Auto-Offset’. Next-down looping is the process by which RITS traverses its queue of transactions awaiting settlement. Before it can be settled, a payment needs to meet a number of tests: it must be marked by the paying bank as ready for settlement; and there must be sufficient available unreserved funds in the paying bank’s Exchange Settlement account. If a payment passes these tests, it is settled with simultaneous entries to the Exchange Settlement accounts of the paying and receiving banks. If a payment does not pass the queue tests, including the Auto-Offset test described below, the queue processor leaves it on the queue and tests the next payment. It continues this process, settling or leaving each payment, until it reaches the end of the queue, after which it restarts testing from the start of the queue. This continual ‘settle or leave’ approach is generally more efficient than the ‘First In First Out’ algorithms often used in other countries.

The last test of the queue processor is an Auto-Offset test. Auto-Offset is a facility that attempts to offset outstanding payments between two banks. If a payment remains unsettled on the system queue for longer than one minute, the queue processor searches for offsetting payments from the receiving bank. If there are sufficient unreserved funds available in each bank’s Exchange Settlement account to settle these transactions simultaneously, then the original and offsetting payments are settled immediately.

These queue features mean that while the queue processor tests transactions in the order received, transactions may not settle in the same order.

The Auto-Offset feature is very effective in using available liquidity efficiently. This shows up as a strong inverse relationship between the level of RTGS liquidity and the value of Auto-Offset settlements (Graph 2).



4. The RTGS day

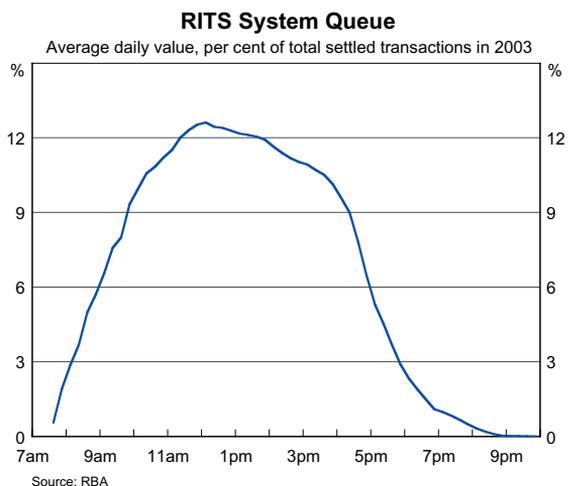
A typical day in the Australian high-value payments system begins when RITS opens at 7.30 am. Prior to this time, the Reserve Bank posts any payments from itself (for example, government payments) to banks’ Exchange Settlement accounts so that these funds are immediately available. In the next 75 minutes, banks estimate their liquidity needs and, if required, undertake intra-day repurchase agreements with the Reserve Bank. RITS closes at 8.45 am ahead of settlement at 9.00 am of a batch which includes interbank obligations from the retail payment systems. The main RTGS settlement period then begins at 9.15 am when

all payments are eligible for settlement. The pattern of payments on the queue is fairly consistent day to day. It rises from opening as banks enter more high-value interbank payments for settlement, peaking around midday and remaining fairly steady through the early afternoon before declining quite sharply late in the day (Graph 3).

The main RTGS settlement period continues until 4.30 pm; Exchange Settlement account holders are typically active at this time settling their own and clients' transactions. By 5.15 pm, those banks that are not involved in global cross-currency settlements finalise their settlements

and unwind any intraday repurchase agreements with the Reserve Bank. An evening session allows simultaneous settlement of foreign exchange flows to take place with banks in other time zones through Continuous Linked Settlement Bank. The system closes at 7.00 pm in winter and 9.00 pm in summer.

Graph 3



Box 1: The Payment Systems and Netting Act

At the same time that RTGS was being developed to provide a payments system with greatly reduced settlement risk, the *Payment Systems and Netting Act 1998* was drawn up to address legal uncertainties including the finality of RTGS payments and the certainty of multilateral netting arrangements.

The so-called ‘zero hour rule’ avoids the difficulty of identifying the moment of insolvency by deeming that a court-ordered liquidation is effective from immediately after the previous midnight. Left unaddressed, this convention gave rise to the prospect that the finality of RTGS payments could be overturned by a court following the insolvency of a participant. To avoid this, the *Payment Systems and Netting Act* provides for the Reserve Bank to approve RTGS systems that meet specified criteria. Transactions settled in an approved system cannot be rendered void if the participant is placed in external administration.

A multilateral netting arrangement is one where obligations between three or more parties to financial transactions are netted. However, the law regarding ‘unfair preferences’ could have meant that if an institution failed, other parties could have challenged the validity of the arrangement. The *Payment Systems and Netting Act* enables the Reserve Bank to protect multilateral netting arrangements in the payments system from such a challenge.

Both of the above protections under the *Payment Systems and Netting Act* require the Reserve Bank to assess applications for approval of specific systems on their merit. To date, three systems have received approvals as RTGS systems – the Austraclear System operated by the Sydney Futures Exchange for real-time securities settlement; RITS operated by the Reserve Bank; and CHESS-RTGS, a system providing the option of real-time settlement of equities transactions. There have also been two multilateral netting systems approved – the Austraclear System under conditions where real-time settlement is not available; and the High Value Clearing System, operated by the Australian Payments Clearing Association, under the same conditions.

Box 2: RTGS Feeder Systems to RITS

Austraclear

Transactions in debt securities are settled through the Austraclear System, which is operated by Austraclear Limited, a wholly owned subsidiary of SFE Corporation (which also owns the Sydney Futures Exchange). Austraclear maintains electronic cash and securities records for its members; traditionally, many securities records were held in paper form.

On an average day, around \$35 billion in debt securities and other money market transactions are settled through Austraclear. Fixed-income securities, including Commonwealth Government securities, make up around two-thirds of this flow; the remainder is short-term debt issued by banks in the form of bank-accepted bills, negotiable certificates of deposit or promissory notes and other money market settlements. Securities settlements are effected on a 'delivery-versus-payment' basis. Where the buyer and seller of the securities have their accounts at different banks, settlement of the securities in Austraclear occurs immediately following the interbank settlement of the payment across Exchange Settlement accounts.

Austraclear has over 600 members, most of whom do not hold Exchange Settlement accounts. These members must have an arrangement in place with a bank which sponsors their participation in Austraclear and settles payments on their behalf.

Futures and options transactions on the Sydney Futures Exchange also result in payments such as margin obligations. These payments are made to and from the Sydney Futures Exchange's Exchange Settlement account and add a further \$40 million to the average daily value of settlements through the RTGS system. The settlement of these obligations between clearing participants and the Sydney Futures Exchange is effected by cash transfers in Austraclear, and any resulting interbank obligations are simultaneously settled across Exchange Settlement accounts.

High Value Clearing System

The High Value Clearing System is administered by the Australian Payments Clearing Association. This is also known as the SWIFT Payments Delivery System as it utilises the SWIFT FIN-copy service. Payments made through this system are predominantly payments for the Australian dollar leg of foreign exchange transactions and payments made on behalf of customers, including overseas banks for whom banks in Australia act as correspondent. Participating members of the system send payment instructions via SWIFT to RITS for the payment to be settled on a real-time basis. Members of the system therefore need to hold an Exchange Settlement account with the Reserve Bank. Currently, there are 48 members of the High Value Clearing System.

Credit Quality in the Australian Non-Government Bond Market¹

1. Introduction

The average credit rating of bonds outstanding in the Australian non-government bond market is high by international standards. About 60 per cent of outstandings are rated AAA, while less than 5 per cent are rated below A; the weighted-average rating is AA (Graph 1).

There are several reasons for this. First, around 40 per cent of non-government bonds in Australia are asset backed. Most of these bonds are backed by residential mortgages and hence tend to be AAA rated. Second, while non-asset-backed bonds span a broader credit spectrum – 36 per cent are AAA rated, and the AA, A and lower-rated (i.e. bonds rated BBB and below) categories account for 25, 33 and 6 per cent respectively – these, on average, are also highly rated by international standards, in part reflecting the prevalence of credit enhancement. Third, the tendency for outstanding bonds to be downgraded over time has been low by international standards.

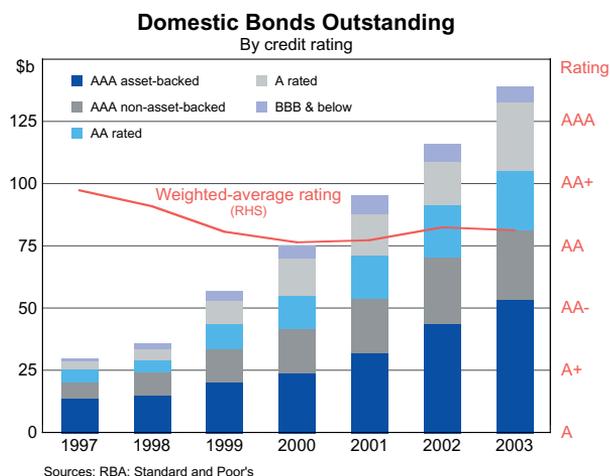
These explanations, however, raise further questions: why has the rapid expansion of the market not resulted in a greater increase in the share of lower-quality, non-asset-backed bonds; why is credit enhancement so common and is it unambiguously desirable; and why has the downwards re-rating of Australian bonds been relatively slight? This article discusses these issues.

2. Composition of the market

The value of non-government bonds outstanding has grown at an average annual rate of 28 per cent since mid 1999. Over this period, outstandings of asset-backed bonds and non-asset-backed bonds have grown at a similar pace, resulting in the share of asset-backed bonds in total outstandings remaining around 40 per cent. Non-asset-backed issuers comprise financial companies (primarily banks), non-financial companies, and non-resident entities, each of which currently accounts for roughly 20 per cent of non-government bonds outstanding.

The sustained rapid growth of *asset-backed bonds* primarily reflects strong growth in housing finance. As the range of mortgages securitised has broadened to include non-conforming loans, and other assets such as credit-card receivables have begun to be securitised, the proportion of asset-backed bonds rated A or lower has risen from virtually zero to almost 5 per cent. Nonetheless, the proportion of outstanding asset-backed bonds that are rated AAA has remained almost unchanged since 1997 at about 90 per cent and the average credit quality of

Graph 1



1 This article was prepared by Michael Davies and Liz Dixon Smith of Domestic Markets Department.

asset-backed bonds has declined only marginally (Graph 2).

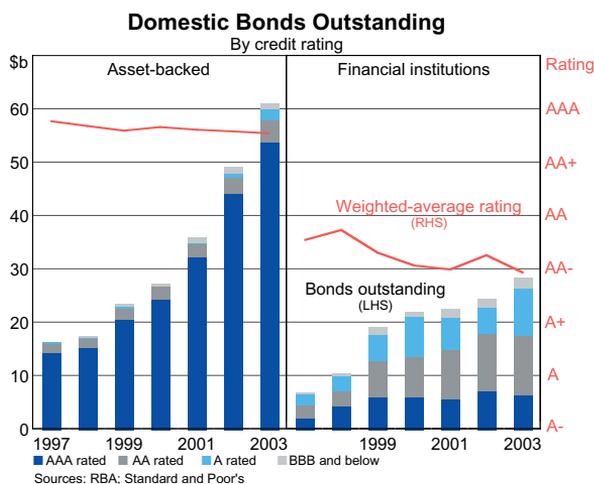
The average credit quality of *financial institutions'* outstanding bonds has also declined only marginally over the past five years. The decline largely reflects reduced outstandings of government guaranteed bonds, which were issued by the state banks and Commonwealth Bank prior to their privatisation, and increased access to the market by smaller financial institutions, which tend to be rated less highly than the major domestic banks.

By contrast, the average credit quality of *non-financial entities* issuing bonds has changed quite markedly since 1997 (Graph 3). In particular, the average quality declined in the late 1990s as companies spanning a broader credit spectrum began to enter the market, and this trend has continued over recent years. In addition, former public trading enterprises (such as Telstra), which in 1997 accounted for a large proportion of the outstanding debt and had high credit ratings due to implicit or explicit government support, became a smaller share of the market and, in many cases, ceased to be able to issue bonds with a government guarantee.

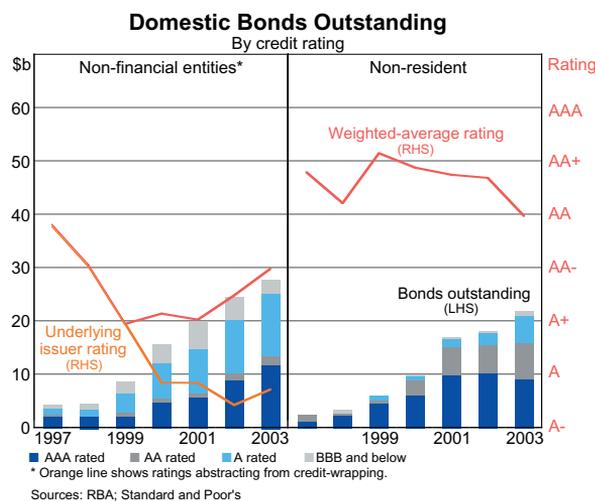
Despite these developments, the average credit quality of outstanding bonds issued by non-financial entities has risen noticeably over the past few years, reflecting the increased use of credit-wrapping, that is, the provision of additional protection against credit losses in order to improve the credit rating of the bond. As a result, the average credit rating of outstanding bonds issued by non-financial companies, at AA-, is substantially higher than the weighted-average rating of borrowers issuing them, which stands at A.

The fourth broad category of borrowers is *non-resident entities*, whose bonds issued into the Australian market are referred to as 'kangaroo bonds'. Non-resident entities issue into the Australian market when opportunities to diversify their funding sources at relatively low cost arise. In turn, Australian investors have been keen to diversify their counterparty exposures; the creditworthiness of kangaroo bonds is not determined by Australian economic conditions. In the past, issuance was dominated by highly creditworthy supranational borrowers (international organisations) so the average credit quality of kangaroo bonds was higher than that of bonds issued by Australian borrowers. More recently, however,

Graph 2



Graph 3



international corporate borrowers, particularly financial institutions, have accessed the market. As a result, the average credit quality has declined towards that of bonds issued by Australian borrowers.

3. Credit enhancement

Credit enhancement in the domestic bond market typically occurs in one of two ways: by a *guarantee or insurance* from a third-party; or by '*tranching*', that is, splitting the bond into several classes with differing degrees of subordination. Whereas a guarantee or insurance has the capacity to improve the overall credit rating of a bond issue, tranching merely creates a distribution of credit risk within that issue; the *average* credit quality of a tranching issue is improved only if the original lender retains the lowest quality tranches on its balance sheet.

3.1 Credit enhancement of asset-backed bonds

Third-party enhancement of asset-backed securities generally comes from insurance on individual mortgages that have a loan-to-valuation ratio (LVR) above a certain threshold (for banks, insurance on loans with LVRs in excess of 80 per cent is a prerequisite for concessional capital risk weighting). A claim on the insurance policy occurs if the mortgagee defaults on the loan and if the value of the property is insufficient to repay the loan. In most cases, the cost of the insurance (around 1½ per cent of the loan value for a mortgage with a 90 per cent LVR) is borne by the mortgagee, who in return can borrow at a lower interest rate – often at the same interest rate as applied to less highly geared mortgages. Mortgage insurance is usually not available for very high LVR and non-conforming mortgages. Instead, the originator may charge these borrowers a fee to establish a pool of equity to cover first losses and/or charge the borrowers a higher interest rate.

Third-party enhancement can also occur via insurance of the whole pool of securitised mortgages. Pool policies provide additional cover for loans that were uninsured while held on-balance-sheet by the lending institution, usually because they had relatively low LVRs. The pool policy covers 100 per cent of the losses of a defaulted loan but may limit the aggregate payout to a percentage of the pool. The cost of this insurance is generally low (a one-off premium of approximately 20 basis points), reflecting the low LVRs of many of the individual underlying mortgages.

Although tranching of mortgage-backed securities has become more common, in part because some originators have sought to reduce their reliance on mortgage insurance, most originators sell all the tranches to investors. As a result, tranching has had little effect on the *average* credit quality of asset-backed securities.

3.2 Credit enhancement of non-asset-backed bonds

Prior to their privatisations, a number of financial institutions and non-financial corporates benefited from third-party credit enhancement in that many of their bonds had implicit or explicit Commonwealth or state *government guarantees*. As a result, the credit rating on these bonds reflected the rating of the government rather than the issuers' stand-alone credit quality. Government guaranteed bonds accounted for around half of outstanding non-financial entities' bonds in 1997, but now account for around 10 per cent. For financial institutions, the share has fallen from almost 30 per cent to 10 per cent over the same period.

For non-financial firms, the falling incidence of government guarantees had, by 2003, been offset by a rising incidence of *private sector guarantees*; the profile for the proportion of

outstanding non-financial bonds with some form of credit enhancement looks very similar to that for the average credit quality of non-financials' bonds outstanding (Graph 4). So-called 'credit-wrapped' bonds have become an increasingly popular financing tool for lower-rated non-financial corporate borrowers. Utility companies and airports have been the predominant issuers of these bonds as, despite tending to have high-quality fixed assets and relatively predictable cash flows, these companies tend to be highly geared. There have been no issues of credit-wrapped bonds by financial institutions.

The private-sector guarantors (of non-financial bonds) are large highly rated specialist insurance companies, commonly known as 'monolines', which have internationally diverse portfolios of obligations. Issuers pay an up-front premium equivalent to between 20 and 60 basis points per annum for the credit wrap.² In return, they are able to borrow for longer maturities and at a lower spread than otherwise. Credit-wrapped bonds tend to have longer maturities than non-wrapped bonds so it is difficult to quantify the yield differential between wrapped and unwrapped bonds issued by similarly rated companies.

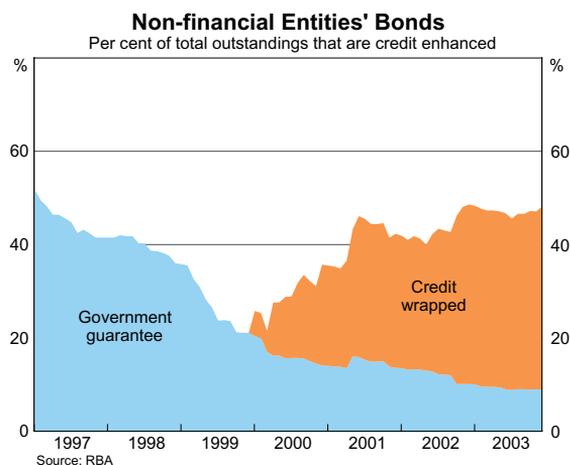
3.3 Implications of credit enhancement

While the increased use of credit enhancement has allowed some mortgage lenders and lower-rated firms to issue debt more cheaply than they might otherwise have been able to, it does have other implications.

First, concentration risk in both the credit-wrapping and mortgage insurance markets may be a concern. Although the providers of third-party credit enhancement are generally very highly rated companies, holders of residential mortgage-backed securities are exposed to the health of two mortgage insurance companies while almost 90 per cent of outstanding credit-wrapped bonds are guaranteed by two 'monoline' insurers.³ If defaults on the underlying loans are correlated, periods of severe economic distress could result in large volumes of claims on the insurance companies, perhaps undermining their creditworthiness. Perhaps reflecting this, primary market spreads on subordinated tranches of prime mortgage-backed securities bonds have widened over the past six months. However, secondary market spreads on credit-wrapped bonds suggest that investors continue to value credit wrapping as much as they have in the past.

Second, the propensity of borrowers to turn to credit enhancement may have precluded a broadening of the opportunities available to investors in the domestic market. That said, the

Graph 4



2 The premium is calculated based on the insurers' assessment of the risk they are incurring, and is generally more than half of the spread reduction that the borrower is likely to achieve by issuing a credit-wrapped bond rather than an unwrapped bond.

3 The five largest mortgage insurers account for 90 per cent of the mortgage insurance market. Of those, three are captive insurers for major banks and only allowed to insure loans on behalf of their parent.

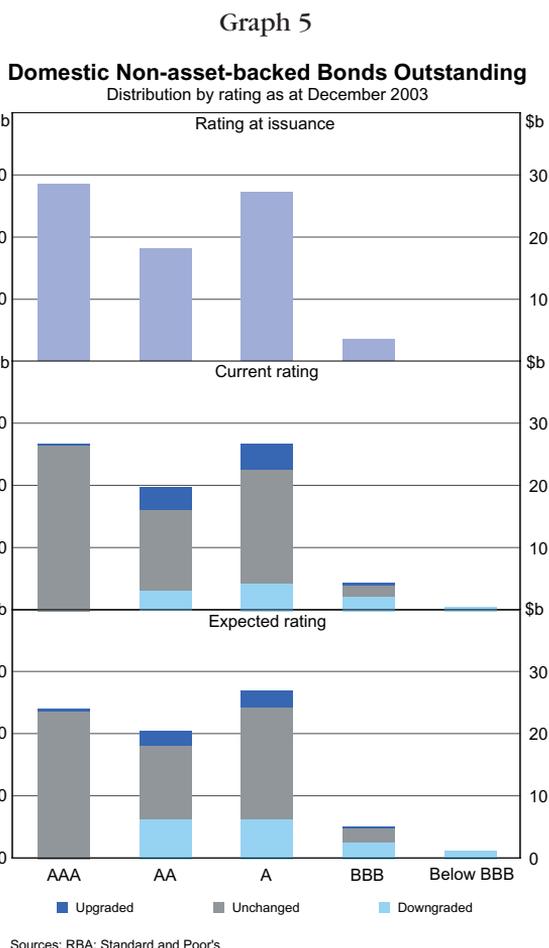
relative lack of lower-rated (and longer-dated) bonds appears to reflect investors' preferences. Lending at least partial support to this view is the fact that some lower-rated borrowers have turned to more mature overseas markets to raise finance; for example, the average rating of (rated) debt issued by Australian borrowers into the US private placement market is BBB.

4. Ratings migration

In addition to rapid securitisation of conventional mortgages and credit enhancement, a third factor that has contributed to the Australian market's high average credit rating is that there has been little downgrading of outstanding bonds. International experience is that, over time, there tend to be more downgrades of credit ratings on outstanding non-government bonds than upgrades. There has been some net downward re-rating in the average prevailing credit rating of outstanding Australian non-government bonds but it has been smaller than that which would be expected based on international experience.

To date, only 1 per cent of asset-backed bonds have been downgraded, while 3 per cent have been upgraded. This is because most asset-backed bonds issued in Australia are securitised portfolios of prime residential mortgages and, to date, Australian residential mortgages have tended to have lower default rates than both residential mortgages in other countries and the loans used to back other securitised bonds. In part, this may reflect the fact that the market has grown at a time when conditions in the mortgage market have been particularly favourable.

Perhaps more significantly, non-asset-backed bonds have been subject to less than two-thirds of the downgrades that would be expected based on global ratings histories since 1980.⁴ Of the bonds outstanding in the Australian market at end 2003, \$60 billion (by face value) still retain the rating they had when first issued, \$8 billion have been upgraded and \$11 billion have been downgraded by one or more ratings notch (Graph 5). If the bonds' credit ratings had changed in line with historical rates for overseas markets, only \$5 billion would have been upgraded, and \$17 billion would have been downgraded. The ratings outperformance was apparent across all credit ratings and all types of issuers, but was particularly evident amongst AAA rated debt, where outstandings have fallen \$2 billion because of net



4 A comparison with international experience since 1997 is difficult. However, the extent of downgrades of US bonds over the past few years would ensure that such a comparison was also favourable.

downgrades, compared with what would have been a \$5 billion fall based on international experience.

The superior ratings performance of Australian non-government bonds reflects, in part, the comparatively strong domestic economic climate of the past decade. This has particularly benefited the banks, which account for a relatively large share of the debt on issue. The relative lack of downgrades amongst AAA-rated non-asset-backed bonds also reflects the fact that many of these bonds are issued by supranational borrowers whose ratings are particularly strong, or contain credit enhancement which provides a second (AAA rated) level of protection against default.

5. Conclusion

The Australian non-government bond market has grown rapidly in recent years and has seen the emergence of issuance by lower-rated firms and some securitisation of non-conventional mortgages. Since around 1999, however, there has been little change in the average credit quality of outstanding securities. This reflects three main factors: sustained rapid growth of securities backed by conventional residential mortgages; recourse to credit enhancement; and a relatively low number of downgrades to the bonds outstanding, reflecting both the composition of bond issuers and a benign economic environment in Australia.

The relative lack of lower-rated issuance into the domestic market and the propensity of borrowers to turn to credit enhancement appears to mainly reflect domestic investors' preferences. At present, the investment community is dominated by institutional investors, many of whom are mandated to invest only in debt that is rated A- or higher. Consistent with this, some lower-rated borrowers have turned to more developed overseas markets to raise finance.

The widespread use of credit enhancement in both asset-backed and non-asset-backed bonds has given rise to concentrated exposures to the insurers. However, recent issuance suggests credit enhancement continues to be valued by investors and is cost effective for some borrowers.