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ASSET PRICES, CREDIT GROWTH, MONETARY AND OTHER POLICIES:  
AN AUSTRALIAN CASE STUDY

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**ABSTRACT**

The long-running debate about the role of monetary policy in responding to rising asset prices has received renewed attention in the wake of the global financial crisis. This paper contributes to this debate by describing the Australian experience of a cycle in house prices and credit from 2002 to 2004, and discussing the role played by various policies during this episode. In particular, it focuses on the efforts by the Reserve Bank of Australia to draw attention to the risks associated with large, ongoing increases in housing prices and household borrowing.

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# **ASSET PRICES, CREDIT GROWTH, MONETARY AND OTHER POLICIES: AN AUSTRALIAN CASE STUDY**

**Paul Bloxham, Christopher Kent and Michael Robson**

## **1. Introduction**

The global financial crisis provided a stark reminder that large falls in asset prices combined with high leverage can severely damage economies. In the United States, which has been at the core of the financial crisis, house prices declined by 25–30 per cent between 2007 and 2009, ultimately contributing to the largest decline in economic activity in over 60 years. Global exposure to the US economy and a sharp decline in confidence was the catalyst for the first decline in global GDP in the post-War period. In addition, house price declines in Ireland, Spain and the United Kingdom contributed to a significant weakening of these economies. Given the scale of the damage, it is not surprising that these events have reinvigorated the long running debate about the role for policy in maintaining financial stability, including whether or how monetary policy should respond to changes in asset prices.<sup>1</sup>

While much of the earlier debate focused on identification of asset-price bubbles and whether monetary policy should respond to them, the debate appears to be shifting towards how policy should respond to financial imbalances more broadly. This reflects a growing recognition that asset price increases that are backed by a substantial rise in leverage and a less prudent approach to risk management by financial institutions can be dangerous. The global financial crisis has clearly demonstrated that a policy of ‘cleaning up the mess’ after a collapse in asset prices is problematic, especially if the collapse is associated with significant damage to financial institutions. This strengthens the case for taking earlier action in order to avoid a damaging correction later on.

Nonetheless, there is much debate about the appropriate nature of the policy response along two broad strands. The first regards how much, if at all, monetary

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<sup>1</sup> Issing (2009), Trichet (2009), Bernanke (2010), Blanchard, Dell’Ariccia and Mauro (2010) and Goodhart (2010).

policy should act to stem financial cycle upswings. The second, and closely related strand regards the scope for other policy instruments, such as so-called macroprudential tools. This paper suggests that there is a need to shift debate away from the extremes towards the question of the degree of policy intervention (or ‘leaning’) that is appropriate and the mix of policies that is likely to be effective in maintaining stability of the macroeconomy.

Understanding the effectiveness of the various approaches is, however, hindered by the limited experience of monetary or other policies being used explicitly to respond to financial imbalances.<sup>2</sup> The few examples commonly cited include: Hong Kong in the early 1990s, with controls on loan-to-valuation ratios (LVRs); Spain’s adoption of dynamic provisioning from 2000; the response in Australia to rapid growth of house prices and credit between 2002 and 2004, with a combination of ‘open mouth operations’, a modest increase in policy rates and some regulatory actions; and the Swedish experience using a similar approach in response to rapid growth in house prices and credit between 2005 and 2007.

This paper provides a detailed case study of the Australian experience in the early 2000s.<sup>3</sup> Between 1997 and late 2003, housing prices in Australia more than doubled, increasing by around 40 per cent over 2002 and 2003 alone. There was also a rapid increase in housing credit (of 20 per cent per annum in 2002 and 2003), particularly for the purchase of residential investment properties. The boom ended in late 2003, with national housing prices broadly flat over the subsequent 18 months (and falling in the two largest capital cities) and investor demand for residential property easing significantly. This turnaround is an example where a range of policies seemingly came together (albeit in a not explicitly coordinated fashion) to ‘lean against’ emerging imbalances at a time when the growth in residential property prices seemed inexorable.

In the five years following the 2003 turnaround, dwelling prices grew at around the same pace as household disposable income and GDP growth averaged 3 per cent per annum. Indeed, the early shake-out of the housing market may be one reason why the Australian housing market and financial system were relatively well

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2 Indeed, Greenspan (2010) claims that: ‘There are no examples, to my knowledge, of a successful incremental defusing of a bubble that left prosperity in tact [*sic*]’ (p 45).

3 This episode is covered briefly by Cecchetti (2006), Fatás *et al* (2009) and Posen (2009).

placed to weather the global financial crisis. Of course, the generally benign outcome is also likely to have reflected a number of other factors. Among them, Australia benefited from a large rise in the terms of trade starting around the time that dwelling prices peaked. More generally, growth in the global economy was very strong over the period from 2003 to 2007.

One important part of the policy response was a ‘public awareness campaign’ by the Reserve Bank, highlighting the risks to households and the economy if the existing trends in housing prices and borrowing continued (Macfarlane 2006). As part of this campaign, from mid 2002 there were an increasing number of ‘open mouth operations’ conducted by senior officials from the Reserve Bank. These public statements were widely reported in the media, and intensified during the period of most rapid growth in house prices. In addition, monetary policy was tightened over this period; in mid 2002 there were two 25 basis point increases, and then another two increases of the same amount in late 2003. While the increases reflected broader macroeconomic developments, they were accompanied by statements that expressed significant concern about the pace of credit growth and housing price inflation, which could fuel imbalances if sustained.

During this episode, the Australian Prudential Regulation Authority (APRA) publicly raised its concerns with banking institutions regarding housing lending standards and undertook a detailed stress test of their housing loan portfolios. The Australian Taxation Office (ATO) also took a stricter approach to enforcement of housing-related tax laws. In addition, authorities took action against what appeared to be fraudulent activity in the rapidly expanding property investment industry, exposing and prosecuting agents of a prominent ‘get-rich-quick’ scheme.

The remainder of the paper is structured as follows. Section 2 reviews the post-financial crisis debate on asset prices and monetary policy, and the literature on the policy responses to asset price upswings. Section 3 provides a brief history of Australia’s experience with cycles in credit and asset prices and discusses events in the Australian housing market in the early 2000s. Section 4 describes the range of policy measures put in place in Australia between 2002 and 2004 in response to rapid house price and credit growth, and examines the media response to the Reserve Bank’s public awareness campaign. Section 5 concludes.

## 2. Asset Prices, Monetary and Other Policies

### 2.1 The Recent Debate

The weight of opinion prior to the global financial crisis was that central banks should respond aggressively to the contractionary effects of sharp asset price falls but not respond directly to asset prices during upswings (Issing 2009).<sup>4</sup> A prominent advocate of this view was Alan Greenspan (former Chairman of the US Federal Reserve System), who argued that identifying a bubble with a degree of certainty was not possible and that any pre-emptive policy response would likely be destabilising. Rather, central banks should pick up the pieces afterwards (Greenspan 2002, 2004, 2010).<sup>5</sup> However, the global financial crisis demonstrated that the cost of an asset price and credit market collapse may be large enough to warrant paying some short-term cost to avoid or contain it. As such, there is now less focus on *whether* policy should respond and much more attention being paid to *which* policies should respond and by *how much* (Bean 2009, Trichet 2009).<sup>6</sup>

There are two broad views on how this should be done. On the one hand, there are those who see a greater role for monetary policy to stem excessive financial cycle upswings. On the other hand, there are those of the view that monetary policy should play a minimal role, but that the policy framework more generally is inadequate and in need of reform. In particular, there has been renewed interest in additional policy instruments – macroprudential tools – often motivated by the argument that multiple objectives (price and financial stability) require multiple instruments (Tinbergen 1952).<sup>7</sup> Both streams typically accept the arguments that: better enforcement of existing regulations is required; some regulatory reform may

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4 For a summary of the state of the literature prior to the global financial crisis see Hunter, Kaufman and Pomerleano (2003), Richards and Robinson (2003) and Cecchetti (2006).

5 See Borio, Furfine and Lowe (2001) and Bordo and Jeanne (2002) for a discussion of the moral hazard problems associated with this asymmetric approach to policy.

6 Despite the costs of the recent crisis, some still argue (along established lines) that monetary policy should not respond to asset prices (Kohn 2008, Posen 2009 and Greenspan 2010).

7 Fischer (2010) notes that this principle only applies when the objective is strict in the sense that it must be satisfied over a relatively short horizon.

be beneficial<sup>8</sup>; and that reforms should not unduly impinge upon efficiency, nor simply push credit provision outside of the regulatory net.

For those who see a greater role for monetary policy, a number of different approaches have been suggested. One possibility – and the focus of earlier work – is that asset prices could be: added to the central bank’s target by including them in the consumer price index; or incorporated in Taylor-type rules and explicitly referred to in the central bank’s mandate (Bryan, Cecchetti and O’Sullivan 2003 and Cecchetti, Genberg and Wadhvani 2003). There are arguments against this, not least that it is difficult to know exactly which asset prices should be included, as well as the fact that mechanical approaches have difficulty distinguishing what might be relatively sustainable increases in asset prices (Goodhart and Hofmann 2002). Others emphasise that large rises in asset prices are more likely to be problematic when accompanied by rapid growth in credit and declining lending standards.<sup>9</sup> Proponents of this view argue that a central bank could use its judgement about low frequency movements in a range of variables (not unlike the case of more standard monetary policy decisions) to motivate ‘leaning against’ emerging financial imbalances. In this regard, concerns should mostly be about growth rates (rather than levels) of key variables, such as asset prices or credit, for a number of reasons. First, it is hard to know what constitutes a sustainable or fundamental level of such variables. Second, while high levels of indebtedness, for example, may imply greater vulnerability to adverse shocks, rapid growth may also suggest that individual, as well as system-wide, risks have not been fully appreciated, and that a larger share of exposures have yet to be tested by a period of economic weakness. Third, monetary policy cannot hope to be concerned with the level of a particular variable, such as property prices, but by altering the price of credit it can influence the willingness to service existing debts and to take on new ones.

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8 This may include measures that better account for the contribution of individual financial institutions to systemic risks (Bank of England 2009, Squam Lake Working Group on Financial Regulation 2009 and Caruana 2010).

9 A number of empirical papers suggest that there is a role for variables such as money, credit and/or asset prices (particularly property prices) in providing an early indication of emerging financial imbalances that will threaten financial stability. See, for example, Borio and Lowe (2002), Borio and White (2004), Detken and Smets (2004), ECB (2005) and Borio and Drehmann (2009). Inclusion of a monetary aggregate target as one of the two pillars of monetary policy by the European Central Bank constitutes a related approach.



Counterarguments to a pre-emptive monetary policy approach are numerous (see Bernanke 2002, Greenspan 2002 and Gruen, Plumb and Stone 2005, for example). There are those who argue that asset price changes may be fundamentally based and the associated higher leverage sustainable, so policy should not resist them. And even if it is possible to identify a bubble with some confidence, others argue that countering it with monetary policy would require such an aggressive response that the cost to the ‘non-bubble’ sectors of the economy would be too high. Some suggest that trying to end an asset price boom late in the piece might in fact make things worse. Finally, the use of monetary policy for this purpose may be difficult to explain given central banks’ current mandates. Hence, if CPI inflation is contained, new and more targeted ‘macroprudential’ policies may be preferred.

More recent discussion has focused on these macroprudential policies, which could serve as either substitutes for, or complements to, monetary policy.<sup>10</sup> These policies involve targeting the incentives and ability of lenders to extend credit. A number of instruments have been widely discussed, including dynamic provisioning, which involves setting aside provisions for expected – rather than actual – losses, direct controls on loan-to-valuation ratios and, more recently, directly linking regulatory capital to credit and asset price developments.<sup>11</sup> One advantage of these measures is that they target the problem of rapidly increasing financial system leverage. A key disadvantage is that they may drive the more risky behaviour outside of the regulatory net. The US subprime crisis provided an example of this, with a large build up of risk in the ‘shadow banking system’ prior to the crisis eventually putting severe strain on the banking system proper. And while it may be possible to bring the existing ‘shadow banking system’ under the regulatory umbrella, it is unlikely that new regulation could circumvent regulatory arbitrage over the longer term. Indeed, financial innovation is often focused on ways to get around the regulatory net. Furthermore, in a globalised financial system, regulatory arbitrage may involve financial participants moving across borders, complicating the domestic policy options, and necessitating international cooperation.

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<sup>10</sup> Brunnermeier *et al* (2009), Fatás *et al* (2009), FSF (2009) and Haldane (2009).

<sup>11</sup> FSF (2009) discusses these instruments. See also, Borio *et al* (2001), Borio and Lowe (2004) and Griffith-Jones, Ocampo and Ortiz (2009).

As with monetary policy, some suggest that macroprudential instruments could be subject to a rule (say for LVRs or capital requirements) based on the behaviour of particular macro variables, such as asset prices or credit (Goodhart and Persaud 2008 and Posen 2009, for example).<sup>12</sup> Others highlight the importance of discretion on the part of policy-makers given the high degree of uncertainty surrounding the most effective approach to combating any particular imbalance (Tucker 2009).<sup>13</sup> Many of the same issues about rules versus discretion in monetary policy are equally applicable to the discussion concerning macroprudential instruments.

In summary, while regulatory overhaul has been the main focus of recent policy discussions, debate about the appropriate role of monetary policy has also intensified. The apparent pre-crisis consensus of benign neglect has softened, with increased interest in approaches which involve monetary policy leaning against emerging imbalances to some extent. However, exactly how such imbalances are to be identified remains problematic and it is likely that a significant amount of judgement is required. This is not surprising given that, despite many important similarities, every financial crisis is different from the last in crucial and unexpected ways.

## **2.2 International Policy Responses – Some Examples**

A key argument against the leaning-against-the-wind approach is that policy-makers are unlikely to be able to reverse or even slow the course of asset prices during an upswing, at least without causing substantial damage to other parts of the economy. This argument is difficult to assess because there are only a few

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12 See Christiano, Motto and Rostagno (2007), Borio and Drehmann (2009), Fatás *et al* (2009), Gerdesmeier, Reimers and Roffia (2009) and Kannan, Rabanal and Scott (2009a) for discussion of the problems associated with the use of a composite indicator in this regard.

13 This is supported by recent empirical work (such as Kannan, Rabanal and Scott 2009b, Gruss and Sgherri 2009 and N'Diaye 2009), which finds a role for (simple) macroprudential instruments in augmenting monetary policy but stresses the need for discretion in the implementation and application of such instruments.

examples of countries that have explicitly used monetary or prudential policies to slow asset price growth. In what follows, we review three commonly cited cases.<sup>14</sup>

### 2.2.1 *Hong Kong*

Restrictions on land supply between 1984 and 1997, and the peg to the US dollar via a currency board, meant that Hong Kong was particularly vulnerable to boom-bust cycles in the housing market. Around 1990, as China became more open to investment and trade from Hong Kong, property prices surged. Between 1989 and 1992, residential property prices rose by around 30 per cent per annum on average in Hong Kong (Figure 1). The high concentration of residential loans on the books of Hong Kong's banks (40 per cent of total loans) meant that a rapid reversal of such strong price growth was a sizeable risk for the banking system.

In May 1991, the Hong Kong Commissioner of Banking urged financial institutions to tighten lending standards and lower the proportion of net worth that could be lent. Some institutions adopted self-imposed LVR ceilings, but by November 1991 there was little indication that credit growth was slowing and so institutions were asked to take further action. A number of the major banks lowered their LVR ceilings to 70 per cent (from around 80 to 90 per cent), which saw housing credit growth slow substantially from the December quarter 1991.<sup>15</sup> The effectiveness of these restrictions in helping to maintain financial stability was tested in 1994 when interest rates increased in line with the US fed funds rate, ending Hong Kong's asset price boom. Although housing prices fell 25 per cent from their peak over the next 18 months, mortgage losses remained below 0.5 per cent of assets and bank profits rose in 1995 (McCauley, Ruud and Iacono 1999).<sup>16</sup>

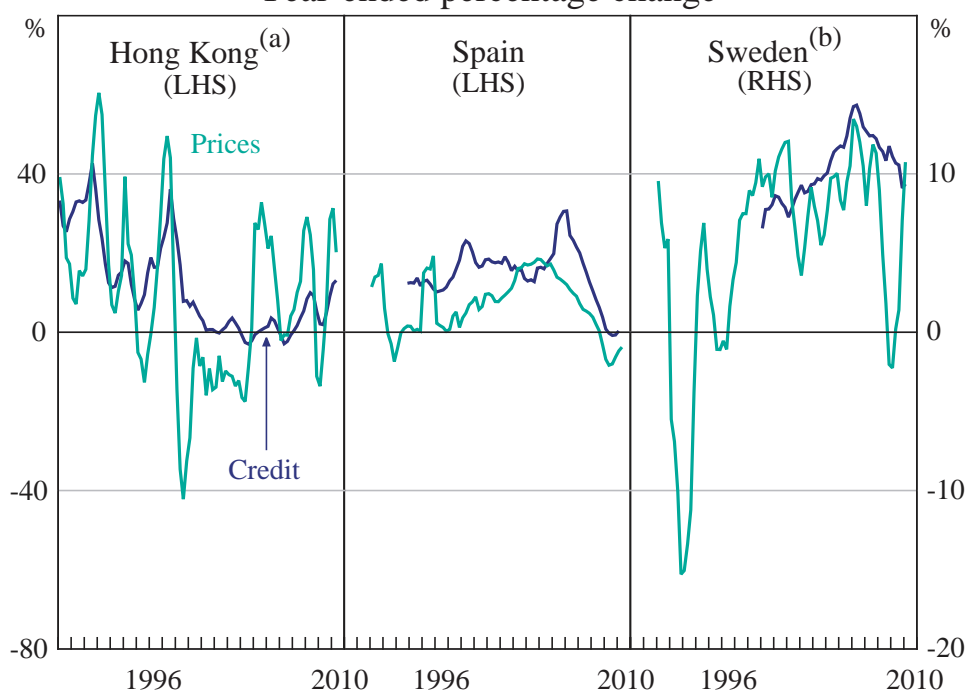
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14 Another case is Japan's use of tax and land supply policies, as well as caps on lending to real estate industries in the late 1980s in response to a real estate boom between 1987 and 1989. However, the subsequent large decline in land prices and associated problems provide some evidence that these policies were implemented too late (see Okina, Shirakawa and Shiratsuka 2001 for a discussion of this point and Ito and Iwaisako 1995 for details on the episode).

15 Other initiatives about this time included a 60 per cent LVR ceiling for luxury properties and a recommended ceiling on the growth rate of mortgage portfolios of 15 per cent per annum.

16 See Mo and Leechor (1998) for detailed coverage of this episode.

**Figure 1: Housing Prices and Credit**  
Year-ended percentage change



Notes: (a) Includes all property

(b) Household credit

Sources: CEIC; Statistics Sweden; Thomson Reuters

Regulatory controls in Hong Kong have been applied in a flexible way, first by the Commissioner of Banking and then by the Hong Kong Monetary Authority (HKMA). Also, regulations have evolved with the financial system. For example, maximum LVRs were increased to incorporate the use of lenders' mortgage insurance (LMI) (Yam 2009). The banking system has been stable despite significant house price volatility. Even during the Asian financial crisis of 1997–1998, banks remained resilient (Gerlach and Peng 2005). More recently, rising asset prices due to low interest rates once again increased concern about a potential boom in credit and asset prices in late 2009. In response, the HKMA decreased the maximum LVR on luxury properties (HK\$20 million and above) to 60 per cent.

Hong Kong is commonly cited as an example of the successful use of macroprudential policies in the face of financial imbalances, although the nature of its housing market and financial system means that its experience is somewhat unique.

### 2.2.2 Spain

Between 1995 and 2000, credit extended to households in Spain grew at an average annual rate of 18 per cent. This strong growth followed, in part, from the reduction in interest rates (due to entry into the euro area) as well as increased competition, which led to an erosion of lending standards; at the same time, specific provisions had declined along with the fall in non-performing loans (Griffith-Jones *et al* 2009). In response, the Bank of Spain implemented a system of dynamic loan-loss provisions in 2000,<sup>17</sup> which forced financial institutions to recognise the risk of loan loss when loans entered the balance sheet, rather than once loans became impaired.<sup>18</sup> The approach was intended to help reduce the volatility of credit growth and profits over the business cycle by increasing the cost to banks of making increasingly risky loans as asset prices rose, and providing them with buffers to protect their balance sheets once prices fell and non-performing loans increased.

The scheme was significantly scaled back in 2005 as a result of a conflict with the International Accounting Standards Board conventions (adopted by the EU); although, provisions still account for about 1.9 per cent of consolidated assets of Spanish depository institutions, compared with total equity of about 8.3 per cent (Bank of Spain 2010). Griffith-Jones *et al* (2009) suggest that there is little evidence that the practice of dynamic provisioning has reduced the amplitude of the credit or house price cycle in Spain, with average annual growth in both measures well above the recent historical average between 2000 and 2005 when the dynamic provisioning scheme was in effect. However, Saurina (2009) indicates that much of the pool of provisions amassed since the scheme's inception was drawn on over the course of 2009, supporting financial institutions during the global financial crisis. Overall though, it is perhaps too early to tell the extent to which the use of this policy instrument in Spain was successful in maintaining financial stability.

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<sup>17</sup> See Caruana (2005), Griffith-Jones *et al* (2009) and Saurina (2009).

<sup>18</sup> For a detailed discussion of dynamic provisioning, see Fernández de Lis, Pagés and Saurina (2000) and Caruana (2005).

### 2.2.3 Sweden

Perhaps the policy response most similar to the Australian experience was that of the Riksbank between 2005 and 2007.<sup>19</sup> During this period, housing prices and housing credit increased by 11 and 13 per cent per annum on average, respectively. At the same time, the Riksbank raised its policy rate by 200 basis points and publicised its concerns about the sustainability of the expansion and the implications of a sharp house price correction for the financial system and broader economy. In 2005, six of the seven media statements released following policy decisions flagged concerns about developments in asset prices and household credit (Hoerova *et al* 2009), and in 2006 the policy rate was increased with concerns about rapidly rising house prices and household indebtedness referred to in the policy statement.<sup>20</sup> The Riksbank was criticised for its approach. In a report commissioned by the Swedish Parliament, Giavazzi and Mishkin (2006) suggested that it was a mistake for policy to consider developments beyond those relevant to CPI inflation. More recently, however, Hoerova *et al* (2009) contend that the policy tightening, when combined with public announcements about the dangers of the housing market boom, helped to moderate the financial upswing.

## 3. Asset Prices and Credit Cycles in Australia

### 3.1 Key Features of Australia's Earlier Financial Cycles

Australia has a long history of cycles in both asset prices and credit. Four episodes stand out as having had some degree of financial system instability and an economic slowdown. At the core of these episodes was a boom and bust in the property market centred on the early 1890s, early 1930s, mid 1970s and late 1980s/early 1990s.<sup>21</sup> Despite their similarities, there were substantial differences

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<sup>19</sup> See Nyberg (2005), Giavazzi and Mishkin (2006) and Hoerova, Monnet and Temzelides (2009). The banking crisis in Sweden in 1990, which followed a boom in credit and property prices in the late 1980s, required the Government to take a large equity share in the banks. The fact that this severe episode was in the living memory of bankers and policy-makers may have contributed to the approach taken to the housing boom of the mid 2000s.

<sup>20</sup> See, for example, <http://www.riksbank.com/templates/Page.aspx?id=20017>.

<sup>21</sup> For a detailed comparison of these episodes see Kent and D'Arcy (2000) and Kent (forthcoming). Simon (2003) provides a broad discussion of booms and busts in Australian asset markets.



across these episodes in terms of the extent of damage done to the financial system during the phase of declining asset prices. These differences can in the main be traced back to the strength of competitive pressures, the prudence of financial institutions and the decline in lending standards during the expansionary phases.

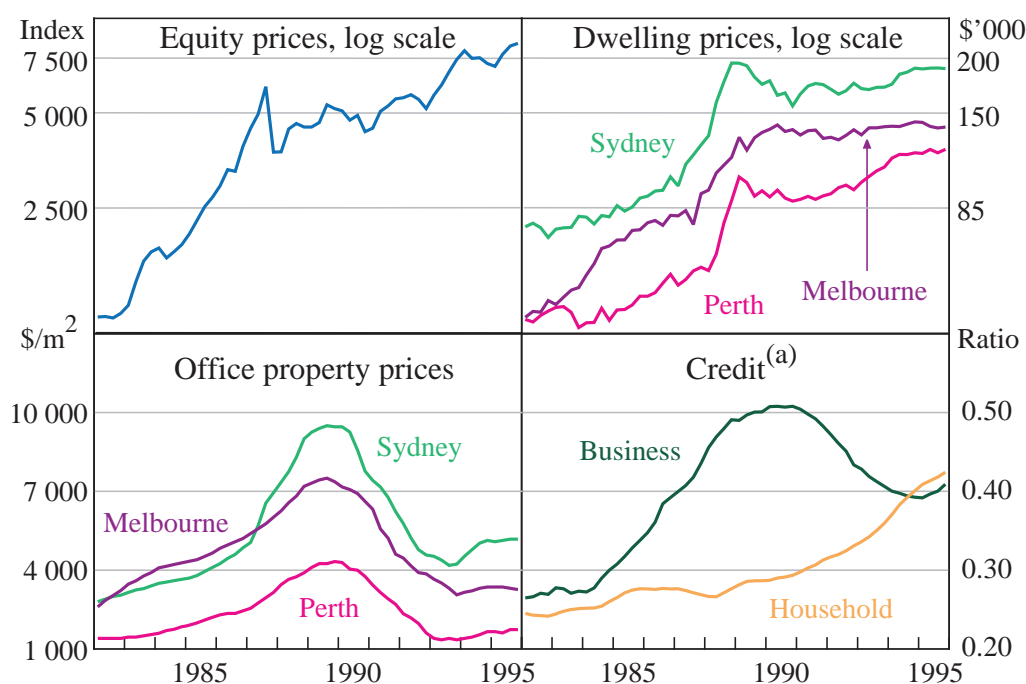
The most extreme cycle, and the most damaging, lay behind the 1890s depression. The expansionary phase was underpinned by a sharp rise in competitive pressures among financial institutions, which encouraged an easing in lending standards and rapid growth of credit, much of which was channelled into the booming property market. The eventual downturn in the property market led to a severe financial crisis and a depression unequalled in Australia's experience. In stark contrast, Australia's financial system was relatively stable during the 1930s depression, notwithstanding a pronounced cycle in property prices. The cycle in credit was substantial but somewhat muted compared with the 1890s, helped in part by less intensive competitive pressures and more prudent behaviour by the banks. In turn, this reflected the change in market structure since the 1890s crisis and the memory of that disastrous episode.

The credit and property price cycle of the mid 1970s was spurred on by rising competition from an emerging fringe of non-bank financial institutions, while banks remained tightly constrained by regulations. There was a pronounced cycle in commercial property, ultimately leading to the failure of almost half of the largest 20 finance companies. However, high levels of debt were less problematic because much of the correction in real property prices occurred via relatively rapid generalised inflation.

The cycle in credit and property prices of the late 1980s/early 1990s was driven by improving economic conditions and easier lending standards, which followed from financial deregulation in the 1980s. Businesses were the main recipients of the more readily available credit. A lot of reliance was placed on property as collateral. Not surprisingly then, the large rise in corporate gearing was associated with a boom in the commercial property market. Sydney office prices more than doubled between 1986 and 1989 but fell sharply thereafter to levels seen around seven years earlier (Figure 2). The October 1987 stock market crash had little impact on the commercial property market (or the economy more generally). It was not until interest rates were increased substantially that commercial property prices began to

decline, with adverse effects on financial institutions and the economy more broadly. Eventually, two of Australia's largest banks experienced sizeable losses and had to issue more equity. The early 1990s recession was long lasting, in large part because of the substantial financial headwinds (Macfarlane 2006). Importantly, this event was in the living memory of bankers and policy-makers during the 2000s boom in housing prices and household credit.

**Figure 2: Asset Prices and Credit in the 1980s and Early 1990s**



Note: (a) As a share of GDP

Sources: ABS; APRA; Jones Lang LaSalle; RBA; REIA

### 3.2 Housing Market Developments in the Early 2000s

In contrast to these earlier episodes, the large run-up in housing prices and rapid growth of credit in the early 2000s was followed by a levelling out in housing prices for a few years, with little if any adverse impact on the financial system overall. Between 1997 and 2003, dwelling prices in Australia doubled (growing by an average of 13 per cent per annum). Growth was particularly rapid towards

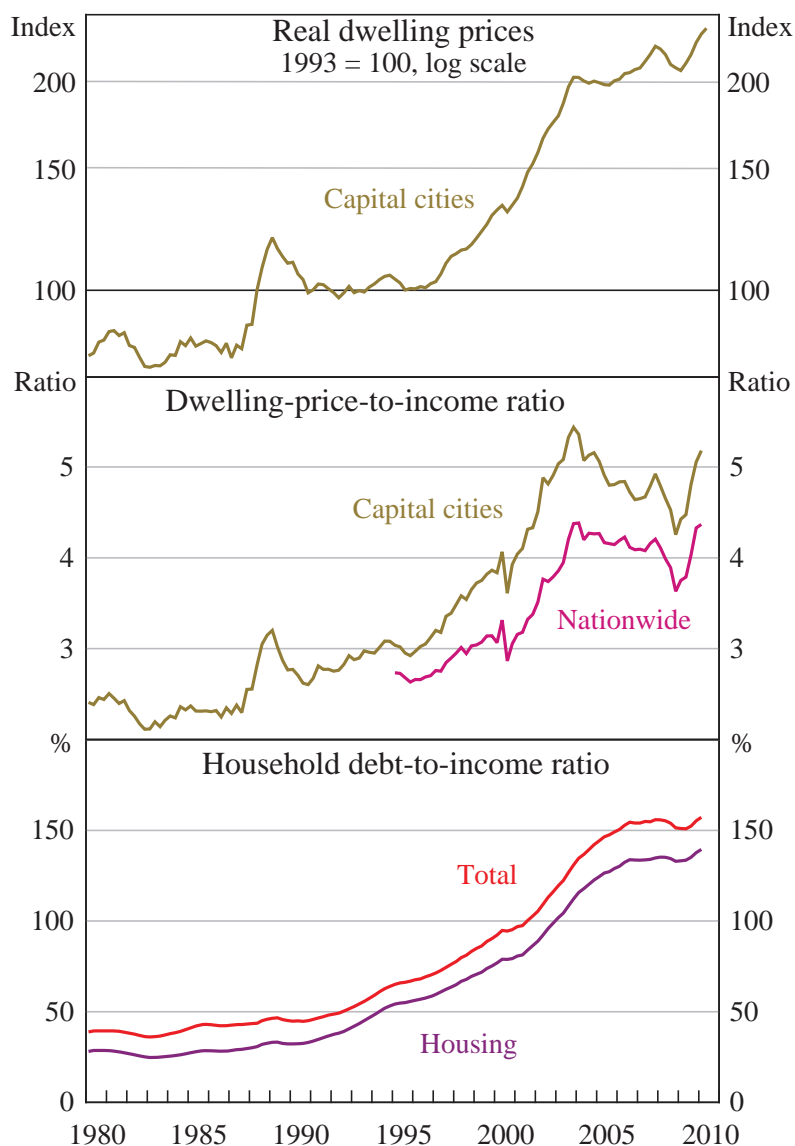


the end of this period, with median dwelling prices rising by an average of 18 per cent per annum in 2002 and 2003.<sup>22</sup> Dwelling price growth significantly outpaced growth in household disposable income, with the nationwide dwelling-price-to-income ratio rising from around 2½ in the mid 1990s to a little over 3 by 2001 and then to 4½ at its peak in early 2004 (Figure 3).<sup>23</sup> In late 2003, nationwide dwelling prices levelled out. Over the subsequent 18 months, capital city dwelling prices were broadly flat, though they fell in some key areas, particularly in western Sydney. Thereafter, nationwide dwelling prices grew at about the same pace as disposable income, with the price-to-income ratio trending down slightly before dipping during the financial crisis and rebounding more recently. The household debt-to-income ratio has also been broadly stable since 2006.

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<sup>22</sup> The rise in dwelling prices between 1997 and 2003 was broadly based, albeit with different timing and intensity across regions – stronger earlier in the larger cities of Sydney and Melbourne (which together account for around 40 per cent of the national dwelling stock), and more rapid in the smaller capital cities in 2002 and 2003.

<sup>23</sup> The *capital cities* dwelling-price-to-income ratio presented here is biased upwards as the income measure includes regional areas, which typically have lower incomes than the capital cities. The *nationwide* measure is lower, though not available for the earlier history. In Australia, around 60 per cent of the value of the housing stock is located in the capital cities.

**Figure 3: Housing Prices and Debt**

Note: Income is disposable income after tax and before interest payments. Household sector excludes unincorporated enterprises.

Sources: ABS; APM; RBA; REIA

There were many factors which contributed to the prolonged housing price appreciation. Most were associated with structural changes that supported a rise in household indebtedness and greater demand for housing.<sup>24</sup> These included:

- The effects of the move to a low and stable inflation environment through the early 1990s. Lenders in Australia had frequently determined borrowing capacity

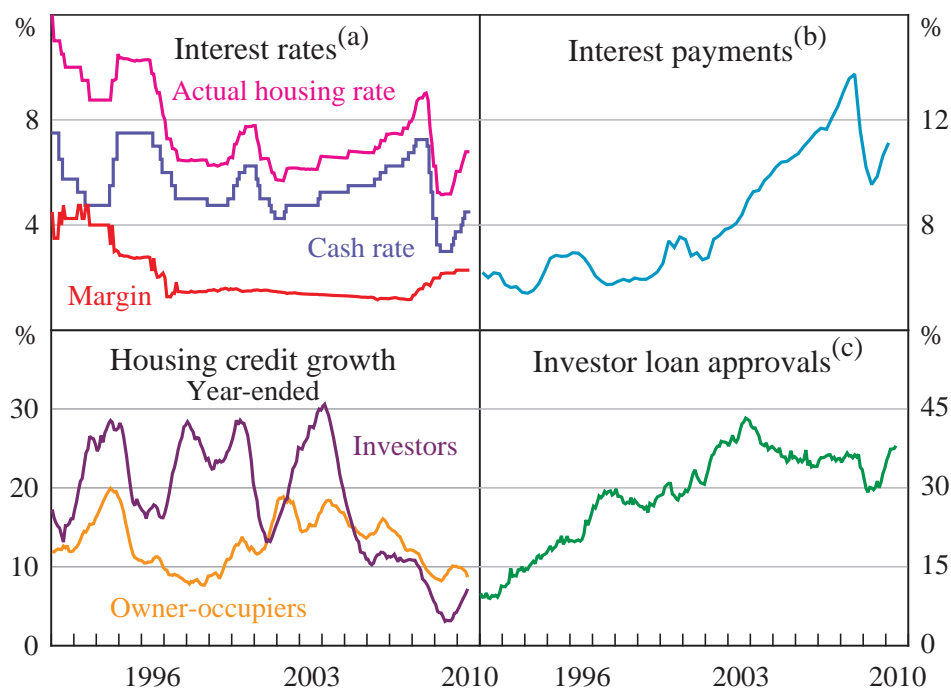
<sup>24</sup> Kent, Ossolinski and Willard (2007) discuss these trends across a range of economies.

according to a rule of thumb whereby initial repayments were no more than some fixed share of borrowers' income, typically around 30 per cent of gross income (Stevens 1997; RBA 2003a). By reducing nominal interest rates, lower inflation worked to ease this constraint by reducing initial repayments. Real interest rates also fell after lower inflation was secured, which helped to reduce the real costs of funds for institutions.

- Rising competitive pressures (following financial market deregulation) and innovations which reduced the costs and increased the availability of credit. Mortgage interest rate margins were compressed significantly, by about 160 basis points over the second half of the 1990s (Figure 4). Innovations in securitisation enabled traditional banking institutions to broaden their funding base and provided low cost funding for unregulated lenders employing an 'originate-to-distribute' business model. These changes supported an easing in lending standards including via the introduction of new types of loans.
- A more favourable tax treatment for investors in housing. While Australia's tax arrangements have long been favourable to investors, in September 1999 the Federal Government significantly reduced the capital gains tax rate (RBA 2003b).<sup>25</sup> Although the rental yields were relatively low thereafter (Figure 5), the net cash flow position of households investing in rental properties was enhanced by the tax treatment of investment-related expenses.

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<sup>25</sup> From September 1999, half of the capital gain from assets held for at least a year became exempt from tax; prior to this, taxes were assessed according to real capital gains (based on the CPI). The taxpayers' main residence is exempt from capital gains tax, although interest payments are not tax deductible.

**Figure 4: Housing Finance Indicators**

- Notes:
- (a) From 1995 onwards, the actual housing rate is the bank average including discounts. Prior to 1995, the actual housing rate is the average of the five major banks' standard variable rates.
  - (b) Household interest payments as a share of household disposable income. Excludes unincorporated enterprises and income is before the deduction of interest payments.
  - (c) Share of the total value of housing loan approvals.

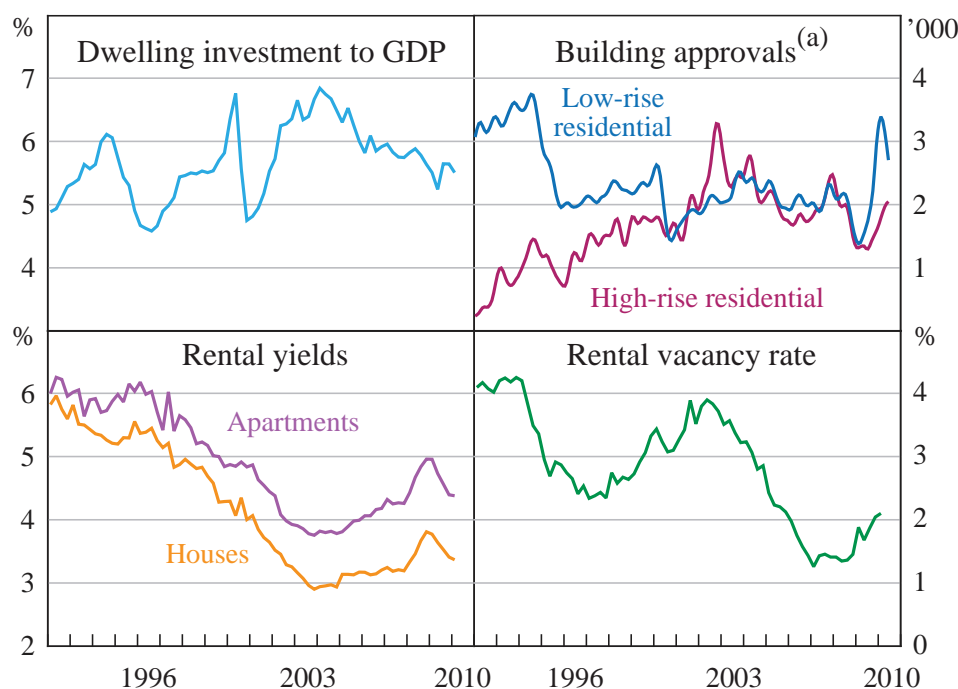
Sources: ABS; RBA

Assessing the extent to which the upswing in housing prices reflected fundamental factors is not easy. Most time-series modelling approaches seek to identify a stable long-run relationship, but this is notoriously difficult, particularly at times of significant structural change. However, given that housing prices had already increased substantially over a number of years, the pace of growth in 2002 and 2003 appeared to be unsustainable.<sup>26</sup> Indeed, much of the increased demand for housing and finance came from investors (as opposed to owner-occupiers). By 2003, nearly 45 per cent of all new housing loans were for investment purposes,

<sup>26</sup> Analysis similar to that of Borio and Lowe (2002) (and updated by Borio and Drehmann 2009) using measures of the deviation of credit-to-GDP and house prices from real-time trends, suggests that such 'gap' indicators breached the threshold values (posited by Borio and Lowe) around 2002–2003. Hence, imbalances that have historically been associated with financial crises were present in the period of interest. However, the results of this approach are quite sensitive to the choice of smoothing parameters, which would likely limit its usefulness as a way of gauging imbalances for application in a rule-based approach to policy.

compared to around 25 per cent over the four years prior to 2003, and an even lower share prior to this (Figure 4). This was despite very low rental yields, providing some evidence that investors were motivated by expectations of after-tax returns due to capital gains rather than the current investment income (Figure 5).

**Figure 5: Housing Supply Indicators**



Note: (a) Only medium density, 13-period Henderson trend

Sources: ABS; RBA; REIA

Financial innovations had encouraged investors into the housing market. Lending criteria on investor loans became easier from around 1996 as they moved into line with those that applied to owner-occupiers. Along with the removal of the interest rate penalty on investor loans (of about 1 percentage point in the mid 1990s), low-equity and interest-only loans became readily available. Also, new products – such as deposit bonds – allowed investors to purchase off-the-plan properties with no cash outlay upfront and with only small outlays to finance ongoing costs. At about the same time, a number of non-financial companies began to promote investment in residential property. It was ‘not uncommon ... for promoters ... to suggest that due to the operation of the tax system, investors [could] purchase an investment property worth \$400,000 or \$500,000 for as little as \$50 per week’ (RBA 2003b, p 39).

Broader macroeconomic conditions were also conducive to rising household indebtedness as Australia's economy fared well through the global downturn of 2001, growing at an average rate of 4 per cent from 2001–2003. Initially this resilience reflected Australia's low production of information technology, and later was partly due to strength in the housing market and the effect of this on consumption. Australia's unemployment rate rose through 2001, though only back to levels of a year earlier, and by 2003 it was back down to around 6 per cent.

Against the background of a robust economy, housing credit growth picked up significantly. From an average of 14 per cent per annum from 1998–2001, it stepped up in 2002 and then again in 2003 to 21 per cent, significantly faster than the growth of household disposable income. Moreover, investor activity accounted for much of this growth. Household surveys (which became available only with some delay) suggest that the proportion of households owning investor or second homes rose from 16 per cent in 2002 to 20 per cent by 2006. The increase in household debt saw the household interest burden rise to new highs (although it has subsequently surpassed this level). It also increased the exposure of the financial system to the housing market, with housing credit rising from around 40 per cent of total credit in 1997 to 55 per cent in early 2005.

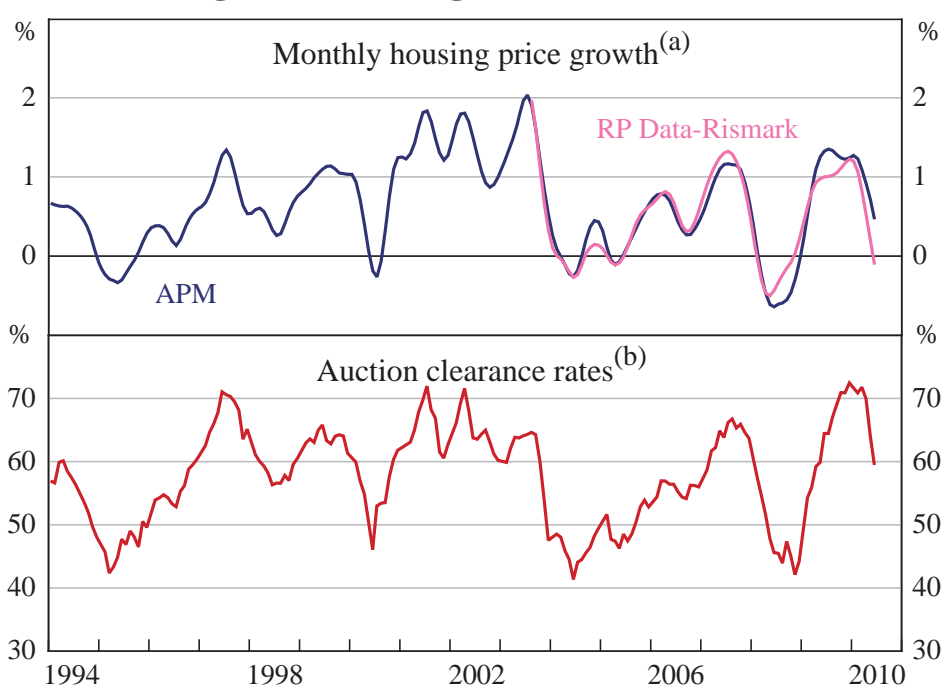
Over this period, there was little evidence that overall supply was running either substantially behind underlying demand (which would have supported dwelling prices) or ahead of underlying demand (which would have pushed down prices).<sup>27</sup> While there was a sharp pick-up in construction of apartment buildings, and a significant push by property developers to sell these apartments to investors, there were few signs of broader excess housing supply, with rental vacancy rates returning to around average levels after peaking in 2002 (Figure 5). Any overbuilding was fairly localised, with approvals for high-rise residential buildings rising sharply over 2002; by 2003 this had contributed to some fears of overbuilding in this segment of the market. Dwelling investment rose to above average in 2003, at 6½ per cent of GDP, though the introduction of a goods and services tax in 2000 – which added volatility into the housing construction measures – makes it difficult to assess how much of the run-up in dwelling investment in 2002–2003 was payback for earlier weakness.

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<sup>27</sup> Estimates of underlying demand can be calculated using data on population growth, average household size and the number of vacant dwellings (including holiday houses, etc).

Housing market activity started to ease in October 2003 and growth of capital city dwelling prices overall stopped in the last two months of 2003 (Figures 6 and 7). They then remained broadly steady for about 18 months, though prices fell in Sydney and Melbourne. While reliable monthly housing price indicators were not available at the time, subsequent improvements allow us to confirm the timing of the easing in housing prices. Even so, timely data on auction markets were available (around 15 per cent of all residential sales occur at auction in Australia, though this varies substantially across cities), and auction clearance rates (the number of auctions resulting in a sale relative to auctions that take place) have a strong correlation with monthly housing price growth (of 0.9 on a nationwide basis). These rates declined in October 2003 and fell substantially to reach levels of previous troughs by June 2004.<sup>28</sup>

**Figure 6: Housing Market Indicators**

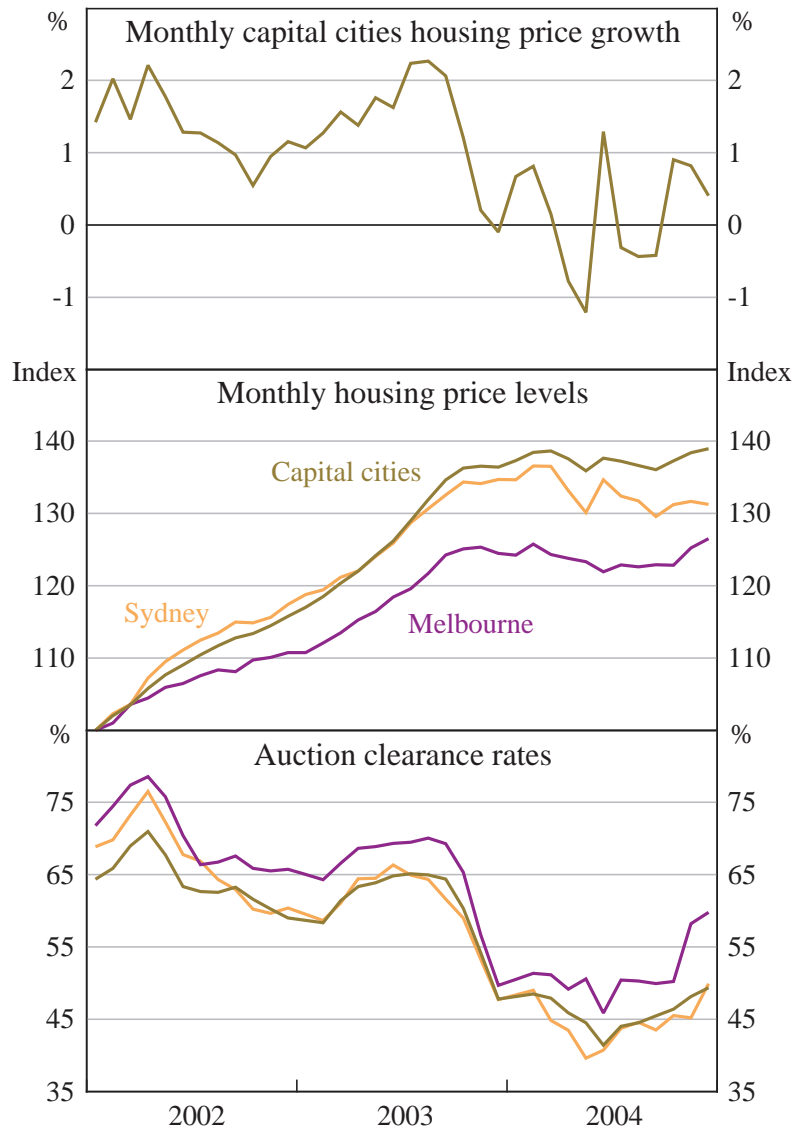


Notes: (a) Capital cities; 13-period Henderson trend

(b) Dwelling stock-weighted capital city measure

Sources: APM; RBA; REIV; RP Data-Rismark

<sup>28</sup> Measures of consumer sentiment regarding whether it is a 'good time to buy a dwelling' also fell sharply in December quarter 2003, after having taken a step down in 2002 from earlier very high levels, due to rising interest rates and falling affordability.

**Figure 7: Housing Market Indicators**

Sources: APM; RBA; REIV

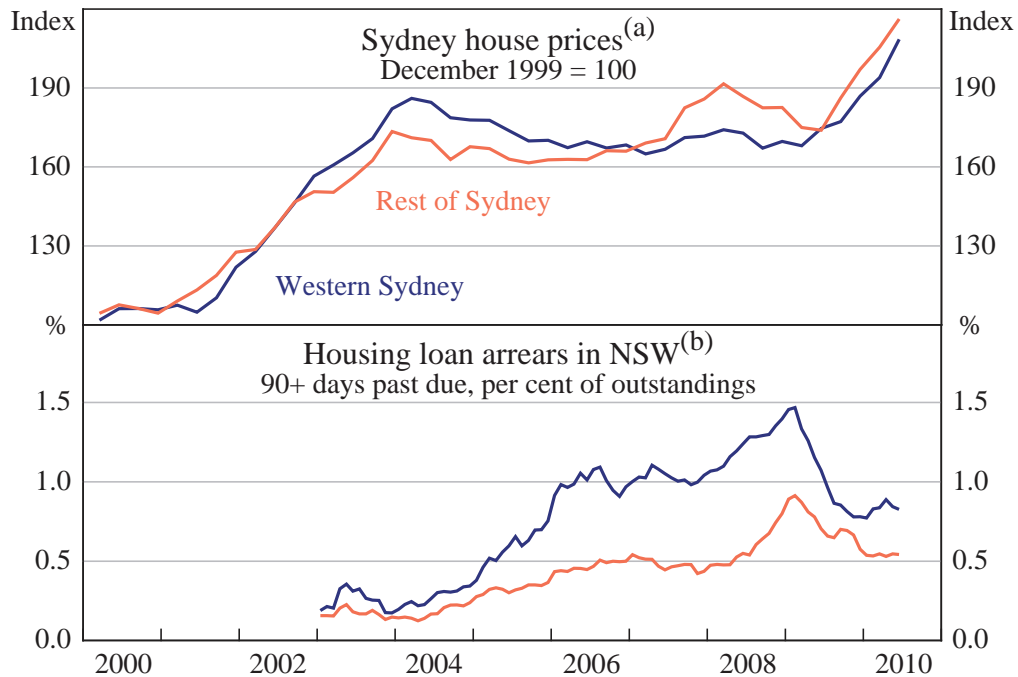
### 3.3 After 2003

Housing prices fell for a period through 2004 in both Sydney and Melbourne. Large declines were apparent in the suburbs in western Sydney, where house prices fell by between 5 and 20 per cent (Figure 8). This part of Sydney accounts for about 6 per cent of the national housing stock and tends to have lower-priced housing than much of Sydney; prices also peaked later than in the rest of Sydney. A significant number of late entrants into the housing market in western Sydney had loans with high LVRs and low documentation. Also, mortgage originators (as opposed to banking institutions) comprised a greater share of new lending in this



region than in others and, partly through looser lending standards, were able to increase their market share. Accordingly, western Sydney was the region of Australia that exhibited the most substantial rise in housing loan arrears and mortgage defaults, with an arrears rate considerably higher than the average arrears rate for loans in other parts of Sydney.

**Figure 8: Sydney House Prices and Loan Arrears**



Notes: (a) Weighted average of suburb medians

(b) Prime loans securitised by all lenders

Sources: ABS; Perpetual; RBA; Residex

From 2004 until 2007, housing prices nationwide grew broadly in line with household disposable incomes and housing credit growth slowed considerably, especially for investors. Rents, which had previously not grown very strongly, picked up and there was an upward trend in the rental yield, consistent with low rental vacancy rates and a relative decline in home building. The shake-out of the housing market also had implications for financial institutions' balance sheets. On-balance sheet arrears for banks rose gradually and reached a local maximum of around 0.5 per cent of housing loans in early 2007, though they subsequently rose a little further largely due to increasing interest rates. Arrears rates on securitised housing loans rose earlier, by more and to a higher level, partly reflecting the larger share of low-documentation loans in the securitised pool.

The rise in housing loan arrears was eventually reflected in more widespread concerns about lending practices and some additional tightening in lending standards, although pinpointing the timing and extent of this is hindered by data limitations.<sup>29</sup> Periodic surveys of banks and data on the characteristics of securitised mortgages provide some information in this regard, though these provide only a partial view due to significant shifts in the market share of mortgage lenders. Available evidence suggests that lending standards tightened after housing prices declined, albeit with considerable delay. Eventually, a parliamentary inquiry was held on 'Home Lending Practices and Processes' in August 2007, with submissions from a range of institutions including the Reserve Bank, APRA and the lenders' mortgage insurance (LMI) providers. Australia's largest LMI provider, Genworth Financial, noted a number of areas in which insurance companies could help to ensure prudent lending practices, including detailed underwriting guidelines for high LVR loans, procedures to verify property valuations, and scoring techniques to identify high-risk loans (Genworth Financial 2007).

#### **4. Australian Policy Developments**

This section summarises the statements by, and actions of, the relevant policy authorities, including the Reserve Bank, in the period from 2002 to 2004 in response to housing market developments. This is based on an examination of public statements. For the Bank, these include the quarterly *Statement on Monetary Policy (SMP)*, statements to parliamentary committees,<sup>30</sup> media releases related to policy announcements and speeches by senior Bank officials. A detailed summary of these statements is provided in Appendix A. It is also worth noting that over this period, the Bank devoted considerable resources to the analysis and research of trends in Australian housing prices and housing finance. This included a careful comparison with developments in a range of other relevant economies. The results of these efforts were released in a number of articles, including an extensive

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<sup>29</sup> APRA now collects data on types of loans by banking institutions and LVRs on new loans.

<sup>30</sup> See Macfarlane (2002a, 2002b, 2003b, 2003c).

submission by the Bank to the Productivity Commission Inquiry on First Home Ownership (RBA 2003b).<sup>31</sup>

While the wider debate surrounding the role of monetary policy in responding to asset prices was particularly vigorous in this period, these issues had been under consideration by the Reserve Bank for some time. In the late 1990s and early 2000s, the Bank released a number of papers dealing with issues of asset-price bubbles, credit cycles and episodes of financial instability. Some provided an examination of Australia's historical experiences of financial instability, while others undertook more abstract analysis using a more structured framework.<sup>32</sup> The broad conclusion was that rapid growth in asset prices and leverage, accompanied by declining lending standards, can pose a risk to financial and macroeconomic stability more generally. This was echoed by a number of participants at the Reserve Bank's 2003 conference on asset prices and monetary policy (Richards and Robinson 2003).

#### **4.1 Policies and Discussions**

As the previous Section describes, there were fundamental factors underpinning the rise in housing prices over the second half of the 1990s and the early 2000s in Australia. However, developments in 2002 and 2003 began to cause some unease for policy-makers, as the pace of growth in housing prices and credit were accelerating to very rapid rates and there were signs that lending standards were declining in a number of important respects. The very prominent role of investors in the housing market also suggested a strong speculative element.

The broad approach of the Reserve Bank can be summarised as follows. The Bank attempted to draw attention to the longer-term risks associated with recent trends, especially the high rates of growth of housing prices and housing credit. In

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31 This type of analysis and research continued beyond 2003. For example, in 2004 the Bank, in conjunction with private sector firms and the Australian Bureau of Statistics, made considerable effort to develop robust and timely measures of housing prices (see the July 2004 RBA *Bulletin*, Hansen 2006 and Prasad and Richards 2006), many of which are used in this paper.

32 For detailed consideration of Australia's historical experience with asset-price bubbles see Kent and D'Arcy (2000) and Kent (forthcoming). For a more theoretical approach regarding the case for monetary policy to act against asset prices *ex-ante*, see Kent and Lowe (1997a, 1997b). Gruen *et al* (2005) highlight arguments against pre-emptive action.

particular, the Bank drew attention to the fact that it was unlikely that these trends were sustainable over the medium term, and that borrowers entering the market based on expectations that prices would continue to rise at a rapid rate were taking a significant risk, particularly if highly leveraged. Similarly, the Bank drew attention to the risks associated with declining lending standards. During the period, monetary policy continued to be set on the basis of medium-term prospects for inflation and output and the Bank was not targeting housing prices or credit growth. However, developments in the housing market were an important factor in the Bank not delaying a tightening of monetary policy that was likely to be required on more general macroeconomic grounds.<sup>33</sup> The Bank's explanations of its monetary policy decisions also highlighted the risks in the housing market.

The Reserve Bank started raising concerns about housing market developments in early 2002. Between 2002 and late 2003 there was a clear progression of themes relating to housing price and credit growth in Bank statements as it endeavoured to use 'open mouth operations' to draw attention to the risks. While the approach to the housing market developments could not be described as an explicitly coordinated strategy, regulatory agencies and governing bodies also provided pointed discussion of market developments and took some regulatory actions.<sup>34</sup> In 2002/03, APRA undertook a comprehensive stress test of the resilience of housing lending portfolios of banking institutions, which led subsequently to a tightening of prudential capital requirements for non-standard loans and for lender's mortgage insurers. Federal taxation authorities sought to better enforce the tax code relating

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<sup>33</sup> Combination forecasts from a suite of macroeconomic forecasting models (using the current vintage of data and current parameter estimates) confirm this. The central tendency of the cash rate projections from the models suggested gradual increases in the cash rate from around mid 2002 and late 2003. The increase in rates in May and June 2002 left the cash rate about 30 basis points above the median combination forecast around that time. Similarly, the increases in November and December 2003 left the cash rate about 35 basis points above the median forecast around that time. For a discussion of the combination forecasts, see Gerard and Nimark (2008). Jääskelä and Nimark (2008) describe the DSGE model used in the suite; a fourth 'Minnesota VAR' model has also been included.

<sup>34</sup> The Council of Financial Regulators (CFR), which has representatives from APRA, ASIC and the Federal Treasury and is chaired by the Reserve Bank Governor, provides a formal link between these institutions. There is evidence in the CFR's *Annual Report*, published in September 2003, of growing concerns about the housing market, particularly that the 'exceptionally fast increase in borrowing for investor housing has clearly increased risk and that the accompanying rapid expansion in apartment building shows all the signs of a seriously over-extended market' (CFR 2003, p 19).

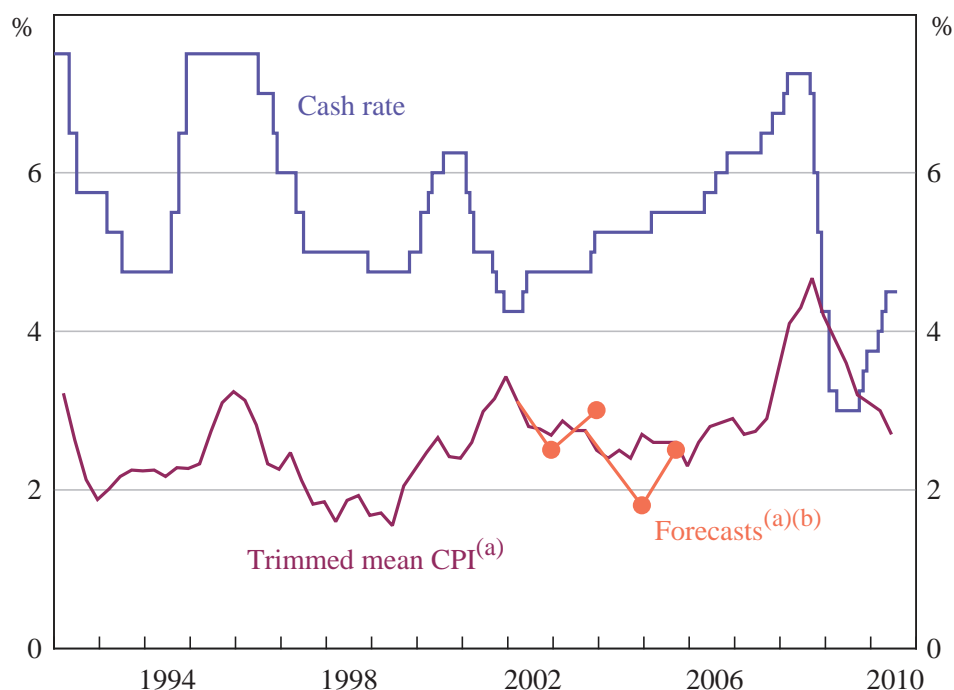
to deductions stemming from investment properties, and state governments tightened regulations regarding the conduct of auctions. The Australian Securities and Investments Commission (ASIC) and the Australian Competition and Consumer Commission (ACCC) also played a role by investigating alleged illegal activities by a number of property marketers.

#### *4.1.1 Developments in 2002*

Prior to 2002, housing price developments were often discussed by the Reserve Bank in the context of positive wealth effects, as the domestic economy attempted to shrug off the headwinds associated with slow global growth. As the recovery gained momentum domestically, the focus turned to the possibility of overbuilding in some segments of the medium-density housing market, and to the question of the risks associated with rapid growth in credit and house prices.

The Bank tightened monetary policy in May 2002 and again in June (by 25 basis points on each occasion) (Figure 9). In explaining the Bank's general strategy, the May 2002 *SMP* highlighted that while inflation was expected to ease to around the middle of the target through 2002, inflationary pressures were expected to pick up over the course of 2003 as the economy strengthened. The Bank, however, also suggested that low rates risked fuelling imbalances associated with a strong rise in house prices and household borrowing over a number of years. For example, in the statement accompanying the May 2002 monetary policy decision it was noted that:

To persist with a strongly expansionary policy setting ... could fuel other imbalances such as the current overheating in the housing market, potentially jeopardising the economy's continued expansion. (RBA Media Release – 8 May 2002)

**Figure 9: Policy Rate and Inflation**

Notes: (a) Excluding interest charges prior to the September quarter 1998 and adjusted for the tax changes of 1999–2000

(b) For underlying inflation, consistent with the text of the May 2002 and November 2003 *SMPs*

Source: ABS; RBA

While the structural shift in the availability of housing finance and macroeconomic conditions more generally justified strong growth in house prices in the late 1990s and early 2000s, low interest rates and tax arrangements were encouraging investors and subsidies were boosting first-home buyer demand. Poor returns on alternative investments in the wake of the dot-com bust were also emphasised (Macfarlane 2002b, Stevens 2002). Further, the Bank noted that:<sup>35</sup>

... whenever [a structural shift] of this type occurs, there is the risk that prices may overshoot, as some purchasers extrapolate past movements as a guide to future capital gains. This may be occurring at present, since the low rental yield on property, and high rental vacancy rates, seem inconsistent with rapidly rising house prices. (*SMP* – May 2002, pp 31–32)

<sup>35</sup> See also Macfarlane (2002b, 2002c) and the July 2002 RBA *Bulletin*.

This line of argument continued throughout 2002 with the clear goal of highlighting the risks:

... the potential for further capital gains in the housing market [is] likely to be countered by increased supply of rental properties, rising vacancy rates and falling rents in some areas. (*SMP* – August 2002, p 2)

However, over the second half of 2002, deterioration in the prospects for global growth and a marked increase in the volatility of global share markets led to an increased focus on near-term downside risks to the domestic economy. Growth in output and inflation failed to reach the rates forecast when the 2002 tightenings were conducted, and in spite of the risk posed by rapid growth in credit and house prices, further moves towards a more neutral monetary policy setting were judged not to be appropriate (*SMP* August and November 2002).

An impact of the policy tightenings and the accompanying statements on the housing market was not obvious in the near-term. For example, loan approvals to investors for housing continued to grow rapidly, increasing by more than 40 per cent in 2002. The Governor, in testimony to a parliamentary committee, emphasised, however, that:

... the market works, but with long lags during which people are encouraged to take decisions based on little more than optimistic extrapolation of what happened in the past. Developers will continue to put up new apartment blocks while there are investors willing to precommit to buy. These are the investors who turn up at seminars where they are told by the developers how they can become very rich if they highly gear themselves and buy an apartment. (Macfarlane 2002b)

Discussion by the Bank of the sustainability of the high rate of price increases continued throughout 2002 (Stevens 2002, for example). The Bank also began to highlight the role of speculation, the risks associated with rapid growth in leverage, and emerging evidence of a reduction in lending standards (see below). Initially, the focus was on the prospect of financial hardship for overburdened investors in the event of a substantial correction in the housing market, but attention was also directed to the potential effects of increased loan defaults on financial stability.



#### 4.1.2 *Developments in 2003*

In early 2003, the Reserve Bank reiterated its concerns in the *SMP* about these risks:

... the run-up in housing prices and associated expansion in housing-related debt were a source of concern for most of the past year, given the potential of such a process to remain disconnected from fundamentals and develop into a significant imbalance over time. (*SMP* – February 2003, p 3)

At the same time, some comfort was taken from the tentative signs that pressures in the housing market were easing, particularly in the investor segment. As it turned out, these signs did not persist as the year progressed.

In a speech in April 2003, the Governor outlined the Bank's concerns regarding rising household indebtedness (Macfarlane 2003a). The worry was not so much that a housing market downturn would directly impinge upon financial stability, but rather that it could have adverse consequences for household consumption and economic activity more generally.<sup>36</sup> Also, the increasingly dominant role of investors in the housing market reinforced earlier concerns that some households did not adequately appreciate the risks and were simply extrapolating recent price trends.

Through 2003, the Reserve Bank repeatedly drew attention to the risks associated with ongoing rapid growth of house prices and housing credit. It also acknowledged that there might be occasions when monetary policy might need to be tightened in response to emerging financial imbalances. The contention was that such a response could be justified within its flexible inflation-targeting framework, which allowed longer-term considerations to be taken into account. If imbalances in the housing market could pose a threat to medium-term economic stability, it made sense to tolerate a higher policy rate than that which was justified by shorter-term inflation pressures. In a speech, the Deputy Governor explained this in terms of a risk-management approach to policy decisions (Stevens 2003b):<sup>37</sup>

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<sup>36</sup> Stevens (2003c) provides further discussion of this point.

<sup>37</sup> Macfarlane (2002c) and Stevens (2003a) provide similar arguments in support of intervention.



... a case *might* be made, on rare occasions, to adopt a policy of ‘least regret’ so far as asset prices are concerned, if financial and macroeconomic stability were thought to be at risk.

It is worth noting that while the Reserve Bank of Australia did not raise rates until late 2003, it stands out as having not cut rates through the year, whereas monetary policy in every other developed economy, and in most of the large developing economies, was eased at some point during 2003 in response to subdued inflationary pressures (and fears of deflation in some cases) (IMF 2003).

Meanwhile, unease surrounding lending practices was being aired by APRA. In late 2002, APRA wrote to the chief executives of authorised deposit-taking institutions (ADIs),<sup>38</sup> calling for a conservative approach to risk and urging them to avoid the temptation of relaxing lending standards in the wake of such a long and sustained economic upswing; this correspondence was made public soon after the fact (APRA 2002). While APRA acknowledged the generally healthy state of Australian financial institutions, through 2003 it raised a number of concerns about some emerging trends in the mortgage market, including the growth of broker-originated and ‘non-conforming’ lending, as well as the substantial increase in the use of lenders’ mortgage insurance.<sup>39</sup> APRA noted that: ‘... the psychology of home lending has changed from a credit rationing process to a product marketing process’ (Littrell 2003). This had contributed to an increase in average LVRs for mortgages, an over-reliance (by lenders) on collateral as a signal of a borrower’s suitability, and a decline in the attention given to the ability to repay loans. So while APRA’s stress test of institutions’ housing lending portfolios around that time revealed that the financial system was well placed to weather a downturn in the housing market, it raised some concerns, particularly for some institutions that were not compiling important information regarding the extent and nature of their exposures (Laker 2003).<sup>40</sup>

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38 ADIs (which we also describe loosely as ‘banking institutions’) include banks, building societies and credit unions.

39 See, for example, APRA (2003), Esho (2003) and Littrell (2003).

40 One illustration of these points is provided by Laker (2007), which notes that some banking institutions had – drawing on their own stress tests – perceived credit losses on their mortgage portfolios to be in the order of 10 basis points, some 10 times lower than suggested by APRA’s own stress tests of 2002/03.

The Reserve Bank also commented on the increased level of risk on the balance sheets of financial institutions. At a parliamentary committee in December 2002, the Governor highlighted deposit bonds as a key factor fuelling speculation and increasing risks for more vulnerable investors:

... there are new financial instruments such as deposit bonds that have been created that just make it so easy for people to do it [invest/speculate in property]. People can actually make these investments on almost 100 per cent gearing. (Macfarlane 2002b)

In addition, the Reserve Bank's *Annual Report* for 2003 (released in September) noted the increased risk posed by non-standard products such as home equity loans and redraw facilities, which allowed borrowers to build up more debt and run it down more slowly than had previously been the norm.

One factor that appeared to play some role in drawing attention to the risks in the housing sector was the crackdown on property investment seminars, in particular, the high-profile case of 'spruiker' (or promoter) Henry Kaye and his companies. In March 2003, ASIC commenced legal proceedings, alleging dissemination of false and misleading information by Mr Kaye and others.<sup>41</sup> When ASIC uncovered evidence that the law had been breached it appointed administrators and receivers to each of the companies involved. The effect of this on the confidence of investors was reinforced by the commitment of the ACCC in September 2003 to crackdown on deceptive conduct by property marketers, and by increased scrutiny of tax deductions stemming from rental expenses by the ATO. Also, in September 2003, regulations governing sales of residential property at auctions were tightened in New South Wales and Victoria; in particular, the legislative changes were aimed to reduce the number of dummy bids at auctions.<sup>42</sup>

Towards the end of 2003, the Reserve Bank raised the cash rate, by 25 basis points in November and again in December. The accompanying media release in November cited the strength in the demand for credit as a reason not to delay a

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41 Aside from legal breaches, there were allegations that marketers charged sizeable consultancy fees for investment advice, such as to purchase properties in which advisors had undisclosed financial interests (<http://www.theage.com.au/articles/2003/09/21/1064082867568.html>).

42 See, for example, [http://www.austlii.edu.au/au/legis/nsw/consol\\_reg/psabar2003476/](http://www.austlii.edu.au/au/legis/nsw/consol_reg/psabar2003476/).

tightening that was called for on general macroeconomic grounds. At the same time, the inflation forecasts were revised in light of further appreciation of the exchange rate and stronger-than-expected growth in domestic demand, with inflation expected to trough somewhat lower than 2 per cent in 2004 but with a more pronounced pick-up, to 2½ per cent in the second half of 2005 (*SMP* November 2003; Figure 9). It is worth noting that because of the predominance of variable rate housing loans in Australia, increases in the cash rate were quickly passed through to higher costs for existing and new borrowers.<sup>43</sup>

In the months that followed, the Reserve Bank pointed to data suggesting that the rate of increase in housing prices was slowing and the housing market had turned down:

It remains to be seen to what extent the weakening in the inner-city property markets in Sydney and Melbourne will spread more widely across the national market. However, it is clear that sentiment about the property market has softened. (*SMP* – February 2004, p 27)

Following this, there was discussion of the need for credit growth – which up to mid 2004 had yet to show any real weakening – to slow to more sustainable levels.

Finally, a number of developments appeared to have reinforced the housing market correction over 2004. In particular, the ACCC took further action against property marketers and purveyors of ‘get-rich-quick’ schemes involving property where there were concerns about fraud; and the NSW Government instituted a new tax on investment housing aimed at reducing the influence of speculation (although this was partly offset by a reduction in other taxes).<sup>44</sup>

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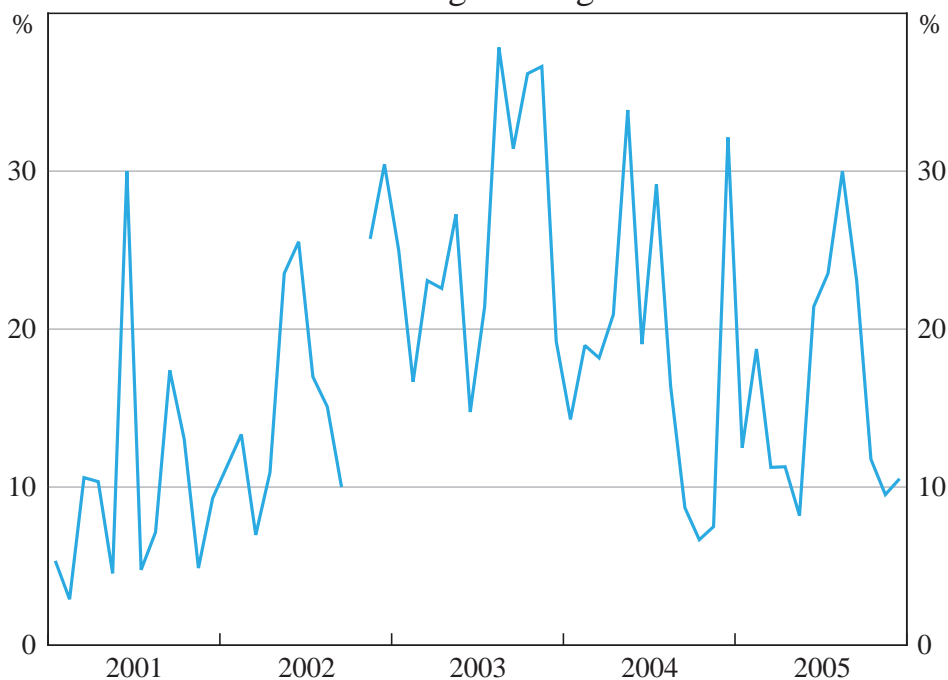
43 See Bloxham and Kent (2009) for a comparison of the US and Australian housing markets in this regard.

44 The NSW Government levied a 2¼ per cent stamp duty on properties (excluding own homes) where the sale price was more than 12 per cent higher than the purchase price; although, this vendor duty could be claimed as a deduction against capital gains tax, thereby reducing its effective rate. The duty came into effect on 1 July 2004 and was withdrawn on 2 August 2005.

## 4.2 Media Reports of RBA Statements

While it is difficult to quantify the effect of the Reserve Bank’s ‘open mouth operations’ over this episode, we can at least confirm that the Bank’s statements were widely reported at the time in the popular press. A survey of some of the major papers from around Australia shows that coverage of the Bank’s comments on housing market issues increased noticeably between 2002 and 2004. Based on a keyword search of articles mentioning the Reserve Bank of Australia and interest rates, the proportion that also mentioned housing increased from an average of 10 per cent in 2001 to 18 per cent in 2002 and 26 per cent in 2003, before trending down in the following couple of years (Figure 10). The timing of these changes aligns with the pattern of Bank statements over this period.

**Figure 10: Press Index**  
Housing coverage



Notes: Percentage of articles mentioning ‘RBA’ and ‘interest rates’ that also mention ‘housing’. The series break in October 2002 is due to limited economic coverage after the Bali terrorist bombing in that month.

Source: Dow Jones Factiva database

A similar exercise shows that the proportion of articles on the Reserve Bank and interest rates which also discussed credit increased between 2002 and 2003, although the series is much more volatile from one month to the next. This share was sustained at a high level in 2004 (at around 10 per cent on average), at the

height of Bank statements regarding the need for a return to more sustainable levels of credit growth.

Approaching the question from a slightly different perspective, it was found that the percentage of articles mentioning housing that also contained a reference to the Reserve Bank of Australia also trended up significantly over the period, peaking sharply around the November 2003 cash rate increase, before trending down through 2004 and 2005.

## **5. Conclusions**

The role of policy in responding to asset prices remains a contentious issue. However, support for the approach of responding only after damaging asset price declines are underway has diminished in light of the fall-out from the global financial crisis. An idea that appears to be gaining wider acceptance is that there is a case for policy to focus on financial imbalances more generally, rather than asset prices in particular.

If one accepts that policy should, on occasions, respond in some way to growing financial imbalances then the issue is which policies should be used to respond and how much should they 'lean against' these imbalances. In contrast to the earlier debates about whether to burst asset-price bubbles, more attention is now being focused on an intermediate path of leaning against emerging imbalances with a view to reducing their severity and hence the cost of any subsequent financial and macroeconomic disturbances. For monetary policy, this would require, at a minimum, avoiding periods of unnecessarily low interest rates that might exacerbate imbalances. Of course, such a strategy is likely to be more effective if complemented by a tightening of macroprudential and other policies.

One difficulty in this whole debate is that there is little practical evidence about how effective an intermediate leaning strategy might be. The Australian experience of 2002 to 2004 is potentially relevant. A key feature of this episode was the significant influence of investors, as well as the decline in lending standards during the expansionary phase. This raised concerns within the Reserve Bank and APRA regarding the risks associated with such trends.

The Bank highlighted the risks associated with sustained high rates of housing price and credit growth when the cash rate was raised in 2002. This was not inconsistent with the Bank's inflation-targeting framework, which allows for a degree of flexibility, including the ability to account for potential risks to longer-term prospects. From 2002 to 2003, the frequency with which the Bank highlighted the risks arising from housing market developments increased. In late 2003, the Bank raised rates again, highlighting concerns about the pace of housing price and credit growth. This came around the same time as the release of the results of APRA's stress test of housing loan portfolios, the ATO announcement of an increase in the number of audits of individuals claiming tax deductions on rental properties, and the prosecution of a high-profile property marketer by ASIC. A number of measures suggest that housing prices peaked around December 2003. Most importantly, the turnaround in the market was associated with a sharp reduction in the role of investors and clearly demonstrated that large parts of the market can and do experience falling prices.

It is difficult to draw a definitive link between these housing market developments on the one hand, and the policy actions and associated statements on the other. One problem is that it is difficult to come up with a robust structural model of housing prices. Another related problem is the time it takes for policies to gain traction in the face of growing speculative pressures. Some might be tempted to argue that the rise in the cash rate in late 2003 (of 50 basis points) was too small to turnaround the housing market and suggest, therefore, that the market turned on its own accord. However, the timing of the turnaround is consistent with the cumulative impact of the full range of modest but consistent policy actions – by the Bank as well as the regulatory authorities – affecting the dynamics in the housing market. Furthermore, it is difficult to know what might have happened if the Reserve Bank had remained silent, kept monetary policy looser than was the case, and the regulatory authorities had not responded.

Looking beyond 2004, it has been suggested that the turnaround was temporary, that house prices did not fall by much and have subsequently rebounded (Posen 2009). However, this ignores some important and persistent effects of the turnaround that started in late 2003. Perhaps most importantly, it provided a stark and timely reminder that house prices can fall and that those with high rates of leverage are more vulnerable to such corrections. Consistent with this, investors

have played a less prominent role in the market since that time. Also, the subsequent rise in loan arrears for non-conforming and low documentation loans clearly highlighted the greater risks associated with these products. Finally, the ratio of housing prices to income has been reasonably flat for a number of years.



## Appendix A: Timeline of Key Public Statements/Publications

| Date   | Event/Description  |
|--------|--|
| 2001   |  |
| 7 May  | <p><b><i>RBA – SMP</i></b></p> <p>‘It is possible that the recent concentration of activity has resulted in some degree of overbuilding in some areas.’ p 21</p>   |
| 30 Sep | <p><b><i>APRA – Working Paper: Asset Price Bubbles and Prudential Regulation</i></b></p> <p>‘On balance we conclude that the role for financial regulation in controlling the emergence of, and damage from, asset price bubbles remains relatively limited.’ p 22</p>   |
| 12 Nov | <p><b><i>RBA – SMP</i></b></p> <p>‘... the current level of building approvals is well above most estimates of underlying demand.’ p 28</p> <p>‘... mounting evidence that rental vacancy rates are rising, particularly for medium-density dwellings ...’ p 28</p>  |
| 2002   |  |
| 12 Feb | <p><b><i>RBA – SMP</i></b></p> <p>‘Oversupply is particularly evident in medium-density dwellings, where there are high vacancy rates in some states.’ p 24</p>  |
| 8 May  | <p><b><i>RBA – Media release after policy tightening</i></b></p> <p>‘To persist with a strongly expansionary policy setting would risk amplifying inflation pressures and, over time, could fuel other imbalances such as the current overheating in the housing market, potentially jeopardising the economy’s continued expansion.’</p>  |
| 10 May | <p><b><i>RBA – SMP</i></b></p> <p>‘A continuation of this trend [of rapid increases in debt] clearly carries the risk of households, at some point, becoming overstretched.’ p 2</p>   |
| 31 May | <p><b><i>RBA – Governor – Testimony to House of Representatives Standing Committee on Economics, Finance and Public Administration</i></b></p> <p>‘I do not think we are going to get that overshoot [in asset prices]. I sincerely hope it does not happen because those sorts of events are very disruptive.’</p> <p>‘... overall average measures of house prices are still going up, but we can see in some important areas that oversupply has already occurred.’</p> |



| Date   | Event/Description   |
|--------|---|
| 5 Jun  | <p><b><i>RBA – Media release after policy tightening</i></b></p> <p>‘... continued rapid expansion of household debt.’</p> <p>‘Today’s action is aimed at reducing the risk of potential imbalances, and thereby promoting sustainable expansion of the economy with low inflation.’</p>  |
| 18 Jul | <p><b><i>RBA – Bulletin: Recent Developments in Housing: Prices, Finance and Investor Attitudes</i></b></p> <p>‘It would be unlikely that further strong price increases could co-exist with rising vacancy rates and falling rental yields for very long. It is more likely that any assumption by investors that future capital gains can be assured will have to undergo some revision.’ p 6</p>   |
| 12 Aug | <p><b><i>RBA – SMP</i></b></p> <p>‘[The continued rapid growth in investor finance] looks to be in part a result of expectations by investors that the strong increases in housing prices over recent years will continue into the future. However, the attractiveness of this form of investment now appears to be waning, with the potential for further capital gains in the housing market likely to be countered by increased supply of rental properties, rising vacancy rates and falling rents in some areas.’ p 2</p>  |
| 21 Aug | <p><b><i>RBA – Speech – Governor: What Does Good Monetary Policy Look Like?</i></b></p> <p>The rate of growth in the investor segment in the context of rising vacancy rates and stagnant or falling rents suggests a ‘... mis-allocation of investment, and the likelihood of a shakeout in the market, at least in the major cities. If that is to occur, it is better that it occur sooner rather than later’.</p>   |
| 1 Oct  | <p><b><i>APRA – Media Release: APRA Reminds Banks to Observe Conservative Risk Management Practices</i></b></p> <p>‘While we are not presently observing unsound loan growth in any systemic sense, we urge the industry to maintain prudent property lending practices ...’</p>  |
| 14 Oct | <p><b><i>RBA – Speech – Deputy Governor: Medium-term Economic Prospects for Australia</i></b></p> <p>‘But at present, our focus is on the role of investors in rental dwellings, which has become much more prominent in the past couple of years. These are people who presumably have been attracted by perceptions of capital gains and tax advantages of leverage, and who recently may have been disappointed with returns in the share market.’</p> <p>‘It is getting harder and harder to believe that the prospective returns from that outlook are high enough either to sustain valuations which are so high relative to historical experience, or to warrant the \$4–5 billion which is being loaned to investors each month.’</p> |

| Date   | Event/Description  |
|--------|--|
| 11 Nov | <p data-bbox="304 331 456 360"><b><i>RBA – SMP</i></b></p> <p data-bbox="304 383 1418 600">‘Investors have played a large part in the buoyancy of the housing market, accounting for virtually all of the growth in new finance approvals in the sector over the past year, presumably in expectation of strong growth in prices. It has been apparent, however, that this process would not be sustainable indefinitely, with emerging oversupply being bound at some point to limit the scope for further price increases.’ p 3</p>  |
| 13 Nov | <p data-bbox="304 640 1129 669"><b><i>RBA – Speech – Governor: Monetary Policy in an Uncertain World</i></b></p> <p data-bbox="304 692 1418 909">‘It seemed pretty clear to us that investors were moving into an already over-supplied market, and this behaviour could only be explained by their usual desire for tax minimisation plus their expectation that they would benefit from future large capital gains, an expectation which was encouraged by the marketing programs employed by developers of investment properties.’</p> <p data-bbox="304 943 1418 1021">‘It is the length of this expansion, as much as the other things I have described, that provided the environment which encouraged this type of investor behaviour.’</p>   |
| 6 Dec  | <p data-bbox="304 1061 1305 1140"><b><i>RBA – Governor – Testimony to House of Representatives Standing Committee on Economics, Finance and Public Administration</i></b></p> <p data-bbox="304 1162 1418 1240">‘Our purpose in what we have been saying is to try to get the market to work a little better and so avoid the overshooting that so often characterises parts of the property market.’</p> <p data-bbox="304 1274 1418 1536">‘... the market works, but with long lags during which people are encouraged to take decisions based on little more than optimistic extrapolation of what happened in the past. Developers will continue to put up new apartment blocks while there are investors willing to precommit to buy. These are the investors who turn up at seminars where they are told by the developers how they can become very rich if they highly gear themselves and buy an apartment.’</p> |
| 19 Dec | <p data-bbox="304 1576 1262 1606"><b><i>RBA – Bulletin: Innovations in the Provision of Finance for Investor Housing</i></b></p> <p data-bbox="304 1628 1418 1706">‘... prospective capital gains and the ability to negatively gear for tax effectiveness have always been the major incentives for this type of investment [in rental housing].’ p 1</p> <p data-bbox="304 1740 1418 1865">‘Over the course of the 1990’s ... the supply of finance increased markedly, making geared investment in rental properties available to a much wider cross-section of the public than formerly.’ p 1</p>  |

| Date   | Event/Description  |
|--------|--|
| 2003   |  |
| 22 Jan | <p><b><i>APRA – Report on Broker-Originated Lending</i></b></p> <p>The Australian market for broker-originated lending is reasonably safe however: ‘Over half of the institutions (53%) base the broker’s remuneration solely on the volume of business generated, providing brokers with an incentive to generate loan volume without appropriate regard for risk. With such an incentive structure it is critical that ADIs have procedures in place to ensure their own credit assessment standards are rigorously applied to broker-introduced loans’.</p> |
| 10 Feb | <p><b><i>RBA – SMP</i></b></p> <p>‘... the run-up in housing prices and associated expansion in housing-related debt were a source of concern for most of the past year, given the potential of such a process to remain disconnected from fundamentals and develop into a significant imbalance over time. These risks, however, appear to have eased somewhat in recent months.’ p 3</p>   |
| 13 Feb | <p><b><i>RBA – Speech – Deputy Governor: The Economic Outlook</i></b></p> <p>‘With one exception, we have not rushed to ring alarm bells about excessive debt. The exception is, of course, the rapid growth in debt to finance investment in rental properties, where we felt during 2002 that people were being drawn into a position of high leverage by unrealistic expectations of returns. At some stage down the track, this is likely to result in disappointment for many and distress for some ...’</p>  |
| 25 Feb | <p><b><i>APRA – Speech – C Littrell: Mortgage Lending Practices: The APRA View</i></b></p> <p>‘... the psychology of home lending has changed from a credit rationing process to a product marketing process.’</p> <p>‘Although home lending is generally safe, in APRA’s view lenders have become too comfortable with this product ...’</p>  |
| 4 Mar  | <p><b><i>ASIC – Media Release: ASIC Commences Proceedings against Henry Kaye and Others</i></b></p> <p>ASIC launch proceedings against Henry Kaye for dissemination of false and misleading information.</p>   |
| 3 Apr  | <p><b><i>RBA – Speech – Governor: Do Australian Households Borrow Too Much?</i></b></p> <p>‘... for a high proportion of these investors, tax considerations drive the profitability calculations and so provide an incentive to maximise debt.’</p>   |

| Date   | Event/Description  |
|--------|--|
| 10 Apr | <p data-bbox="304 344 1278 423"><b><i>RBA – Speech – Deputy Governor: Inflation Targeting: A Decade of Australian Experience</i></b></p> <p data-bbox="304 443 1410 566">‘Does inflation targeting allow scope for responding to asset price concerns, if that is thought to be sensible? I think it does, provided we are prepared to adopt a sufficiently long time horizon.’</p>  |
| 9 May  | <p data-bbox="304 589 456 618"><b><i>RBA – SMP</i></b></p> <p data-bbox="304 638 1410 763">‘Although loan approvals for housing have levelled out in the past few months, they remain at a high level consistent with housing-related credit growth of over 20 per cent, which will not be sustainable in the longer run.’ p 3</p>   |
| 16 May | <p data-bbox="304 792 1342 871"><b><i>RBA – Speech – Assistant Governor (Financial System): Financial System Stability – Some Current Observations</i></b></p> <p data-bbox="304 891 1410 1014">‘... the cloud on the near horizon is the substantial build-up in household debt, which may create strains for financial institutions if Australia's economic circumstances were to deteriorate and mortgage defaults rise sharply.’</p>   |
| 6 Jun  | <p data-bbox="304 1043 1310 1122"><b><i>RBA – Governor – Testimony to House of Representatives Standing Committee on Economics, Finance and Public Administration</i></b></p> <p data-bbox="304 1142 1410 1267">‘I think there is now some evidence that in the most speculative hot spots a degree of commonsense is returning. Investor interest in inner city apartments, particularly in this city, is well down and quite a number of proposed projects have been shelved.’</p> <p data-bbox="304 1301 1410 1476">‘We have another financial tool. It is called open-mouth policy, and I have been using it, but it may not be as effective as other tools you could conceive of. I am not putting in a plug for another instrument, although if in the longer run things turned out badly it would not surprise me if people started looking at other arms of policy—for example, tax policy.’</p> <p data-bbox="304 1509 1410 1731">‘I think there is a regulatory gap there. It is clearly a problem if there is one group of people who are holding seminars on how to invest your money who are regulated—the financial planners—and there is another group who are doing almost exactly the same thing, although doing it within the one asset class, which is property, who are unregulated. So I think there is a need to extend the capacity for ASIC to do that.’</p> |
| 27 Jun | <p data-bbox="304 1765 1150 1794"><b><i>ATO – Tax Time Media Kit 2003 – Compliance Focus on Individuals</i></b></p> <p data-bbox="304 1814 1410 1890">Increased focus on compliance especially in the area of rental deductions with increased scrutiny and more audits.</p>   |

| Date   | Event/Description  |
|--------|--|
| 31 Jul | <p><b><i>ASIC – Media Release: ASIC Obtains Undertakings from Henry Kaye and Others</i></b><br/>Obtains undertakings from Henry Kaye limiting his and his associates’ ability to provide advice regarding investment in property.</p>  |
| 11 Aug | <p><b><i>RBA – SMP (with a special chapter on credit growth)</i></b><br/>‘The risk presented by these developments [rapidly rising debt and house prices] is that, the longer they go on, the larger will be the contractionary effect on the economy when they inevitably turn.’ p 3</p>  |
| 12 Aug | <p><b><i>APRA – Speech – N Esho: APRA’s Approach to Broker Loans in Authorised Deposit Taking Institutions</i></b><br/>‘At present APRA is satisfied that ADIs are effectively managing the risks associated with broker loans, and therefore see no need at this stage to take any particular action in this area.’</p>                         |
| 2 Sep  | <p><b><i>ACCC – Media Release: ACCC Targets Property ‘Scammers’</i></b><br/>Announcement by ACCC of its intention to target property scammers.</p>   |
| 17 Sep | <p><b><i>RBA – Speech – Deputy Governor: Economic Conditions and Prospects</i></b><br/>‘But there cannot be much doubt either that running up debt today must diminish the scope to do so in future, and that it must also impair, at the margin, the capacity of some households to cope with adverse shocks which might come along.’</p>       |
| 17 Sep | <p><b><i>NSW Govt – Call on Federal authorities to extend the powers of ASIC to better deal with property spruikers and wealth creation seminars</i></b><br/>Successful motion to call on federal authorities to extend the powers of ASIC to better deal with property marketers and wealth creation seminars citing ASIC and ACCC actions.</p> |
| 25 Sep | <p><b><i>Council of Financial Regulators – Annual Report 2002</i></b><br/>‘... the exceptionally fast increase in borrowing for investor housing has clearly increased risk and that the accompanying rapid expansion in apartment building shows all the signs of a seriously over-extended market.’ p 19</p>                                   |
| 7 Oct  | <p><b><i>ASIC – Media Release: ASIC Commences New Proceedings against Henry Kaye and National Investment Institute</i></b><br/>Investigations into the operations of Henry Kaye and others for breach of prior undertaking.</p>  |

| Date   | Event/Description  |
|--------|--|
| 9 Oct  | <p data-bbox="304 349 1415 427"><b><i>APRA – Speech – J Laker: The Resilience of Housing Loan Portfolios – APRA’s ‘Stress Test’ Results</i></b></p> <p data-bbox="304 450 1415 622">‘Over the past seven years, it would seem, housing loan default rates have become uncoupled from growth in housing credit. The likely explanation is that the rapid increase in housing prices over the period has enabled any troubled borrowers to exit the market without incurring losses.’</p> <p data-bbox="304 656 1415 734">‘When reality inevitably intrudes, however, the earlier linkages between housing credit growth and loan defaults might reassert themselves.’</p> |
| 1 Nov  | <p data-bbox="304 768 1415 846"><b><i>APRA – Discussion Paper: Proposed Changes to the Risk-weighting of Residential Mortgage Lending</i></b></p> <p data-bbox="304 869 1415 940">‘APRA is concerned that the current risk-weightings on loans for which the borrowers’ servicing ability is not verified do not adequately reflect the likelihood of increased risk.’ p 3</p>   |
| 5 Nov  | <p data-bbox="304 974 1415 1008"><b><i>RBA – Media release after policy tightening</i></b></p> <p data-bbox="304 1025 1415 1149">‘Credit outstanding is rising at around 14 per cent per year, and at over 20 per cent to households. That is a much faster rate of growth than can be expected to be consistent with economic stability over the longer run.’</p> <p data-bbox="304 1182 1415 1261">‘The strength of demand for credit increases the danger associated with delaying a tightening of policy that is called for on general macroeconomic grounds.’</p>   |
| 10 Nov | <p data-bbox="304 1294 1415 1328"><b><i>RBA – SMP</i></b></p> <p data-bbox="304 1350 1415 1467">‘Those risks [associated with the rapid run-up in household debt], discussed at length on other occasions and so not repeated here, appear to be growing. Monetary policy should, as far as possible, avoid adding to them.’ p 3</p>   |
| 14 Nov | <p data-bbox="304 1500 1415 1534"><b><i>RBA – Submission to the Productivity Commission Inquiry on First Home Ownership</i></b></p> <p data-bbox="304 1556 1415 1729">‘This more favourable treatment has played a role in investors being prepared to accept rental yields that are lower than those seen in other countries. While taxation arrangements are not the source of the current speculative activity in the housing market, they may affect the price dynamics once the attractiveness of investing in housing has improved for other reasons.’</p> <p data-bbox="304 1751 1415 1778">p 54</p>  |

| Date   | Event/Description  |
|--------|--|
| 20 Nov | <p><b><i>RBA – Bulletin: Asset Prices and Monetary Policy</i></b></p> <p>‘In particular, the risk of a substantial asset-price correction may be sufficiently low or hard to quantify as to be excluded from any central forecast, particularly at a horizon of only one or two years. But that does not mean that it can be ignored. Rather, these considerations highlight the need for monetary policy to maintain a medium-term perspective ...’ pp 53–54</p>  |
| 25 Nov | <p><b><i>ASIC – Media Release: Receiver and Administrator Appointed to Henry Kaye Companies</i></b></p> <p>Receiver and administrator appointed to Henry Kaye companies.</p>   |
| 3 Dec  | <p><b><i>RBA – Media release after policy tightening</i></b></p> <p>Despite some signs of a change in sentiment in the housing market:</p> <p>‘Monetary policy is continuing to have a stimulatory effect on the economy through domestic credit expansion. The growth of credit remains rapid and indeed has picked up further in the past few months’.</p>   |
| 8 Dec  | <p><b><i>RBA – Governor – Testimony to House of Representatives Standing Committee on Economics, Finance and Public Administration</i></b></p> <p>‘It is clear that, despite our best endeavours to explain ourselves, a number of people think that the bank tightened monetary policy to cool down the property market ... However, such an approach would not be consistent with the truth. For a start, signs of overheating in the housing market were clearly evident through the second half of 2002 and all through 2003, yet the bank did not change monetary policy. It was only when it became clear that good economic growth had returned both globally and domestically that rates were raised.’</p> |
| 2004   |  |
| 9 Feb  | <p><b><i>RBA – SMP</i></b></p> <p>‘While this [the rapid run-up in household debt] was not the principal driver of policy, it did argue for avoiding undue delay when a case for moving to a less expansionary setting emerged on broader macroeconomic grounds.’ p 3</p>  |



| Date   | Event/Description  |
|--------|--|
| 17 Feb | <p data-bbox="304 349 1342 378"><b><i>RBA – Speech – Deputy Governor: Recent Issues for the Conduct of Monetary Policy</i></b></p> <p data-bbox="304 398 1406 573">‘... it is increasingly clear that a narrow policy focus confined to the product of conventional economic analysis over a one to two year horizon can miss very important developments in the financial sector and asset markets, which often play out over longer horizons but which can have major economic implications ...</p> <p data-bbox="304 613 1406 976">So where does this leave us? I believe it should leave us trying to think about outcomes and risks, and policy settings which seek to manage those risks, over a horizon a bit longer than is common in much discussion of economic policy. Is this a departure from our long-established medium-term, flexible approach to inflation targeting? Definitely not. In fact, it dovetails quite well with the long-held view that policy should not respond <i>solely</i> to the inflation forecast at some fixed horizon and ignore other considerations. All that is new is that there is an additional dimension to the general rationale to maintain, and on occasion to use, the flexibility the system has always had.’</p> |
| 6 Apr  | <p data-bbox="304 1016 999 1046"><b><i>NSW Govt – 2004 mini-budget announcing Vendor Duty</i></b></p> <p data-bbox="304 1066 1334 1144">NSW Government presented a mini-budget which included changes to land tax and the imposition of a vendor duty on investment properties.</p>  |
| 7 May  | <p data-bbox="304 1184 456 1214"><b><i>RBA – SMP</i></b></p> <p data-bbox="304 1234 1382 1408">‘With the heat now coming out of the credit and housing markets, this risk [of a damaging correction] has diminished over recent months. Housing finance approvals ... [are] still a[t] very high level[s] and will need to fall much further to bring the growth of housing credit back to a reasonably sustainable pace.’ p 3</p> <p data-bbox="304 1449 1406 1570">‘While this factor [the overheating housing market] was not the principal driver of policy, it had been an important reason to avoid unnecessary delay in moving the cash rate back up to a more normal position.’ p 3</p>  |
| 2 Jun  | <p data-bbox="304 1610 1326 1639"><b><i>RBA – Speech – Deputy Governor: Economic Conditions and Prospects: June 2004</i></b></p> <p data-bbox="304 1659 1366 1827">‘... we have been worried about the housing market as an <i>asset</i> market, and about the borrowing behaviour of participants in that market. The concern was not out of a desire to <i>target</i> house prices, but more over the potential risks to macroeconomic stability from a major boom – and possible bust – in the household sector’s main asset class.’</p>  |

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| Date   | Event/Description   |
|--------|---|
| 4 Jun  | <p data-bbox="304 349 1310 427"><b><i>RBA – Governor – Testimony to House of Representatives Standing Committee on Economics, Finance and Public Administration</i></b></p> <p data-bbox="304 450 1418 667">‘As the fall in prices becomes widely known, it should allow potential house purchasers to take their time ... It should also enable them to resist the blandishments of the banks, brokers and other commission agents plying them with offers of seemingly generous quantities of credit. It should also reinforce the recent tendency of investors to question the assumption about easy capital gains.’</p> <p data-bbox="304 712 1418 831">‘When the public recognise that prices are going down rather than up—as they are recognising because they are reading it more and more in the papers—I think it should affect their behaviour.’</p> |
| 1 Jul  | <p data-bbox="304 875 820 904"><b><i>NSW Govt – Vendor duty came into effect</i></b></p> <p data-bbox="304 927 1418 1003">Introduction of 2.25 per cent vendor duty on the sale price of investment property when the sale price exceeds the purchase price by more than 12 per cent.</p>   |
| 19 Jul | <p data-bbox="304 1037 1043 1066"><b><i>ACCC – Action against Vision Pursuit for deceptive conduct</i></b></p> <p data-bbox="304 1088 1418 1164">Action against Vision Pursuit for misleading or deceptive conduct in promotion of property investment.</p>   |
| 9 Aug  | <p data-bbox="304 1198 456 1227"><b><i>RBA – SMP</i></b></p> <p data-bbox="304 1249 1418 1328">‘The overheating in the housing market last year carried the potential to destabilise the broader economy, the more so the longer it continued.’ p 3</p> <p data-bbox="304 1373 1418 1496">‘There has also been an easing in the demand for housing finance, particularly from investors, though this will need to adjust further if the growth of housing credit is to return to a reasonably sustainable pace.’ p 3</p>  |
| 8 Nov  | <p data-bbox="304 1529 456 1559"><b><i>RBA – SMP</i></b></p> <p data-bbox="304 1581 1418 1709">‘The adjustment to date has been an orderly one, so that the risk of an uncomfortably sharp decline in house prices does not appear to be large, though equally there does not appear much risk of a renewed upsurge at present.’ p 3</p>  |
| 2005   | <p data-bbox="164 1816 231 1845">2 Aug</p> <p data-bbox="304 1816 740 1899"><b><i>NSW Govt – Vendor duty abolished</i></b><br/>Vendor duty abolished</p>  |

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## References

**APRA (Australian Prudential Regulation Authority) (2002)**, ‘APRA Reminds Banks to Observe Conservative Risk Management Practices’, Media Release No 02.39, 1 October.

**APRA (2003)**, ‘Proposed Changes to the Risk-Weighting of Residential Mortgage Lending’, Discussion Paper, November.

**Bank of England (2009)**, ‘The Role of Macroprudential Policy’, Discussion Paper, November.

**Bank of Spain (2010)**, *Financial Stability Report*, March.

**Bean C (2009)**, ‘The Great Moderation, the Great Panic and the Great Contraction’, Schumpeter Lecture to the Annual Congress of the European Economic Association, Barcelona, 25 August.

**Bernanke B (2002)**, ‘Asset-Price “Bubbles” and Monetary Policy’, Address to the New York Chapter of the National Association for Business Economics, New York, 15 October.

**Bernanke B (2010)**, ‘Monetary Policy and the Housing Bubble’, Presentation to the 2010 American Economic Association Annual Meeting, Atlanta, 3 January.

**Blanchard O, G Dell’Ariccia and P Mauro (2010)**, ‘Rethinking Macroeconomic Policy’, IMF Staff Position Note SPN/10/03.

**Bloxham P and C Kent (2009)**, ‘Household Indebtedness’, *The Australian Economic Review*, 42(3), pp 327–339.

**Bordo MD and O Jeanne (2002)**, ‘Monetary Policy and Asset Prices: Does “Benign Neglect” Make Sense?’, IMF Working Paper No WP/02/225.

**Borio C and M Drehmann (2009)**, ‘Assessing the Risk of Banking Crises – Revisited’, *BIS Quarterly Review*, March, pp 29–46.

**Borio C, C Furfine and P Lowe (2001)**, ‘Procyclicality of the Financial System and Financial Stability: Issues and Policy Options’, in *Marrying the Macro- and Microprudential Dimensions of Financial Stability*, BIS Papers No 1, BIS, Basel, pp 1–57.

**Borio C and P Lowe (2002)**, ‘Asset Prices, Financial and Monetary Stability: Exploring the Nexus’, BIS Working Paper No 114.

**Borio C and P Lowe (2004)**, ‘Securing Sustainable Price Stability: Should Credit Come Back from the Wilderness?’, BIS Working Paper No 157.

**Borio C and W White (2004)**, ‘Whither Monetary and Financial Stability? The Implications of Evolving Policy Regimes’, BIS Working Paper No 147.

**Brunnermeier M, A Crockett, C Goodhart, A Persaud and HS Shin (2009)**, *The Fundamental Principles of Financial Regulation*, Centre for Economic Policy Research, London.

**Bryan M, S Cecchetti and R O’Sullivan (2003)**, ‘A Stochastic Index of the Cost of Life: An Application to Recent and Historical Asset Price Fluctuations’, in WC Hunter, GG Kaufman and M Pomerleano (eds), *Asset Price Bubbles: The Implications for Monetary, Regulatory, and International Policies*, The MIT Press, Cambridge, pp 277–289.

**Caruana J (2005)**, ‘Monetary Policy, Financial Stability and Asset Prices’, Banco de España Documentos Ocasionales No 0507.

**Caruana J (2010)**, ‘Financial Stability: Ten Questions and about Seven Answers’, in C Kent and M Robson (eds), *Reserve Bank of Australia 50<sup>th</sup> Anniversary Symposium*, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 53–64.

**Cecchetti S (2006)**, ‘The Brave New World of Central Banking: Policy Challenges Posed by Asset Price Booms and Busts’, *National Institute Economic Review*, 196, pp 107–119.

**Cecchetti S, H Genberg and S Wadhvani (2003)**, ‘Asset Prices in a Flexible Inflation Targeting Framework’, in WC Hunter, GG Kaufman and M Pomerleano (eds), *Asset Price Bubbles: The Implications for Monetary, Regulatory, and International Policies*, The MIT Press, Cambridge, pp 427–444.

**Christiano L, R Motto and M Rostagno (2007)**, ‘Two Reasons Why Money and Credit May be Useful in Monetary Policy’, NBER Working Paper No 13502.

**CFR (Council of Financial Regulators) (2003)**, *Annual Report 2002*. Available at <<http://www.rba.gov.au/publications/annual-reports/cfr/2002.pdf>>.

**Detken C and F Smets (2004)**, ‘Asset Price Booms and Monetary Policy’, ECB Working Paper No 364.

**ECB (European Central Bank) (2005)**, ‘Asset Price Bubbles and Monetary Policy’, *Monthly Bulletin*, 04/2005, pp 47–60.

**Esho N (2003)**, ‘APRA’s Approach to Broker Loans in Authorised Deposit Taking Institutions’, Presentation to the Conference on ‘Regulating the Mortgage Broking Industry’, Sydney, 12 August.

**Fatás A, P Kannan, P Rabanal and A Scott (2009)**, ‘Lessons for Monetary Policy from Asset Price Fluctuations’, *World Economic Outlook – Sustaining the Recovery*, World Economic and Financial Surveys, IMF, Washington DC, pp 93–120.

**Fernández de Lis S, J Pagés and J Saurina (2000)**, ‘Credit Growth, Problem Loans and Credit Risk Provisioning in Spain’, Banco de España Documento de Trabajo No 0018.

**FSF (Financial Stability Forum) (2009)**, ‘Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System’, 2 April.

**Fischer S (2010)**, ‘Panel Discussion on “Fifty Years of Monetary Policy: What Have We Learned?”’, in C Kent and M Robson (eds), *Reserve Bank of Australia 50<sup>th</sup> Anniversary Symposium*, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 38–41.

**Genworth Financial (2007)**, ‘Inquiry into Home Loan Lending Practices and Processes’, Submission to the House Standing Committee on Economics, Finance and Public Administration Inquiry into Home Loan Lending Practices and Processes, 20 July.

**Gerard H and K Nimark (2008)**, ‘Combining Multivariate Density Forecasts Using Predictive Criteria’, RBA Research Discussion Paper No 2008-02.

**Gerdesmeier D, H-E Reimers and B Roffia (2009)**, ‘Asset Price Misalignments and the Role of Money and Credit’, ECB Working Paper No 1068.

**Gerlach S and W Peng (2005)**, ‘Bank Lending and Property Prices in Hong Kong’, *Journal of Banking & Finance*, 29(2), pp 461–481.

**Giavazzi F and FS Mishkin (2006)**, ‘An Evaluation of Swedish Monetary Policy between 1995 and 2005’, A report for the Riksdag Committee on Finance, 28 November.

**Goodhart C (2010)**, ‘Panel Discussion on “Financial Stability: Ten Questions and about Seven Answers”’, in C Kent and M Robson (eds), *Reserve Bank of Australia 50<sup>th</sup> Anniversary Symposium*, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 72–74.

**Goodhart C and B Hofmann (2002)**, ‘Asset Prices and the Conduct of Monetary Policy’, Paper presented at the Royal Economic Society Annual Conference, Warwick, 25–27 March.

**Goodhart C and A Persaud (2008)**, ‘How to Avoid the Next Crash’, FT.com site, 30 January. Available at <<http://www.ft.com/cms/s/0/fed495d4-cf4b-11dc-854a-0000779fd2ac.html>>.

**Greenspan A (2002)**, 'Economic Volatility', Remarks at the Federal Reserve Bank of Kansas City Economic Symposium on 'Rethinking Stabilization Policy', Jackson Hole, 29–31 August.

**Greenspan A (2004)**, 'Risk and Uncertainty in Monetary Policy', Remarks at the Meetings of the American Economic Association, San Diego, 3 January.

**Greenspan A (2010)**, 'The Crisis', Paper presented at Brookings Papers on Economic Activity Spring 2010 Conference, Washington DC, 15 April. Available at [http://www.brookings.edu/~media/Files/Programs/ES/BPEA/2010\\_spring\\_bpea\\_papers/spring2010\\_greenspan.pdf](http://www.brookings.edu/~media/Files/Programs/ES/BPEA/2010_spring_bpea_papers/spring2010_greenspan.pdf).

**Griffith-Jones S, JA Ocampo and A Ortiz (2009)**, 'Building on the Counter-Cyclical Consensus: A Policy Agenda', Paper prepared for the High-level Roundtable 'Towards Basel III? Regulating the Banking Sector after the Crisis', Foundation for European Progressive Studies, Brussels, 12 October.

**Gruen D, M Plumb and A Stone (2005)**, 'How Should Monetary Policy Respond to Asset-Price Bubbles?', *International Journal of Central Banking*, 1(3), pp 1–31.

**Gross B and S Sgherri (2009)**, 'The Volatility Costs of Procyclical Lending Standards: An Assessment Using a DSGE Model', IMF Working Paper No WP/09/35.

**Haldane A (2009)**, 'Small Lessons from a Big Crisis', Remarks at the Federal Reserve Bank of Chicago 45<sup>th</sup> Annual Conference on Bank Structure and Competition 'Reforming Financial Regulation', Chicago, 6–8 May.

**Hansen J (2006)**, 'Australian House Prices: A Comparison of Hedonic and Repeat-Sales Measures', RBA Research Discussion Paper No 2006-03.

**Hoerova M, C Monnet and T Temzelides (2009)**, 'Money Talks', ECB Working Paper No 1091.



**Hunter WC, GG Kaufman and M Pomerleano (eds) (2003)**, *Asset Price Bubbles: The Implications for Monetary, Regulatory, and International Policies*, The MIT Press, Cambridge.

**IMF (International Monetary Fund) (2003)**, *World Economic Outlook – Public Debt in Emerging Markets*, World Economic and Financial Surveys, IMF, Washington DC.

**Issing O (2009)**, ‘Some Lessons from the Financial Market Crisis’, *International Finance*, 12(3), pp 431–444.

**Ito T and T Iwaisako (1995)**, ‘Explaining Asset Bubbles in Japan’, NBER Working Paper No 5358.

**Jääskelä J and K Nimark (2008)**, ‘A Medium-Scale Open Economy Model of Australia’, RBA Research Discussion Paper No 2008-07.

**Kannan P, P Rabanal and A Scott (2009a)**, ‘Macroeconomic Patterns and Monetary Policy in the Run-Up to Asset Price Busts’, IMF Working Paper No WP/09/252.

**Kannan P, P Rabanal and A Scott (2009b)**, ‘Monetary and Macroprudential Policy Rules in a Model with House Price Booms’, IMF Working Paper No WP/09/251.

**Kent C (forthcoming)**, ‘Two Depressions One Banking Collapse: Lessons from Australia’, *Journal of Financial Stability*.

**Kent C and P D’Arcy (2000)**, ‘Cyclical Prudence: Credit Cycles in Australia’, Paper presented at the BIS Annual Autumn Meeting of Central Bank Economists on ‘Marrying the Macro- and Microprudential Dimensions of Financial Stability’, Basel, 9–10 October.

**Kent C and P Lowe (1997a)**, ‘Asset-Price Bubbles and Monetary Policy’, RBA Research Discussion Paper No 9709.

**Kent C and P Lowe (1997b)**, ‘Property Price Cycles and Monetary Policy’, Paper presented at the BIS Annual Autumn Meeting of Central Bank Economists on ‘The Role of Asset Prices in the Formulation of Monetary Policy’, Basel, 28–29 October.

**Kent C, C Ossolinski and L Willard (2007)**, ‘The Rise of Household Indebtedness’, in C Kent and J Lawson (eds), *The Structure and Resilience of the Financial System*, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 123–163.

**Kohn D (2008)**, ‘Monetary Policy and Asset Price Revisited’, Speech to the Cato Institute’s 26th Annual Monetary Policy Conference on ‘Lessons from the Subprime Crisis’, Washington DC, 19 November.

**Laker J (2003)**, ‘The Resilience of Housing Loan Portfolios – APRA’s “Stress Test” Results’, Address to the Securities Institute of Australia, Sydney, 9 October.

**Laker J (2007)**, ‘Credit Standards in Housing Lending – Some Further Insights’, Address to The Institute of Chartered Accountants in Australia, Melbourne, 20 June.

**Littrell C (2003)**, ‘Mortgage Lending Practices: The APRA View’, Securities Institute of Australia Seminar ‘Mortgage Lending Practices’, Sydney, 25 February.

**Macfarlane I (2002a)**, ‘Testimony to the House of Representatives Standing Committee on Economics, Finance and Public Administration’, Official Committee Hansard, Sydney, 31 May.

**Macfarlane I (2002b)**, ‘Testimony to the House of Representatives Standing Committee on Economics, Finance and Public Administration’, Official Committee Hansard, Warrnambool, 6 December.

**Macfarlane I (2002c)**, ‘What Does Good Monetary Policy Look Like?’, 12<sup>th</sup> Colin Clark Memorial Lecture, Brisbane, 21 August.

**Macfarlane I (2003a)**, ‘Do Australian Households Borrow Too Much?’, Talk to The Sydney Institute, Sydney, 3 April.

**Macfarlane I (2003b)**, ‘Testimony to the House of Representatives Standing Committee on Economics, Finance and Public Administration’, Official Committee Hansard, Melbourne, 6 June.

**Macfarlane I (2003c)**, ‘Testimony to the House of Representatives Standing Committee on Economics, Finance and Public Administration’, Official Committee Hansard, Brisbane, 8 December.

**Macfarlane I (2006)**, *The Search for Stability*, Boyer Lectures 2006, ABC Books, Sydney.

**McCauley RN, JS Ruud and F Iacono (1999)**, *Dodging Bullets: Changing U.S. Corporate Capital Structure in the 1980s and 1990s*, MIT Press, Cambridge.

**Mo Y and C Leechor (1998)**, ‘Asset Pricing and Central Bank Policies: The Case of Hong Kong’, Hong Kong Monetary Authority *Quarterly Bulletin*, May, pp 15–30.

**N’Diaye P (2009)**, ‘Countercyclical Macro Prudential Policies in a Supporting Role to Monetary Policy’, IMF Working Paper No WP/09/257.

**Nyberg L (2005)**, ‘House Price Developments and Monetary Policy’, Speech to Evli Bank, Stockholm, 19 December.

**Okina K, M Shirakawa and S Shiratsuka (2001)**, ‘The Asset Price Bubble and Monetary Policy: Japan’s Experience in the Late 1980s and the Lessons’, Bank of Japan, Institute for Monetary and Economic Studies *Monetary and Economic Studies*, 19(S-1), pp 395–450.

**Prasad N and A Richards (2006)**, ‘Measuring Housing Price Growth – Using Stratification to Improve Median-based Measures’, RBA Research Discussion Paper No 2006-04.

**Posen A (2009)**, 'Finding the Right Tool for Dealing with Asset Price Booms', MPR Monetary Policy and the Markets Conference, London, 1 December.

**RBA (Reserve Bank of Australia) (2003a)**, *Annual Report 2003*.

**RBA (2003b)**, 'Productivity Commission Inquiry on First Home Ownership', Submission to the Productivity Commission Inquiry on First Home Ownership, 14 November.

**Richards A and T Robinson (eds) (2003)**, *Asset Prices and Monetary Policy*, Proceedings of a Conference, Reserve Bank of Australia, Sydney.

**Saurina J (2009)**, 'Dynamic Provisioning: The Experience of Spain', World Bank Crisis Response Policy Briefs, Public Policy for the Private Sector Note No 7.

**Simon J (2003)**, 'Three Australian Asset-Price Bubbles', in A Richards and T Robinson (eds), *Asset Prices and Monetary Policy*, Proceedings of a Conference, Reserve Bank of Australia, Sydney, pp 8–41.

**Squam Lake Working Group on Financial Regulation (2009)**, 'Reforming Capital Requirements for Financial Institutions', Squam Lake Working Group Paper, April.

**Stevens G (1997)**, 'Some Observations on Low Inflation and Household Finances', Reserve Bank of Australia *Bulletin*, October, pp 38–47.

**Stevens G (2002)**, 'Medium-Term Economic Prospects for Australia', Address to the 40<sup>th</sup> Australia-Japan Joint Business Conference, Sydney, 14 October.

**Stevens G (2003a)**, 'The Economic Outlook', Address to 2003 CEDA Economic and Political Overview, Perth, 13 February.

**Stevens G (2003b)**, 'Inflation Targeting: A Decade of Australian Experience', Address to the South Australian Centre for Economic Studies 'April 2003 Economic Briefing', Adelaide, 10 April.

**Stevens G (2003c)**, 'Structural Change and the Conduct of Monetary Policy', Commentary at the Federal Reserve Bank of Kansas City Economic Symposium on 'Monetary Policy and Uncertainty: Adapting to a Changing Economy', Jackson Hole, 28–30 August.

**Tinbergen J (1952)**, *On the Theory of Economic Policy*, Contributions to Economic Analysis No 1, North-Holland Publishing Company, Amsterdam.

**Trichet JC (2009)**, 'Credible Alertness Revisited', Intervention at the Federal Reserve Bank of Kansas City Economic Policy Symposium on 'Financial Stability and Macroeconomic Policy', Jackson Hole, 21–22 August.

**Tucker P (2009)**, 'The Debate on Financial System Resilience: Macroprudential Instruments', Barclays Annual Lecture, London, 22 October.

**Yam J (2009)**, 'Evolution of 70% Loan-to-Value Policy', Hong Kong Monetary Authority Viewpoint, 4 June.

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