

Research Paper

Housing affordability and the economy: A review of macroeconomic impacts and policy issues

**National Research Venture 3: Housing
Affordability for Lower Income
Australians**

Research Paper 4

authored by

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EXECUTIVE SUMMARY

Debates on the trends and drivers of housing affordability in Australia and other advanced industrial countries have focused on the impacts of market failure in specific markets – notably, the private rental sector – and on issues of equity or distributive justice. However, it is also the case that some of the factors resulting in increasing housing stress impact on the broader economy through the interactions of movements in housing prices and change in aggregate demand.

Housing markets do more than lead the economy with respect to new house construction. Rising housing prices are positively correlated with rising consumption – and consumption accounts for more than 60 per cent of aggregate demand in the economy. If housing prices and consumption are rising, then the economy grows; conversely, if prices and consumption drop, the economy slows. If the former decline far and fast enough, the economy can fall into recession. The fate of Japan during the 1990s and early 2000s provided a sobering demonstration of the degree to which these forces can interact to generate a long-lasting and deep recession.

The period 1997-2004 witnessed a pronounced housing boom in many countries. Australia, along with South Africa, Spain and the United Kingdom, experienced the highest rates of house price inflation during this period. Australia's house price inflation has clearly been driven by a number of basic, fundamental drivers, in particular, population and household growth, continuing urban concentration and a long period of high economic growth and rising incomes. A number of institutional factors also seem to have been at work, viz.:

- The financial liberalisation of capital markets, easing credit constraints, encouraging financial innovation and facilitating borrowing for house purchase
- The rapid growth in rental investment, financed by easier credit conditions
- Increasing female labour market participation leading to the growth in two-income households
- The one-off effects of the stock market correction in 2000 that encouraged the switch of savings from equities into property
- The traditional attraction of real assets, like gold and real estate, in times of increasing international insecurity and uncertainty

The recent housing boom in Australia is important in the macroeconomic context because it underpinned the consumption boom driving buoyant economic growth since the late 1990s. The causal – as opposed to correlational – link between house prices and consumption is based, in large part, on what economists call “the wealth effect”. In short, households consume more, the wealthier they are (or feel). This follows from the ‘life cycle theory of savings’ which holds that people save out of current incomes in order to distribute their consumption through time so as to maximise their lifetime utility or happiness. If they experience an unexpected

increase in wealth – say, as a result of an increase in their house values – they will need to save less than they otherwise would have to achieve their optimal lifetime pattern of consumption. Current consumption rises accordingly. The aggregate effect of this increase in individual consumption boosts aggregate economic activity and employment. Conversely, as real housing prices fall, owners become less wealthy, save more out of current income in order to protect their future lifestyles and cut back on consumption. The aggregate effect is to reduce aggregate demand, activity, income and employment.

There are three further reinforcing factors linking movements in housing prices and consumption, viz.:

- *The collateral effect*: households who were prevented by inadequate wealth from borrowing as much as they preferred to fund current consumption are now able to do so, since their wealth, in the form of housing, has increased. The credit standing of wealthier borrowers has risen, encouraging lenders to lend more at lower interest rates. Total consumption rises accordingly. The reverse is true. As prices fall, the collateral backing to loans declines, encouraging lenders to call in loans (or reduce the rate of new loans) and/or increase lending rates, squeezing consumption and causing economic activity to slow.
- *Residential construction*: as the price of existing housing rises, so does the expected profit on new houses. Housing construction increases raising aggregate demand or GDP. When housing prices overall moderate or begin to fall, the profitability of construction follows, slowing aggregate demand and the growth of GDP.
- *Demand for consumer durables*: increasing construction and house renovation activity increases the demand for a range of consumer goods – white goods, television sets, carpets, etc. – contributing to the surge in consumption and economic growth. This demand reverses when housing markets cool.

These four interrelated effects ensure that volatility in housing markets feeds through into the general economic cycle of the economy. The overall effect can be cumulative. For example, increasing consumption sparked by rising housing prices leading to increasing economic growth results in rising incomes, which increases (among other things) the demand for housing, which pushes housing prices higher, and so on. This spiral of rising housing prices and incomes can generate inflationary expectations, causing households to anticipate further price rise in future – the basis for ‘an asset bubble’ – further reinforcing the upward spiral. Eventually, reality sets in. House prices stop rising and, in some markets, begin to fall. The process reverses itself, as house prices, consumption and incomes fall, sparking a further decline in housing demand and prices, and so on. The economy may, thus, move from an over-heated boom to a serious recession i.e. ‘a hard landing’. Whether this happens will, in part, depend on the scale and composition of the preceding boom,

the level of debt taken on by borrowers and the skill with which monetary and fiscal policy makers anticipate and manage the process.

Australia appears to have been fortunate in this respect. Over the past two years, as housing markets have eased and equity markets recovered, consumption growth has merely slowed, along with the general economy. This outcome appears to herald the hoped-for 'soft landing'. However, this fortunate outcome does not undercut the arguments presented in this report. In fact, the reverse is the case. That economic growth has slowed rather than fallen sharply is, in part, due to the fact that – this time – housing prices have flattened out or fallen modestly in most markets, rather than crashed by the 20 to 30 per cent forecast in some quarters, limiting the negative impact on spending due to wealth and related effects. Australia may not always be so lucky. The nature of risk, looking forward in time, is that today's current soft landing gives no guarantees that the next time – or the time after that – will result in a similarly benign outcome. Japan's recent fate provides a clear picture of the downside risk facing macroeconomic policy makers. In such a world it makes sense to find out more about how housing markets work in different circumstances and countries, and how movements in housing prices feed through into consumption and investment behaviour driving the macro-economy.

It is in this context that ***housing affordability*** has significance for the overall health of the economy. In the first place, the factors responsible for declining affordability – viz. house prices rising ahead of incomes – also lead to buoyant economic growth and an eventual downturn. Secondly – and more directly – a pronounced housing boom increases the scale and intensity of housing stress among lower income households. When the monetary authorities raise interest rates to ease pressures in an over-heated economy, housing markets moderate and households cut back on consumption. As incomes fall, housing stress further intensifies unless housing costs also fall proportionately. However, recent home purchasers and investors are locked into the preceding higher price regime and rents may not fall quickly or far enough to offset falling incomes and employment, especially in the low-cost private rental sector. In the case of private tenants, rents may be sticky in the downward direction because current leases do not allow immediate renegotiation of rent levels, and landlords seek to maintain or even increase rents to compensate for declining expected capital gains on rental dwellings, supported by low vacancy rates and chronic under-supply at the bottom end of the rental market. Increasing housing stress in the declining phase of the cycle reinforces the negative effects on consumption, particularly when low and moderate income households are carrying large debts as a legacy of the preceding boom.

To the extent that intensifying housing stress increases the risk that housing price movements will increase the overall volatility of the economy, problems of housing affordability should attract the attention of economic policy makers at the national level. Indeed, the level and stability of housing affordability outcomes might be seen as a useful indicator of the success of macroeconomic policy.

1 INTRODUCTION

The focus of this report (and its companion¹) is on the key *economic effects* of problems associated with housing affordability. The basic aim is to provide a broader-than-normal rationale for, and a basis on which to develop, policies designed to improve affordability outcomes. Housing affordability is here considered in relation to the operation of the national and regional economies and not merely as a question of social policy.

The traditional theory of public finance identifies *three* fields or ‘branches’ of economic intervention by the state – allocation, distribution and stabilisation (Musgrave, 1959). In the first place governments may intervene to offset or correct market imperfections and failures. Secondly, governments act to change the market-determined distribution of income and wealth. Finally, since the mid-twentieth centuries, governments and key agencies like central banks, have taken on the responsibility of steering the whole economy to achieve some combination of price stability, adequate aggregate employment and external economic balance.

Ensuring adequate housing affordability has, in recent times, largely been seen as a matter for the distribution and allocation branches of government. Private housing and finance markets, if left to themselves, have shown a tendency to under-supply housing at the affordable end. In the neo-liberal era, financial deregulation, constraints on government spending, global trade liberalisation and more flexible labour markets have been associated with increasing inequalities in the distribution of income and, especially, wealth (Boreland, Gregory and Sheehan, 2001; Burbidge and Sheehan, 2001; Kelly, 2001). Housing forms a major share of the wealth holdings of people in countries like Australia which have a high rate of owner occupation and a significant private rental sector. Relative access to housing is significantly influenced by the current distribution of income, which in turn reinforces the relative capacity of households to accumulate further wealth. The result over recent times in Australia has been rising wealth inequalities in housing and all other assets except superannuation savings (Kelly, 2001).

Maclennan (2005, p. 11), seeking to outline what ‘a modern housing policy’ should be, notes the redistributive cast of current housing policy:

The consequences of the residual/fairness emphasis of policy were that housing policy at national and sub-national levels, in Canada, New Zealand and Australia, became largely a resented subset of social security policy. That is, housing policy came to be seen to be about palliative policy and redistribution, often focussing on the homelessness issue rather than fostering a key integrative system with the capacity to create and support social and economic change for households and societies.

¹ The companion paper (which will also be published as a CRV3 background report) deals with the issue of efficiency in regional labour markets.

In fact, the delivery and location of housing has important economic implications for both the employment prospects of households and the functional efficiency of regional labour markets. Increasing residential polarisation in the metropolitan regions increases the difficulties and costs of getting workers – especially low-waged workers in the service sector – to and from work. To the extent that there develops a spatial mismatch between where people work and where they can afford to live, regional labour markets will fail to operate efficiently, resulting in labour bottlenecks and surpluses, reflected in higher wages in some areas coinciding with persistent frictional unemployment in other areas. The lack of local jobs can result in the growth of deeper structural unemployment in marginalised areas, which then assumes an inter-generational character. Recent data suggest that, in Sydney and Melbourne at least, the location of affordable housing is moving strongly to the periphery, reinforced by the central location of high-paid ‘knowledge workers’ (Wood et al., 2005).

Housing affordability problems arise when a household’s income is insufficient to meet the various non-housing costs of living after paying for a dwelling of reasonable basic standard, appropriate to the size and structure of the household. Hence, governments in many advanced capitalist countries have long sought to address the problem by redistributing income through taxation and income support measures. This approach relies on a belief that housing and financial markets will respond by increasing the supply of low-cost housing, mainly through processes of market filtering. However, in reality, housing markets – especially in large metropolitan regions – show a perverse tendency to under-shoot with respect to the supply of lower cost housing. The reasons are complex and not fully understood but include the spatial segmentation of the housing market, noted above, and the impact of government regulations and taxes. In addition, the following causes of housing stress (defined when lower income households spend 30 per cent or more of their household income in meeting their housing costs) can be noted from the CRV 3 Plan (Yates et al., 2004, p. 2):

- Demographic change and, especially, ageing, leading to a rise in the number of small households with small incomes
- Changing housing preferences – shaped by choice and constraint factors – that are resulting in more complex housing careers, including a tendency for long term renting to place demand pressures on the private rental sector
- A reduced supply of low-rent dwellings in the private and public sectors
- Pronounced house price inflation, punctuated by plateau effects, due to low nominal interest rates, assistance to (some) home purchasers and strong (speculative) investment behaviour
- A lack of innovation in the house building industry and consumer resistance to low-cost housing in the community

- Labour market change, leading to increasing inequalities in earnings and greater job insecurity

“As a result of these complex interactions which affect different groups in the population differently, ‘the’ affordability problem should not be seen as one problem, but as a series of interconnected problems which affect both rental and home ownership markets” (ibid., p. 2).

The resistance of housing stress to redistributive policies alone has meant that governments also turn to the allocation branch, intervening directly in the provision of low cost housing by way of conventional public housing and by facilitating and funding the growth of non-profit providers. As public expenditure constraints have intensified governments in countries like Australia and the United Kingdom are seeking to accelerate the growth of the non-profit sector and reduce the role of direct provision by attracting private investment to fund expansion to meet the housing needs of an increasingly diverse group of households at risk of experiencing housing stress. This new commitment to recognising the increasing scope of housing stress and dealing with its impacts is based on an increasingly firm view that affordable housing is a necessary condition for *both* social inclusion *and* efficiently functioning regional economies.

What has been missing from recent debates on housing affordability, however, is the fact that the growth of housing affordability problems also has a *macro* economic dimension – viz. the forces underpinning rising housing stress can threaten the *stability* of the overall economy. In particular, developments in the housing system can influence the level of and change in aggregate demand in the economy through impacts on consumption and savings decisions, investment and imports. In other words, dealing with housing stress brings into play the stabilisation branch of government. In order to meet the continuing macro imperatives of full employment, low inflation and balance of payments equilibrium over time, governments may need to ensure that the factors giving rise to housing affordability problems do not get out of hand.

The remainder of this report is focused on the macroeconomic dimension of the affordability problem and takes up the issue of macroeconomic stability in the context of the affordability debates.

1.1 Objectives of the Project

This project will:

- Identify the main issues and policy views on the role of housing affordability in the macroeconomic performance of developed economies, including Australia.
- Review available evidence on the interactions between housing investment and consumption, household debt, household consumption and

macroeconomic policy settings in Australia, focusing specifically on the role of housing affordability.

In order to pursue these objectives, the following **key research questions** are posed:

- In what ways do affordability issues affect the operation of the housing market as it impinges on the broader outcomes of the economy?
- How has housing equity withdrawal from the housing sector been influenced by changing housing affordability and how has this influenced aggregate consumption patterns in Australia? What are the possible/likely impacts on consumption and growth of a decline in equity withdrawal?

1.1.1 A Note on Method

This report is based on an extensive, selective review of relevant published articles, government, industry and media reports, unpublished parliamentary submissions, official statistics and unpublished academic papers. The sources consulted and referred to are listed in the bibliography. No attempt has been made to fully summarise or evaluate most sources; instead they have been interrogated with a view to provisionally answering the key research questions noted above. This report is intended as a first stage in opening up fruitful policy-relevant questions for more intensive future research.

1.1.2 Structure of the Report

Chapter 2 outlines a framework for considering the issue of housing affordability and macroeconomic performance. The basic national income aggregates are introduced. Attention is focused on the determinants of the savings/consumption decision and, in particular, the nature of wealth effects on changes in aggregate consumption. Chapter 3 looks at available international evidence on how the factors influencing trends in housing markets and affordability may also be impacting on aggregate consumption, growth and balance of payments outcomes, particularly through the practice of 'equity withdrawal' and 'debt overhang'. Chapter 4 takes up these issues with respect to Australia. An important question to address here is the extent to which, in situations of high housing stress, an upward movement in interest rates triggers sharp falls in consumption, leading to falling economic growth and rising unemployment. Chapter 5 summarises and notes the policy implications – for both housing and economic policy makers – of the findings, as they relate to the issue of housing affordability.

2 SETTING THE FRAMEWORK

“The macroeconomy and the housing market are indeed interrelated and co-determined” (Leung, 2004, p. 253)

Macroeconomics seeks to identify the components and determinants of the overall level of economic activity in an economy. By analogy to blood in the body, the economy is conceived as a ‘circular flow’ of money and activities. The key actors are households, firms and government. Households sell their ‘factors of production’, notably labour, to firms in return for wages, dividends, rents, etc. Firms combine factors of production to produce goods and services which they sell; the proceeds of sales are paid to households for their factors of production to complete the flow. Government intervenes in the flow in the three ways noted in the preceding chapter: firstly to provide goods and services like education; secondly, to alter the final distribution of income flows to factor owners and; thirdly, to even out the overall level of activity (control ‘blood pressure’) over time. Government finances these activities by taxing and borrowing from households and firms. Economic activities flow within and across national borders. From the viewpoint of the national economy, imports represent a ‘leakage’ of income abroad, while exports are an ‘injection’ of income to the domestic economy.

The box below presents the basic economic aggregates at the economy-wide scale². Gross Domestic Product (GDP) is the total value of goods and services produced in a period (conventionally, a year). It comprises domestic consumption and investment, spending by government on goods and services (but not transfer payments like pensions), and exports minus imports (equation 1). Exports are goods and services produced in the country in question but purchased by people and firms elsewhere in the world. Imports, conversely, are goods and services produced in another country but bought by consumers and firms in the country in question.

The proceeds of total output (GDP) go as incomes to someone – in the form of wages, dividends, interest and rents. Households and firms also receive transfer payments from government in the form of social security payments, subsidies and the like, and pay taxes, both direct and indirect, back to government. Total disposable income in the economy, Y , thus comprises GDP minus taxes plus transfers (equation 2). Total disposable income is either consumed or saved (equation 4).

By simple algebraic manipulation we reach equation 7, the basic national income identity. The terms in brackets represent the balance of payments on current account ($X-M$) and the budget deficit or surplus ($G_c + P_t - T$). It says that a nation’s private savings (by its households and firms) must, in any period, equal the level of domestic investment *plus* the balance of exports and imports *plus* the balance of government spending and taxation. The equality is true by definition of the terms.

² See any introductory text on macroeconomics for a fuller discussion of the circular flow and basic national income accounting: e.g. Gordon (1961); Dornbusch and Fischer (1987).

The basic algebra....

$$\text{GDP} = C + I + (X - M) + G_c - \quad (1)$$

$$Y = \text{GDP} + P_t - T \quad (2)$$

Rearranging (2) –

$$\text{GDP} = Y - P_t + T \quad (3)$$

But, also

$$Y = C + S \quad (4)$$

Substituting (4) into (3)

$$\text{GDP} = C + S - P_t + T \quad (5)$$

Equating the RHS of eqns. (1) and (5) –

$$C + I + (X - M) + G_c = C + S + T - P_t \quad (6)$$

Rearranging (6) –

$$I + (X - M) + (G_c + P_t - T) = S \quad (7)$$

Where:

GDP = Gross Domestic Product

Y = National (Disposable) Income

C = Domestic Consumption

I = Domestic Investment

S = Domestic Savings – by persons and businesses

X = Exports

M = Imports

G_c = Government Consumption Expenditure

P_t = Transfer payments by government

T = Taxes by government on persons and businesses

Rearranging equation 7 slightly gives us:

$$I = S + (M - X) + (T - G_c - P_t) \quad (8)$$

This says that domestic investment must be matched by domestic private savings or by running a higher balance of payments deficit (or lower surplus) or by increasing

the government budget surplus (or reducing its deficit). A current account deficit is exactly balanced by inward foreign investment (this again follows by definition; the total of current account deficits among all deficit nations must exactly equal the total of current account surpluses among countries with surpluses). In other words, the expression $(M - X)$ represent savings from the rest of the world that flows to partly finance domestic investment. Likewise, the surplus of government revenue over expenditure represents government savings. Of course, the government sector may be in deficit and/or the external sector in surplus, which would mean that private savings would exceed investment. Equation (8) makes the basic point that investment must be paid for by someone saving – local firms and households, the government or foreigners.

The national income aggregates say nothing about what determines their relative levels – e.g. whether investment is high or low. That is because the identity describes the overall situation *ex-post* (after the event). Economists are interested in the *ex-ante* situation, the factors that determine the intentions of economic actors to consume, save, invest, work, etc. These decisions together determine the aggregate level of activity and its rate of growth through time. After all these factors work themselves out in any period the identity expressed in equation (7) or (8) necessarily holds.

It is here that economists begin to disagree. Neoclassical economics holds that the economy has a strong built-in tendency to run at or close to a full employment equilibrium. This means that deliberate government intervention through expansionary policies – increasing the budget deficit or lowering interest rates – will not boost overall growth but result in reducing or ‘crowding out’ investment or driving inflation up or both. Alternatively, increasing domestic expenditure may spill over into imports, pushing up the balance of payments deficit. This latter response has been termed the ‘twin deficits argument’, both the budget and balance of payments deficits increasing in tandem. In terms of equation 7, all the action happens on the left hand side – as $(G - T)$ rises, I falls or $(X - M)$ falls, or some combination of all, and S (and the overall level of output, GDP) remains unchanged. Yet another argument suggests that savings will in fact increase when governments run up larger deficits because households know that their taxes will have to rise at some time in future to pay for all this and they respond now by saving more (consuming less) out of current income in order to defend their disposable income and lifestyles at that future time. This effect is referred to as ‘Ricardian equivalence’, after the nineteenth century economist, David Ricardo who first pointed it out. Once again, however, it means that there will be no boost to growth because increased government consumption is exactly offset by reduced private consumption as households rush to save – i.e. private savings compensate for government dissavings. A more general and extreme version of mainstream economics – so called, ‘new classical economics’ – generalises this approach and argues that all economic actors have ‘rational expectations’ (and perfect information) and immediately factor in all the consequences of government economic policy, so negating any impact on overall

economic activity. In this school, both fiscal and monetary policy are powerless and merely likely to stoke inflation.

Economists of a Keynesian persuasion have a markedly different view as to how the decisions that lie behind equation (8) work themselves out over time. In this world of information limitations and asymmetries, money illusion and market rigidities, chronic uncertainty about the future can lead to an economy operating at less than full capacity for considerable periods of time. 'Sticky' prices and wages and speculative behaviour in financial markets prevent 'market-clearing' forces from quickly returning the economy to a full employment level of output. The fact that investment and savings decisions are made by different actors with different information bases and decision horizons means that there are no mechanisms that automatically generate the 'right' level of both to ensure full employment. In such a situation government intervention through either fiscal or monetary policy can have substantial *real* impacts on the economy. For example, where government increases expenditure relative to revenue (a reduction in $[T - G_c - P_i]$ on the RHS of equation (8)) this may spark an increase in both private consumption and investment, lifting output and incomes and increasing private savings (LHS of equation 8). Part of the increase in public and private consumption may come from rising imports. In other words *all* the other expressions in equation (8) may rise, along with the overall level of output, consumption and employment³. Conversely, if, for some reason, people set out to save more, this might have the contradictory effect of reducing demand (consumption) causing firms to cut investment, leading to a decline in output and incomes and less savings overall. This is Keynes' famous 'paradox of thrift'.

Consumption by households accounts for more than 60 per cent of aggregate demand in countries like Australia. The factors that determine the way households organise their consumption over time, by deciding to save more or less, thus have a large impact on the overall operation of the economy, both because of the relative size of the consumption component in the economy and because investors are influenced by the level and rate of increase of current consumption.

Consumption and savings levels are influenced by a number of factors⁴, including:

- *Demographic factors.* Modigliani's 'life cycle hypothesis' holds that people generally try to 'smooth out' their consumption over the life course (Modigliani and Brumberg, 1954). This means saving little and even borrowing to consume while young and dependent on low incomes, saving more in middle age as (if) income rises, with a view to providing for retirement when current income declines. Thus, if this hypothesis held true, one would expect that a country with an ageing population would eventually experience falling savings as a higher proportion of the population reached retirement. This, in turn, would be reflected in decline on the LHS of equation (7) – i.e. some

³ For an accessible review of the alternative approaches, see Arestis (1992).

⁴ For a useful overview, see Beddoes, 2005, pp. 5-9.

combination of falling investment, a worsening balance of payments situation and an improving government budget. This latter outcome would be offset to the extent that transfer payments to retirees increased and were not funded by increased taxes or expenditure cuts elsewhere by government, throwing greater weight on the balance of payments and domestic investment⁵.

- *Economic growth.* As average incomes rise due to growth in the economy, savings rates and volumes also tend to increase. Most people do not adjust their consumption spending as quickly as their incomes rise, especially where financial institutional factors limit the availability of credit. To the extent that growth favours higher income people, savings rates tend to increase, since they typically have higher marginal propensities to save than lower income households. Where incomes are volatile over time, savings rates tend to be higher, as people put aside resources for 'a rainy day'.
- *Wealth factors.* A household's consumption appears to be related to its current wealth holdings. Households that are or feel wealthier tend to consume more (save less). Since – in countries like Australia with a high rate of owner occupation – housing comprises more than half of all personal net wealth, changes in the current value of the existing housing stock can have very significant impacts on the level of consumption over time. Similar impacts can come from changes in the values of shares listed on the stock exchange (and any other assets). However, a recent OECD (2005) study found that, in general, changes in housing wealth have a greater impact on consumption than changes in share values, in part because more households in advanced industrial countries own houses than shares and partly because capital gains on houses are believed to be more permanent (see chapter 3 for more detail). However, as noted in chapter 4, the evidence, limited though it is, suggests that the opposite is the case in Australia; the housing wealth effect appears to be smaller than the effect with respect to financial wealth.
- *Institutional factors.* Countries with highly developed financial systems tend to have lower savings rates, as both households and businesses borrow to fund current expenditures. The purchase of durable consumer items like houses is particularly dependent on the availability of mortgage finance. The development of sophisticated mortgage products allowing owner occupiers to withdraw equity to fund consumption activities is an important recent cause of declining savings rates in countries like Australia, though it also provides a powerful lever of further wealth accumulation by facilitating the purchase of rental dwellings and funding other business activities. It also seems to be the case that savings rates are higher in countries in which there are poor government 'safety nets' to meet situations of unemployment, disability and

⁵ Strictly speaking, the changes in the variables referred to are changes proportional to GDP.

retirement. With respect to government intervention, the theory of 'Ricardian equivalence' has already been noted above.

- *Cultural factors.* Different societies and cultural groups may have differing patterns of consumption and savings. In some groups, saving is partly motivated by the desire to leave wealth to their children or other family members. Attitudes to lending and borrowing also vary across cultures.

In the advanced industrial (G7) countries, household net savings rose as a proportion of GDP during the latter part of the 1990s (albeit, still remaining in negative territory) while corporate savings and government savings fell. Over the past five years, corporate savings has gone on increasing as firms cut back on investment in the wake of the collapse of the high-tech boom, while government savings has continued to decline and household savings reversed and now net dissavings exceeds 4 per cent of GDP in the G7 (Beddoes, 2005, p. 4). These trends are especially marked in the United States, where the main factor appears to be: continuing credit-fuelled house price inflation feeding through into booming consumption as people spend against their rising wealth. With the US government moving heavily into deficit and a very low household savings rate, the US economy has experienced a rising balance of payments deficit that now stands at around 6 per cent of GDP. Economic growth is being underpinned by the credit-fuelled consumption boom and the continuing willingness of foreign investors to fund that boom. This latter outcome has been reinforced by the role of the US dollar as the world's reserve currency.

China has been a critical factor here, with both investment and savings running at an amazing 40 to 50 per cent of GDP over the past 5 years. Given lagging domestic consumption, the high savings rate has led to the accumulation of large balance of payments surpluses, even allowing for the very high rate of domestic investment activity. This outcome has been partly due to a deliberate past policy of 'keeping the Yuan low', by pegging it to the US dollar, a major source of political friction between the two countries. Much of this surplus has found its way into US government securities and other American assets. There are signs that China's investment boom is easing which may mean that its balance of payments surpluses could rise further as the country pursues its export-led growth strategy, even allowing for the recent change in exchange rate policy that may allow the Yuan to rise against the US dollar⁶.

Japan has also consistently run balance of payments surpluses over the past 20 years due to high private savings in an economy with weak social safety nets, a highly regulated and conservative financial sector and insipid investment as the economy suffered through a long deflationary recession in the 1990s. Recent signs show that the savings rate is falling as the population ages and domestic

⁶ The Chinese government recently announced a correction to the national accounts; official GDP figures have undervalued the service sector with the result that the official savings rate has been overstated.

consumption picks up, in part because of a partial recovery in the Japanese property sector and share market, which were both hit very hard during the recession. If domestic investment also picks up, as firms pay off debt and absorb asset revaluations necessitated by the excesses of the speculative boom of the late 1980s, balance of payments surpluses will fall.

The other nations with balance of payments surpluses to invest in deficit countries, notably the US, include a number of emerging economies in East Asia and the oil-exporting countries. The former are still recovering from the economic crisis of the late 1990s, with weak domestic consumption and investment and high savings rates. The latter have benefited from the oil price spike driving export revenues up while domestic investment and government expenditure are constrained.

The build up and recycling of balance of payments surpluses has underpinned the rapid growth of deficit countries like the US, Britain and Australia in recent times. As long as overseas investors are willing to continue to invest in deficit countries, then these economies will continue to grow strongly. However, the danger is that, at some point, overseas investors will lose confidence in the capacity of deficit countries to generate adequate returns. As the balance of payments deficit grows, foreign debt rises, requiring an increasing proportion of GDP to service it. This leaves less to be reinvested in growing the domestic economy and repatriated interest and dividend payments further swell the balance of payments deficits. At some point, foreign investors will require a premium to offset the falling exchange rate of debtor countries and the risk that it will fall further. The pressure on the central bank to raise interest rates will intensify. Rising domestic interest rates will squeeze off investment and economic growth, limiting both the extent to which unemployment can be reduced and the rate at which real incomes can expand.

A worsening balance of payments position therefore (eventually) places 'speed limits' on the economy, especially small open economies like Australia in which exports and imports are a high proportion of GDP and do not have the luxury of having a world reserve currency. When balance of payments constraints impact on the domestic economy, the result may be either a 'hard' or 'soft' landing. A hard landing implies a significant drop in economic growth into negative figures, resulting in rising unemployment. That is, external shocks may result in a sharp contraction of domestic investment and credit-supported consumer spending, leading to a big drop in aggregate demand and a rapid slowing of the economy. Declining investor and consumer confidence may then reinforce and prolong the decline. Of course, the hardness of the landing will partly depend on the skill with which economic policy makers, including in Australia's case the Reserve Bank, intervene.

The impact may also reflect the existing structure of demand and institutional framework in the economy and the level of 'debt over hang'. If households are heavily indebted and also experience a decline in their wealth through falling property and stock markets, their response to rising interest rates may be dramatic, increasing the likelihood of a hard landing. Similar considerations also apply to the

business sector. If firms are highly leveraged and see the value of their assets marked down in an increasingly gloomy investment climate, they are likely to cut back on investment and work 'to repair their balance sheets' before contemplating future investment. Financial institutions, especially the banks, are also likely to reconsider the credit situations of their clients and re-price risk, rationing loans to those who meet increasingly stringent requirements and calling in loans from those who do not. The experience of the Australian economy in the early 1990s – 'the recession we had to have' – following a pronounced speculative asset boom suggests just how severe the reaction can be, although in today's low-inflation environment the Reserve Bank is unlikely to ramp up interest rates to the levels reached in the late 1980s (Garnaut, 2004).

Given the importance of consumption behaviour in the economy and the sensitivity of aggregate consumption to the value of the housing stock, and given the significance of the rate of new house construction to overall investment in the economy, it is surprising to find that macroeconomists have little to say on the matter. In a review of the links between macroeconomics and housing, Leung (2004, p. 250) comments – "Standard macroeconomics textbooks either treat housing as one of many consumption goods, or neglect it all together. 'Mainstream macroeconomics', simply put, ignores the housing market."

Leung (ibid., p. 251) points to several factors that underlie the importance of the 'macro-housing nexus' in most advanced capitalist countries. First, housing represents a significant share of current total household expenditure, as well as a predominant share of household wealth. Second, the value of the total housing stock is larger than the value of business capital. Third the value of annual housing construction is usually higher than business capital investment. Finally, housing markets are volatile, with respect to prices, construction and turnover, creating the potential for large 'ripple effects' through the economy.

Leung goes on to consider the macro-housing nexus in relation to three issues.

1. *Housing and Taxation.* Housing is taxed in most countries because it is a large component of wealth and because, as a tangible, immobile asset, it is relatively difficult to avoid taxes placed on it. However, it is also clear that for political and social reasons, owner occupied housing generally enjoys favourable taxation treatment. In Australia, owner occupiers are not taxed on their capital gains nor on the imputed rental value of their homes. Most of the studies Leung quotes conclude that such preferential taxation treatment leads to an overall loss of economic welfare; i.e. the 'distortion' in investment flows away from productive business investment in favour of housing reduces the rate of economic growth over time. This argument has been popularised as 'the over-investment in housing thesis' in Australian housing policy debates going back to the 1950s (Dalton, 1999). A counter view is that home ownership confers difficult to measure 'external benefits' that outweigh the narrow efficiency losses (Glaeser and Sacerdote, 2000).

2. *Housing and Business Cycles.* Housing markets are cyclical. The volatility of residential investment in the US is twice that of non-residential investment, while the total turnover of residential properties is more volatile than housing prices which are more volatile than GDP (Leung, 2004, p. 253). Residential investment has been found to lead the general business cycle and non-residential investment lags, all moving together. A number of studies quoted (some of which are discussed in the next chapter) identify the empirical impact of changing property values on aggregate consumption and investment (e.g. Black et al., 1996). In particular – “(t)hose households with significant mortgage debt may need to adjust non-durable consumption when confronted by a negative, unanticipated economic shock (the ‘lock-in effect’) (Leung, 2004, p. 257). External shocks, in this context, can be an increase in mortgage interest rates, loss of employment, intensified credit rationing, as well as external shock to the national economy like exchange rate crises, wars or oil price hikes.

Overlaying the ‘normal business cycle’ are so-called ‘long cycles’ of property investment (also called ‘Kuznets cycles’ after the economist who studied them) of 20 years or so duration (Gottlieb, 1976; Ball and Wood, 1999). Thus, housing cycles are typically longer than the general business cycle and their amplitude greater. The factors underlying this rhythm seem to be tied to swings in vacancy rates and supply responses, reflecting demographic change over time and the impact of exogenous ‘shocks’ like wars and natural disasters (Leung, 2004, p. 258).

3. *Urban Micro-structure.* The fact that vacancy rates in both the residential and commercial property sectors is inversely correlated with and leads movements in property prices and transactions points to the importance of the *spatial concentration* of economic activities in cities. Fluctuations in urban housing prices generated in one city may signal and stimulate economic activities to move to *other* places. Thus, the macro-effects of housing market changes may be expressed very unevenly ‘on the ground’. Moreover, the spatial externality or ‘neighbourhood effects’ generated in large and segmented cities may interact to affect household attitudes to home ownership, in particular, and consumption/savings behaviour in general.

The critical connection in all this is the link between conditions and movements in the housing market(s) *and* aggregate effects on consumption and investment throughout the economy. This link cuts both ways. A booming economy may spark a housing market boom, just as buoyant housing markets can spill-over into the general economy. The processes of rise and decline are mutually reinforcing. Indeed, in the upswing of a general boom, housing construction will (as noted above) tend to lead and a process of house price inflation (for existing as well as new dwellings) can result as part of a general asset price boom, as occurred in Australia during the late-1980s and, arguably, the late-1990s.

The next chapter reviews arguments and evidence on this process, drawing selectively on overseas studies. The chapter following that focuses on Australia.

3 HOUSING MARKETS AND CONSUMPTION: INTERNATIONAL EVIDENCE

“It is surely no coincidence that the only two countries where house prices have fallen – Japan and Germany – have seen very weak consumer spending, while those with the strongest housing booms – Britain, Australia and Spain – have binged” (*The Economist*, 2005a, p. 70).

3.1 Overview

In his review of the macroeconomic implications of housing, Leung (2004, p. 255) concludes that the evidence and theoretical explanation for the co-movement of housing and business investment, with housing leading the cycle, is ‘relatively satisfactory’. Less satisfactory, he suggests, is the research on housing price dynamics. Empirically, housing markets do not appear to behave in ways that are consistent with economic models based on conventional general equilibrium principles and ‘rational expectations’. More successful are models, also reviewed by Leung, that posit constraints on credit related to variations in wealth or ‘collateral’ between consumers (*ibid.*, p. 256, fn. 32).

The empirical interaction between collateral value and housing prices has been established for a number of countries, including Singapore, Hong Kong, Japan, Korea and England (for references, see Leung, *op.cit.* p. 256, fn. 37). This suggests that the ownership of housing and other assets gives a household greater effective access to credit that can be used to finance expanded consumption and/or business activities, reinforcing the wealth effect noted earlier. A third factor, in addition to the impact of wealth and credit rationing effects, reinforces this relationship in the economic upswing. As the rate of new construction and the volume of housing transactions increases, the demand for – and hence, consumption of – household furnishings, appliances and renovation also tends to rise. It is therefore not surprising that aggregate consumption and housing prices tend to move up together. Figure 3.1 makes this point for a number of OECD countries. The rates of increase in consumption and average house prices over the 2000-2004 period are fairly closely correlated. Figure 3.2 illustrates this relationship for the United Kingdom over the longer period, 1970-2002.

Figure 3.1: Relation between increases in aggregate consumption and house prices

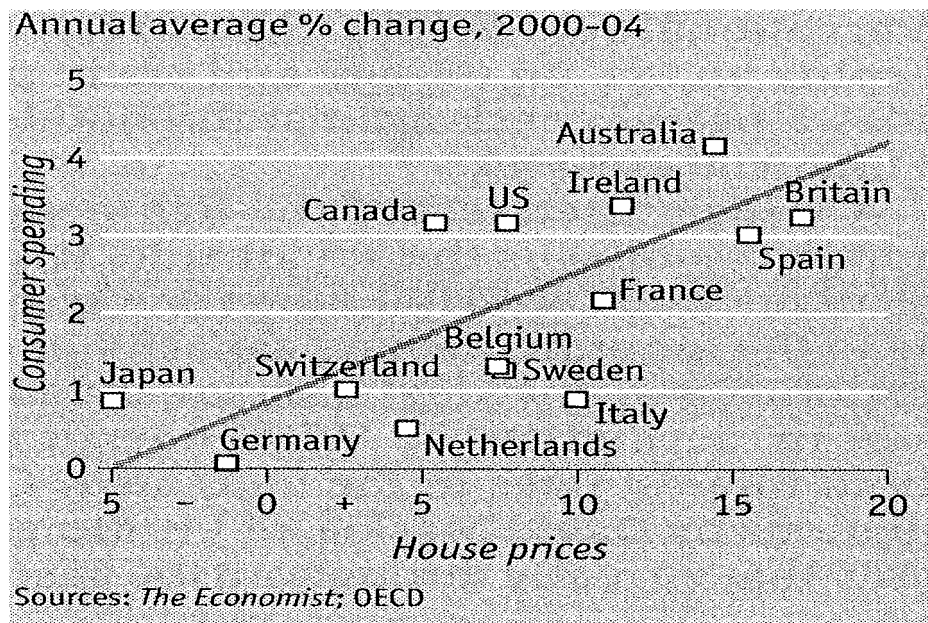
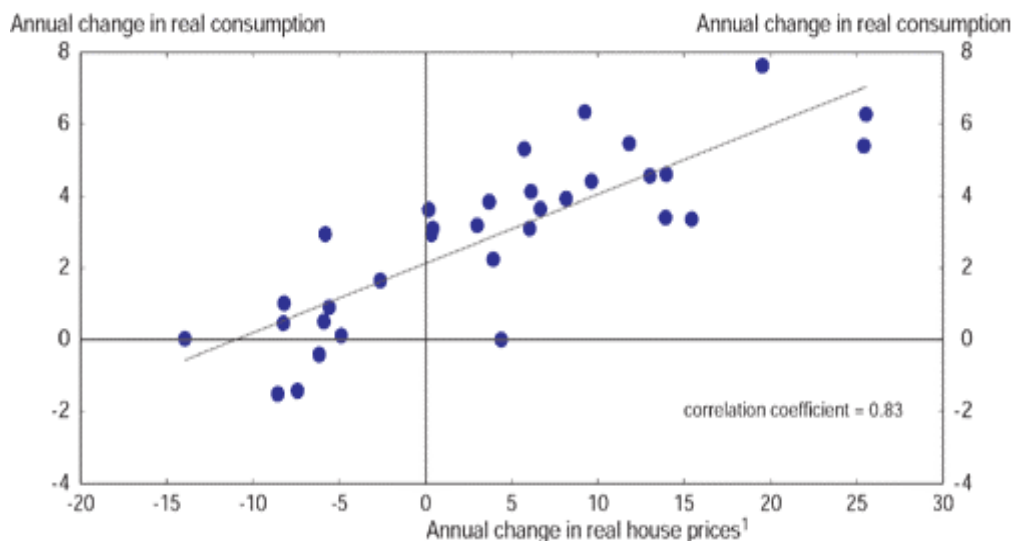


Figure 3.2: Correlation between real house price growth and consumption, UK, 1970 – 2002



Source: OECD (2005)

The Economist (2005b), in a special report on 'the global housing boom', argues that '(n)ever before have real housing prices risen so fast, for so long, in so many countries' (ibid., p. 52). The total value of residential property in the developed economies more than doubled to over \$70 trillion in the first five years of the new century, significantly more than the increase in total share values in the stock market

boom of the second half of the 1990s. In scale, this massive rate of housing asset appreciation equalled the total value of GDPs for the countries in question. Table 3.1 presents a comparative picture of house price inflation in the 1997-2005 period.

Table 3.1: *The Economist's* house price indices

Country	% change on a year earlier		% change 1997-2005
	Q.1 2005	Q.1 2004	
South Africa	23.6	28.1	244
Honk Kong	19.0	17.4	-43
Spain	15.5	17.2	145
France	15.0	14.7	87
New Zealand	12.5	23.3	66
United States	12.5	8.4	73
Denmark	11.3	6.0	58
Sweden	10.0	7.7	84
China	9.8	7.7	n.a.
Italy	9.7	10.8	69
Belgium	9.4	8.8	71
Ireland	6.5	13.2	192
Britain	5.5	16.9	154
Canada	5.2	5.7	47
Singapore	2.0	-1.5	n.a.
Netherlands	1.9	9.5	76
Switzerland	1.0	3.4	12
Australia	0.4	17.9	114
Germany	-1.3	-0.8	-0.2
Japan	-5.4	-0.4	-28

Source: *The Economist*, June 18 2005, p.52.

The largest gains were in South Africa, Ireland, Spain and Great Britain, with Australia also experiencing three-digit growth. However, in the last year the residential market has slowed dramatically in Britain and Australia. In the case of

Britain, *The Economist* quotes the view of the Bank of England to the effect that the recent downturn in the housing market is unlikely to spark a sharp curtailment of consumption since a smaller proportion of the capital gains accrued during the boom have been spent. *The Economist* (2005a, p. 70), in reply, comments: 'Really? Over the past year, as the 12-month increase in house prices has fallen from 20% to 4%, the rate of increase in retail sales has dived from 7.5% to 1.3%'. In the United States, the article continues, two-fifths of the jobs created since 2001 have been in housing and related industries, including construction, real estate and brokering, and 90 per cent of GDP growth has been due to consumption and housing construction, further suggesting that a correction in housing markets leaves the American economy vulnerable.

It is clear that a key factor in the recent housing boom has been the role of an increasingly deregulated and global financial system. In the Anglo-Democracies, in particular, financial innovation and increasingly intense competition has led to the proliferation of new mortgage products. In addition to equity withdrawal ('treating houses as ATMs'), the advent of interest-only and re-draw, 'negative amortisation', zero deposit and 'low doc' loans has increased the scope of housing demand and introduced an increasingly speculative element. Purchasers can bet on house prices continuing to rise, just as in the stock market. The rapid continuing growth of the secondary mortgage market in these economies has increased the efficiency with which individual savings are mobilised for mortgage lending. (For an outline of the key institutional and financial market changes in the OECD countries during the 1980s and 1990s, see Girouard and Blöndal (2001, pp. 9-12.) These changes strengthen the link between housing prices and consumption by relaxing credit constraints in a direct and significant manner.

One distinguishing feature of the most recent housing boom was the increasing role of investors. In the United States, almost a quarter of houses sold during 2004 were acquired by investors and a further 13 per cent as second homes (quoted in *The Economist*, 2005b, p. 53). The situation was similar in Australia over the past few years (Berry and Dalton, 2004). Investors and second-home buying home owners are likely to be heavily leveraged, up to and even beyond 100 per cent, especially where, as in Australia, existing taxation regimes deliver substantial benefits for pursuing this path. Consequently, this essentially speculative strategy – entailing low or negative net rental yields in the hope of reaping substantial longer term, tax-favoured capital gains – is vulnerable to a downturn or even plateauing of housing markets, with falling household consumption and savings rates likely.

The proliferation of mortgage products has included the facility for house owners to 'withdraw equity' from their housing assets. For example, equity release or 'lifetime mortgages' have grown rapidly in the UK from a very small base. By the end of 2004 these loans outstanding totalled £4 billion, up from £1.2 billion in 2002 (CML, 2005, p. 3). Although the former figure represents less than half of one per cent of the total value of mortgage loans outstanding in the UK, recent research by the Institute of Actuaries predicts that the equity release market could quickly grow to in excess of

£5 billion per year and survey research indicates that 80 per cent of owner occupiers are aware that they could draw on the equity in their homes, while almost half of those surveyed expected to use some of their housing equity in future (CML, 2005, p. 3). Those aged under 55 were much less likely than over-65s to indicate that they intended to leave all their housing wealth to their beneficiaries.

One further factor may increase the likelihood of a slowing housing market leading to declining consumption. In the past housing booms have tended to result in declining real but not nominal housing prices, because of relatively high rates of general inflation. Given some degree of 'money illusion', many households would not have recognised that their real wealth had fallen as far as it had, if at all. As long as their money incomes had kept pace with inflation they would not have cut their consumption, nor not cut it as far as their declining wealth would suggest. However, in today's low-inflation climate, falling demand is likely to be expressed in both falling real and nominal average house prices, underscoring to most owners that their wealth is declining.

Low inflation also tends to make consumers and investors sensitive to small changes in interest rates; it doesn't take much of a tightening in monetary conditions by the central bank to get the message across and spark a dampening response in the housing market. This appears to have been the case in 2004-05 in Australia when a small number of small rises in official interest rates cooled property markets in 2004-05. This would suggest that the chance of a hard landing for the economy is reduced if the central bank can choke off speculative surges with minor, well-signalled adjustments without significantly raising borrowing costs for consumers and investors. However, this is not necessarily the case, even for Australia (see next chapter). In part, the effectiveness of conventional monetary policy will depend on the institutional framework. In the United States, for example, mortgage interest rates follow long term (10-year) government bond rates, not short term rates, as in Australia. Although the US Federal Reserve has progressively raised short term rates by more than four percentage points over the past few years, long term rates (governed mainly by international factors, especially the demand by foreign investors for US dollar securities) have remained largely unchanged, as have effective mortgage rates for many borrowers. Not surprisingly, the US housing boom has continued unabated; in the year to March 2005, average house prices rose by 12.5 per cent (see Table 1).

In an OECD study of house price movements and economic activity in the OECD, Girouard and Blöndal (2001) trace interactions over the 1970 to 1999 period. The main conclusions were as follows.

- Real annual (average national) house price increases were: in excess of 2.5 per cent for the United Kingdom, the Netherlands, Spain, Ireland and Norway; less than 1 per cent in Germany, Italy, France and Sweden; and in between for Australia, Finland and Denmark.

- Volatility in average house prices varied significantly between countries. Price fluctuations were high for Italy, Spain, Japan and the UK and relatively small in France and the United States. Ireland had stable prices for much of the period but a very pronounced boom from the mid-1990s; average prices doubled between 1993 and 1999, an annual increase of around 10 per cent real. Australia displayed moderate volatility, with the boom and bust of the 1980s pronounced. By 1999 average real house prices in Australia stood at about the same level of the booms in the mid and late 1970s and above that in the late 1980s. In most countries, volatility of house price movements during the 1990s was less than for the overall 1970-1999 period – though the data presented above on the subsequent 5 years of the new century suggests greater volatility in recent times.
- In the second half of the 1990s, average house prices grew quickly in the UK, Ireland, the Netherlands and Spain.
- House price movements over the 1970-1999 period were closely related to changes in the level of aggregate economic activity. Periods of general inflation have been consistently associated with bouts of house price inflation. Conversely, in economies like Japan and some European Union countries, falling property markets have occurred alongside periods of recession.

Girouard and Blöndal (2001, pp. 7-9) note three transmission mechanisms linking house prices and consumption – the wealth effect, the collateral effect (both already noted) and the impact on the profitability of residential construction. In this latter context, changing prices for existing houses may make it more or less profitable to build new houses. (A fourth factor – the impact on house-based consumer items was also mentioned above.) With respect to the wealth effect, it can be argued that although rising house prices increase household *financial* wealth it does not change *real* wealth, since as prices rise so does the implicit rent ‘paid’ by the owner occupier. However, households facing rising implicit rents could trade down to cheaper houses releasing equity for consumption spending. In any event, it is not clear that home owners respond to rising implicit rents in any conscious and consistent fashion.

Rising housing prices relax borrowing constraints by increasing the borrowing capacity of home owners; their increasing house values reduce the risk to lenders and improve the terms on which they can borrow. Hence, easing credit constraints can be seen as a mechanism for ‘activating’ the wealth effect when it is present. But even where it is not – i.e. where households do not adjust their consumption because they feel more or less wealthy – borrowing and consumption may increase, since the previously credit constrained households are now able to bring forward desired consumption by borrowing against future income. ‘In practice, households’ ability to borrow is strongly dependent on their capacity to supply assets that can serve as security for repayments and real estate is the most widely used collateral asset. By increasing borrowing secured on rising property values, households can

withdraw part of the rise in housing equity and use some of the proceeds to finance extra consumption' (ibid., p. 8). It is this double impact on consumption wrought by the housing market (as well as the latter's volatility) that has such important implications for the health of the macro economy.

When house prices generally rise, the difference between the cost of building new houses and the price at which they can be sold increases⁷. This increase in prospective profit on residential construction results in an increase in residential investment, further inflating the economy. Because of the time taken to construct houses, especially high density blocks, buoyant construction can continue well after the housing market cools. Builders and developers are also often highly leveraged and credit constrained. Once the value of their buildings in progress falls, lenders may sharply curtail credit, imparting greater volatility to the house construction cycle (ibid., p. 8). This is likely to occur in the high density, multi-unit market when lenders perceive a situation of over-supply developing.

Girouard and Blöndal (2001, pp. 12-14) review a number of empirical studies of the size of the wealth effect in advanced capitalist countries and then conduct an econometric analysis of the same for a select number of OECD countries⁸. The key estimates are presented in Table 2.

Table 3.2: Estimates of the Housing Wealth Effect

Country	Elasticity of Cons.	MPC
United States	0.08	0.048
Canada	0.16	0.120
United Kingdom	0.18	0.060
Italy	-0.03	-0.02
Japan	0.17	0.180

Source: Girouard and Blöndal (2001, p. 28)

The responsiveness (elasticity) of consumption with respect to changing housing wealth ranges from 0.08 in the US to 0.18 in the UK⁹. Italy is the exception with a

⁷ The ratio between prices and costs is called 'Tobin's q'.

⁸ They use the Granger-Engle two-step strategy, testing for robustness with the Johansen co-integration technique. The countries included were: the US, UK, Canada, France, Italy and Japan. The comparative study covered the period from the early 1970s to the late 1990s.

⁹ The measure of housing wealth used here is the gross value of housing assets not housing equity. The elasticity figure measures the *percentage* response of consumption to changing housing wealth, whereas the MPC_w measures the absolute response – e.g. 5 cents extra consumption for every extra

negative coefficient – i.e. as housing prices fall, consumption increases, resulting in a small negative wealth effect. The marginal propensity to consume out of rising wealth is high for Canada and Japan and moderately high for the US and UK. Benjamin et al. (2004) also estimated, for the United States, the long term elasticity of consumption with respect to real estate wealth at 0.08, for the longer period 1952 to 2001. These authors compared this result to the impact of changes in financial wealth, comprising stocks, bonds and mutual funds, and found that the elasticity of consumption there was only 0.02. The greater responsiveness of consumption to housing wealth is consistent with the earlier study by Case, Quigley and Shiller (2001) and with the estimates presented by Girouard and Blöndal (2001, Tables 6 and 7).

Catte et al., (2004) provide the most recent detailed cross national study of housing wealth effects. They confirmed the existence of substantial effects in the US, UK, Canada, the Netherlands and Australia. The MPC of Australia's housing wealth effect was estimated at 0.07, larger than the US and the same as the UK. This estimate is substantially higher than that found by recent Australian studies (see chapter 4).

There are a number of reasons why consumption is less responsive to financial wealth. Much of financial wealth is tied up in pension (superannuation) funds and difficult to access. Financial markets do not, in general, exist to borrow against pension wealth. The poorest half of the population has virtually no financial wealth (many, of course, do not own houses either). Financial assets are held by wealthy households, and often tied up underpinning controlling interests in corporate arrangements. When households borrow to fund consumption, tax benefits on housing in countries like the US tend to favour concentration of debt and assets in housing¹⁰.

Benjamin et al. (2004, p. 342) make the interesting suggestion that '(w)hen stock market prices decline, households use their real estate equity to increase consumption, thereby stabilising the economy'. This appears to have been the case after the share market and dot.com collapse of 2000. As housing markets boomed the positive wealth effect more than compensated for the negative effect on consumption of a declining stock market. This suggests that house price inflation helps the economy avoid a 'hard landing'. The unanswered question, however, is – does the switch of activity from the stock market to real estate merely put prolong and amplify the bubble and lead to a bigger bust in the longer term?

Girouard and Blöndal (2001, p. 13-14) report on a number of studies in the UK looking specifically at the role of equity withdrawal in driving consumption expenditure. Miles (1995) estimated that around 80 per cent of all housing equity

dollar increase in wealth. Algebraically, the two measures are related as follows: $MPC_w = e.c/w$, where e is elasticity, c is initial consumption and w is initial wealth.

¹⁰ Other relevant empirical studies on the wealth effect are: Bertaut (2002); Macklem (1994); Boone et al. (1998).

withdrawal resulted in higher current spending. Westerway (1993) found that some forms of equity withdrawal were more likely to be consumed than others. In particular, borrowing secured on housing equity for non-housing purposes and 'over-mortgaging' (borrowing more than is required for house purchase) had amplified the economic expansion during the 1980s and intensified the slump in the early 1990s. On the other hand, Hamnett et al. (1991) found only a modest propensity to consume out of trading down. In the United States, Poterba and Manchester (1989) found that the propensity to consume out of second mortgages was about 75 per cent. Conversely, Brady et al. (2000) analysed survey data for 1998-99 found that only 20 per cent of 'cash-out' re-financed mortgages (over-mortgaging) supported consumption.

Girouard and Blöndal (2001, Tables 8 and 9) also estimated the long run elasticities of consumption with respect to housing equity withdrawal (HEW). The estimates ranged from 0.004 to 0.15 for the G7 countries, though the results were statistically significant only for France and Canada. The responsiveness of consumption to HEW was, in general, lower than for housing wealth and lower than the earlier estimates of Westerway (1993) and Miles (1995). The authors suggest that these discrepancies may be due to different constructions of time series data.

The recent OECD study (Catte et al., 2004) found more compelling evidence of a strong and significant HEW impact on consumption in the major economies of the US, UK and Canada, as well as Australia. This study found that where HEW plays an important role in the wealth effect it is also highly correlated with house price movements. In these countries – notably, Australia – it is HEW that accounts for most of the housing wealth effect on consumption, suggesting that access to credit is critical in the process.

The most recent OECD (2005) study brings the story up to date. Over the past five years average house prices have continued to boom, as *The Economist* has reported. The size and duration of the price rises since 1996 are, according to the OECD report, unprecedented, as is the extent to which house price inflation has occurred together across member countries and been dissociated from the general business cycle. The report goes on to argue that housing appears to be over-valued – i.e. prices increasing well beyond the levels sanctioned by 'fundamental' factors like interest rates – in some but not all member countries. Moreover, the degree of over-valuation in a period of low inflation is likely to result in a correction down in both real and nominal housing prices which, due to the 'stickiness' of prices, is likely to occur over a prolonged period¹¹.

Over the period 1970-1995, house price cycles in most countries followed a roughly 10 year rhythm, increasing on average in the six-year up-phase by around 40 per

¹¹ Downward stickiness in housing prices follows from the tendency for existing house owners to take or keep their dwellings off the market when demand cools, restricting the rate of price decline and stretching it over a longer period (see Berry and Dalton, 2004). Other factors making for 'stickiness' include the heterogeneous nature of housing and illiquidity due to high search and transaction costs.

cent in real terms and declining over the following down-phase by 25 per cent. However, the recent up-phase has lasted for 10 years in Australia, the Netherlands, Norway, Sweden, the United States, the United Kingdom, Ireland, France and Denmark. Real house prices have now exceeded their past peaks in these countries. The current boom has lasted more than twice as long as the previous record in the first five countries listed above, including Australia, though, as noted earlier, there are signs that it is over in Australia and the UK. Just as remarkably, the residential property cycle has moved counter-cyclically over the past 5 years; the overall OECD output gap (difference between maximum and actual GDP) began rising in 2000 but housing prices continued to rise, whereas both moved in lagged harmony over the previous 25 years. The greater synchronicity of house price cycles across the OECD is probably due to a series of fundamental and institutional factors, like generally low real interest rates, the increasing integration of the global economy and financial liberalisation (Otrok and Terrones, 2005).

The OECD report summarises econometric analyses designed to test the extent to which fundamental factors (real interest rates, real disposable income, population growth, etc.) account for the observed movement in housing prices over the recent cycle. Broadly speaking, the fundamentals seemed to account for price movements in Denmark, Finland, France, the US and Norway. Results were mixed for the Netherlands. However, clear signs of overvaluation were identified in the UK, Ireland and Spain – in other words, housing prices in those countries varied well beyond the bounds suggested by the fundamentals.

However, the report goes on to note the limitations of conventional econometric modelling:

...it cannot be excluded that the estimated relationship is unstable, possibly because the price elasticities of supply and demand vary over time, due for instance to changes in regulatory conditions, demographic developments and taxes that cannot be adequately taken into account. Given the margin of uncertainty, this evidence needs to be complemented by other approaches (OECD, 2005, p. 198).

The two proposed indicators are (1) the average housing price-to-income ratio and (2) the average housing price-to-rent ratio. Where these ratios are above their historic averages it might indicate over-valuation of housing and the prospect of a future downward correction. In 2005, these ratios exceed their long run trends by more than 40 per cent in the UK, Ireland, Spain, Australia and New Zealand. These ratios have also peaked in the US, Canada, Denmark and France. Those countries with stable or declining house prices (Japan, Switzerland and Korea) have had relatively low ratios.

Affordability has also been influenced by the level of mortgage interest rates. Low rates have allowed average mortgage debt levels to rise in a number of countries without unduly increasing housing stress. The main exceptions here, according to the OECD report, are Australia, New Zealand and the Netherlands where the proportion of income needed to service mortgages has been increasing. If interest

rates trend upward, however, housing affordability problems are likely to increase across the board due to the previous rise in average indebtedness.

When adjustments are made for the changing user cost of housing¹², the actual price-to-rent ratios in some countries suggest considerable over-valuation of housing. On this measure, Australia and the UK had the most over-valued housing markets in 2005, followed by Spain, Ireland, Norway and the Netherlands. Although the US price-to-rent ratio tracks the fundamental path at the national level, it is well above in particular regional housing markets, notably in California, Florida and New England (ibid., p. 211).

The OECD report makes the important point that countries like the US, UK, Australia, Canada and New Zealand, where financial liberalisation and innovation has occurred fastest and furthest are those displaying the greatest actual volatility in housing markets and the greatest potential impact of changes in housing prices on aggregate levels of economic activity. Apart from direct impacts via wealth and collateral effects, housing market volatility raises the possibility of systemic risk in the financial sector:

Sharp downward corrections in asset markets, including in housing markets, can impact the banking system, which in turn may adversely affect public finances and macroeconomic stability at large. If financial intermediaries misjudge risks, the potential for credit and asset booms to derail and turn into busts is a concern. Banks may be reluctant to make provision for their loan losses when housing markets are buoyant, and supervisors may be reluctant to suggest it without solid evidence. Hence, when a large shock occurs, banks may find themselves with inadequate cushions to absorb the loss, which could affect credit availability (ibid., p. 217).

3.2 Specific Studies

The following studies reviewed in this section provide data and analysis related to the issues canvassed above and in the preceding chapter. The studies focus on different aspects of the critical link between changes in (perceived) wealth by households and consumption and, therefore, aggregate economic activity in the economy over time¹³.

¹² The user cost of housing for owner occupiers includes the financial returns to home ownership along with the costs of depreciation and maintenance, tax benefits, property tax payable and the risk associated with residential property. Equilibrium in the housing market occurs when the annual user cost of owning a home equals its market rent. Overvaluation occurs when the actual price-to-rent ratio is above that implied by the user cost. In an efficient housing market this would mean that renting is cheaper than buying and house prices would be pushed down and rents up until the appropriate price-to-rent ratio is established.

¹³ It should be noted that savings is the obverse of consumption. This can be seen from equation 4 in the box in chapter 2 where income is defined as the sum of consumption and savings; i.e. savings is income minus consumption; conversely, consumption is income minus savings.

3.2.1 Shiller (2004) Household Reaction to Changes in Housing Wealth.

In this review carried out for the Board of Governors of the Federal Reserve System, Shiller assessed the available US evidence for a pronounced wealth effect due to changes in housing wealth. He began by noting the virtual impossibility of identifying the independent effect of housing at the aggregate national level. Changes in the national average savings rate and national house price index were too small over the period for which good data existed. Movements in these series hid a multitude of interacting variables¹⁴. One factor that clearly did appear to affect savings at the national level was inflation. Nationally, the savings and inflation rates were highly positively correlated. Shiller suggested that this followed in part from widespread consumer views that high inflation was a signal for high volatility and future uncertainty in the economy. High inflation would therefore encourage households to save more to meet the unforeseeable future exigencies (resulting in a high 'precautionary motive' for saving). He also referred to research demonstrating that many households – in effect, suffering from money illusion – regarded inflation as a 'thief', stealing their past savings, regardless of whether or not their money incomes were rising at the same rate. In such a situation these households may increase their savings rate (reduce current consumption) to restore their perceived lost wealth.

This inflation effect could, of course, impact on the housing market if households see housing as an appropriate asset to accumulate, either by trading up as home owners or by investing in rental housing. High inflation also causes existing home owners to pay off more of their real debt up front, assuming they hold conventional credit foncier mortgages, increasing their new wealth. Conventional theory based on the life cycle hypothesis discussed earlier would suggest that this increase in wealth would spark further consumption, feeding inflationary pressures. However, for reasons discussed below in relation to *behavioural* economic analyses of consumption and savings, this effect may be muted or non-existent for most households.

Shiller goes on to look at the issue of housing and stock market based wealth effects at the regional level in the United States. Using cross sectional data Case, Quigley and Shiller (2001) found evidence of strong regional wealth effects. These authors conclude that '... there are potentially serious regional problems if a real estate bubble in some cities comes to an end. A possible decline in real estate in these regions could weaken the regional economies' (Shiller, 2004, p. 13).

However, Shiller also points to the danger, nationally, of regional bubbles bursting and triggering problems in the financial system which would then have serious economy-wide impacts. He notes that this occurred in the US in the aftermath of 1929 and in the late 1980s Savings and Loan (S&L) crisis and in Japan during the 1990s. In each case, falling house prices and rising mortgage defaults sparked a

¹⁴ This underscores the inadvisability of relying on short term co-movements of variables like aggregate consumption and house price indices; the single year figures on retail sales decline quoted by *The Economist* and noted above is a case in point.

series of banking failures. Of course, in these examples, institutional factors were clearly influential. In Japan's case, the close links between the banking and corporate sectors contributed substantially to the crisis as it unfolded. Likewise, in the US, the S&L crisis was fuelled by the unintended moral hazard effects of the Federal Government's deposit guarantee scheme.

Shiller further suggests that if, in current circumstances, a similar financial crisis is sparked by declining housing markets, the impact may be more serious than in the past because average loan-to-value ratios are much higher, leading to more defaults. He adds that, in the US, lending institutions, including the largest, Fannie Mae and Freddie Mac, do not hedge against house value risk and so remain vulnerable to sharp property price declines¹⁵. Mortgage insurers are also institutions that have been unable to hedge their frontline risk in this regard. Sharp regional house price decline may also impact negatively on the credit ratings of municipal government, as their tax base erodes. This would place a double squeeze on local government budgets through declining tax revenue and higher borrowing costs.

Shiller (2004, p. 14) concludes '... that although the "wealth effect" of national house prices on national consumption may be hard to prove, there is a serious risk of the consequences of home price declines at least regionally. The regional housing bubbles that appear to be going on in the United States ought to be concerns of the Federal Reserve Board.'

3.2.2 Case and Shiller (2004) *Is there a Bubble in the Housing market?*

Much of the force of arguments, such as that summarised above by Shiller, turn on the extent to which housing (and equity) markets develop 'bubble-like' trajectories. If housing markets are highly volatile (in a non random manner), then the shocks to consumer spending/saving and other economic effects can be pronounced. Certainly, *The Economist* is in no doubt that housing asset price bubbles developed in many OECD countries over the past five years or so. But, as Case and Shiller (2004, pp. 299-300) comment:

The term "bubble" is widely used but rarely clearly defined. We believe that in its widespread use the term refers to a situation in which excessive public expectations of future price increases causes prices to be temporarily elevated. During a house price bubble, homebuyers think that a home that they would normally consider too expensive for them is now an acceptable purchase because they will be compensated by significant future price increases. They will not need to save as much as they otherwise might, because they expect the increased value of their home to

¹⁵ He also notes that there are no real estate value hedging products currently offered by financial markets, an example of market failure. He castigates the major mortgage lenders for not showing 'more initiative' in demanding financial innovation in this area. 'In fact, Fannie Mae and other institutions who face risks associated with housing prices appear to be unconcerned about home price risk, even though problems that they could encounter if home prices fall could have systematic effects and might require a government bailout' (Shiller, 2004, p. 14). With respect to the last point, it should be remembered that the cost to the US government of the S&L crisis was in the order of US\$300billion.

do the saving for them. First-time homebuyers may also worry during a housing bubble that if they do not buy now, they will not be able to afford a home later. Furthermore, the expectation of large price increases may have a strong impact on demand if people think that home prices are very unlikely to fall for long, so that there is little perceived risk associated with an investment in a home.... If expectations of rapid and steady future price increases are important motivating factors for buyers, then home prices are inherently unstable. Prices cannot go up rapidly forever, and when people perceive that prices have stopped going up, this support for their acceptance of high home prices could break down. Prices could then fall as a result of diminished demand: the bubble bursts.

Orthodox finance theory, based on the efficient market hypothesis, holds that speculative bubbles – defined as prolonged departure of asset market values from fundamental values – are impossible in principle. In this view, financial and property markets act quickly and effectively to bring market and fundamental values back into line. The argument here turns on how ‘temporary’ are the ‘temporary elevations’ of housing prices. The fact of volatility is not enough. For a bubble to occur, prices must be pushed up and kept up by widespread expectations of continuing future price increases *and* these expectations must generate sufficient anxiety among home buyers to motivate their purchasing activity.

The alternative school of ‘behavioural finance theory’ (see Shleiffer, 2000; Haugen, 1995) denies the theoretical force and empirical reality of efficient markets, leaving open the likelihood of asset price bubbles. Robert Shiller (2000)¹⁶ himself is a prominent contributor to this school and draws on the notion of ‘feedback’ to stress the self-reinforcing process of bubbles at work (in this case in relation to share prices):

In feedback loop theory, initial price increases...lead to more price increases as the effects of the initial price increase feed back into increased investor demand. This second round of price increases feeds back again into a third round, and then a fourth, and so on. Thus the initial impact of the precipitating factors is amplified into much larger price increases that the factors themselves would have suggested (ibid., p. 60).

Simon (2003) looked at a number of (claimed) past bubbles, including the 1929 stock market crash, and the NASDAQ collapse of the late 1990s, as well as several Australian cases, including the 1987 stock market collapse and the earlier experience of the Poseidon nickel boom and bust. The common characteristics of these events seem to be as follows:

- Asset prices first rise sharply and eventually fall precipitously
- Bubbles have their genesis in some fundamental change or force, often technological in form (e.g. steam driven locomotives)
- Speculation – optimistic and self-validating views about the positive impacts of the fundamental changes – takes hold among investors

¹⁶ The title to Shiller’s best-selling popular book – *Irrational Exuberance* – was coined by Alan Greenspan, Chairman of the Federal Reserve Board, during the 1990s high-tech stock market boom.

- Bubbles seem to appear in a benign economic environment, e.g. after a long period of high economic growth
- Bubbles feed on easy credit; this appears to be particularly important in the case of housing booms

Simon (*ibid.*, p. 10) comments:

To summarise the foregoing discussion, a bubble is an asset market event where prices rise, potentially with justification, rise further on the back of speculation, and then fall dramatically for no clear reason when the speculation collapses. Furthermore, they typically occur in an environment of general optimism, for example, at the end of a long expansion. Commonly associated with these price changes, but not necessarily, are an easy availability of credit, new technology, and an increase in company formation.

House price rises (and falls) can be driven by fundamental forces – like population growth and concentration, economic growth and structural changes in the distribution of income and wealth – as well as by institutional factors like interest rate movements, taxation policies and land supply controls. To test whether a housing bubble has emerged in the US, Case and Shiller analyse (a) the extent to which fundamental factors account for state-level house price movements (and, hence, whether there is any variation ‘left over’ that could be the result of a bubble) and (b) survey results from households who bought houses during 2002 in four city-regions – Boston, Los Angeles, San Francisco and Milwaukee – which they compare to a similar household survey carried out in 1988.

Case and Shiller first consider data on state-wide median house price changes (using repeat-sales indices) and per capita income by state on a quarterly basis over 1985-2003. They establish by regression analysis that in all but eight states, income accounts almost completely for the variation in average housing prices (R^2 in the 0.9 to 0.99 range). In a large majority of states the ratio of average house prices to average incomes was remarkably stable over the period in question. However, in the eight states – which include California, New York and Massachusetts, with four of the city-regions that have experienced pronounced house price inflation, viz. Los Angeles, San Francisco, New York City and Boston – the ratio of prices to incomes was much more variable; income change in those states explained a much lower proportion of house price change (lower R^2) than for the other states. Put another way, house prices did not display a ‘random walk’ but displayed strong inertial tendencies or path dependence.

The authors then add other fundamental variables to their regression analysis of the 1985-1999 period, including housing starts, mortgage interest rates, employment and unemployment levels. This improves the explanatory power of the analysis (increases R^2) in the eight volatile states but when these equations are used to forecast the actual progress of house prices in the post-stock market boom period,

2000-02, they under-forecast in seven of the eight states. Case and Shiller (ibid., p. 312) conclude:

... we find that income alone explains patterns of house price changes since 1985 in all but eight states. In these states the addition of other fundamental variables adds explanatory power, but the pattern of smoothly riding and falling price-to-income ratios and the consistent pattern of underforecasting of home prices during 2000-02 mean that we cannot reject the hypothesis that a bubble exists in these states.

Case and Shiller then go on to compare the results of two household surveys undertaken in four cities in four of the 'volatile' states – viz. Orange County (i.e. suburban Los Angeles), Alameda County (suburban San Francisco), Middlesex County (suburban Boston) and Milwaukee County, Wisconsin. The first survey was undertaken in 1988, the second in 2003, both periods of booming property markets in the four cities. Over the period 1982-2003, the average annual rate of house price inflation ranged from 5.6 per cent in Milwaukee and Los Angeles to 8.2 per cent in Boston. Los Angeles, Boston and San Francisco displayed great volatility with both pronounced boom and bust features, whereas Milwaukee tracked a steady upward climb in dwelling values over the entire period.

Random samples of households were drawn in each city in each year. Questionnaires were mailed to each household and response rates fell in the 30 to 50 per cent range in both years. In the large majority of cases households purchased the dwelling for their own primary use. First home purchasers were between 30 and 55 per cent of each sample. Landlord investors made up less than 6 per cent of the sample (except in San Francisco in the 1988 study).

The authors concluded, with respect to the 1988 study:

The results of that survey provide strong evidence for some parameters of a theory that a housing bubble did exist in 1988: that buyers were influenced by an investment motive, that they had strong expectations about future price changes in their housing markets, and that they perceived little risk. Responses to a number of questions revealed that emotion and casual word of mouth played a significant role in home purchase decisions. In addition, there was no agreement among buyers about the causes of recent home price movements and no cogent analysis of the fundamentals (Case and Shiller, 2004, p. 314).

Similar, though slightly weaker, findings resulted in the 2003 study. The vast majority of respondents stated that investment was a 'major consideration' in their home purchase. With the exception of San Francisco (14.1 per cent), less than 8 per cent of respondents considered that their home purchase represented 'a great deal of risk'. Around 90 per cent of respondents in the cities in both surveys expected an increase in housing prices 'over the next few years'. The mean expected increase in the 2003 respondent's house value over the next 12 months ranged from 7.2 per cent in Boston to 10.5 per cent in Los Angeles. The most strikingly bullish expectations occurred over the longer period. Expected *annual* price increases over the next 10 years ranged from 11.7 per cent in Milwaukee to 15.7 per cent in San Francisco. At least two-thirds of respondents in the four cities

said that 'it was a good time to buy a house'. The authors also found some evidence that respondents rely on fallacious 'theories' to make sense of house price changes and generally do not perceive that 'psychology' or 'irrational exuberance' is responsible, suggesting to the authors that homeowners do not perceive themselves to be in a bubble market even at the height of a bubble¹⁷. However, they also detect a slightly greater degree of scepticism about housing and other markets than respondents to the earlier survey, resulting in a higher degree of uncertainty about future price movements.

In a companion report, Case, Quigley and Shiller (2003) compile a panel of 14 advanced industrial countries (not including Australia) and analyse annual data on wealth and consumption over the period, 1975 to 1996. Estimates of consumption elasticities were then derived in a parallel fashion to the multi-state analysis already described. The value obtained for the housing wealth effect ranged from 0.11 to 0.17, depending on the model specification. The elasticity of consumption of stock market wealth was found to be much lower, around 0.02. This difference, the authors surmise, could be due to the relatively small proportion of the population who directly own equities in the European countries in the panel.

This empirical analysis lends some support to the theory of speculative asset bubbles outlined in Shiller (2000). In this book the author argues that bubbles are 'precipitated' by changing public opinions that have an immediate effect on housing demand and by 'amplification mechanisms' in the form of price-to-price feedback loops. Fundamental factors on both the demand and supply sides can start the process. For example, increasing population and general economic expansion in a climate of low interest rates can drive demand up in the short run, pushing against supply constraints (particularly with respect to urban land availability) leading to initial house price rises that fuel the speculative change in expectations and consumer behaviour. Accelerating prices provide the amplification process as more and more buyers came to anticipate further price rises. Eventually prices overshoot as supply catches up to demand, vacancy rates rise and price increase slows, eventually encountering 'sticky' barriers to significant price falls, resulting in a sharp fall in transaction volume and more pessimistic expectations about future prices. The bubble bursts. Housing markets, in this view, are 'slow to over-react' (Haugen, 1995).

Housing bubbles depend, argue Case and Shiller, on the free exchange of optimistic stories, with word-of-mouth communication generating the 'excitement' that seems to attach to the process. The amplification process seemed to be strongest in 'glamour cities' with hot property markets like Los Angeles and Boston; '(t)hus real estate price volatility can be self-perpetuating: once started, it generates more public attention and interest, and thus more volatility in the future' (Case and Shiller, 2004, p. 338).

¹⁷ Mayer and Quigley each provide interesting, generally sympathetic critiques of the Case and Shiller findings and interpretations in the discussion section at the end of the paper in question.

Looking ahead, Case and Shiller suggest that, compared to 1988, today's US home owners are more informed about the bubble-like nature of asset markets, having lived through the crashes of 1990 and 2000 and the subsequent accounting scandals in American business. This suggests that if the current US housing boom (which has continued since 2003) does break then the response of households (negative amplification effect) may be to increase their savings or repay debt and cut back on consumption with dampening aggregate effects on the economy, as noted in the preceding chapter. However, the authors also note that the uneven spatial impact of house price inflation, with bubbles confined to particular 'hot spot' cities, means that declining housing prices are unlikely to be synchronous and their differential staging in time will lessen the cumulative aggregate effect over any given period.

The analysis in this paper is useful since it suggests that the process of speculative rises and declines in housing markets (and their economic impacts) are likely to be unevenly articulated through time and over space. Whereas fundamental forces drive most regional housing markets, bubbles can develop and burst in some 'hot spots' and depending on how important – for overall economic activity – those cities are, the macroeconomic effect on the national economy will vary. In the context of Australia, if housing bubbles are seen to develop in Sydney and Melbourne, for example, the potential downside risk for the Australian economy is likely to be high, even if housing markets in other parts of the country are 'behaving well'.

In a later paper Shiller (2006) argues that the 1997-2005 housing boom was – like the slightly earlier bull run on the stock exchange – an aberration when taking the long view. He constructs a US repeat-sales house price index for the period, 1890 to 2005. From 1890 to the mid-1990s average real house prices in the US were virtually unchanged, throwing into relief the subsequent sharp boom. Although for most of this period average real *prices* gravitated around a constant trend, there was a noticeably decline in real *rents*. Hence, over this period, the ratio of real rents to real house prices fell, accentuated in the recent boom. Tellingly, Shiller argues, the declining rent-to-price ratio was not caused by a matching decline in real interest rates, so that 'the recent divergence in real interest rates and the real rental-price ratio suggests the possibility of an irrational overpricing [of housing] today and a huge fall in home prices in coming years' (ibid., p. 5).

Shiller also points to the behavioural economic factors noted above as reinforcing the divergence between market and fundamental values in housing markets experiencing a bubble. Once a speculative upsurge is established, house owners and buyers tend to suffer from a number of 'heuristic biases' (Shefrin, 2002). In particular, they tend to be 'anchored' in recent optimistic views of the market and under-react or filter out conflicting pessimistic information. This, coupled with 'overconfidence' in their ability to 'read' the market, helps to maintain their 'bullish' behaviour.

3.2.3 Shefrin and Thaler (1988) *The Behavioural Life-cycle Hypothesis*

Modigliani and Brumberg's (1954) life-cycle theory of savings, noted above, is cast within the standard intertemporal utility maximising tradition of mainstream economics. The theory holds that all households organise their consumption through clearly defined stages of the life cycle in order to maximise utility over their lifetimes. All forms of income are treated on a formally equal basis. That is, all forms of income are assumed to impact on the household's consumption/savings decisions at a point in time in the same way. That means that a household is indifferent between receiving income as a given cash payment or current income stream, an equivalent capital gain on existing wealth and a certain future stream of income the present value of which is equal to the given cash payment. Their marginal propensities to consume and save are assumed to be the same with respect to all income forms¹⁸.

Shefrin and Thaler, drawing on the alternative tradition of 'behavioural economics'¹⁹, question this assumption of equal treatment across income forms. Using the concept of 'mental accounts', they argue that people, when making decisions about what proportion of their incomes to save towards retirement, clearly differentiate between the forms and sources. Each of the main forms – cash now, capital gains and future income and wealth – is considered as separate decisions in different 'accounts'. The 'behavioural life-cycle hypothesis' (BLH) that the authors propose holds that the mps will differ between mental accounts, that is across the alternative ways in which income is received (or 'framed'). This follows because the psychic cost of resisting the *temptation* to spend now (which the act of saving necessarily imposes) differs. The temptation to spend is greatest – and the cost of resisting highest – when households receive current regular cash payments and lump sum payments like work bonuses. Empirical evidence tends to suggest that the temptation to immediately spend other lump sums like inheritance bequests is lower. Income gains through appreciation of current wealth like houses seems to have a lower temptation to spend (though the phenomenon of equity withdrawal suggests that this is far from zero) and future guaranteed income or wealth has still lower temptation attached. Where temptation exists, 'will-power' is necessary to overcome it, unless households can establish 'rules' to circumvent the unpleasant need to exert it. To avoid Oscar Wilde's lament – 'I can resist everything except temptation' – households may opt to 'lock-up' wealth to prevent it being raided for current consumption. Superannuation or pension plans where savings cannot be released until retirement is a case in point. Some households treat their home in the same

¹⁸ As noted earlier, the marginal propensity to consume (mpc) is the proportion of an extra dollar's income the household would consume. Similarly, the marginal propensity to save (mps) is the proportion of that dollar that is saved. Clearly, $mpc + mps = 1$, since all income is either consumed or saved. Hence, $mpc = 1 - mps$, and vice versa.

¹⁹ Behavioural economics has developed over the past 30 years, based on the original work of psychologists, especially Kahneman and Tversky (2000). For a useful review, see Camerer and Lowenstein (2003) and the collection of articles in Camerer, et al., (2003).

way – that is, in their mental accounting framework, the family home appears in the future wealth account which has a very low temptation to raid factor. Other households clearly place their homes in the current assets account with a higher temptation factor and raid via equity withdrawal.

The import of the BLH is that the mps will tend to be high for future income and wealth, moderate for current wealth and low for current income; conversely, the mpc will be low, moderate and high, respectively. Because temptation to spend is so high with respect to current income, the level of will-power required to resist is very high and the psychic cost of mobilising that will-power intense. This psychic cost will be traded off against future wealth accumulation in favour of current consumption, resulting in a relatively high mpc. Conversely, because the temptation to spend now from (borrow against) future wealth is low it doesn't take much will-power to leave that anticipated future stock of wealth in tact and any increase in it (say because of a reduction in the taxation of superannuation fund contributions) will largely be saved.

The key point with respect to the role of housing wealth in the economy is that the wealth effect on consumption, if the BLH holds, will be lower than in the traditional world of the standard life-cycle theory. Most if not all households will tend to treat housing wealth gains as less 'fungible' – i.e. less available to spend – than a similar increase in current income and therefore save a higher proportion. Some households, as noted, will see their house as a store of future wealth not to be touched until retirement or not even then if they wish to bequeath it to beneficiaries. However, it should be stressed that, although more moderate, the housing wealth effect is still likely to be present to some extent, with the consequences for macro-stability and policy already discussed. The extent to which this effect holds in any case is then a matter for empirical enquiry. Of particular interest is how the marginal propensities to save and consume vary between mental accounts across the life-cycle. Although Shefrin and Thaler offer suggestive ideas here, they provide little empirical support. This issue is taken up in the next section.

3.2.4 Campbell and Cocco (2004) How Do House Prices Affect Consumption?: Evidence from Micro Data

This United Kingdom study is based on the annual UK Family Expenditure Survey (FES) between 1988 and 2000. The authors construct a pseudo-panel data set that enables them to track house prices in the regions where the households live, controlling for income, borrowing, tenure and demographic structure and to distinguish the effects of house prices on consumption at the national, regional and household levels.

The authors found that older home owners had a high elasticity (responsiveness) of consumption to house price increases. Conversely, the elasticity of consumption of younger households is lower; in the case of young tenants it is close to zero, unsurprising since the latter have nothing to gain from rising prices and much to lose if rents follow prices up. Indeed, it would not be surprising if the elasticities of some

tenants were negative, resulting from a strong precautionary motive to save more (consume less) now to provide for anticipated future rent increases. The responsiveness of consumption to changes in house prices, in descending order, is as follows: older homeowners, younger homeowners, older renters, younger renters. All elasticities are significantly positive, except for younger tenants. The policy implication is also clear:

This age heterogeneity is important since it suggests that as the population ages and becomes more concentrated in the old homeowners group, aggregate consumption will become more responsive to house prices. Previous estimates of the elasticity of consumption to house prices using aggregate data miss this source of time variation since they do not take into account the slowly changing age structure of the population (Campbell and Cocco, 2004, p. 3).

And again:

This finding has macroeconomic implications since it suggests that as the population ages and becomes more concentrated in the old homeowners group, aggregate consumption may become more responsive to house prices. In recent years both the UK and US have experienced rising property prices and strong private consumption, pointing to the relevance of our estimates (ibid., p. 25).

The high consumption responsiveness of many older homeowners may result from the fact that they believe themselves to be adequately provided for in their rapidly approaching retirement, or that they anticipate subsequently trading down to a cheaper house in retirement, and can spend some of their housing wealth now. Younger homeowners, on the other hand, may anticipate having to trade up in future to a bigger and more expensive house to satisfy the requirements of a growing household and will need to save towards this end. Younger tenants aspiring to homeownership will, in addition, have to accumulate sufficient wealth through savings to access that tenure. In other words, based on this micro-data set, the authors find strong evidence of heterogeneous wealth effects across different age and tenure groups.

The responsiveness of consumption to house price changes can – as noted above – be due to either or both wealth effects and the degree of borrowing constraint on households. Campbell and Cocco find that both effects are significant in this study. Predictable changes in house prices at the national level have a direct and statistically significant impact on consumption, implying that when the collateral value of housing increases, borrowing constraints are relaxed and consumption increases. Conversely, a fall in prices would tighten borrowing capacity and dampen household consumption. Interestingly, predictable change in *regional* house prices has much lower explanatory power. ‘This suggests that if predictable [rising] house prices affect consumption by relaxing borrowing constraints, this may be a macro effect rather than a direct channel’ (ibid., p. 17). In other words, the key credit constraint is not imposed through the borrowing capacities of households in a given region but through the aggregate level and cost of credit in the economy as a whole. A corollary of this finding is that macroeconomic policy by the national economic policy

makers in central banks and national treasuries will have a significant impact on aggregate consumption – whether intended or unintended – via their impact on liquidity in the economy as this contributes to the expansion or contraction of house price inflation. The authors also find no evidence of significant differences between predictable changes in house prices and the consumption effects on young as opposed to old home owners or between homeowners and tenants. This further suggests that borrowing constraints are not directly imposed (tenants, of course, don't experience relaxed borrowing constraints when house prices rise) but the result of a macro easing or tightening of liquidity.

The findings on wealth effects includes the fact that unpredictable changes in *regional* house prices *does* impact significantly on household consumption. Hence, the channel through which wealth effects work seems (unlike the case of borrowing constraints) to have a strong regional dimension adding to the heterogeneous nature of this phenomenon and making single national policy responses inappropriate.

4 HOUSING PRICES, DEBT AND CONSUMPTION IN AUSTRALIA

“Since About 2000-01 household spending/debt has been the main driver of the current account deficit” (*Australian Senate*)

The issue of the macroeconomic significance of housing – the macro-housing nexus – is topical in Australian policy debates. During 2005 the Australian Senate carried out a public inquiry into the “Links between Australia’s Current Account Deficit, the Demand for Imported Goods and Household Debt”. The Report of the Economics References Committee (2005) was tabled in the Senate in October 2005. The Senate committee received 18 submissions, including from the Australian Bureau of Statistics and the Commonwealth Treasury.

4.1 The Senate Inquiry

The Senate’s immediate policy concern focused on two very recent and unusual features of Australia’s balance of payments situation. While Australia has consistently run current account deficits (CADs) since World War II, resulting in a continuing inflow of foreign investment, the year 2004-5 saw the CAD increase to 7 per cent of GDP for the first time. In addition, the primary factor behind the growing deficit was household spending. The household sector had moved from being a net saver to becoming a net borrower, while governments pushed their budgets into surplus and a run of high profits turned the corporate sectors into net savers as well²⁰. Buoyant consumer spending coincided with a large rise in household debt – both housing and credit card related – over the previous 5 years. As The Treasury (2005, p. 6) commented in its submission to the Senate Inquiry: ‘The household sector has been borrowing (indirectly, via the banking system) from the rest of the world to fund spending in excess of income’.

The high level of debt-fuelled consumption also underpinned the relatively high rate of economic growth of the Australian economy since the early 2000s. However, the key question is – how sustainable is this prosperity? More particularly, is the Australian economy vulnerable to a sharp downward ‘correction’ if the CAD continues to worsen and rising interest rates jolt over-committed consumers into cutting their spending? The fact that Australia has enjoyed very favourable terms of trade over the last few years, thanks to booming commodity prices, adds to the risk that a return to more normal levels will place further pressure on the balance of payments and the value of the Australian dollar. A second factor may also be

²⁰ In relation to equation 8 (chapter 2, above) relatively high domestic investment (left hand side) in a growing domestic economy has been financed by a continuing decline in the household component of private savings (S) and a sharp rise in the CAD (M-X), as the government sector moved into slight surplus ($[G_c + P_t - T]$ became negative) on the right hand side of the equation.

important here. The cumulative build up of CADs since the 1980s has largely been financed by foreign borrowings, rather than long term equity investment (as was the case earlier). The growing stream of interest payments overseas adds to the deficit. Moreover, some of this overseas borrowing is short term and therefore potentially volatile, liable to be repatriated if foreign investors lose confidence in the Australian dollar, placing pressure on the Reserve Bank of Australia to raise interest rates or risk a self-fulfilling exchange rate crisis.

The Senate inquiry also sought to answer a number of associated questions:

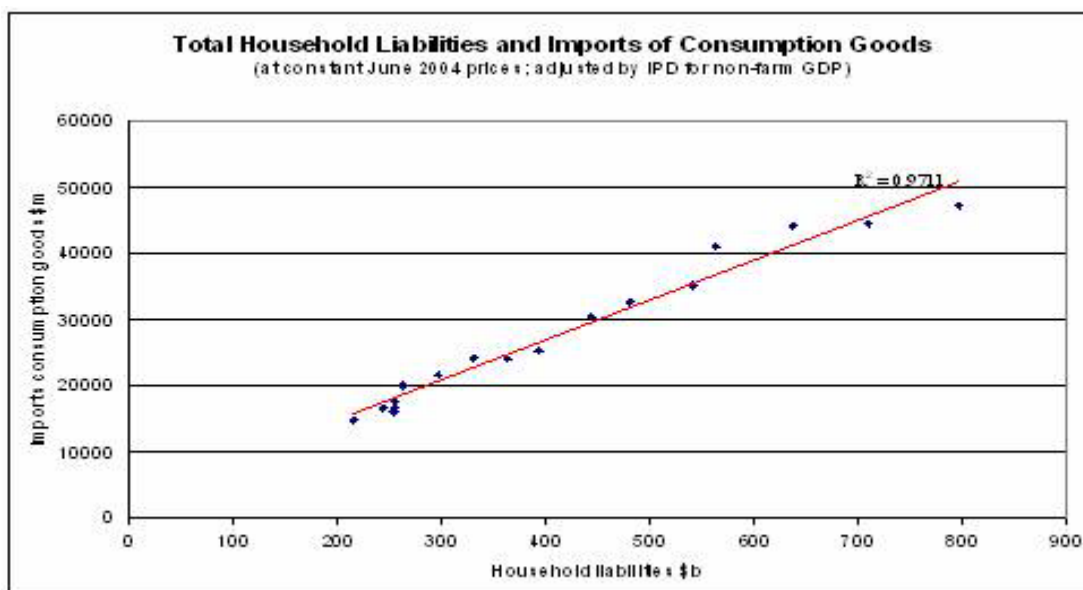
- Does a CAD in excess of 7 per cent of GDP signal the existence of persistent structural problems in the national economy?
- Should policy makers be concerned about a high level of household debt and its link to the CAD?
- Should policy makers try to do something about all this?

Many of the submissions and witnesses to the Inquiry pinpointed the household sector's savings-spending decisions as the main driver of the Australian CAD. Professor Ross Garnaut of the ANU, for example, stated:

The biggest single cause of a large current account deficit is the decline in the household savings, which I think most economists ...would attribute above all else, directly and indirectly, to the extraordinary wealth effects of our housing boom, which is large by our historical standards. It led Australian households...to think that they were very wealthy and very comfortable, and that they could comfortably go through a period of higher consumption expenditure and low or negative savings (quoted in Economic References Committee, 2005, p. 18).

High domestic spending spills over into rising imports, especially when consumers have ready access to credit. The Senate report notes that, over the 1987-88 to 2003-04 period, there was a very high correlation between the level of indebtedness of Australian households and the import of consumption goods (see Figure 4.1). However, as noted earlier, the causes – as opposed to association – of these links are unclear. It is also the case that, since 1981-82, the share of consumption goods in total imports has increased from 16 to 25 per cent, largely at the expense of both intermediate goods and services (Economics References Committee, 2005, p. 43). Over the same period, total imports have increased faster than Gross National Expenditure, due according to the Australian Treasury (2004-05) to rising incomes, falling relative prices and changing tastes. The decline of Australian manufacturing in an increasingly competitive global economy may also have been a factor.

Figure 4.1: Total household liabilities and imports of consumption goods



Source: Economics References Committee (2005, p. 43)

There was some disagreement among expert witnesses to the Senate inquiry about whether a CAD of 7 per cent of GDP was a cause for major concern, given that the CAD had varied between 2 and 6 per cent over the last 20 years, averaging just under 5 per cent. The Treasury view has been that variation is to be expected as part of the flexible process by which the domestic economy absorbs shocks from the international economy and that a flexible exchange rate will normally deal with temporary balance of payments disequilibria. In this view, a CAD of 7 per cent is just part of a slightly wider adjustment range. However, other contributors to the Inquiry, notably Professor Garnaut (Economic References Committee, 2005, p. 47), saw a figure of this dimension as a possible signal of deeper structural problems in the medium to longer term and as a warning sign for policy makers: 'Having a current account deficit of seven per cent of GDP does not prove that you have a big problem or crisis coming, but it should be a warning bell that you should look very carefully at what is generating it and at whether or not the things that are generating it are sustainable'. He goes on to point out that this figure is very unusual for a developed country and, where it has been reached in the past, the economies in question subsequently experienced severe adjustment problems.

The fact that a rising CAD has been associated with rising household debt suggests, at least to some witnesses to the Inquiry, that the Australian economy faces three risks. First, consumption may fall sharply as households cut back in order to service their debts, especially if interest rates rise. Second (and conversely), if imports continue to grow faster than exports, due to booming consumption, the domestic economy may suffer an eventual balance of payments crisis bringing growth sharply to a halt. Third, the long term growth of the Australian economy may suffer because

of the misallocation of resources caused by the housing bubble and debt explosion. In this last case, both interest rates and exchange rates may be 'too high', due to the need to finance domestic consumption, to encourage sufficient domestic and foreign direct investment in Australian industry, especially manufacturing, reducing long term export capacity and locking the Australian economy more firmly into its existing narrow international economic specialisation.

On the issue of the vulnerability of the Australian financial system to a sharp fall in house prices, the Committee witnesses were sanguine, noting a survey by the Australian Prudential Regulation Authority that found that the banks could withstand a fall of 30 per cent in house prices and still maintain operation. The main threat would be if the economy went into severe recession and rising unemployment forced large numbers of borrowers to default.

The Committee report accepted that, in the long term, Australia's CAD would be self-correcting, one way or another. Again, Garnaut (op. cit, p. 50) comments:

The question is: what will the process of adjustment be and what stress will that place on government budgets, on unemployment and on economic activity – or, to put it another way, will it give us a recession like similar adjustments have in the past?

The Committee report does, however, raise the possibility that the self-correcting forces may be 'jammed' in the shorter run, quoting an article in *The Economist*, noting that the US economy had been running increasing budget and balance of payments deficits over a long period. There are clearly special forces at work here with respect to the world's largest economy that are unique to it. In Australia's case, it may be that the resulting impact on the Asian economies, especially China, has allowed domestic inflation to be kept low due to cheap imports, keeping Australian interest rates lower than they otherwise would have been thereby prolonging the consumption boom. Eventually, the US economy will have to deal with its deficits, the fallout impacting heavily on open economies like Australia. To the extent that the normal self-correcting forces have been stalled, the ballooning of Australia's CAD to 7 per cent and beyond may indeed be an indication of an abnormal and unsustainable situation and a signal of an eventual sharp downward correction to the domestic economy.

The Senate Inquiry considered the role of increasing household debt in Australia. Between June 1990 and March 2005, total household liabilities rose from \$187 billion to \$861 billion. Total liabilities doubled to 99 per cent of GDP over the same period; as a percentage of gross household income, total liabilities rose from 70 to 157 per cent. Bank lending to households grew rapidly from 24 per cent of GDP to 67 per cent in 2005. About 85 per cent of bank debt to households was in the form of house mortgages and a further 5 per cent on credit cards. Investors currently account for about a third of housing mortgage debt. Table 4.1 presents Reserve Bank of Australia (RBA) data on recent lending volumes.

Table 4.1: Bank lending to persons, June 1999 to 2005, \$billion

Month/Year	Housing		Other Personal		Total (\$billion) (+ change over previous year)
	Owner-occupiers	Investors	Fixed loans	Revolving loans	
June 1999	153.1	60.7	21.2	21.4	256.3
June 2000	169.7	75.7	22.5	26.7	294.6 (+15%)
June 2001	194.0	86.1	19.6	27.2	326.9 (+11%)
June 2002	220.5	96.9	26.7	31.4	375.5 (+15%)
June 2003	254.2	123.3	28.8	37.9	444.3 (+18%)
June 2004	288.6	151.9	31.6	45.4	517.4 (+17%)
June 2005	324.0	167.9	33.5	53.7	579.1 (+12%)

Source: Economics References Committee (2005, p. 63)

The Committee report lists a number of primary factors that have led to the pronounced increase in household debt over the period in question:

- *Financial deregulation*, freeing up financial markets and allowing credit to be more readily available. Deregulation resulted in the removal of restrictions on lending to particular clients or for particular purposes, increased competition between existing lenders, attracted new lenders into the market and encouraged innovation that led to a much wider choice of financial products, including interest-only loans, re-draw facilities, etc.
- *Greater competition* contributed to lower interest rates and lender operating margins. Increased competition also led to more advertising and promotion of financial products.
- *A prolonged by period of high economic growth*, falling unemployment, low inflation and low nominal interest rates increased consumer confidence.
- *The asset boom of the late 1990s and, especially, the housing boom that continued after the stock market correction* encouraged households to borrow for investment purposes. This trend was encouraged by the growth of the financial planning industry and the increasing financial literacy of the Baby Boom generation preparing for retirement. The concept of 'good debt', promoted by financial planners, encouraged baby boomers to embark on wealth-creating strategies based on leveraged investments in equities and property.

- *The wealth effect*, based on rising housing prices.
- *An increase in the number of borrowers*. For example, the RBA (2005a, p.130, fn.4) estimates that, since 1996, the number of owner occupiers with mortgage debt has risen by about 40 per cent, much faster than the growth in households.

Most submissions to the Inquiry pointed to this last factor as critical. House price inflation and rising debt went hand in hand. The Governor of the Reserve Bank commented in 2003: 'The story of household debt is largely a story about housing and, of course, is ultimately tied up with the subject of rising house prices' (quoted in Economic References Committee, 2005, p.131). The causality runs both ways. Increasing lending to house purchasers pushes up demand leading to rising house prices; rising prices, in turn, increase housing equity which can be drawn on to borrow more, for both housing and non-housing purposes.

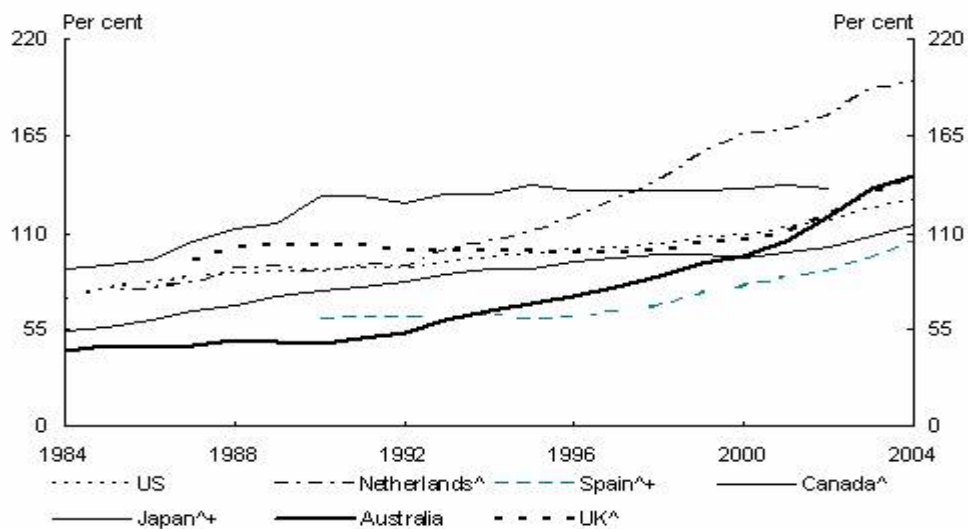
The following figures, presented in the Committee report, show the trends in key debt-related ratios. Figure 4.2 below illustrates the progressive decline in the ratio of household savings to household income. Figure 4.3 shows the trend in the ratio of household debt to (after tax) income for Australia and a number of other OECD countries. Over the period represented, Australia has gone from a low-debt to a high-debt position, comparatively speaking. Figure 4.4 shows the trend in the ratio of interest payments to income for Australian households. This ratio has risen significantly since the mid-1990s and is now higher than it was in the late-1980s asset boom. Finally, the Committee produced data that indicated that the overall gearing ratio – debt as a percentage of household assets – at less than 15 per cent, though rising, was comparatively low in Australia. However, for households with housing debt, the average gearing now stands at around 43 per cent (Economics References Committee 2005).

Figure 4.2: Savings ratio of Australian households



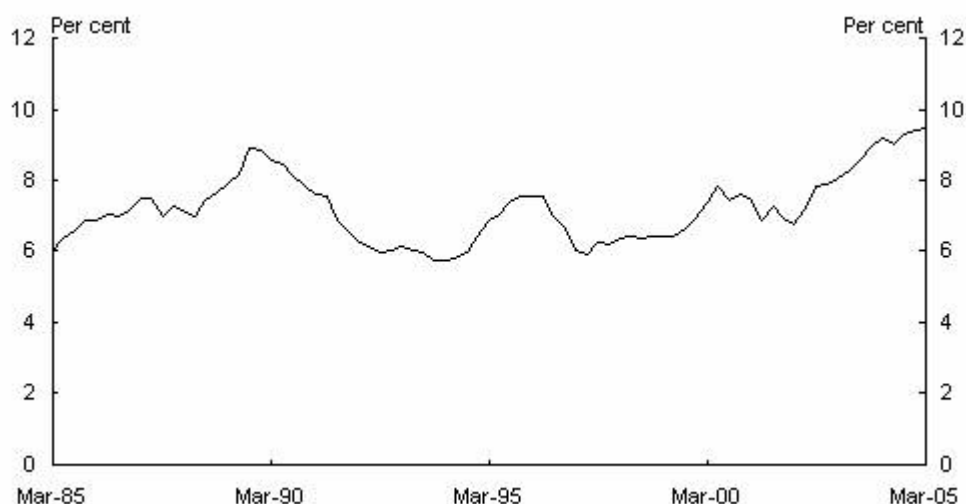
Source: Economics References Committee (2005, p67)

Figure 4.3: Household debt-to-income ratio, selected countries



Source: Economics References Committee (2005, p68)

Figure 4.4: Interest payments-to-income ratio of Australian households



Source: Economics References Committee (2005, p69)

There is recent evidence – discussed later in this chapter – that suggests that the households bearing the highest levels of debt are those best able to meet repayment requirements if and when economic financial conditions worsen. Nevertheless, the RBA continues to warn about what it regards as unsustainably high debt levels and the risks this poses for marginal borrowers and the economy at large. The RBA's statement to an earlier Parliamentary committee in 2003 commented:

...the combination that would be most damaging to the Australian economy would be if the household sector were to continue putting itself into a more exposed position at the rate it has over the past few years, while at the same time a further weakening of the world economy was starting to feed through to activity and incomes. That would be a recipe for ensuring that, when the house price correction came, as it inevitably would if the world economy was weak enough, it would be bigger and more disruptive than otherwise. I am not saying that this is the most likely outcome, only that it is a risk we have to take into account (RBA, 2003, p.3).

More recently, the RBA has indicated that the slowing of the capital city housing boom in the eighteen months to mid-2005 (Perth excepted) and the parallel reduction in the growth of household indebtedness has reduced this risk – but not to zero. As the Reserve's September 2005 review makes clear: '...the high levels of household debt make the household sector vulnerable to change in the generally favourable economic and financial climate. Given this, developments in household sector finance and the housing market will bear close watching in the period ahead' (RBA, 2005a, p.16).

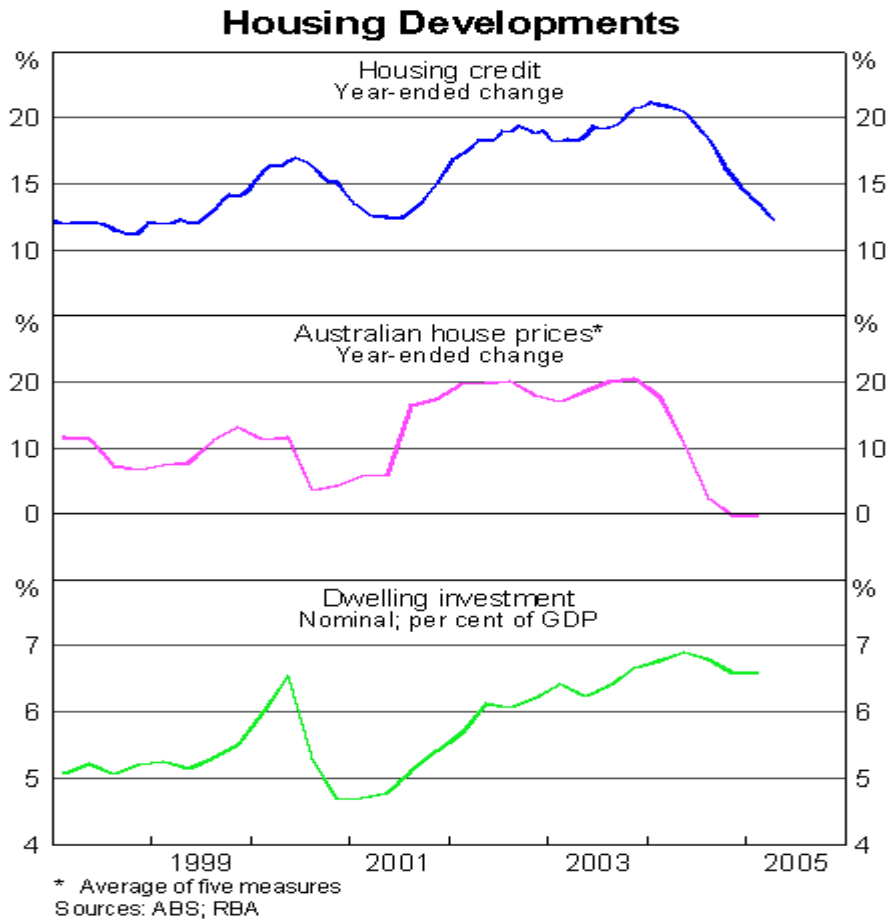
The risk that the negative impact on household spending could be greater than currently anticipated is due in part to the exposed existing debt position of house owners, both owner occupiers and, especially, investors, and, in part, to the uncertain nature of future developments in the world economy. In the latter case, the

two great uncertainties for a small trading nation like Australia are: firstly, the extent to which the imbalances in the US trade and government budget situations can be resolved without large shocks reverberating throughout the world economy, and; secondly, the sustainability of China's current rate and trajectory of economic growth. The Treasury submission to the Senate Inquiry points to the greater sensitivity of households with housing debt to movements in interest rates; this is particularly pertinent to investors, more of whom are likely to be heavily geared. The RBA is less worried about this, in the sense that it does not anticipate that interest rate rises will move during the economic cycle over anything like the same range as in earlier times (Economic References Committee, 2005, pp. 76-77). Quite small increases in interest rates now appear to have significant cooling effects on spending in the current low-inflation environment, given the high average ratio of mortgage interest payments to income. However, this fact cuts both ways. The fact that a small rate increase or series of increases has a large impact could result in a sharper than desired correction if borrowers 'over-react' or anticipate that the RBA will continue to raise rates in future.

The recent growth in tax-favoured, leveraged housing investment has created a growing class of 'petty landlords', many of whom are not sophisticated investors and may not have adequately assessed the real risks they are taking on, nor their capacity to manage that risk if economic conditions deteriorate. These borrowers, along with recent owner occupiers are most likely to face financial distress and cut back on current consumption in adverse circumstances, with potential knock on effects in the housing market and broader economy.

The Reserve Bank pointed to some signs of a slow down in domestic demand in the first half of 2005, largely due to changes in the housing sector where average house prices have flattened, the growth in mortgage lending for housing has eased and the rate of new house construction declined (see Figure 4.5).

Figure 4.5: Housing credit, house prices and housing investment



(from Macfarlane, 2005, p. 4)

As a result, the growth in domestic consumption declined from 5.9 per cent in 2003-04 to 3.4 per cent in 2004 – 2005 (Macfarlane, 2005, p. 5). However, in 2005, these housing aggregates were still higher than normal in relation to GDP and GDP growth. As the RBA Governor commented:

In other words, while households have stopped adding to their consumption by borrowing against the equity in their houses, there has not been a major scaling back in order to build up savings. It is hard to know whether this household consolidation will continue, for how long it will last, or whether it will intensify. It is early times yet and the situation bears close watching (Macfarlane 2005, p. 5).

4.2 Specific Studies

The following sections summarise key findings from recent Australian studies that address or relate to the links between the housing sector and macroeconomy.

4.2.1 *Dvornak and Kohler, Housing Wealth, Stock Market Wealth and Consumption: A Panel Analysis for Australia.*

At the national level, Tan and Voss (2003) found evidence of a significant aggregate wealth effect in Australia. They estimated that for every dollar increase in permanent wealth, consumption increased by 4 cents – i.e. implying a marginal propensity to consume of 4 per cent. This finding is within the range found in other advanced industrial countries quoted earlier. However, although Tan and Voss's study identified a strong *stock market* wealth effect, it did not find a significant *housing* wealth effect on consumption. Following Case et al. (2001), Dvornak and Kohler postulate that this negative result may be due to problems with the data – viz. multicollinearity of the two wealth variables at the national level. When, as noted above, Case et al. (2001) used a panel of state-wide data, they found evidence of a significantly higher wealth effect for housing compared to equities. Dvornak and Kohler also broke their data set down to the state level in Australia to test whether a housing wealth effect appears.

Dvornak and Kohler's model was more richly specified than that of Case et al., controlling for changes in household wealth and employing a wider range of relevant micro-econometric techniques to estimate and test for robustness of results. The data consisted of a panel of observations on the five mainland Australian states with respect to five key variables: consumption, income, stock market wealth, net dwelling wealth and net other financial wealth. The period spanned quarterly observations from the fourth quarter 1984 to the fourth quarter 2001. The estimates of these variables were drawn from relevant Australian Bureau of Statistics and RBA publications (for details see, Dvornak and Kohler, 2003, Appendix A).

The main results of this study are as follows; averaged at the national level:

- The MPC for stock market wealth is between 0.06 and 0.09 – i.e. for every dollar increase in wealth consumption increases over the long-run by between 6 and 9 cents.
- The MPC for housing wealth is 0.03.
- Hence, unlike the US case, housing has a smaller wealth effect than equities.

Use of state-wide data allowed the researchers to separate out some of the differential impacts of housing and non-housing wealth, since the states have different wealth profiles and housing markets influenced mainly by regional factors. The MPC estimates for each form of wealth varied fairly widely across the five states, and considered alone, must be viewed with caution. The authors conclude, '...we can be reasonably confident about our estimates at the 'average' (i.e. national) level, even if the range of estimates for the particular states seems implausibly wide' (ibid., p. 17).

The estimate of the housing wealth effect at 0.03 is towards the low end of the range found in other countries (see Table 3.2, above), while the stock market effect is relatively high. Unlike the situation in other countries, the housing wealth effect was

found to be smaller than the stock market effect. It is not clear why this should be the case, especially given the rate of financial deregulation and innovation in Australia. Part of the answer may lie in the way Australians view their homes. In terms of the behavioural life cycle approach, noted above, some Australians may place their homes in a 'don't touch' mental account. It may also be the case that, for many house owners, they are unsure about the true value of their houses. Finally, in spite of the explosion in new financial products and their aggressive marketing by financial institutions, some households may be reluctant to withdraw equity to finance current consumption, both for prudential and inheritance-related reasons.

Whatever, the reasons for any differential in wealth effects in Australia, the implication is that the lower the housing wealth effect, the less volatile the overall impacts of the housing sector on the macroeconomy. Nevertheless, at around the 3 per cent found in this study, the situation for policy makers (in the RBA Governor's words) still 'bears close watching'.

4.2.2 Reserve Bank of Australia (2005b), Survey on Housing Equity Withdrawal and Injection.

Individual house owners and purchasers can be divided into three broad categories: first, those who inject more equity into housing than they withdraw – e.g. by an owner occupier 'trading up' to a more expensive home; second, those who withdraw more equity than they inject – e.g. investors shifting their wealth into other assets or retiree owner occupiers trading down; and third, those who do not change their housing wealth position, either because they do not engage in any housing-related transactions for the period or their equity injections just equal their withdrawals. These individual positions can be aggregated to an economy-wide view:

Conceptually, at the macroeconomic level, the amount of equity withdrawn or injected is the difference between the change in the household sector's total debt secured against the housing stock, and the net spending by the household sector on new housing, renovations, and transfer costs associated with property transactions (RBA 2005b, p. 11).

Up until 2000, the household sector was a net equity injector to the housing sector of the economy. That is, households overall were progressively increasing the net wealth held in the form of housing, to the tune of about 4 per cent of total household disposable income per year. However, since 2000, the situation has swung around and housing equity withdrawal has been running at about 5 per cent of gross disposable income, or some \$25 billion. If the cost of the land component in new housing is included, the rate and level of withdrawal halves to about 2.3 per cent and \$12 billion per year (RBA 2005a, Figure 7)²¹.

An alternative approach to gauging the equity withdrawal/injection process is to focus directly at the household level. In this study the RBA carried out a survey in

²¹ There were signs, in early 2006, that the period of net equity withdrawal in Australia had just ceased.

January-February 2005 of 11,000 households, based on a geographically representative sample. About 4,500 households responded. Of those, about 12 per cent were equity withdrawers, 30 per cent equity injectors and the remainder, neither withdrawers nor injectors over the year, 2004. More specifically the study found (RBA 2005b, pp. 2-3):

- Two-thirds of the equity withdrawers did so by increasing their debt on existing housing; the average amount withdrawn that way being \$20,000.
- The remaining withdrawers did so through property transactions (e.g. trading down); the average amount being \$82,700.
- Almost a fifth of total households surveyed had injected equity during 2004 by paying down existing housing debt by \$9,000 on average.
- The other equity injectors injected equity by (a) paying for at least part of house renovations from other wealth (6.5 per cent of total households, average injection of \$14,000) and (b) through property transactions – e.g. trading up (4.6 per cent of total households, average injection of \$55,100).

By value, 72 percent of equity withdrawn was through property transactions, the remaining 28 per cent through extending debt on existing houses. Although the former group was numerically smaller, the average value of equity withdrawn was very high, at \$126,000. These households were, on average, older than those withdrawing equity through increasing debt on their existing houses. About half of this group were over 50 years, compared to less than 10 per cent of those extending debt. This is consistent with the importance of life cycle factors, encouraging older households to convert part of their total wealth into income accessible forms to support post retirement lifestyles.

Almost a third of the value of equity injected into housing in 2004 was achieved through reducing existing debts by regular repayments of loan principal, regular repayments of principal above minimum and lump sum principal repayments. Just over 40 per cent of equity was injected through households buying more properties than they sold and another 6 per cent through trading up on an existing house.

Respondents withdrawing equity were also asked what they did with the proceeds. Overall, 58 per cent of the value withdrawn was used to accumulate other assets, like superannuation savings. Around a third of equity withdrawers increased their consumption, mainly on housing renovation/redecoration, cars and other consumer durables, but this only represented 18 per cent of the value withdrawn. However, households who withdrew equity by extending housing debt were more likely to use the funds to increase consumption (30 per cent of value withdrawn) and less likely to accumulate other assets (41 per cent of value withdrawn).

If the results of this survey are 'aggregated' to estimate the economy wide situation, it appears that, for 2004, Australian households were net *equity injectors* to the tune of about 2.5 per cent of gross disposable income. This outcome conflicts with the macroeconomic estimate noted above, pointing to a net *equity withdrawal* of about

the same size. This suggests that there may have been some under-reporting of debt in the survey. The difference may also be due to the relatively small sample. Given the very significant build up of housing debt, high renovation expenditure, buoyant construction, high turnover in housing markets and rapid house price inflation during 2002 and 2003, it is more likely than not that the macro situation in 2004 was one of net equity withdrawal.

Acknowledging the limitations and doubts as to the validity of the survey results, the authors draw some tentative conclusions with respect to the potential implications for macroeconomic activity. In the first place, given that most (72 per cent) of the value of equity withdrawn is *not* used to expand consumption, then the impact of this process on aggregate consumption and, therefore, overall economic activity is likely to be muted. This may help to explain the relatively small MPC found for housing wealth (0.3), noted above. Hence, any sharp reduction in equity withdrawal brought about by cooling housing markets may not have a major depressive effect on consumption and the economy. Second, however, the rapid growth in borrowing to finance housing renovations over the past 5 years has undoubtedly driven booming consumption and a slow-down in this market may have significant impact on consumption. Around 11 per cent of the households surveyed in this study spent money on renovations during 2004 and 40 per cent used housing debt to pay for at least part of these renovations. The larger the amount spent on renovation, the more dependent on debt finance and the more likely were households to extend existing housing debt.

For this latter reason and given the limitations of a study based on a snap-shot at a point in time and a small sample, it is not possible to offer strong and confident conclusions about the potential impacts of equity withdrawal on aggregate economic activity, especially given the conclusion of the previous study, above, to the extent that there is a moderate housing wealth effect in play. Once again, the RBA (2005b, p. 10) recommends a 'watching brief': 'accordingly, in the period ahead, it will be important to monitor trends in both housing turnover and refinancing to help understand the implications of changes in household credit growth and housing equity withdrawal for the overall economy'.

4.2.3 La Cava and Simon (2003), A Tale of Two Surveys: Household Debt and Financial Constraints in Australia.

Attention has focused on the macroeconomic role of the housing sector, partly because of the significant build up in housing debt in recent times, noted above in the report of the Senate Inquiry (see Figures 4.2 and 4.3 above). A key issue is *who* holds this increased debt. If most of the debt is being taken on by households who are struggling to meet current debt repayment requirements along with the necessities of life, then the negative impact on economic activity of a shock like rising interest rates, a declining exchange rate, rising prices for key items like oil or an increase in unemployment will be considerable. Conversely, if the extra debt is

assumed by those households well able to afford it, then the potential impacts on the economy will be minimal.

La Cava and Simon address this issue by using data from the 1993-94 and 1998-99 Household Expenditure Surveys (HES) of the ABS and the Household Income and Labour Dynamics in Australia (HILDA) Survey for 2001. They focus on the questions concerning financial hardship or stress and seek to relate this to the borrowing and debt situation of respondents.

Over the 1993-2001 period, they estimate that the rise in the debt-to-income ratio has been mainly the result of growth in the average size of housing loans, as opposed to a substantial increase in the number of households borrowing.

Between 1998-99 and 2001, the rise in the debt-to-income ratio has been greater for 'financially unconstrained' households – from 51 to 67 per cent – compared to 'financially constrained' households – from 61 to 69 per cent. The latter group include households who indicated that they had financial difficulties, like not being able to meet utility bills, couldn't pay the mortgage or insurance premium on time, went without meals due to shortage of money, etc. These problems did not apply to the financially unconstrained. Moreover, the number of unconstrained households has increased relative to the number of constrained households.

What this latter conclusion suggests is that the significant increase in average housing debt, at least up until 2001, was primarily brought about by both the increase in the number of households who could afford to take on debt and an increase in the proportion of total debt held by the group. La Cava and Simon conclude:

...despite the increase in the aggregate household debt to income ratio to historically high levels, we find little evidence that Australian households are now significantly more financially fragile than in the past. Much of the rise in debt appears to have been due to unconstrained households. There are also more unconstrained households in the population and it is these households that are primarily responsible for the increase in household debt. Indeed, the rise in the aggregate debt to income ratio seems to reflect households reacting to increased household income and low unemployment rather than being an indicator of increased household financial distress or fragility.

This conclusion is, perhaps, too strong given that – on their own estimates – financially constrained households increased their average debt-to-income ratio to 69 per cent over the two-year period, presumably making them more vulnerable to interest rate rises and other economic shocks. Moreover, the authors admit that they are unable to separate out the sub-group of investors who may be highly leveraged (negatively geared) and vulnerable to small shifts in general economic and financial conditions. Finally, it is not clear whether the results found for the late 1990s apply to more recent years – i.e. whether the increasing rate of housing indebtedness has been as benign since 2001.

In a parallel RBA study, Ellis et al. (2003) also draw on the 2001 HILDA data set – but instead focus on the leverage rate, the ratio of housing debt to housing assets (rather than income). These authors note that highly leveraged households may be especially vulnerable to interest rate rises, since the impact on their disposable incomes will be large and lenders will tend to be less willing to extend further loans, resulting in a large potential reduction in consumption. Where lenders accept real estate as collateral for loans, high leverage, reinforced by falling house values, increases the balance sheet risk of lending institutions.

Ellis et al. found that leverage was highest among households in mid-life with high incomes. These households tend to be those most able to bear high debt burdens. They also argue that leverage tends to be highest in areas that are least vulnerable to housing price ‘reversals’ – viz. the outer suburbs of large cities and non-metropolitan regions that have experienced relatively small housing price gains over the past decade. This is arguable. It is in such areas that younger households who are purchasing home owners tend to concentrate, a sub-group that the authors themselves point out has very high leverage rates and relatively low incomes at this early stage in the life cycle²². Just because peripheral areas have not boomed is no guarantee that they won’t crash. The fact that the past decade has seen house price polarisation between the inner-middle and outer suburbs in cities like Melbourne and Sydney may be further intensified as housing markets cool.

4.2.4 Shin (2003), Financial System Liquidity, Asset Prices and Monetary Policy.

When, for example, interest rates change, borrowers are likely to alter their consumption and investment behaviour. The central bank – in Australia, The Reserve Bank of Australia – can influence interest rates throughout the economy by varying the overnight cash rate and therefore influence aggregate spending and overall economic activity. Interest rate changes affect asset prices, including houses and, through the wealth and collateral effects noted above, feed back into enhanced spending and growth. This effect occurs through changes in the balance sheet of borrowers – e.g. if interest rates fall, demand for and prices of housing will tend to rise, increasing the net worth of house owners – i.e. increasing the market value of their total assets to their liabilities. This provokes increased consumption or investment and makes them more credit worthy and, thus, able to fund enhanced spending through borrowing at favourable interest rates.

However, as this author stresses, interest rate changes, by influencing asset prices, also changes the balance sheets of lenders. As interest rates fall, the credit risk of a bank’s existing loans improves, increasing the price (value) of the mortgages it

²² The reason why the average leverage rate for younger households is relatively low is that most households in this group are not home owners. However, the minority who are have very high leverage rates.

currently extends. Since the value of its loans to customers is the bank's major asset, its net worth rises. In other words, the value of its assets rises relative to its liabilities (mainly made up of its customers' deposits). This unintended reduction in the bank's leverage encourages the bank to further extend credit to house purchasers (and for other purposes). The increased demand for housing pushes house prices higher, further improving the bank's balance sheet, which causes the bank to lend more, pushing house prices still higher, and so on. Conversely, if house prices fall for any reason, the bank's balance sheet worsens (the value of its loan book falls relative to liabilities) and the bank restores its 'capital adequacy' or net worth by pulling in loans or reducing the rate of new loans, which impacts on the housing market, reducing demand and prices (or the rate of price rises), further undermining the bank balance sheet, and so on. This may help to explain why financial institutions act so aggressively in the up-phase of a property boom and conversely, respond so sharply when that market turns down.

In other words, the financial sector can amplify the primary effects of monetary policy, making the macro economy more volatile than it would otherwise be, because of the interaction of bank lending policies and the housing market. Shin (2003, p. 314) further comments:

The amplified response to the easing of monetary policy, by itself, need not be a problem for policy-makers if they can fine-tune their monetary levers to take account of the amplification. Rather, the problem is the highly asymmetric nature of the mechanisms at play 'on the way down'. If the bursting of a property bubble impairs the solvency of the financial sector, then the dynamics 'on the way down' can turn into an extremely messy affair, involving a whole new set of mechanisms that did not figure in the initial inflating of the bubble. Default, financial distress, and inefficient liquidations will all conspire to exact very large economic costs.

In other words, the reverse downward feedback process is likely to be punctuated by additional crisis factors – unexpected bankruptcies, fire sales, management attention of struggling firms focused on staving off financial disaster rather than on growing the firm. These crises can set off further chains of effect that reinforce the general economic decline, accentuating the risk of a hard landing for the economy, sparked by a cooling housing sector.

Shin (op.cit., pp. 327-330) notes a further institutional factor that may intensify the amplification effect 'on the way down'. To the extent that banks take over ownership of the houses of defaulting borrowers, their balance sheets will reflect changes in house prices. As the latter fall, the asset side of the bank's balance sheet and net worth will fall. Moreover, as banks 'unload' these houses onto a weak property market, housing prices are likely to fall further reinforcing the dynamic already underway. If this process continues far enough then the bank's minimum capital adequacy requirement will be breached, both because of the reduction in housing values and the rise in the riskiness of the loan book. The bank will respond by cutting back credit, feeding into the general economic decline. 'The lessons here are quite general. Changes in asset prices may interact with externally imposed

solvency requirements or the internal risk controls of financial institutions to generate amplified endogenous responses that are large relative to any initial shock' (Shin, op.cit., p. 330).

The force of Shin's argument depends critically on the extent to which banks and other financial institutions 'mark-to-market' – i.e. whether and how frequently they re-value their assets at current values rather than by traditional historic cost accounting methods. Shin argues that, increasingly, regulatory regimes and active shareholders in advanced countries are requiring firms to mark to market in order to more accurately and transparently represent the real value of the enterprise. Linking management remuneration to share market performance has also encouraged managers in the financial sector to operate at maximum leverage levels in order to maximise the growth in shareholder wealth (and their own), at least in the short term.

By focusing on the incentives and barriers facing financial institutions it is possible to identify important indirect ways in which changes in housing markets through time may – along with the more direct impacts on consumption and borrowing – increase the volatility of the macro economy and, therefore, the difficulties and costs of successfully implementing government economic policy. In the traditional view of monetary policy, financial markets and institutions play an essentially passive (transmission) role in the macro economy. If Shin (op. cit., p. 332) is correct, '... the increased reliance on short term incentives and the greater immediacy given by marking to market hold huge significance for the conduct of monetary policy'. Monetary authorities will need to much better understand the indirect feedback loops between financial institutions and the housing market in order to adjust their interventions to achieve economic stability over time.

The final section following draws together the issues and arguments presented in this and the preceding section, in the context of the significance of housing affordability for economic stability and policy tractability.

5 WHY AFFORDABILITY MATTERS

During the economic upswing, rising housing prices above the inflation rate increase the real wealth of house owners, both owner occupiers and landlord-investors. This tends to result in rising consumption in both direct and indirect ways. In the first place, to the extent that households recognise their increasing wealth they may revise downward their savings plans, since if they go on saving at their existing rate they will accumulate more wealth than they had originally planned. The freed savings can be devoted to increasing current consumption. This assumes that their original target wealth was optimal. If this is not the case then households may keep saving at the original rate in order to get closer to their goal savings. In the second place, households may use the increasing collateral value of their houses to borrow more to spend now on the purchase of a second house ('holiday' or investment), house renovations, consumer durables, holidays, etc. ("It's equity, mate.") To the extent that households spend or invest in housing, upward pressures on housing markets and prices are reinforced, underpinning further bouts of 'equity withdrawal'. Research quoted earlier in this paper suggests that the 'hang over' effects of rising prices, in terms of expectation of further price rises, is long term, and thus a factor in prolonging the boom. The wealth effect of rising house prices can also encourage households to borrow from a range of other lenders, like credit card providers.

As the level of household indebtedness rises (saving rates fall), households become more vulnerable to rising interest rates. Small movements up in interest rates may have large impacts on the capacity of households to service their debts and result in a large fall in current consumption spending, with far-reaching impacts on the overall economy, given that consumption is the dominant component of aggregate demand. Rapidly rising house prices and rents in advance of average income growth also leads to increasing problems of housing affordability for households left behind in the buoyant economy. Because of the tight squeeze on their after-housing cost incomes, these households are at special risk of having to sharply cut back their consumption, especially where they hold high levels of debt. Tenants in housing stress (the majority of cases in Australia) do not enjoy increasing wealth through house ownership (unless they are also landlord-investors) and to the extent that they do not own other wealth, do not have access to relatively cheap credit, including (obviously) mortgage loans. However, if tenants are heavily indebted it is likely to be short term, high cost debt – e.g. hire purchase or credit cards. To the extent that rents follow housing prices upward, a housing boom will further intensify the squeeze on the after-housing cost disposable income of tenants, reinforcing the depressive effects on current consumption. These effects will extend beyond those actually in full-blown housing stress, to include households increasingly at risk of falling into housing stress, especially where they are heavily indebted. In this case, the negative impacts on consumption by tenants tend to occur in the upward phase of the general boom, resulting in a dampening effect on the economy, what might be called an unintended 'built-in stabiliser'.

With respect to home owners, however, house price inflation clearly boosts consumption through the wealth effect, feeding the upswing in the mutually reinforcing manner discussed throughout this paper. Since, numerically, home owners outweigh private tenants by more than three to one in countries like Australia, the expansive impact on consumption and growth is likely to outweigh the dampening effect.

Behavioural (heuristic) biases may reinforce the speculative upswing, as earlier noted. In this context, households may exhibit a degree of what might be called 'affordability blindness'. In a buoyant rising housing market, house owners may take on significant debt to fund desired current consumption without fully calculating or even being aware of the risks entailed – risks that would be crystallised if interest rates subsequently rise, the economy slows and unemployment rises. This outcome would be most likely in the contemporary Australian context for younger owners who are less likely to have directly experienced the asset boom, mortgage interest hike and subsequent recession in the late 1980s and early 1990s.

Recent home purchasers and outright owners re-mortgaging their dwellings are especially likely to be heavily indebted and required to commit a high proportion of income to servicing the mortgage. When interest rates rise they are at risk of falling into housing stress. Once the economy turns over into the declining phase of the cycle and housing markets cool, both home owners and tenants carrying significant debts face a squeeze on disposable incomes that can result in sharp reductions in consumption. This is the case for tenants if rents do not fall in the lower cost segments of the rental market, as housing demand falls with activity in the general economy. There is reason to believe that housing markets, especially low-rent segments, do not operate efficiently (Berry and Dalton, 2004; Yates and Wulff, 2004). Much of the response to falling housing demand tends to result in declining transaction volumes and rising vacancy rates, rather than falling prices and rents. During the declining phase tenants may also have to bear the impact of increasing rental yields as landlord-investors seek to offset falling expected capital gains; rental yields and vacancy rates tend to fall during a property boom and resume 'normal' levels in the aftermath. Rents may also be 'sticky' in the downward direction because current leases do not allow immediate renegotiation of rent levels.

Increasing housing stress among tenants and home purchasers, intensified during the boom, may therefore be one factor that increases the likelihood of a 'hard landing' for the economy after a boom. The greater the preceding boom, the greater the build-up of debt through processes like equity withdrawal and the more vulnerable these households will be to rising interest rates and a slowing economy. Housing stress and dampened consumption will be further intensified as the economy moves into recession and unemployment rises. The over-hang of housing-related debt may act as a break on economic recovery after other sectors of the economy pick up. In other words, sluggish consumption may not respond quickly to improvements elsewhere in the economy, as financially hard-pressed households struggle to pay back debt and meet current housing costs. Households in

intermediate sized, open economies like Australia may be especially vulnerable to certain external economic shocks. For example, in the case of an oil price hike, home owners will experience a direct cut to their disposable incomes, due to rising transport costs, while increasing oil imports put pressure on the balance of payments and increasing interest rates to control inflation.

In summary, the impact of changes in housing markets and the incidence of housing stress may actually reinforce volatility in the overall economy – accentuating the amplitude of the business cycle – while making it more difficult for macroeconomic policy makers to effectively respond. This outcome is particularly likely where housing market changes impact significantly on the balance sheets of both borrowers and lenders. Reducing the number of households in or at risk of housing stress would, other things equal, tend to reduce the mortgage default rate ‘on the way down’ and the limit the consequent ‘damage’ to lender balance sheets. A corollary to the main argument is that by acting to reduce the incidence and risk of housing affordability stress, policy makers may actually reduce the negative impacts of housing markets on consumption with respect to changes in interest rates and other policy settings, thereby reducing volatility in the macro economy and increasing the effectiveness of policy interventions.

Concluding Comments

At the time of writing (April 2006), the Australian economy shows no signs of following the example of Japan during the 1990s. Following a pronounced asset boom in the 1980s, Japanese housing and equity markets fell precipitously, dragging the economy into a long and painful deflationary recession from which the country has only recently emerged. By comparison, over the past two years, as housing markets have eased and equity markets recovered in Australia, consumption growth has merely slowed, along with the general economy.

This outcome appears to herald the hoped-for ‘soft landing’. However, this fortunate outcome does not undercut the arguments presented in this report. In fact, the reverse is the case. That economic growth has slowed rather than fallen sharply is, in part, due to the fact that – this time – housing prices have flattened out or fallen modestly in most markets, rather than crashed by the 20 to 30 per cent forecast in some quarters, limiting the negative impact on spending due to wealth and related effects. Australia may not always be so lucky. The nature of risk, looking forward in time, is that today’s current soft landing gives no guarantees that the next time – or time after that – will result in a similarly benign outcome. Japan’s recent fate provides a clear picture of the downside risk facing macroeconomic policy makers. In such a world it makes sense to find out more about how housing markets work in different circumstances and countries, and how movements in housing prices feed through into consumption and investment behaviour driving the macro-economy. To the extent that intensifying housing stress increases the risk that housing price movements will increase the overall volatility of the economy, problems of housing

affordability should attract the attention of economic policy makers at the national level. Indeed, the level and stability of housing affordability outcomes might be seen as a useful indicator of the success of macroeconomic policy.

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