A house or a home? Finding value in Australian residential property

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Abstract

The Australian housing market has a massive impact on the Australian economy due to the significant level of wealth that will be tied up in an individual’s home and the multitude of industry groups employed in the construction, servicing and financing of residential property.

Extremely strong house price gains over the past 10 years have lead many domestic and international commentators to suggest that Australian residential property is significantly overvalued and potentially in the midst of a housing bubble. Market participants, however, point to a number of factors that they believe justify current prices and that should continue to support future price growth. These include:

- Strong population growth and structural undersupply of residential dwellings creating a continued housing shortage and upward pressure on rents and house prices
- Affordability metrics, such as price to income ratios and mortgage to income ratios, are at acceptable levels and in line with global peers
- Significant increase in dwelling sizes over the past 20 years

Closer analysis of the key arguments can lead to an alternative view:

- Undersupply is not as significant as suggested, with population growth already easing from the peak 2 years ago, and the actual impact on rental growth does not suggest a chronic undersupply is persisting
- Price to income ratios can be calculated any number of ways, many of which do show Australian prices to be inflated, and the reporting of this key affordability metric does not always ensure comparisons are made on a like for like basis.
- Low interest rates have helped mortgage to income ratios stay within reasonable levels, however, over the past 20 years it has also helped fuel the house price boom with cheap, readily available credit being increasingly used to fund purchases.

Analysis of the housing market from an investor’s perspective suggests that very optimistic assumptions of future house price growth and/or future rental growth are being factored into current market pricing. With current gross rental yields in Australia below 5% and mortgage rates above 7%, a return to more “normal” levels of house price growth in the future would see many investors fail to generate a positive return and even ungeared investors could struggle to achieve a return in excess of a simple term deposit investment.

Rather than structural factors (such as population growth and housing supply) being the main elements supporting current house prices, the alternative view is that cyclical factors, essentially low interest rates and low unemployment, are the key factors currently keeping Australian house prices at their present levels. The stalling of house price growth over the past 6 months following mortgage rate increases suggests affordability has reached its limits and the residential market will remain extremely sensitive to further interest rate rises. The strong economic conditions in Australia, reflected in the low unemployment rate, should protect the Australian housing market from a US-style housing collapse in the short term, but in the longer term increasing unemployment will inevitably cause some correction in house prices. The further Australian house prices move above what could be considered “fair value” from an affordability or investment perspective, the more severe that correction will be.

Keywords: residential property, affordability, housing supply, price-to-income ratio, interest rates, unemployment
1. Introduction

The Australian residential property market is currently estimated at $3.5 trillion, almost 3 times the size of the Australian equity market and 3 times Australia’s annual GDP. A significant proportion, if not most, of the lifetime wealth of individuals will be tied up in residential property. A vast component of the labour force is employed in industries connected to the residential property market including construction and building services, real estate agents, banking, mortgage broking and insurance, not to mention the ubiquitous property developers.

It is therefore not surprising that all these groups, including the humble home owner, has a view on the residential property market and each is able to present data that seemingly justifies that view. Measures ranging from price to income ratios to mortgage stress analysis and rental yields are all used in the arguments. Combined with factors such as population growth, housing supply, city versus country, coastal versus non-coastal, arguments can and have been made to support almost any view.

A lack of consistent methodology in calculating these measures, scarcity of data, a lack of international comparatives and of course the vested interests of those not only commenting on but also calculating the data has resulted in the debate simply going around in circles rather than helping create a better informed market.

This paper summarises some of the main arguments used on both sides and attempts to point out inherent problems in much of the analysis.

In addition, much of the debate on the state of the Australian housing market centers around affordability and uses affordability metrics to assess whether the market is over or under valued. The paper takes a further look at value from the perspective of an investor to assess the investment rationale, or lack thereof, for current residential prices.

2. Historical Australian Residential Property Returns

![Real house price growth in Australia](image.png)

Figure 1: Real House Price Index (Source: ABS, Stapleton. June 2004 = 100)

Over the 40 year period from 1960 to 2000, Australian house prices returned a respectable, if not quite consistent, real return of 1.7%pa. Over the following 10 years real house price growth jumped to 5.9%pa.
The strong growth in house prices was driven by the dramatic improvement in the economic fortunes of Australia with a strong labour market, the highest terms of trade conditions since the 1950’s combined with low interest rates and, prior to the GFC, low funding costs for banks.

Figure 2: Real house prices compared to bank standard variable mortgage rates and unemployment (Source: ABS, RBA, Stapleton)

Figure 2 illustrates the first major period of house price growth in Australia, from 1960 to the early 1970s. This coincided with extremely low unemployment due to the post-war boom and mortgage rates hovering around the 5% level. By 1975 mortgage rates had crept up to 10% but it was not until a dramatic increase in the unemployment rate, from 2% or less over the previous 15 years, to over 5%, that real house prices started to fall.

Even higher interest rates and unemployment then constrained house price growth over the next 25 years (apart from a brief jump in 1988-89, which coincided with the unemployment rate falling back into the 5% range and the reintroduction of negative gearing).

In 1999 the unemployment rate fell below 7% for the first time in 9 years and mortgage rates, at 6.5%, were at their lowest point since 1970. This set the stage for the bull market in house prices that is potentially still being experienced today.

By comparison with the 5.9%pa real house price growth experienced since the start of 2000, in real terms, average full time weekly earnings grew by 1.5%pa, GDP per capita grew by 0.9%pa, rents grew by 0.8%pa and the All Ordinaries Index delivered a real return of 0.5%pa. This dramatic divergence of house prices from what would normally be considered the fundamentals driving the market ignited the debate on whether current prices are justified or whether Australia is in the midst of a housing bubble.
3. The case for current market prices

Over the past 12 months or more a large number of market participants have come out supporting current house prices and attempted to explain why recent price growth is justified. A summary of the major points are provided in the paragraphs below.

3.1 Supply shortage
Supporters of this argument point to the combined impact of strong population growth, driven by an increase in immigration numbers, and restrictive planning regulations that have limited the release of new land for development and slowed infill developments.

Estimates provided by the National Housing Supply Council’s 2010 State of Supply Report point to a current undersupply of 178,000 dwellings with annual undersupply running at approximately 23,000 dwellings. This report points to a structural imbalance between demand, driven by strong population growth, and the construction of new dwellings.

Industry participants point to this structural imbalance as a factor that will support further house price growth and put further pressure on rents.

3.2 Price to income ratio
Supporters of current market prices quote a price to income ratio of around 4.5 and believe higher numbers quoted of 7 or more (such as by GMO co-founder and Chief Investment Strategist Jeremy Grantham in June 2010) are misrepresentative of the total Australian market as they are for capital city houses only and therefore ignore the significant proportion of the market in apartments and outside of the main capital cities.
Despite the price to income ratio being significantly higher now than in the 1990s, the relative stability of this index over the past 7 years is given as evidence that current residential prices are being supported.

Price to income ratios of around 4 are also quoted for other countries to give further weight to the argument that Australian house prices are in line with the developed world.

3.3 Mortgage repayments as percentage of income in line with long term averages

Over the past 10 years mortgage repayments on a median priced dwelling have hovered around 35% of gross household income, a level many consider to be a benchmark for affordability.

This has, of course, been helped by lower interest rates, which have offset the significant price gains since 1999. However, many argue there has been a structural shift towards lower interest rates globally given the ability of central banks to keep inflation under control and they do not believe we will again see the 10% or higher interest rates experienced in the 1980’s and 90’s.
3.4 Low rental vacancies

With rental vacancies currently at 2% or lower and the supply shortage forecast to continue (as discussed in 3.1) pressure on rents will continue, which will support housing demand from both investors and owner-occupiers.

3.5 Increased size of dwellings

Houses are getting bigger, with floor areas estimated to be currently 50% more than in 1986. Buyers will naturally pay more if they are getting more, and while houses may not continue increasing in size, it does help partially explain the real house price growth since the 1980s.

4. Arguments that house prices are inflated

4.1 What supply shortage?

An alternative illustration of dwelling starts versus Australian population growth is shown below in Figure 8.
While Figures 3 and 8 both use exactly the same data, altering the scale of the left-hand axis provides a strikingly different result. The graph shown in Figure 3, or similar, has been used by a range of groups to promote the undersupply argument\textsuperscript{iii}, however, with a current ratio in Australia of around 2.5 persons per dwelling\textsuperscript{iv}, the scale used in Figure 8 is arguably a better comparison. This does not illustrate any structural undersupply in the Australia market over the past 20 years. There may have been some undersupply in the past 2-3 years due to the higher immigration but the strong population growth has reduced over the past 12 months and construction has increased.

The National Housing Supply Council that provided the estimated dwelling shortfall mentioned in paragraph 3.1 was established by the Council of Australian Governments (COAG) to provide advice to the Government on land supply and the factors affecting the supply of housing in Australia over a 20 year horizon. However, the Council was only formed in 2008 and its first \textit{State of Supply Report} released in March 2009 identified an existing shortage of 85,000 dwellings and a projected shortage of 431,000 dwellings by 2028 (equivalent to an annual shortfall of 17,000 dwellings). It was in their second report released only a year later, the \textit{2010 State of Supply Report} that the 178,000 shortage and a cumulative gap of 640,600 by 2029 (23,000pa) was reported. It was these latter results that were picked up by the industry to justify current house prices and future price growth.

The difference between the two Supply Reports suggests a couple of key facts. Firstly, the supply issue has only arisen in the past 2 years, which is consistent with Figure 8. The implication that a lack of supply has been a major driving force in recent house price growth does not appear to be supported by any meaningful statistics. Secondly these types of projections are highly sensitive and the strong population growth between the 2009 and 2010 surveys clearly impacted the results. As stated in the 2010 State of Supply Report “long-range projections are error prone at the best of times. Thus, 20-year projections should only be regarded as illustrating the possible consequences of proceeding on a certain trajectory” and “demand projections have been updated in this report to reflect higher population projections”.

Nevertheless, even if an annual supply shortage of 23,000 did continue over the next 5 or 10 years, with an existing housing stock of over 8 million dwellings and 2 million of those owned by private investors’, would this undersupply really be enough to continue supporting house price growth, or even stop house prices falling, should interest rates continue to rise or the unemployment rate start to increase?
4.2 An alternative Price to Income ratio

As in section 3.2, those quoting a price to income ratio (of around 4.5) generally fail to clarify exactly how that ratio is calculated or ensure that the global metrics it is compared to are calculated in the same manner.

The price to income ratio of around 4.5 that was quoted in the middle of June 2010 by a number of institutions (CBA, Westpac, RBA), and shown in Figure 3, was calculated using an estimate of “average” household income taken from ABS National Accounts data\(^{vi}\).

A price to “median” income ratio can also be calculated using ABS data\(^{vii}\) that results in a ratio of 6-7 times.

![Median house price to median household income](image)

Figure 9: Ratio of median house price to median household income (Source: calculations using ABS data)

Both calculation methods have inherent problems, chief amongst them the lack of reliable household income data, which requires very broad estimations to be made. Use of “average” income results in a substantially higher household income number being used in the denominator than a “median” calculation given the high proportion of national income that would be earned by the small, wealthy end of the population. The ABS National Accounts data also includes a measure of “imputed rent” in its national income estimation, i.e. how much income owner occupied housing could generate if it was rented, but in effect this is not real cash income that could be used to purchase a property. The “median” income calculation is also not perfect as there is no up-to-date source of median household income. The data used in Figure 5 was from the Survey of Income and Housing last taken in 2007-08 and requires extrapolation between surveys and use of other income data to make more recent estimates.

Other than the lack of reliable income data there is nothing wrong, per se, with using either calculation method to derive a price to income ratio. On a relative basis Figures 4 and 9 essentially illustrate the same fact – that Australian houses prices relative to income are now around twice as expensive as they were in the 1990s.

The concern with the use of these ratios is when the actual ratio numbers are compared without explaining they are based on two different calculations, or when the numbers are compared with price to income ratios in other countries without ensuring a consistent calculation basis.

One of the few international comparisons available, the Demographia International Housing Affordability, uses a median house price to median income ratio to compare house prices across 7 countries. Their 2011 study showed the following results:
Table 1: Median house price to median household income (Source: Demographia)

<table>
<thead>
<tr>
<th>Country</th>
<th>Major Market (pop’n &gt; 1m) Median</th>
<th>All Markets Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>11.4</td>
<td>11.4</td>
</tr>
<tr>
<td>Australia</td>
<td>7.1</td>
<td>6.1</td>
</tr>
<tr>
<td>New Zealand</td>
<td>6.4</td>
<td>5.3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5.1</td>
<td>5.2</td>
</tr>
<tr>
<td>Ireland</td>
<td>4.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Canada</td>
<td>4.6</td>
<td>3.4</td>
</tr>
<tr>
<td>United States</td>
<td>3.3</td>
<td>3.0</td>
</tr>
</tbody>
</table>

While there may be criticisms of the methodology used in this study (such as the inclusion of detached houses only rather than all dwellings which does inflate their results) there is nothing to suggest the methodology has not been applied consistently across each country.

Many proponents of the price to “average” income ratio appear to have taken the more widely available price to “median” income ratios for other countries as a comparison rather than actually re-calculate these ratios using “average” income.

4.3 Increasing household debt

While lower interest rates over the past 20 years have helped keep mortgage repayments in check as house prices rose, many argue that it has in fact been the low interest rates that have fuelled the house price boom as households have taken on increasing levels of cheap debt to purchase houses (see Figure 10).

![Figure 10: Ratio of housing debt to housing assets and disposable income (Source: RBA)](image)

While an economy’s use of debt can be a significant positive if used to generate increased production, but if it purely results in asset price growth then it has the potential to generate a speculative bubble. Using ever increasing levels of debt to buy into a housing market already inflated by cheap credit could be a recipe for disaster.
4.4 Low rental yields

With the average gross rental yields on capital city houses currently at 4.0% and on units at 4.7% viii, investors in residential property are clearly betting on making returns from continued price appreciation. Further analysis is provided in Section 5 but in summary an investor buying a property earning a gross yield of 4.5% needs capital appreciation to continue at a rate of 4-5%p.a (depending on assumed rental growth) over the next 10 years just to end up with a return in line with current term deposit rates (6%). If the investor uses gearing to purchase the property (at a mortgage rate of 7.5%) this adds a further 1% to the annual capital appreciation required to break even.

Section 5.4 shows that a gross rental yield in the range of 6-7% could be expected to deliver a more reasonable investment return without requiring unrealistic house price appreciation or rental growth rates to be achieved. From current levels, property prices would need to fall around 30% for gross yields to move back into the 6-7% range.

4.5 Future rental growth

Whilst the impact of housing supply on the availability of rental properties should not be understated, if the ongoing undersupply is as significant as many market participants have indicated then Australia should still be experiencing very high levels of rental growth. ABS data, however, points to the level of rental growth already starting to decline from that experienced in 2008 when Australia’s population growth reached its high point (Figure 11).
The strong growth in rents must also have been significantly driven by the combination of high house prices and high mortgage rates over 2007 and 2008, which forced many potential house buyers into the rental market. Over the 2007 calendar year, house prices rose 14% (after rising 10% in 2006) and in the 2nd quarter of 2008 when average bank standard variable mortgage rates peaked at 9.45%, quarterly rental growth also peaked.

Future rental growth can therefore not be relied on even if supply is constrained as it will also be impacted by the same affordability variables that impact house prices.

5. Australian residential property from an investor’s perspective

Since the introduction of negative gearing in Australia in the 1980’s, and more recently the stellar headline growth in house prices over the past 10 years, ownership of residential property for investment purposes has boomed. ATO data shows 608,000 taxpayers were earning rental income in 1988-89 compared to 1.7m in 2007-08. Many home owners and investors have no doubt made a lot of money from the boom in house prices, and given the now lengthy period over which this has occurred it is not uncommon to hear residential property promoted as an asset class in which investors “can’t lose”.

But with rental yields, before expenses, now below 5% and mortgage rates above 7%, investors clearly need substantial rental growth, or a continuation of high price appreciation for an investment in residential property to be justified, particularly if gearing is used.

This section uses a simple model (see Appendix I) to illustrate the level of price growth and/or rental returns required for an investment in Australian residential property to deliver an acceptable return in the current environment (ie assuming a gross yield of 4.5% and a mortgage interest rate of 7.5% with an acceptable return defined as exceeding a term deposit return of 6%). The sensitivity of returns to mortgage rates and the initial gross rental yield are also investigated. The detailed results are provided in Appendix I, with a summary of the main points below.

5.1 Capital Growth

Future house price growth is clearly the key variable impacting potential returns to an investor, with a 1-2% difference in annual price growth meaning the difference between losing money on the investment or making a reasonable return in excess of the risk free rate, particularly for a geared investor.

The results in Table A (App I) show that house prices would need to continue growing at 5-6%pa for investors to achieve a reasonable return in excess of current term deposit returns, even over a 20 year investment horizon.

Individual readers will have their own view on whether that level of continued price growth is achievable. Over the past 10 years it was clearly exceeded as house prices grew by around 9%pa. However, over the 10 years to December 1999, house price growth was a more modest 3.5%pa, a level which would not break even relative to a term deposit under most scenarios.

5.2 Rental Growth

Many in the property industry believe the current low rental vacancy rate will drive strong rent growth and thus justify the current prices being paid.

Table B shows that given the current very low yield on residential property in Australia, over a 10 year period, assuming a return to more modest capital growth of 3.5%pa, it will be extremely difficult for an investor to generate a return in excess of a term deposit, even under the most wildly optimistic rental growth assumptions, i.e. 10%pa or more.
Assuming gross rents (starting at a 4.5% yield) were to grow by 10%pa it would take an ungeared investor 8 years to start generating an income yield on their initial investment in excess of 6%.

Geared investors are further hampered by the negative spread of rental yields versus mortgage rates. Assuming a 7.5% mortgage rate, 4.5% initial gross yield, and a similar 10%pa growth in gross rents it will take 8 years for an investor geared at 80% to just start generating positive income and 14 years to generate an income yield over 6%.

5.3 Interest Rates
The current high mortgage rate obviously has a major bearing on the potential investment returns achievable for a geared investor. At a 5-6% mortgage rate many of the scenarios assessed in this section do become a much more attractive proposition (Table C in App. I).

Unfortunately since the 1960s the average bank standard variable mortgage rate has only fallen below 6% once – between February and September 2009 following the RBA’s emergency rate cuts during the GFC. Bank funding costs have also increased substantially following the GFC with the spread between standard variable mortgage rates and the RBA’s target cash rate now above 3% compared to the pre-GFC spread of 1.8%\textsuperscript{ii}. Unless bank funding costs fall, for standard variable mortgage rates to fall back below 6% it would now require the RBA’s target cash rate to fall below 3%, which was the lowest point of the RBA’s emergency monetary settings in 2009.

These results also help explain the sudden plateauing of house prices seen over the past 6 months. With rental yields below 5%, once mortgage rates go above 7%, residential property as an investment decision becomes difficult to justify unless the investor has real confidence that house price growth will continue at a strong pace.

5.4 Initial Gross Rental Yield
The results discussed so far in this section all hinge on the current low rental yield on Australian residential property. Table D shows that, not surprisingly, once gross yields get into the 6-7% range the returns start to look more attractive. It is therefore likely that investors will continue to find individual properties that they believe will generate a good investment return. However for the market as a whole, residential prices would need to fall substantially, or not grow for a number of years, if the average gross yield was to reach these levels. This is illustrated in the table below.

Table 2. Residential market correction required to achieve higher gross rental yields

<table>
<thead>
<tr>
<th>Gross Rental Yield</th>
<th>Price fall required</th>
<th>No. of years of 0% price growth required*</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>10%</td>
<td>3</td>
</tr>
<tr>
<td>6%</td>
<td>25%</td>
<td>8</td>
</tr>
<tr>
<td>7%</td>
<td>36%</td>
<td>12</td>
</tr>
<tr>
<td>8%</td>
<td>44%</td>
<td>15</td>
</tr>
</tbody>
</table>

* assumes gross rents grow at 4%pa

These numbers equate to the 30-40% that many commentators believe the Australian residential market is overvalued. Most of these same commentators also believe that Australian residential prices are not headed for a US style housing market collapse (discussed further in Section 7), in which case if prices are to return to a level considered to be “fair value” from an investment perspective then Australia could be facing a stagnant housing market for many years to come.
5.5 Negative gearing and other tax benefits

Negative gearing is often touted as an important benefit to investors in residential property. The tables in Appendix I compare returns for a non-taxpayer and taxpayers at the 30% and 45% marginal tax rates. Relative to a term deposit investment (which is assumed to be taxed as income at the marginal tax rate plus medicare levy), the non-taxpayer comes out in front over a 10 year period while the taxpayer comes out in front only over a 20 year period. This is due to the discounted capital gains tax benefit (tax is only paid on 50% of the capital gain). Over a 20 year period capital gains become a much more significant factor to an investor’s total return while the benefits of negative gearing in the early years of the investment are not as important from a total net return perspective as many investors believe.

Another potentially valuable tax benefit is the 2.5% capital works deduction on the construction cost of dwellings where construction began after July 1985. This is not included in these calculations but it could add 1-2%pa to a geared investor’s IRR over a 10 year period as it enhances the benefit coming from negative gearing. To an ungeared investor that is earning a positive net income the benefit is less significant. Over a 20 year period, as the capital gains again become a more significant component of the total return compared to the annual after-tax income, it also has less impact on total net returns.

5.6 Actual Investor Experience

A report by Morgan Stanley in 2010 outlined the increasing number of Australians investing in property and, using ATO data, illustrated the extent of losses on their investment properties that 70% of these taxpayers are now reporting. It also pointed out that most of the loss-making landlords are middle income earners with 80% of all loss making properties owned by taxpayers earning $80,000 pa or less.

These numbers are based on all rental properties and therefore includes taxpayers investing in both commercial and residential property. The ATO data can be further assessed by separating taxpayers into salary and wage earners (i.e. ordinary Mums and Dads that arguably are more likely to own a residential investment property rather than commercial) and taxpayers earning income from other business activities.

Table 7. ATO Tax Statistics 2007-08

<table>
<thead>
<tr>
<th></th>
<th>Salary and wage earners</th>
<th>Other taxpayers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting gross rental income:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>725,880</td>
<td>979,805</td>
</tr>
<tr>
<td>% of taxpayers in industry group</td>
<td>10%</td>
<td>19%</td>
</tr>
<tr>
<td>Reporting net rental loss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>605,650</td>
<td>592,850</td>
</tr>
<tr>
<td>% of total</td>
<td>83%</td>
<td>61%</td>
</tr>
<tr>
<td>Average loss</td>
<td>$9,870</td>
<td>$11,430</td>
</tr>
<tr>
<td>Reporting net rental gain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>130,275</td>
<td>397,670</td>
</tr>
<tr>
<td>% of total</td>
<td>17%</td>
<td>39%</td>
</tr>
<tr>
<td>Average gain</td>
<td>$3,935</td>
<td>$9,085</td>
</tr>
<tr>
<td>% claiming interest deductions</td>
<td>91%</td>
<td>74%</td>
</tr>
</tbody>
</table>

The ATO data illustrates a number of interesting and potentially alarming facts:

- Salary and wage earners do not make very good property investors! 83% of all salary and wage earners with an investment property are making a tax loss. This number includes some taxpayers claiming a non-cash capital works deduction (286,000 claimed this deduction at an average $2,000), which would have pushed some into the tax loss position. However, it could still be conservatively estimated that there are at least half a million ordinary salary and wage earners making a real cash loss on their investment property.
With the vast majority of taxpayers claiming a rental loss earning $80,000 or less, an average loss of almost $10,000pa represents a significant proportion of their income. Negative gearing allows this loss to be offset against other income, and is clearly one of the major reasons why so many taxpayers are comfortable bearing an income loss. However, with the marginal tax rate for the 2010-11 financial year falling to 30% for those on a salary of $80,000, the tax benefit is significantly lower than only 5 years ago (2004/05) when the marginal tax rate for an $80,000 salary was 47%.

Of those salary and wage earners actually making a gain from their investment, the return is still extremely low. With an average gain of just under $4,000, even if the average property value was $200,000 (significantly less than the median dwelling price in 07/08 and ignoring those investors owning more than one property), this represents an income yield of only 2%pa.

91% of the salary and wage earners have used gearing to fund their investment, illustrating the extent to which these investors will be impacted by higher mortgage rates.

Clearly a massive bet is being taken that residential property prices will continue to grow, and at a rate that will more than compensate for the short term losses the vast majority of investors are currently bearing.

Should these investors start to lose confidence that the expected level of capital gains will be delivered, for example, if prices did stagnant for a number of years, then investors may look to sell rather than continuing to bear income losses.

6. Owner-occupied housing and affordability

6.1 Key drivers of affordability

It is unlikely that many buyers of residential property for owner-occupation attempt to assess a fair value from an investment perspective before making their purchase. In particular, in Australia, owning your own home is almost part of the national identity with most of the population starting to save for a house deposit as soon as they enter the workforce. Properties are then purchased when they become affordable to the buyer rather than when it makes financial sense.

It is for this reason that discussion around house prices invariably leads to comments on affordability. Recent house price growth has clearly made the purchase of a house unaffordable for a significant proportion of the Australian population. However, this in itself is not enough to force house prices lower. House prices can continue to be supported if they remain affordable for the relatively small proportion of the population required to purchase the stock of dwellings coming onto the market either from new construction or existing house sales.

As already discussed in this paper the two most important factors impacting this affordability are interest rates and employment. As seen over the past 6 months the increase in mortgage rates to over 7% has already been enough to stall price growth. Over 2006 and 2007 house prices continued appreciating as mortgage rates rose from 7% to above 8% as they were supported by the strong labour market (which pushed the unemployment rate down from 5% at the start of 2006 to 4.1% in March 2008). It was only in early 2008 when mortgage rates reached 9% that house prices started to fall.
While the interest rate rises over the past 18 months have been significant, mortgage rates are still only around their long term average levels. With unemployment also still very low at 5%, the jobs outlook positive, and supply arguably still constrained, the sudden stalling of house price growth over the past 6 months does suggest that house prices from an affordability perspective have reached a peak. House prices over the next few years will therefore remain extremely sensitive to further interest rate rises. While unemployment is not expected to increase in the short term, it could also have a similar impact on house prices should some external factor cause a turnaround in Australia’s economic outlook (eg a slowdown in China).

The key point here is that the prospects for Australian house prices will be predominantly be driven by interest rates and unemployment, not housing supply or population growth. Whilst Australia is currently in the midst of extremely favourable economic conditions, the cyclicality of interest rates and unemployment means that these conditions will not remain as strong forever, perhaps not even over the next 5-10 years.

6.2 Is there a solution to affordability other than a significant fall in house prices?

Government initiatives such as the first home owners grant has been used on a number of occasions to help ease the burden of home-ownership. However as seen following the GFC, while it can help stimulate demand by encouraging more people to buy houses, it also puts upward pressure on prices and therefore may not actually help affordability.

Initiatives in other countries include tax deductions for mortgage interest payments on an individual’s principal residence. Countries including the US, Netherlands and Switzerland allow this deduction to varying degrees. The UK allows tenants in council-owned properties to purchase the dwelling at a discount of up to 60% and also has shared-ownership schemes where the buyer part-owns and part-rents their house from a council or housing association. The use of zoning to force property developers to include affordable housing in new developments is also a widely adopted practice.

A more sustainable solution would be one driven by market forces that leads to price reductions or a plateauing of prices over the medium term so that incomes can catch up. While perhaps idealistic, this could occur if investors and owner-occupiers believe house prices are overvalued and stay out of the market. However, the incessant promotion by the vast swathe of industry participants that house prices are at sustainable levels and even that price growth will continue at solid, if not similar levels to the past, makes this highly unlikely. This promotion continues to push owner-occupiers to believe they have to get into the market as soon as possible so they don’t become priced out and investors to believe past returns will continue.

Paradoxically if home buyers did look at investment value more than affordability it could actually have the impact of making houses more affordable for the general population.

The aging population could also present opportunities to improve affordability levels in Australia. As baby-boomers retire there could be increased turnover as they sell out of their homes to downsize or move to coastal or regional areas. Their homes could be redeveloped into higher density dwellings and the strong demand for capital city properties that has created a significant gap between metropolitan and regional property prices may be eased as this generation looks for a “sea change”.

7. The US experience
The Australian housing market is often compared with the US, which experienced similar strong growth in prices over the 10 years to 2006, but has since corrected by 30%. This is illustrated in Figure 13.

![Australian versus US house prices](image)

**Figure 13: Australian versus US house prices (Source: ABS House Price Index, S&P/Case-Shiller Composite-US Index. Indices reweight to 100 at Dec 1989)**

There are a numbers of factors that contributed to US house prices falling, which should not impact the Australian market to the same degree. These have been discussed widely in other forums but a brief summary is provided below.

### 7.1 Sub-prime mortgages

The US sub-prime mortgage market grew significantly, from 8% of loan originations in 2003, to 20% in 2005-06\(^{xv}\), with a large proportion offering discounted interest rates for the first two years of the loan and many with no deposit required. Even if the borrower could not afford the higher interest payments after two years, provided house prices continued rising, they could simply sell the property or even refinance the mortgage at a new discounted rate with no penalty.

This all came unstuck in 2007 once houses prices started to fall. Homeowners that could not afford the higher repayments could no longer flip their property for a profit, delinquencies increased and lenders started tightening standards and refusing to refinance loans. The increase in foreclosures was extremely rapid. From 2000 to 2006, the number of loans entering foreclosure in the US was consistently around 150,000 per quarter. This jumped to 400,000 loans entering foreclosure by the 4\(^{th}\) quarter of 2007.

While sub-prime loans experienced some growth in Australia prior to the GFC, they remained a significantly smaller part of the market (see Figure 14).
In addition, non-conforming loans in Australia are less risky than the US with an average average loan-to-value ratio on new loans around 75%, compared to an average 85% on US sub-prime loans. The low introductory interest rate that was prevalent in the US also tends not to be a feature of Australian non-conforming loans.

7.2 Recourse versus non-recourse loans
In Australia, as in most parts of the world, mortgage lenders have full recourse to the borrower for the loan amount. So in the event of default, if there is a shortfall between the value of the house and loan, the borrower is still liable to repay the full loan amount. This provides a strong incentive for borrowers to stay in their homes and continue paying their mortgage.

In the US however, approximately half the states have non-recourse mortgages, so if the value of the house falls below the loan amount, the borrower can walk away with no further liability. In the US, in 2007-2008 as house prices started to fall, many home owners took just that approach, and handed the keys back rather than continue to repay a mortgage that was higher than the value of their home. As pointed out in 7.1 the level of foreclosure sales increased considerably, putting further downward pressure on house prices and creating a downward spiral of increasing foreclosures as prices continued falling.

7.3 Unemployment

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**Figure 14: US and Australian subprime housing markets (Source: RBA)**

![Size of Sub-prime Housing Markets](chart)

**Figure 15: US and Australian unemployment rates (Source: ABS, Bureau of Labor Statistics)**
While US house prices started to fall well before US unemployment increased, the continued high level of unemployment clearly extended the length of the downturn in the US housing market and is one of the main reasons it has yet to show any signs of rebounding.

The increase in unemployment in Australia during the GFC never came close to matching the US, and the quick recovery in the Australian labour market is one of the reasons (along with Government stimulus) that the Australian housing market was able to recover so quickly in the 2nd half of 2009. As discussed previously in this paper, the strong Australian labour market continues to provide a level of support for housing prices that was not present in the US when its housing market fell.

8. Conclusion

This paper has outlined a number of theoretical arguments to describe and attempt to measure housing market pricing, such as supply and demand factors, rental earnings, investment return analysis and affordability. However as immortalised in the classic Australian movie, *The Castle*, you can put a price on a house but you can’t put a price on a home. Currently 70% of private dwellings in Australia are held by owner-occupiers who are unlikely to solely buy or sell their home based on theoretical investment rationale but will take into account any number of personal, family and social factors in their decision.

It is therefore unlikely residential property will ever resemble an efficient investment market, and as with any inefficient market it will go through boom and bust cycles and rarely, if ever, be at a level all market participants will agree is appropriate. It also means there are significant opportunities for investors and home-owners to make a lot of money from the residential market, and inevitably, many will also lose a lot of money. The strong housing market over the past 10 years has lulled many Australians into a false sense of security when it comes to house prices but as with any market cycle it will not go on forever.
APPENDIX I – Potential investment returns from Australian residential property in the current environment

The results in this section illustrate the internal rates of return (IRRs) possible over 10 and 20 years from an investment in Australian residential property. The assumptions made in this analysis include:

- interest-only repayments for the geared investor. This is to help illustrate the two possible extremes: a high level of gearing with no principal repayments versus an ungeared investor. Most investors will lie somewhere between these two extremes, although the RBA reported that in 2005 around 60% of all new investor housing loans were interest-only (compared to 15% for owner-occupiers).
- rental expenses of 1.8%pa, based on 40% of the current 4.5% gross yield. This is more conservative than the actual 50% expense ratio reported in the ATO data over the past 3 years. These expenses are also assumed to grow at only 3%pa, whereas in practice many would grow in line with gross rents, for example, agency rental commission.
- stamp duty of 4% but ignores other buying costs such as conveyancing, property inspections etc.
- selling costs of 2%, essentially real estate agent commission.
- ignores potential tax deduction for depreciation of construction costs on properties built after July 1985, although this is discussed further in section 5.5
- ignores land tax
- ignores cost of renovations

The shaded results are those IRRs that exceed the net of tax term deposit return.

Table A. Impact of future house price growth
Assumes an initial gross rental yield at the current market average of 4.5% and rental growth of 4%pa (the average over the past 10 years).

<table>
<thead>
<tr>
<th>House Price Growth Rate</th>
<th>Geared (80% at a 7.5% mortgage rate)</th>
<th>Ungeared</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before Tax</td>
<td>30% Marginal Tax Rate</td>
</tr>
<tr>
<td>10 yr IRR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2%pa</td>
<td>-3.4%</td>
<td>-8.9%</td>
</tr>
<tr>
<td>4%pa</td>
<td>3.4%</td>
<td>0.2%</td>
</tr>
<tr>
<td>6%pa</td>
<td>8.5%</td>
<td>6.2%</td>
</tr>
<tr>
<td>8%pa</td>
<td>12.8%</td>
<td>10.8%</td>
</tr>
<tr>
<td>20 yr IRR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2%pa</td>
<td>0.7%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>4%pa</td>
<td>5.2%</td>
<td>4.6%</td>
</tr>
<tr>
<td>6%pa</td>
<td>8.6%</td>
<td>8.2%</td>
</tr>
<tr>
<td>8%pa</td>
<td>11.6%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Return from 6% Term Deposit</td>
<td>6.0%</td>
<td>4.1%</td>
</tr>
</tbody>
</table>
Table B. Impact of rental growth
Assumes a 4.5% initial gross rental yield and house price growth of 3.5%pa (the average during the 1990s).

<table>
<thead>
<tr>
<th>Rental Growth Rate</th>
<th>Geared (80% at a 7.5% mortgage rate)</th>
<th>Ungeared</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30% Marginal Tax Rate</td>
<td>45% Marginal Tax Rate</td>
</tr>
<tr>
<td>10 yr IRR</td>
<td>Before Tax</td>
<td></td>
</tr>
<tr>
<td>2%pa</td>
<td>0.7%</td>
<td>-2.8%</td>
</tr>
<tr>
<td>4%pa</td>
<td>1.9%</td>
<td>-1.7%</td>
</tr>
<tr>
<td>6%pa</td>
<td>3.2%</td>
<td>-0.5%</td>
</tr>
<tr>
<td>8%pa</td>
<td>4.5%</td>
<td>0.8%</td>
</tr>
<tr>
<td>20 yr IRR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2%pa</td>
<td>2.5%</td>
<td>2.0%</td>
</tr>
<tr>
<td>4%pa</td>
<td>4.2%</td>
<td>3.5%</td>
</tr>
<tr>
<td>6%pa</td>
<td>6.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>8%pa</td>
<td>8.5%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Return from 6% Term Deposit</td>
<td>6.0%</td>
<td>4.1%</td>
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</table>

Table C Impact of Interest Rates
Assumes a 4.5% initial gross rental yield and house prices and rents both grow at 4%pa.

<table>
<thead>
<tr>
<th>Mortgage Rate</th>
<th>80% Geared</th>
<th>50% Geared</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before Tax</td>
<td>Before Tax</td>
</tr>
<tr>
<td>10 yr IRR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>8.4%</td>
<td>4.4%</td>
</tr>
<tr>
<td>6%</td>
<td>6.4%</td>
<td>2.7%</td>
</tr>
<tr>
<td>7%</td>
<td>4.4%</td>
<td>1.0%</td>
</tr>
<tr>
<td>8%</td>
<td>2.4%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>20 yr IRR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>8.6%</td>
<td>7.3%</td>
</tr>
<tr>
<td>6%</td>
<td>7.2%</td>
<td>6.1%</td>
</tr>
<tr>
<td>7%</td>
<td>5.8%</td>
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</tr>
<tr>
<td>8%</td>
<td>4.6%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Return from 6% Term Deposit</td>
<td>6.0%</td>
<td>4.1%</td>
</tr>
</tbody>
</table>
Table D  Impact of initial gross rental yield
Assumes house prices and gross rents both grow at 4%pa.

<table>
<thead>
<tr>
<th>Initial Rental Yield</th>
<th>Geared (80% at a 7.5% mortgage rate)</th>
<th>Ungeared</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30% Marginal Tax Rate</td>
<td>45% Marginal Tax Rate</td>
</tr>
<tr>
<td>10 yr IRR</td>
<td>Before Tax</td>
<td>Marginal Tax Rate</td>
</tr>
<tr>
<td>5%</td>
<td>4.8%</td>
<td>1.4%</td>
</tr>
<tr>
<td>6%</td>
<td>7.8%</td>
<td>3.9%</td>
</tr>
<tr>
<td>7%</td>
<td>10.8%</td>
<td>6.4%</td>
</tr>
<tr>
<td>8%</td>
<td>13.9%</td>
<td>9.0%</td>
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<td>Marginal Tax Rate</td>
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<td>7%</td>
<td>11.1%</td>
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<td>Return from 6% Term Deposit</td>
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</table>
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Endnotes

i Real House Price Index constructed using the ABS House Price Index from June 1986 (Old index calculation methodology used prior to March 2002) and prior data from Nigel Stapledon’s paper, Long term housing prices in Australia and some economic perspectives, Australian School of Business, UNSW.

ii Based on median national dwelling price and assuming 25 year mortgage with 75% LVR

iii Stockland, February 2010 Results Presentation; CBA presentation, Australian Residential Housing and Mortgages, 9 September 2010

iv Source: ABS Year Book Australia, 2008
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v ABS Household Income and Income Distribution, Australia - Detailed tables, 2007-08
vii The price to income ratio was calculated using the ABS capital city house prices index and median household income numbers from the ABS Household Income and Income Distribution estimates from 2007-08, with later years estimated using ABS Average Weekly Earnings data.
viii RP Data-Rismark Hedonic Home Value Index, December 2010 Results.
ix ABS Price Index of Established Houses ; Weighted Average of 8 Capital Cities
x RBA Indicator Lending Rates
xi Morgan Stanley Research, Australia Strategy and Research, Living in a Bubble, August 16, 2010
xii Based on RBA Indicator Lending Rates
xiii Defined by the ATO as individual taxpayers who reported income only from salary and wages and/or non-business net income or loss on their return.
xiv Joint Center for Housing Studies of Harvard University, The State of the Nation’s Housing 2008.