

# The Great Australian Dream - Just a Dream?

Housing affordability trends for Australia and our largest 25 cities



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# Foreword

Owning a home has long been a great Australian dream.

Following World War II, patriotism and a desire for security, as well as favourable economic conditions and government policy, prompted people to put down roots. The rate of home ownership boomed, rising from 40 per cent in 1947 to over 70 per cent by the 1960s.<sup>1</sup>

So, like the “American dream” of prosperity and success, Australians too have been driven by the desire to secure their future and invest in a home of their own.

But is home ownership becoming the impossible dream?

The latest AMP.NATSEM Report *The Great Australian Dream - Just a Dream?* examines the state of housing affordability in Australia. The report found that house prices moved from affordable to severely unaffordable over the last 10 years. The dream may now be completely out of reach for some people, with first home buyers older, borrowing more and facing considerable housing stress once they’ve entered the market.

So why do Australians want to own their own home?

Through the years, home ownership has become part of the Australian psyche.

The Hills hoist has become a cherished symbol of Australia’s love of the land and love of houses. A backyard, a barbecue and a dog have also become part of this picture.

Home ownership has been supported more recently by ongoing government initiatives such as the First Home Owner Grant and tax concessions available to home owners.

However, in the last decade, buying your own little piece of Australia has become a lot more expensive.

Just 10 years ago, more than 50 per cent of all suburbs in our five major capital cities were affordable but today only four per cent are. Not a single inner city suburb is affordable. And the regional areas haven’t been exempt from this phenomenon either.

Although Australia is now one of the most unaffordable developed countries in the world in terms of housing, we’re a country that’s nothing if not determined. There are still many people entering the property market or preparing to do so.

While Australian first home buyers are under the greatest housing stress, this group is finding ways of achieving their goal in different ways. Many are choosing to save money by living with their parents longer while others are choosing to buy an apartment instead of a house.

Our history of determination in the face of adversity is seeing a new generation carve out their financial futures. We have shown in the past that as a nation we can adapt and prosper, a skill that will see us hold on tight to the Australian dream for many years to come.



**Craig Meller**  
Managing Director  
AMP Financial Services

1. Department of Foreign Affairs and Trading website 2008, [www.dfat.gov.au/aib/history.html](http://www.dfat.gov.au/aib/history.html).

# Introduction

The great Australian dream for many individuals and families is to purchase their very own piece of Australia.

As our nation grew and prospered through the second half of the 20th century, this dream became a reality for many young families. Land was cheap, housing was cheap and most of us could afford to buy our very own home.

Something changed last decade. House prices, not only in Australia, but globally, soared and put the great Australian dream in doubt. Rising prices are seen as a boon for those who already have their own home, but a nightmare for those attempting to get into the market.

The Australian property market truly is a tale of the housing haves and the housing have-nots. Typically, the “haves” purchased their home many years ago when prices were more favourable. They have since experienced windfall gains through the growth in the price of their properties. The “have-nots” are typically renters, the young (often First Home Buyers), lone persons and single parents. These are the groups facing the highest rates of housing stress and the greatest affordability constraints.

The results of this report relate most strongly to those people at the lower rung of the housing market who either recently purchased or are saving for their first home, rather than existing home owners.

This issue of the AMP.NATSEM Income and Wealth Report examines housing affordability in Australia and poses the following questions:

- Is it getting harder to realise the great Australian dream?
- Who experiences the most housing stress?
- How affordable are Australia’s 25 largest cities?
- What are the trends in affordability?
- Are any suburbs in Australia’s major capital cities affordable?



# Decade of decline: Australian housing affordability

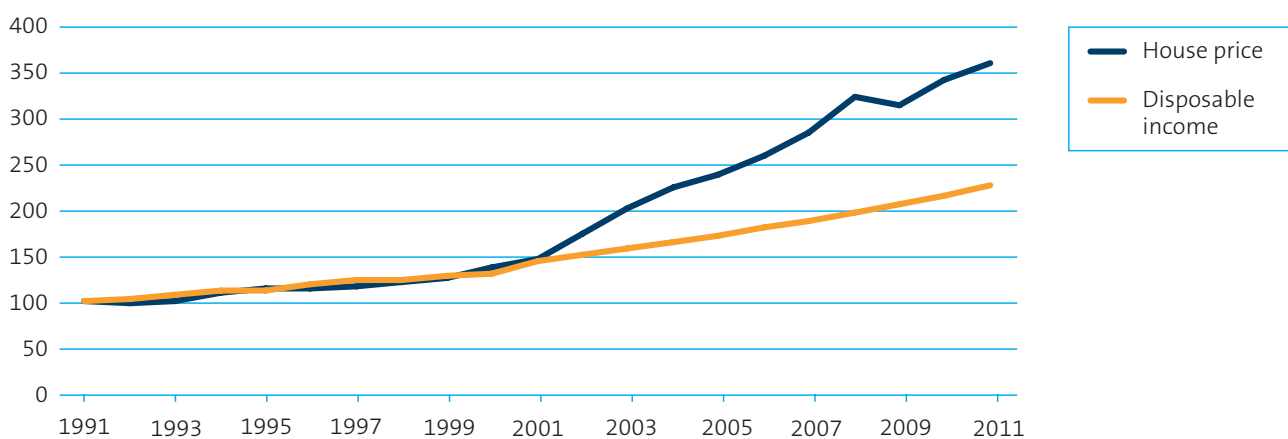
A decent shelter is a basic necessity for us all and owning our own home the life goal for many. While some prefer the flexibility that renting can offer, the stability of tenure offered by home ownership and the sense of place obtained through owning your own home can be hard to beat.

With house prices outstripping income growth over the past decade, owning a home has become less attainable. Figure 1 shows that over the past two decades, growth in median house prices across Australia exceeded growth in median household income. During this period, house prices increased

by 263 per cent, while after-tax income grew by only 95 per cent. The difference is entirely due to the last 10 years, where house prices grew by 147 per cent and household income just 57 per cent.

In actual dollar terms, the median house price in Australia more than doubled over the last decade - increasing from \$169,000 in 2001 to \$417,500 in 2011. Conversely, the annual median after-tax incomes for households increased by only half - from \$36,000 in 2001 to \$57,000 in 2011<sup>2</sup> (see Figure 1).

Figure 1 - Australian house prices and after-tax income (000s) (Index: 1991=100)



**Note:** The median house price index was calculated using RP Data median house prices for Australia on an annual basis up to March of each year. RP Data house prices include all residential dwellings sold during the year. Median after-tax income was based on ABS Census estimates for 2001 and NATSEM modelled data for 2011. Numbers between 2001 and 2011 were interpolated and numbers prior to 2001 were indexed using growth in the ABS' National Accounts Gross Disposable (after-tax) Income measure divided by households (cat no 5206.0).

**Source:** NATSEM calculations.

House prices are driven by supply and demand. Both have worked together over the past decade to push up the cost of land and subsequently house prices.

On the demand side the major factors that have lead to elevated housing prices include:

- A sustained period of relatively low and stable interest rates
- A less regulated banking sector and easier finance with high Loan to Value Ratios<sup>3</sup>
- Strong employment and income growth
- Strong population growth
- Dual income families
- A taxation system and social assistance program that encourages home ownership and investment (Yates 2010)

On the supply side, Australia is thought to have had a housing shortage in 2010 of around 180,000 dwellings and this shortage is expected to increase over the coming years (National Housing Supply Council, 2010). The National Housing Supply Council blamed a limited and slow land release and the impost of high taxation on new housing as the main factors limiting adequate supply.

Clearly, many factors are at play in Australia's housing affordability problems, but the end result is house price inflation.

2. Median incomes tend to be significantly lower than average income measures due to the skewed nature of household income. The figures are based around ABS Census 2006 estimates uprated to 2011. The ABS does report some underestimation in this income measure (ABS 1).

3. A Loan to Value Ratio (LVR) is one of many measures used by financiers to determine the eligibility and risk associated with a loan. An LVR of 80 per cent is generally accepted as a healthy maximum LVR. Beyond that mortgage insurance is usually required by the mortgagor to protect them against the risk.

# Measuring housing affordability

This report uses two distinct measures of housing affordability: housing stress and price to income ratio.

The housing stress measure describes how much households pay as a proportion of income, so how much stress they are under to repay their mortgage or rental costs. The price to income measure describes how difficult it is for the median household to purchase a typical dwelling. For both measures, a higher number indicates a less affordable housing market.

The housing stress measure is best for describing how hard it is to afford your current shelter, while price to income ratios best describe how hard it is to purchase a dwelling. The price to income measure is mostly referred to in this report as “housing affordability” as it represents the relative affordability in terms of gaining entry into a housing market.

The price to income measure can be thought of as the number of years worth of income required to purchase a typical dwelling outright. The number is a very simple measure and has several limitations, including that no account is made for changes in interest rates over time. For example, a higher interest rate makes a given price to income ratio less affordable as repayments increase for a given loan.

However, for much of the research conducted in this report, we have focused on housing affordability over the past 10 years and consequently the impact of interest rate changes is minimal due to their relative stability over the past 15 years.

Our housing affordability measure has been calculated using median household incomes - that is, what a typical Australian family earns. It is important to note that the measure does not take into account household size. Smaller households, such as couple only households, are likely to be able to comfortably take on higher rates of debt compared to larger households with the same income. Further details about the calculation of housing affordability and limitations with this measure can be found in the technical notes provided in Appendix C.

For these reasons we do not use the measure to compare household types or income groups, or other possible variables. For the remainder of this report, we use this affordability measure only for comparing regions. For this purpose alone we believe the price to income measure is a reliable gauge of affordability and the best available given data limitations.

## So, what's affordable and what's not?

A standard rule of thumb for housing affordability is that a ratio of housing costs to income beyond 30 per cent is unaffordable.

In terms of our measure of housing affordability, for current interest rates, a ratio of just above five roughly equates to the 30 per cent rule of thumb. The price to income ratio of five is only relevant for prevailing interest rates.<sup>4</sup> For example, if interest rates were to increase by two percentage points, a ratio closer to four would be considered unaffordable using this rule of thumb.

When taking out a loan, it is generally advisable to have a buffer of around two percentage points so that if interest rates increase the household can still afford to pay off the mortgage, suggesting a ratio of four is the upper end of affordability. Since home buyers face a range of home prices (not just the median) and can choose homes priced below the median, which First Home Buyers often do, for this report we use a price to income ratio of five as the upper end of the affordability scale.<sup>5</sup>

4. The current average “discount interest rate” as at May 2011 was 7.10 per cent (RBA). The discount rate is the RBA measure of average interest rates for “professionals” who receive a discounted interest rate. The standard variable rate average is 7.8 per cent.

5. The academic literature (Nepal et al, 2010) would point to the 30 per cent rule being inappropriate for high income households. This analysis focuses on median income household and is mostly used for comparative purposes between regions.



“The GFC, which hit Australia mostly in 2009, took the steam out of the property market in 2008 and the affordability ratio flattened out.”



Table 1 outlines the relationship between the price to income ratio and how these numbers are interpreted in this report. As the ratio increases beyond five, so too does the severity of unaffordability.

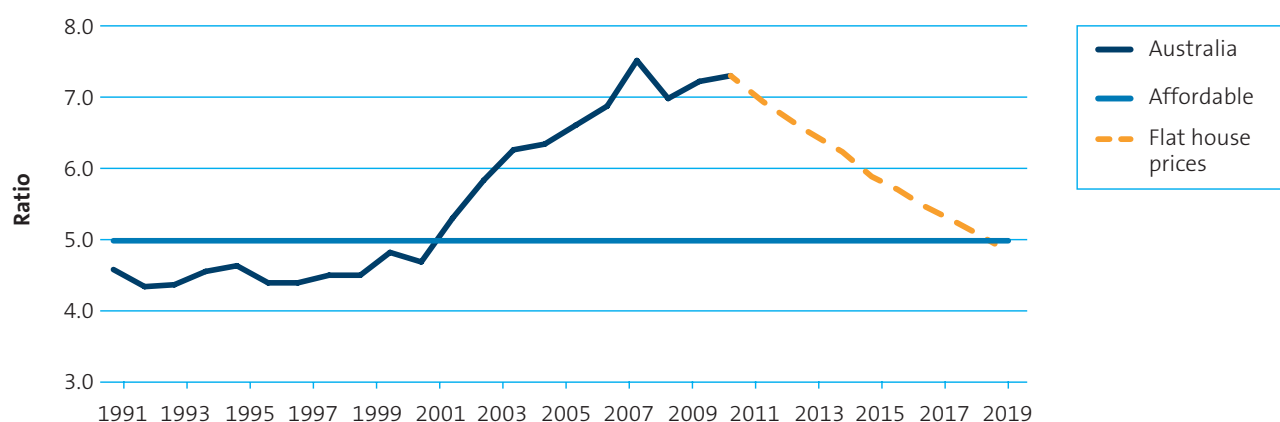
**Table 1 - Housing affordability rating categories**

AFFORDABILITY RATING	PRICE TO INCOME RATIO	EXAMPLE	REPAYMENT RATIO AT 7.1% INTEREST	REPAYMENT RATIO AT 9.1% INTEREST
Affordable	<5	4 - \$240,000 house and \$60,000 income	26%	31%
Moderately Unaffordable	5 to 6	5.5 - \$330,000 house and \$60,000 income	35%	43%
Not Affordable	6 to 7	6.5 - \$390,000 house and \$60,000 income	42%	51%
Severely Unaffordable	7+	8 - \$480,000 house and \$60,000 income	52%	62%

**Note:** The repayment ratio is based on the discounted variable interest rate over a 30 year loan as at May 2011 with a 20 per cent deposit.

Figure 2 shows movements in the housing affordability measure for Australia over time. The ratio was remarkably stable through the 1990s as prices and incomes moved in tandem. However, from 2001 house prices grew substantially, pushing the typical ratio measure from around 4.5 to over 7.0 by the latter part of the noughties. Applying the categories of affordability in Table 1, Australian house prices moved from being affordable in 2001 to severely unaffordable in 2011.

**Figure 2 - Australian median house price to after-tax income ratio (P/I)**



**Source:** NATSEM calculations.

The GFC, which mostly hit Australia mostly in 2009, took the steam out of the property market in 2008 and the affordability ratio flattened out thereafter. This decline, or improved affordability, in 2009 was likely related to a structural shift in the housing market towards the First Home Buyer market (cheaper properties) in response to the Federal Government boost to the First Home Owners Grant.<sup>6</sup>

To achieve an affordable housing market, median house prices need to rise slower than incomes. There are early indications that Australian house prices are slowing. Over the year to April 2011, the RP-Data-Rismark house price series for capital cities in Australia fell 1.5 per cent. The problem for Australia is that house prices are so far from being affordable that this would take considerable time. Figure 2 suggests that if median prices were to remain at current levels and after-tax income continued to grow at trend, it would take nearly nine years for housing to become affordable.

Some countries, such as the United States, Ireland, Spain and the UK have experienced house price drops during the global financial crisis. However, each of these countries had either severe housing debt problems or an over-supply of housing or both. While regional areas in these countries did experience the sort of house price drops required in Australia to bring about affordability, these were isolated instances. Australia neither exhibits crisis levels of debt or a housing over-supply problem.<sup>7</sup>

6. The RP Data median house price series makes no account for "quality" change. A "quality" adjusted series on a shorter time series is provided RP Data-Rismark but was not used in this analysis.

7. Latest Fitch Ratings Survey arrears rates in Australia remain at very low levels.

# Housing stress in Australia

The previous section dealt with housing affordability, in particular, the financial ability of the typical household to purchase a median priced home in Australia. It also demonstrated a serious decline in affordability in Australia over the past two decades.

In this section, we take a closer look at housing stress in Australia - the proportion of income that a household spends on housing costs, including mortgage repayments, rent and rates. Housing stress, especially for mortgages, responds slowly to changes in affordability since most households purchased a home many years ago or indeed own their own house outright. Notable exceptions to this group are First Home Buyers.

## How is housing stress measured?

Housing stress is measured variously by different authors. Most frequently, housing stress is based on the ratio of individual housing costs to income. Typically, if a household is paying more than 30 per cent of their income on housing they are considered to be in stress. In this report we consider three basic forms:

1. The basic “30 only” rule where a household who pays more than 30 per cent of their after-tax income on housing costs is deemed to be in stress
2. The “30/40” where we only include low income earners - the bottom 40 per cent of income and then apply the 30 only rule<sup>8</sup>
3. The “50 rule” are those in extreme housing stress who pay more than half their income in housing costs

The 30 only rule is often criticised for including rich households who by choice spend a large fraction of income on housing and the 30/40 rule overcomes this problem by restricting “stress” to only those households in the bottom 40 per cent of the income distribution. Both measures have their place.

The 30 only rule includes all Australian households and so better captures “middle Australia”, while the 30/40 rule is better placed to consider the implications for the less advantaged in society. The 50 rule is a simple measure of households paying a seriously large amount of money on housing and potentially at greater risk of default, especially should their economic circumstances change or interest rates increase.

## What does it mean to actually be in housing stress?

Quite simply, households that are in housing stress are devoting a much larger fraction of their after-tax income to housing than those households not in stress. Those in housing stress therefore have less money left over for other essential items such as food, transport, health, utilities and education. These households’ ability to purchase non-essential items, or luxury items, is very much compromised.

## Who is experiencing housing stress?

Naturally, housing stress is most strongly felt by those buying a home (mortgagor) or those renting. Both tenure types have a high level of stress of around 30 per cent using the 30 only rule.

However, nearly 1 in 10 buyer households spend at least half their after-tax income on housing. These households are at serious risk of financial difficulties, especially if family or economic circumstances were to change. Renters are the most prominent group (23 per cent) using the 30/40 rule and therefore the group where social costs are likely to be greatest.

It is single persons and single parent households at greatest risk of living in housing stress. On the other hand, couples with children and couples without children barely rate a mention in the two more serious categories of stress. Arguably, couple with children households may be more disadvantaged than suggested as the income measure does not always take into account family size.

A breakdown of housing stress in Australia in 2011 is provided in Table 2. It shows that Sydney is the most stressed city on all measures used, with 9.4 per cent of Sydney households paying more than 50 per cent in housing costs, and 11 per cent of lower income Sydney households paying more than 30 per cent.

Tasmania and South Australia are the least housing stressed states. Of non-capital city areas, Queensland has the most housing stressed households. This may be related to the high demand for housing in the sea change areas of the Gold Coast and the Sunshine Coast where incomes of retirees may be quite low and with the mining boom in inner regional areas.

8. The measure of income used to separate out the bottom 40 per cent of the income distribution accounts for household size.





Table 2 - Proportion of households in mortgage stress, 2011

2011 MORTGAGE STRESS % HOUSEHOLDS				
	30 RULE	50 RULE	30/40 RULE	HOUSEHOLDS (000s)
TENURE TYPE				
Buyer	31.0	9.4	7.1	2,871
Renter	30.0	7.7	23.0	2,120
Owner	1.2	0.9	1.1	2,795
Other	0.2	0.0	0.0	154
All	20.0	5.8	9.1	7,940
FAMILY TYPE				
Sole parent	32.0	5.3	24.0	512
Lone person	28.0	11.0	22.0	1,562
Couple with children	21.0	4.8	2.9	2,329
Other	14.0	3.7	5.1	1,547
Couple without children	13.0	4.8	5.4	1,991
All	20.0	5.8	9.1	7,940
STATE AND TERRITORIES (CAPITAL CITIES AND BALANCE)				
Sydney	28.0	9.4	11.0	1,565
Balance of NSW	16.0	4.0	9.2	994
Melbourne	18.0	5.3	7.9	1,422
Balance of Victoria	14.0	4.3	6.6	560
Brisbane	19.0	4.5	7.9	730
Balance of QLD	22.0	5.6	11.0	850
Adelaide	16.0	3.5	8.9	464
Balance of SA	10.0	3.0	6.3	165
Perth	23.0	7.6	10.0	612
Balance of WA	15.0	4.7	7.1	197
Hobart	13.0	5.1	7.3	84
Balance of Tasmania	9.9	2.3	7.6	111
ACT/NT	17.0	3.0	5.0	91
GENERATION				
Generation Y (15-29)	35.0	10.0	20.0	844
Generation X (30-49)	27.0	7.4	8.9	3,165
Baby Boomers (50-64)	14.0	4.5	7.5	2,219
Builders (65 plus)	6.8	2.2	6.2	1,713
All	20.0	5.8	9.1	7,940
RECENT BUYER (LAST 3 YEARS)				
FHB	60.0	17.0	11.0	249
Upgrader	32.0	12.0	5.6	793

Source: NATSEM calculations from STINMOD.

Generationally, it is the young who experience the most housing stress. Stress levels decline with age and we find that those over 65 years of age face very little housing stress.

A concerning result is that First Home Buyers (FHBs) have by far the greatest stress of any group. Sixty per cent of FHB households pay more than 30 per cent of their after-tax income on housing. Seventeen per cent spend more than 50 per cent and 11 per cent fall into the 30/40 rule. This is the group that has been hit the hardest by the recent escalation in house prices. They have been forced to buy into a red hot housing market and crystallised the housing gains of the older generation.

The mortgages used by FHBs escalated over the past 10 years. In 2001, the average loan by an FHB was just \$131,000. By 2011 the average loan more than doubled to \$280,000. Australian Bureau of Statistics (ABS) figures show that 15.7 per cent of housing loans in 2011 were provided to FHBs. This is much lower than the peak in 2009 of 28.5 per cent and last decade's average of 19 per cent (ABS 2011a).

The typical FHB is also getting older. Larger mortgage requirements and a generation that's delaying the responsibilities of life drives this ageing of FHBs. NATSEM estimates that the age of FHBs is creeping up, in 2001, 39 per cent of FHBs were under 30 compared with 37 per cent in 2011.

The property price boom of the last decade is transferring wealth from the younger generation to the older generation. Whether that wealth is one day returned to younger generations through larger inheritances remains to be seen.



# International comparisons

Australia has one of the least affordable housing markets in the world. The 2011 International Housing Affordability Survey conducted in Australia, Canada, Ireland, Hong Kong, New Zealand, the United Kingdom and the United States showed that Australia was the second most expensive of these countries. While not directly comparable with the results in this report, the survey showed that only Hong Kong was more unaffordable (Kotkin, 2011).

That said, there are considerable difficulties in interpreting international house prices. The sort of housing available in each country differs tremendously. Some countries, like Australia and Hong Kong, are highly urbanised.

Typically, urban areas are more expensive owing to greater job opportunities and a general preference for city life. Housing quality also varies greatly between countries, for example, in Australia, most housing has a large floor area and is detached while many other countries have much smaller housing that is either semi-detached (terraces/townhouses) or units.

Regardless of the difficulties of international comparisons, housing in Australia is expensive compared with most other countries.

**Table 3 - Housing affordability ratings by nation**

COUNTRY	MEDIAN PRICE TO INCOME RATIO	% AFFORDABLE REGIONS	% SEVERELY UNAFFORDABLE REGIONS
Hong Kong (one region)	11.4	0	100
Australia	6.1	0	84
New Zealand	5.3	0	50
United Kingdom	5.2	0	64
Ireland	4.0	0	0
Canada	3.4	26	17
United States	3.0	35	7

**Note:** The authors in this survey use a stricter definition of severely unaffordable (a ratio of 5+) and a stricter definition of affordable (a ratio of <3) based on gross income, whereas this report is based on after-tax income. Since different countries charge different rates of tax on income the after-tax income measure used in this report provides a better point for international comparison.

**Source:** Kotkin, 2011.



# Capital cities and states

Throughout the last decade, rising Australian house prices led to a major drop in affordability. In the next two sections we consider whether this drop was pervasive throughout all regions of Australia or limited to just a few.

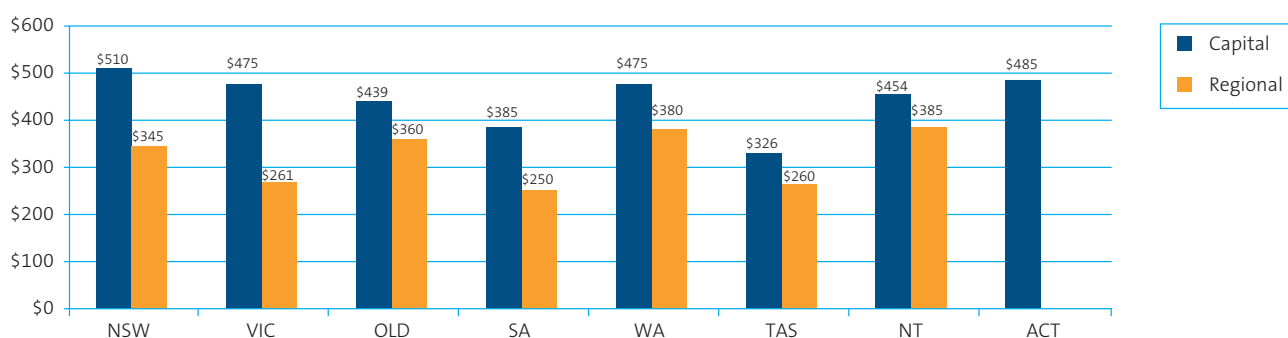
Firstly, we look at the state and capital city picture. Affordability reports consistently show that South Australia and Tasmania and their respective capitals are the most affordable in the country. The reports also tend to show that New South Wales and Sydney are the most unaffordable in the country (see for example, HIA 2011, REIA 2011).

There are methodological differences between the affordability reports provided in these studies compared to the price to income ratio approach in this report. The major advantage of the NATSEM methodology is that all property transactions are included in the calculation of the median price. Other providers rely on lending data from banks which do not provide full coverage of all transactions.

A good start on developing the affordability picture is to consider the median house prices of each state and capital city. Figure 3 shows that Sydney has the highest median house price at \$510,000 for the year to March 2011. The ACT and Melbourne are not far behind at \$485,000 and \$475,000 respectively. The cheapest capital city is Hobart at \$326,000, well ahead of the second cheapest, Adelaide (\$385,000).

The most expensive regional areas (balance of state/territory) are found in the mining states with the Northern Territory (\$385,000) and Western Australia (\$380,000) well ahead of the cheapest regional areas of South Australia (\$250,000) and Tasmania (\$260,000).

Figure 3 - Capital city, regional house prices (000s) March 2011

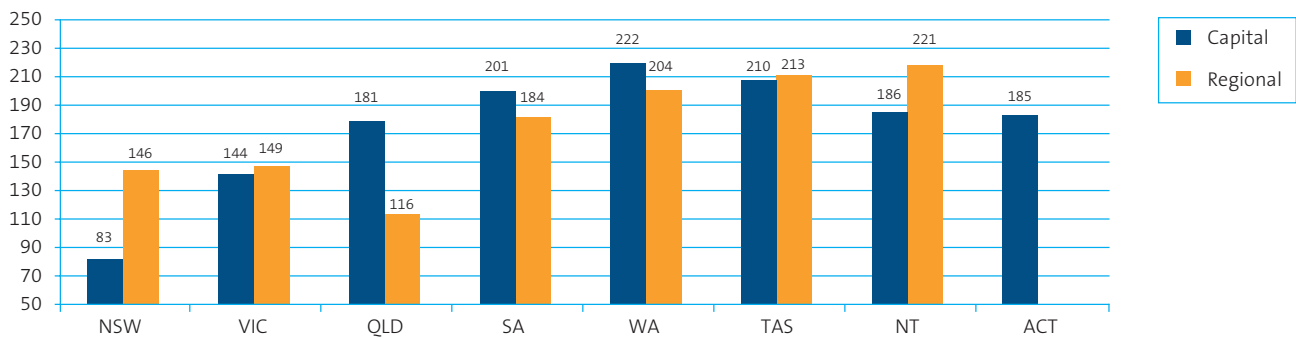


Source: NATSEM calculations from RP data.

Clearly, capital cities are much more expensive than the balance of state regions. Was this an outcome of capital cities experiencing much higher rates of house price growth than regional areas? Figure 4 shows this is not the case. Over the past 10 years, in four out of seven states and territories, it has been the regional areas that have experienced stronger house price growth.



Figure 4 - Capital and regional house price growth 2001 to 2010 (%)



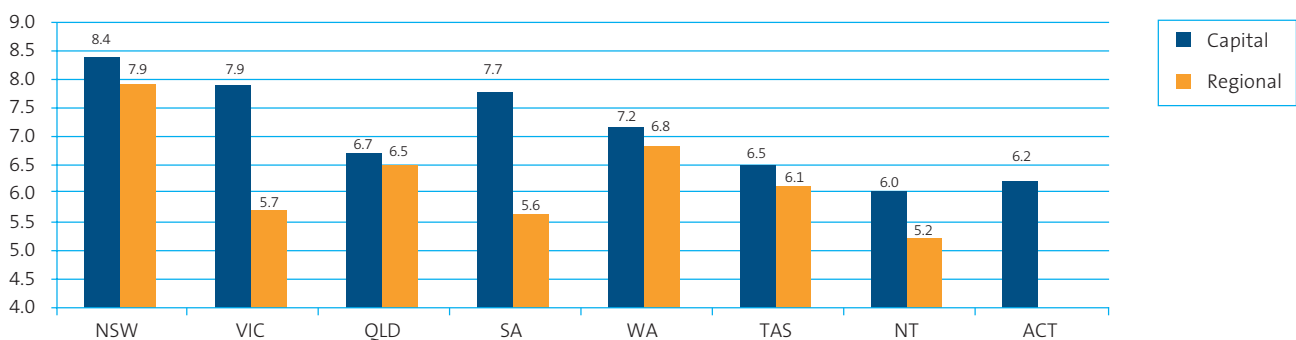
Source: NATSEM calculations from RP data.

Sydney experienced the least growth in housing prices through the last decade; however, to some extent this is related to Sydney leading the house price boom in the late 1990s. The other states followed and played catch up over the last decade.

Figure 4 shows that strong house price growth was indeed pervasive through all capital cities and regions. Some of the results are unexpected with South Australia and Tasmania experiencing stronger growth than the larger, and often more investor-fancied, states. House prices pushed much higher in the mining states of the Northern Territory and Western Australia.

Price levels alone don't always give a true picture of housing affordability. Different income levels in different states mean that a given median house price may be more affordable in higher income states. Figure 5 overcomes the limitations of price information alone, providing the price to income ratio used earlier in this report.

Figure 5 - Affordability ratio, capital city and regions, March 2011





A slightly different picture is provided in Figure 5 as compared to Figure 3, where house prices only were considered. Sydney, with an affordability measure of 8.4 (severely unaffordable) is the most expensive capital city or region in Australia. This measure means that a typical Sydney home costs around 8.4 times the average annual household income in Sydney. Melbourne is the second most expensive at 7.9 but Adelaide loses its affordability edge over other capital cities with an index of 7.7, owing to a lower after-tax income than other state capitals.

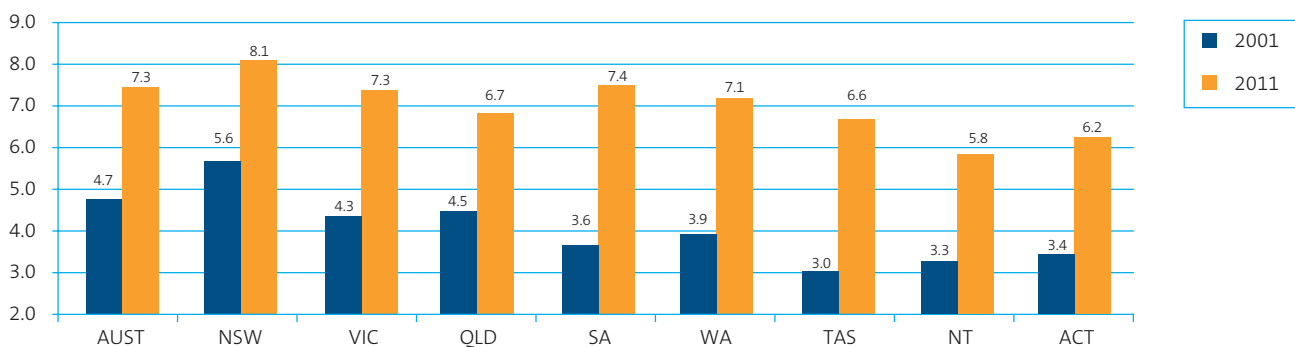
The most affordable capital cities are Darwin (6.0) and the ACT (6.2), both of which have the two highest after-tax income levels of all the capitals. All capitals are considered unaffordable with Sydney, Melbourne and Adelaide all severely unaffordable.

Lower income levels in non-capital city areas diminish their affordability edge over capital cities. The balance of NSW offers the least affordable regional area with high prices and low incomes leading to an affordability measure nearly as poor as Sydney. The mining boom in Queensland and Western Australia is also likely to keep these states' regions in the not affordable category.

All regional areas are considered unaffordable, however, the Northern Territory and South Australia come the closest to affordable status.

Figure 6 demonstrates the extent of the collapse of housing affordability throughout Australia. In 2001, with the exception of NSW, all states were affordable using our definition. NSW was only moderately unaffordable. By 2011, four states moved to severely unaffordable while the ACT, Tasmania and Queensland moved to not affordable and the Northern Territory moved to moderately unaffordable.

**Figure 6 - Affordability ratio, states, March 2001 and 2011**



Source: NATSEM calculations from RP data.



“Sydney experienced the least growth through the last decade. To some extent this is related to Sydney leading the house price boom in the late 90s.”

# Australia's largest 25 cities compared

We now drill down to Australia's largest 25 cities and consider separate housing markets. For each of these cities we consider their individual affordability and show which are the most affordable and the least affordable and how affordability changed during the last 10 years.

Also included is an analysis of the inner, middle and outer rings for each of the largest five capital cities. The analysis places sales that occurred less than 10 km from the CBD as "inner ring", between 10 and 20 km as "middle ring" and beyond 20 km as "outer ring".<sup>9</sup>

Splitting the five major capital cities into distance groups from the CBD creates 35 distinct Australian housing markets. Australia is highly urbanised and these 25 cities have a total population of nearly 18 million, or around four-fifths of all Australian residents.

Analysis of affordability conditions in the 25 cities and the major capital city rings provides intriguing insights into the operation of the real estate market. "Location, location, location" is the cry of property experts. The theory is that the closer your location to employment and amenities, the stronger capital gains you will likely receive. Typically, this means purchasing closer to CBDs. But does the evidence support this?

Are Australia's major capital cities vastly more expensive than regional centres, such as Newcastle or the Gold Coast or even inland centres such as Toowoomba? These regional centres offer similar amenities and for many, equally solid employment prospects. If these regional centres offer superior value should those looking to move consider Australia's regions rather than just the typical big capital cities?

An alternative perspective is that many of these regional centres have been boosted by the recent mining boom. Has housing affordability been impacted in these boom towns? How do Australian cities rank in terms of median price? Table 4 shows Australia's 10 most and least expensive major cities.

Appendix B shows the full list of Australian cities studied and the major capital city rings along with their respective population, house prices, median after-tax income, associated affordability index and their respective rankings on a number of variables.

Sydney's inner ring takes the dubious prize of the most expensive property market in Australia with a median price of \$685,000. Inner ring Melbourne is some distance behind as the second most expensive location at \$625,000. The rest of the table is made up of capital city regions. Rounding out the top 10 is the Sunshine Coast in Queensland.

At the other end of the scale, we see that Australia's cheapest major city is the Latrobe Valley in Victoria. The Latrobe economy is dominated by the nearby power stations and the local Latrobe University. Latrobe's median house price is \$162,000, less than a quarter the price paid in Sydney's inner ring.

Most of the remaining cities in the 10 least expensive list are mid-sized regional cities. Middle ring Adelaide and Brisbane also make the list offering a reasonable level of affordability for their location.

9. The location of the sale is approximated by the centroid of the Statistical Local Area the sale occurred in. The terms inner, middle and outer ring are commonly used in real estate terminology and are well understood publicly and preferred in this report.



**Table 4 - Median house price rankings, 2011**

TOP 10 MOST EXPENSIVE			TOP 10 LEAST EXPENSIVE		
RANK	CITY	MEDIAN	RANK	CITY	MEDIAN
1	Sydney inner ring	\$685,000	1	Latrobe Valley (VIC)	\$162,000
2	Melbourne inner ring	\$625,000	2	Albury-Wodonga (NSW/VIC)	\$245,000
3	Brisbane inner ring	\$515,000	3	Burnie-Devonport (TAS)	\$251,500
4	Perth inner ring	\$515,000	4	Bendigo (VIC)	\$254,000
5	Melbourne outer ring	\$505,000	5	Ballarat (VIC)	\$259,000
6	Sydney outer ring	\$479,500	6	Launceston (TAS)	\$260,000
7	Canberra-Queanbeyan (ACT/NSW)	\$470,000	7	Rockhampton (QLD)	\$300,000
8	Darwin	\$460,000	8	Adelaide middle ring	\$310,000
9	Adelaide inner ring	\$459,000	9	Toowoomba (QLD)	\$331,000
10	Sunshine Coast (QLD)	\$445,000	10	Brisbane middle ring	\$335,000

**Source:** NATSEM calculations from RP data.

When we consider the affordability of each city (Table 5) we get a slightly different picture. Inner ring Melbourne becomes the most expensive market. Melbourne's inner ring weekly after-tax income is around \$175 less than Sydney's, pushing inner Melbourne into the least affordable slot.

A number of regional centres move into the top 10 least affordable list as well, owing to their lower incomes relative to the capital city regions listed in Table 4. Wollongong, the Sunshine Coast, Mandurah and Newcastle all make the least affordable list. All regions in this list are severely unaffordable.

In our most affordable list only the top two cities are rated as affordable. The other top 10 affordable cities are mostly in the moderately unaffordable group. Queensland and Victoria dominate the "affordable" list. Latrobe is again our most affordable city with a very affordable 4.3 for its price to income ratio. Interestingly, this is up from the now unimaginable 1.7 in 2001. Brisbane is the only capital city with a ring that manages to make the affordable list with the middle ring listed at 5.5 - a moderately unaffordable market.



Table 5 - Affordability rankings, 2011

TOP 10 LEAST AFFORDABLE					TOP 10 MOST AFFORDABLE				
RANK	CITY	MEDIAN	PRICE/ INCOME 2011	PRICE/ INCOME 2001	RANK	CITY	MEDIAN	PRICE/ INCOME 2011	PRICE/ INCOME 2001
1	Melbourne inner ring	\$625,000	10.2	6.1	1	Latrobe Valley (VIC)	\$162,000	4.3	1.7
2	Sydney inner ring	\$685,000	9.7	8.1	2	Albury-Wodonga (NSW/VIC)	\$245,000	4.9	3.1
3	Adelaide inner ring	\$459,000	8.8	4.8	3	Bendigo (VIC)	\$254,000	5.4	3.0
4	Wollongong (NSW)	\$425,000	8.5	4.7	4	Brisbane middle ring	\$335,000	5.5	4.8
5	Melbourne outer ring	\$505,000	8.4	4.8	5	Toowoomba (QLD)	\$331,000	5.6	3.2
6	Sunshine Coast (QLD)	\$445,000	8.2	5.5	6	Cairns (QLD)	\$360,000	5.6	4.1
7	Sydney outer ring	\$479,500	8.1	6.1	7	Rockhampton (QLD)	\$300,000	5.6	2.8
8	Mandurah (WA)	\$385,000	8.0	4.1	8	Ballarat (VIC)	\$259,000	5.7	3.1
9	Perth inner ring	\$515,000	7.7	4.9	9	Townsville (QLD)	\$390,000	5.8	3.5
10	Newcastle (NSW)	\$350,000	7.7	5.0	10	Mackay (QLD)	\$402,000	6.0	3.8

Source: RP Data, NATSEM calculations.

With the exception of two of our smaller cities (Latrobe and Albury-Wodonga), Australia's housing affordability woes are mostly commonplace amongst our major cities. It really is not a case of whether or not a city is unaffordable, but by how much.

How do our major capital cities compare? What premium is required to live close to the city CBD? Are there any bargains hiding within our capitals? Table 6 splits the major capitals into inner, middle and outer ring groups. All inner ring regions are severely unaffordable - Sydney and Melbourne astronomically so. Adelaide is surprisingly unaffordable for those living in the area but this is because incomes are much lower than in Melbourne and Sydney. Perth and Brisbane have the most affordable inner city locations but remain severely unaffordable.

Table 6 - Major capital regions by affordability

RANK	INNER RING	MEDIAN PRICE	P/I	MIDDLE RING	MEDIAN PRICE	P/I	OUTER RING	MEDIAN PRICE	P/I
1	Melbourne	\$625,000	10.2	Sydney	\$401,000	7.4	Melbourne	\$505,000	8.4
2	Sydney	\$685,000	9.7	Melbourne	\$410,000	7.1	Sydney	\$479,500	8.1
3	Adelaide	\$459,000	8.8	Adelaide	\$310,000	6.6	Adelaide	\$366,000	7.3
4	Perth	\$515,000	7.7	Perth	\$420,000	6.1	Perth	\$420,000	6.3
5	Brisbane	\$515,000	7.6	Brisbane	\$335,000	5.5	Brisbane	\$397,250	6.2

Source: RP Data, NATSEM calculations.



An interesting result is that middle ring suburbs are both cheaper and more affordable than outer ring suburbs. The most likely explanation for this is that while the land component in middle ring suburbs is more expensive, the houses being purchased are newer and much larger.

Australia's average new dwelling size for a detached house is around 250 square metres. This is about 50 per cent larger than 25 years ago when the typical middle ring suburbs were establishing (ABS 2010).

Sydney has the most expensive middle ring properties on account of lower incomes than Melbourne middle ring suburbs. Brisbane is clearly the most affordable inner ring suburb.

Melbourne has experienced a building boom in its outer suburbs in recent years and people have happily paid more than any other city for the privilege. The outer Melbourne suburbs median price is more expensive than any middle ring capital city and comparable with inner ring Brisbane and Perth but less affordable. Based on the number of new home approvals, Melbourne is Australia's capital of the urban sprawl and the great Australian dream (Table 7).

The number of building approvals of detached housing in each of our major capital cities in 2010 is shown in Table 7. The bulk of these new dwellings are built in "greenfields" areas (urban sprawl). Melbourne currently builds more than triple the number of detached houses compared to construction rates of most other capital cities.

Melbourne's strong recent record of land release in the outer suburbs has not translated into affordable housing. Melbourne has the most expensive outer ring properties in Australia and also the least affordable. A strong driver here is that people are actually choosing to purchase land (which is relatively cheap) but build large houses often termed "McMansions", pushing these dwellings into the unaffordable category.

The lack of affordability in Melbourne in spite of the strong record of land release reinforces the complex nature of housing affordability and the reality that many factors are at play.

**Table 7 - Building approvals, 2010**

CAPITAL CITY	DETACHED BUILDING APPROVALS
Melbourne	26,640
Sydney	8,019
Brisbane	8,457
Perth	13,033
Adelaide	6,350

**Source:** ABS Building Approvals, 8731.0, 2011.



"Sydney has the most expensive middle ring properties on account of lower incomes than Melbourne middle ring suburbs. Brisbane is the most affordable inner ring suburb."



# Suburban affordability 2001 and 2011 in our largest cities

Another way to consider affordability is to consider those suburbs that are affordable to the typical household in each capital city. The results are obtained for both 2001 and 2011 and they paint a disturbing picture of affordability diminishing in our major capital cities.

The full results are provided with a breakdown of each ring in capital cities in Appendix A. The maps below show a clear move away from affordability in every capital city of Australia. As an example, in Adelaide in 2001 - once “the home of affordable housing in Australia” - the typical household could afford to purchase a home in 74 per cent of the 54 statistical local areas (SLAs).<sup>10</sup> By 2011 this deteriorated to just two per cent of regions. In raw numbers there is now only one affordable SLA in Adelaide: Playford - Elizabeth. Elizabeth is a well-known public housing community set up in the 1950s.

The tables in Appendix A and the maps in this section dramatically show how Adelaide has moved from a mostly affordable city to a now severely unaffordable city. This analysis goes against the popular opinion of Adelaide being an affordable housing city.

Brisbane has the highest proportion of affordable SLAs and the lowest proportion of severely unaffordable ones. The numbers are still sobering with only five per cent of SLAs affordable but a hefty 57 per cent severely unaffordable.

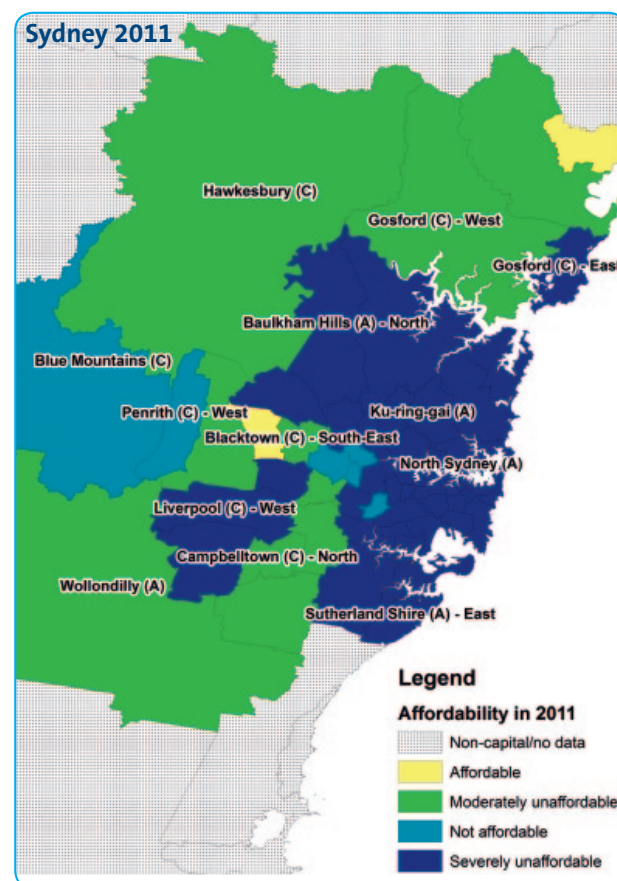
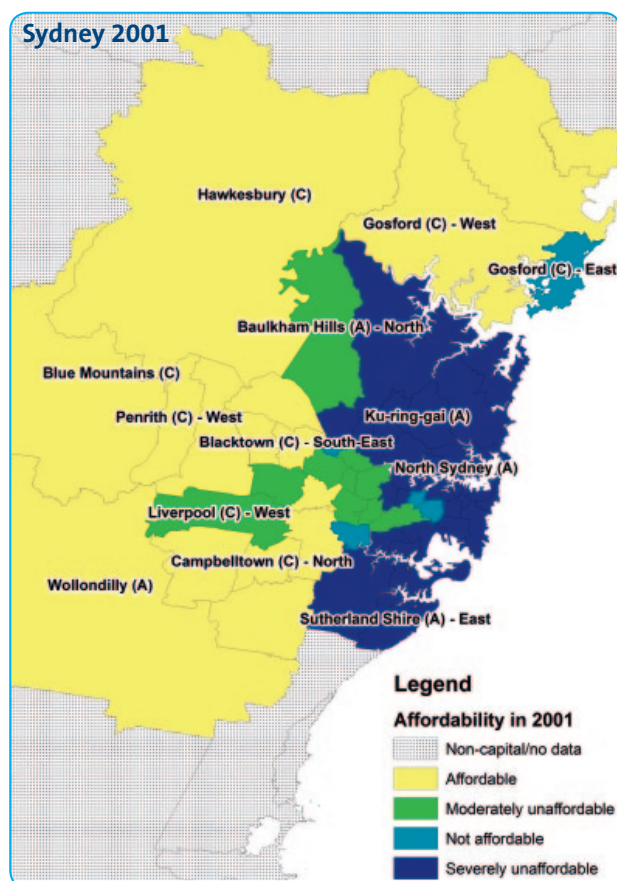
Melbourne too has moved from relatively affordable to severely unaffordable. Where once 54 per cent of SLAs were affordable now only three per cent remain affordable. Nearly two-thirds of Melbourne suburbs are now severely unaffordable.

In Perth, the mining boom is a strong driver of its deterioration in housing affordability. Only one SLA (Kwinana) is rated as affordable in Perth, compared with 20 in 2001.

Sydney started the last decade as the worst capital city for affordability and ended the decade in exactly the same way. The other capital cities are catching up, though Sydney remains the most unaffordable with nearly three in four SLAs severely unaffordable to the typical Sydney household. Sydney's only affordable SLA is Blacktown in the western suburbs with a median price of \$305,000.

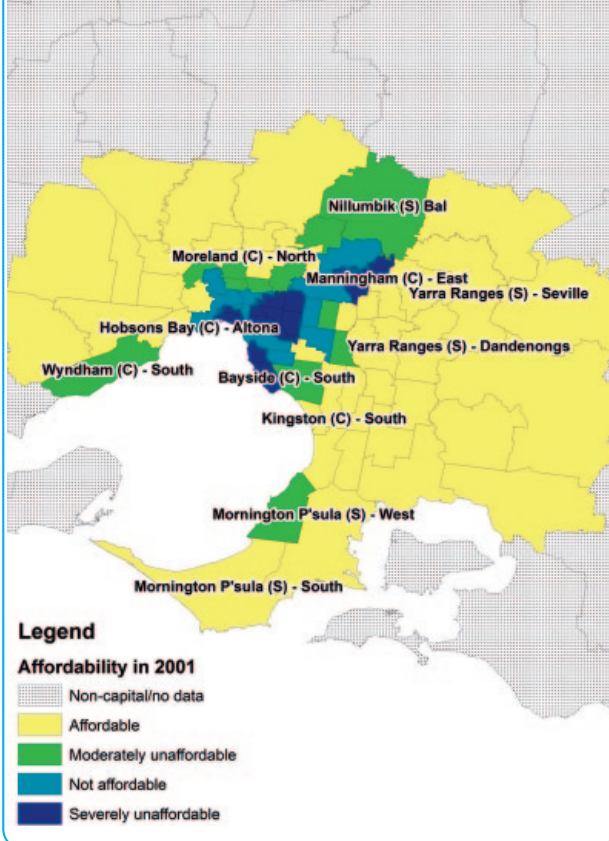
In 2001 there were plenty of options for those attempting to get into the market. Three in four SLAs were affordable in the middle ring suburbs as were more than one in three inner ring suburbs. By 2011 less than 10 per cent of middle ring suburbs were affordable and those within 10 km of an Australian CBD would be out of the question for households on the median income.

10. An SLA is an ABS geographic region. For Brisbane, an SLA is a suburb, for the other major capital cities listed, an SLA is usually larger than a suburb.

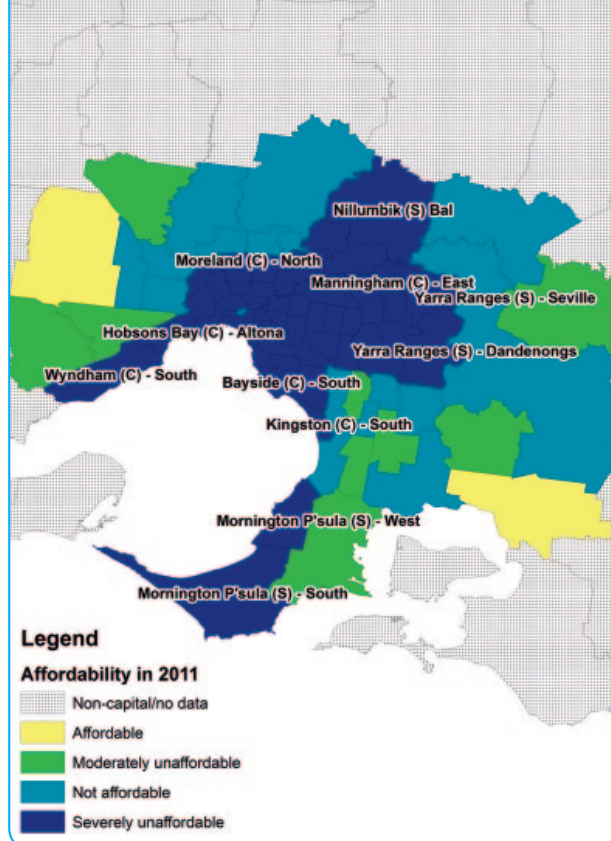




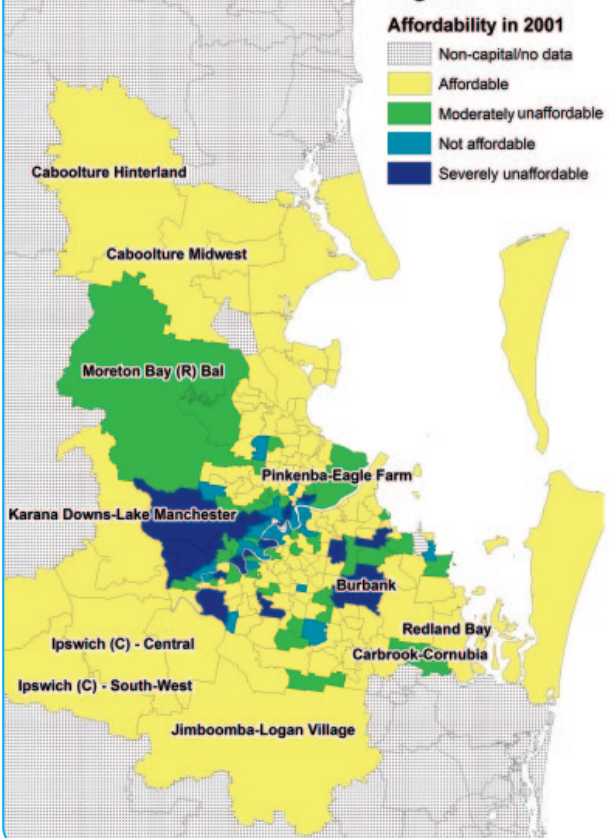
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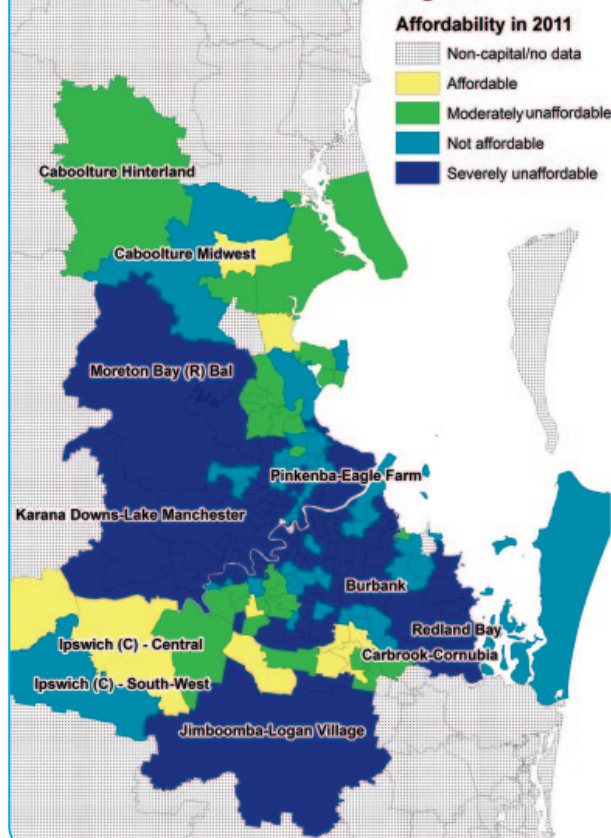
Melbourne 2011

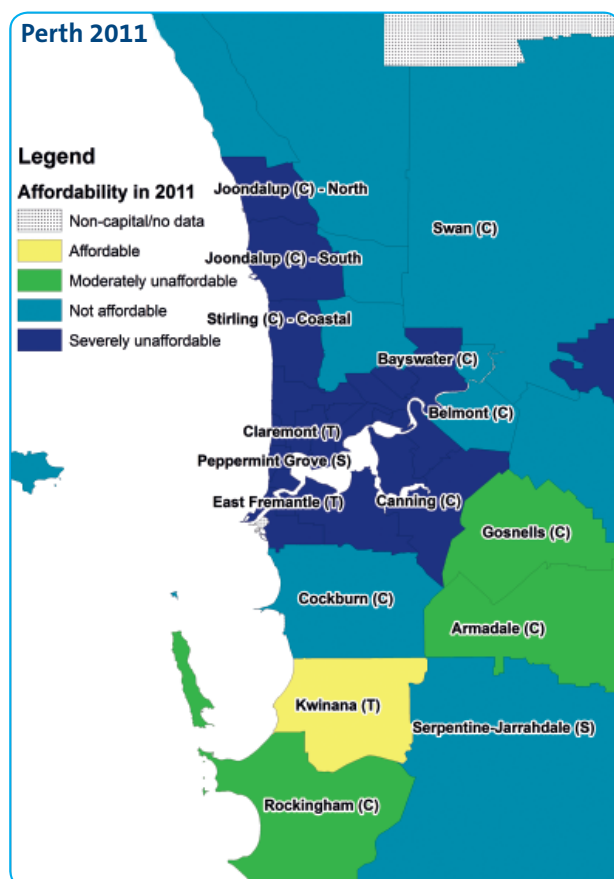
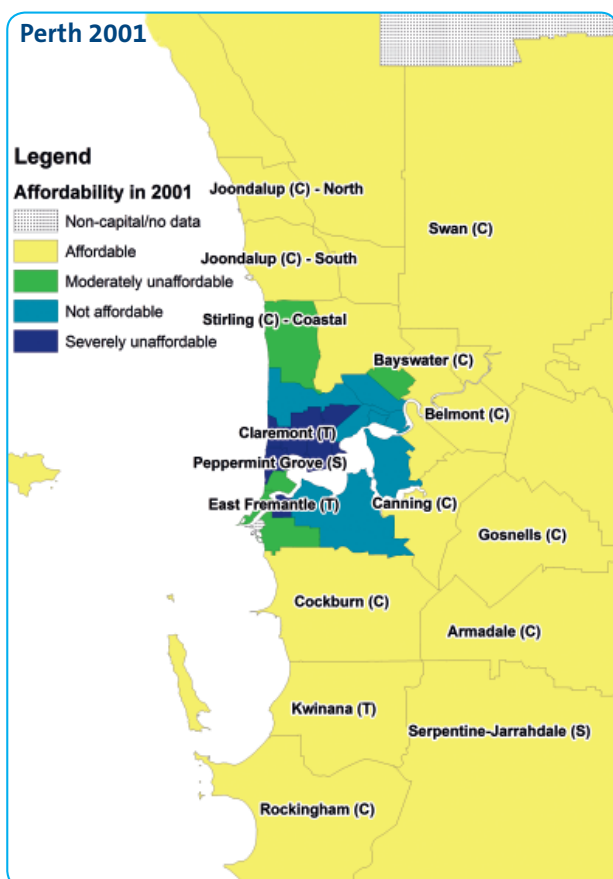
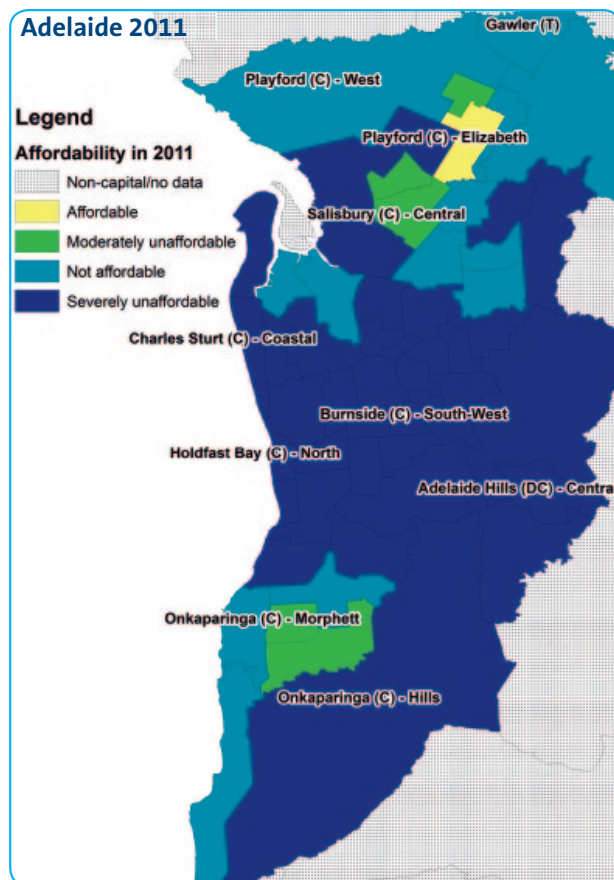
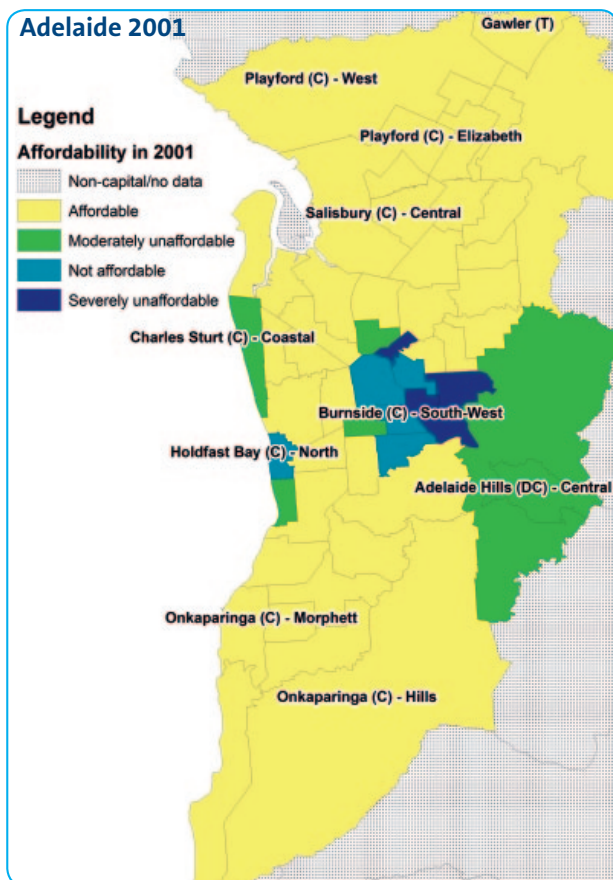


Brisbane 2001



Brisbane 2011







There are so few affordable suburbs in Australia they can be listed below in Table 8. Australia's most affordable suburb is Woodridge, in Brisbane. The median house price in Woodridge is just four times the typical Brisbane household income. Brisbane dominates the affordable list with 11 out of the 17 affordable SLAs.

**Table 8 - Australian major capital city affordable SLAs**

CAPITAL	SLA NAME	MEDIAN PRICE	RING	P/I
Brisbane	Woodridge	\$265,000	Outer ring	4.0
Adelaide	Playford-Elizabeth	\$201,500	Outer ring	4.0
Brisbane	Kingston	\$277,000	Outer ring	4.2
Brisbane	Slacks Creek	\$277,250	Outer ring	4.2
Brisbane	Inala	\$292,000	Outer ring	4.5
Brisbane	Greenbank	\$295,000	Outer ring	4.5
Brisbane	Ipswich	\$297,000	Suburban	4.5
Melbourne	Melton	\$273,500	Suburban	4.5
Brisbane	Ipswich	\$302,500	Suburban	4.6
Brisbane	Caboolture	\$307,000	Outer ring	4.7
Brisbane	Waterford	\$312,250	Suburban	4.8
Brisbane	Deception Bay	\$315,000	Outer ring	4.8
Brisbane	Marsden	\$315,750	Outer ring	4.8
Sydney	Wyong-North East	\$300,000	Outer ring	4.9
Melbourne	Cardinia	\$297,000	Outer ring	4.9
Perth	Kwinana	\$332,000	Suburban	5.0
Sydney	Blacktown	\$305,000	Suburban	5.0

The 10 most unaffordable suburbs for the residents of a given capital city are listed in Table 9. Peppermint Grove in Perth is Australia's most unaffordable SLA. Perth has three of the four most unaffordable SLAs edging out Sydney's Hunters Hill for the top spot.

**Table 9 - Australia's least affordable SLAs**

CAPITAL	SLA NAME	MEDIAN PRICE	RING	P/I
Perth	Peppermint Grove	\$3,300,000	Inner ring	49.6
Perth	Cottesloe	\$1,600,000	Inner ring	24.1
Sydney	Hunter's Hill	\$1,330,400	Inner ring	21.8
Perth	Nedlands	\$1,420,000	Inner ring	21.4
Brisbane	Ellen Grove	\$1,320,000	Outer ring	20.2
Melbourne	Bayside-Brighton	\$1,190,000	Inner ring	19.8
Sydney	Woollahra	\$1,165,000	Inner ring	19.1
Brisbane	Rosedale	\$1,220,000	Outer ring	18.6
Melbourne	Boroondara	\$1,108,000	Outer ring	18.4
Sydney	Mosman	\$1,100,000	Inner ring	18.0

# Conclusion

The previous decade witnessed a dramatic drop in Australian housing affordability. Median house prices more than doubled to \$417,000 while median after-tax incomes only increased by 50 per cent to \$57,000. Australia now has amongst the most expensive property in the developed world.

This report shows that this decline in affordability is all-pervasive through Australia's states and territories and major cities and towns. Just 10 years ago, Australian housing was considered affordable. Australian housing is now severely unaffordable. If incomes continue to grow, it would take nearly 10 years of flat house prices for Australia to return to an affordable housing market.

In 2001, more than half the suburbs in our five major capital cities were rated as affordable. Today, only four per cent are affordable. Not a single inner city suburb is affordable.

The impact of affordability is most strongly felt by those attempting to get into the housing market via the purchase of a home. Australia is a nation of housing "haves" and "have-nots". The "have nots" - typically young, or single, or First Home Buyers - are facing the greatest housing stress and housing affordability constraints.

Sydney has the most expensive house prices and is the least affordable capital city. Inner Melbourne is the most unaffordable region in this report with house prices more than 10 times its median income.

Hobart has the least expensive housing in Australia with a median house price of just \$326,000 but Darwin's relatively much higher median income pushes it to the most affordable capital city.

Newer and larger homes mean that outer suburbs are now more expensive than middle ring suburbs. The most affordable regions within capital cities are middle ring Adelaide and Brisbane.

Australia's capital cities are much more expensive than their regional counterparts. The most expensive area is Sydney's inner ring at \$685,000, while Latrobe's median price was a quarter that at just \$162,000. The only cities in this study found to be affordable were Latrobe and Albury-Wodonga. Around a half of regions studied were considered to be severely unaffordable.

In summary, Australian house prices are simply so high that for many Australians the great Australian dream is just that - a dream. For those who do manage to purchase a house, high house prices mean taking on very high levels of debt that will constrain their lifestyle for many years into the future.

Significant, widespread house price drops appear unlikely in Australia, meaning that housing will remain unaffordable for many years to come.

Australians have not been deterred though, with new entrants to the property market every day.





# References

- ABS (Australian Bureau of Statistics), 2006, *Census Dictionary Australia 2006 (Reissue)*. Cat. No. 2901.0
- ABS (Australian Bureau of Statistics), 2010, *Building Activity Survey*, 8752.0, December 2010.
- ABS (Australian Bureau of Statistics), 2011 *Australian National Accounts*, 5206.0, March 2011.
- ABS (Australian Bureau of Statistics), 2011a, *Housing Finance*, 5609.0, April 2011.
- ABS (Australian Bureau of Statistics), 2011b, *Building approvals*, 8731.0, April 2011.
- Fitch Ratings, *Fitch Ratings Survey*, 2011.
- Kotkin, J. 2011, *7th Annual Demographia International Housing Affordability Survey*.
- Housing Industry Association, *Affordability Report*, March 2011.
- National Housing Supply Council, *2nd State of Supply Report*, 2010.
- Nepal, B. Tanton, R. Harding, A. 2010, *Measuring Housing Stress: Do Definitions Matter?*, Urban Policy and Research, Vol 28 Issue 2.
- REIA/Deposit Power *Affordability Report*, March 2011.
- Yates and Gabriel, *Housing Affordability in Australia*, AHURI, 2006.



# Appendix A

## Capital city SLA affordability ratings

2001											
STATE	STATUS	AFFORDABLE NUMBER OF SLAs				ALL	AFFORDABLE % OF SLAs				ALL
		<5	5 TO 6	6 TO 7	7+		<5	5 TO 6	6 TO 7	7+	
ADELAIDE	INNER RING	14	3	4	3	24	58%	13%	17%	13%	100%
	MIDDLE RING	9	0	1	0	10	90%	0%	10%	0%	100%
	OUTER RING	17	3	0	0	20	85%	15%	0%	0%	100%
	ALL	40	6	5	3	54	74%	11%	9%	6%	100%
BRISBANE	INNER RING	44	19	23	11	97	45%	20%	24%	11%	100%
	MIDDLE RING	14	2	1	0	17	82%	12%	6%	0%	100%
	OUTER RING	68	15	6	9	98	69%	15%	6%	9%	100%
	ALL	126	36	30	20	212	59%	17%	14%	9%	100%
MELBOURNE	INNER RING	3	4	6	8	21	14%	19%	29%	38%	100%
	MIDDLE RING	25	5	2	1	33	76%	15%	6%	3%	100%
	OUTER RING	15	3	4	3	25	60%	12%	16%	12%	100%
	ALL	43	12	12	12	79	54%	15%	15%	15%	100%
PERTH	INNER RING	6	3	5	5	19	32%	16%	26%	26%	100%
	MIDDLE RING	9	0	1	0	10	90%	0%	10%	0%	100%
	OUTER RING	5	1	0	1	7	71%	14%	0%	14%	100%
	ALL	20	4	6	6	36	56%	11%	17%	17%	100%
SYDNEY	INNER RING	0	0	2	17	19	0%	0%	11%	89%	100%
	MIDDLE RING	8	3	2	5	18	44%	17%	11%	28%	100%
	OUTER RING	8	7	1	11	27	30%	26%	4%	41%	100%
	ALL	16	10	5	33	64	25%	16%	8%	52%	100%
ALL	INNER RING	67	29	40	44	180	37%	16%	22%	24%	100%
	MIDDLE RING	65	10	7	6	88	74%	11%	8%	7%	100%
	OUTER RING	113	29	11	24	177	64%	16%	6%	14%	100%
	ALL	245	68	58	74	445	55%	15%	13%	17%	100%

2011											
STATE	STATUS	AFFORDABLE NUMBER OF SLAs				ALL	AFFORDABLE % OF SLAs				ALL
		<5	5 TO 6	6 TO 7	7+		<5	5 TO 6	6 TO 7	7+	
ADELAIDE	INNER RING	0	0	1	23	24	0%	0%	4%	96%	100%
	MIDDLE RING	0	2	6	2	10	0%	20%	60%	20%	100%
	OUTER RING	1	3	6	10	20	5%	15%	30%	50%	100%
	ALL	1	5	13	35	54	2%	9%	24%	65%	100%
BRISBANE	INNER RING	0	2	25	70	97	0%	2%	26%	72%	100%
	MIDDLE RING	3	3	2	9	17	18%	18%	12%	53%	100%
	OUTER RING	8	25	22	42	97	8%	26%	23%	43%	100%
	ALL	11	30	49	121	211	5%	14%	23%	57%	100%
MELBOURNE	INNER RING	0	0	0	21	21	0%	0%	0%	100%	100%
	MIDDLE RING	1	7	9	16	33	3%	21%	27%	48%	100%
	OUTER RING	1	2	8	14	25	4%	8%	32%	56%	100%
	ALL	2	9	17	51	79	3%	11%	22%	65%	100%
PERTH	INNER RING	0	0	3	16	19	0%	0%	16%	84%	100%
	MIDDLE RING	1	2	4	3	10	10%	20%	40%	30%	100%
	OUTER RING	0	1	3	3	7	0%	14%	43%	43%	100%
	ALL	1	3	10	22	36	3%	8%	28%	61%	100%
SYDNEY	INNER RING	0	0	0	19	19	0%	0%	0%	100%	100%
	MIDDLE RING	1	6	1	10	18	6%	33%	6%	56%	100%
	OUTER RING	1	4	5	17	27	4%	15%	19%	63%	100%
	ALL	2	10	6	46	64	3%	16%	9%	72%	100%
ALL	INNER RING	0	2	29	149	180	0%	1%	16%	83%	100%
	MIDDLE RING	6	20	22	40	88	7%	23%	25%	45%	100%
	OUTER RING	11	35	44	86	176	6%	20%	25%	49%	100%
	ALL	17	57	95	275	444	4%	13%	21%	62%	100%

# Appendix B

## 25 major cities: Detailed housing numbers

AMP REPORT REGION	RING	POPULATION*	DISPOSABLE INCOME		MEDIAN HOUSE PRICE		PRICE GROWTH	AFFORDABILITY RATIO		UNAFFORDABILITY RANK
			2001	2011	2001	2011		2001	2011	
Adelaide	Inner	1,203,186	\$634	\$999	\$160,000	\$459,000	186.9%	4.8	8.8	3
Brisbane	Inner	2,043,185	\$706	\$1,301	\$188,000	\$515,000	173.9%	5.1	7.6	11
Melbourne	Inner	4,077,036	\$802	\$1,175	\$255,000	\$625,000	145.1%	6.1	10.2	1
Perth	Inner	1,696,065	\$723	\$1,276	\$184,500	\$515,000	179.1%	4.9	7.7	9
Sydney	Inner	4,575,532	\$926	\$1,351	\$390,000	\$685,000	75.6%	8.1	9.7	2
Adelaide	Middle		\$602	\$894	\$105,000	\$310,000	195.2%	3.3	6.6	18
Brisbane	Middle		\$622	\$1,160	\$156,000	\$335,000	114.7%	4.8	5.5	32
Melbourne	Middle		\$778	\$1,109	\$155,500	\$410,000	163.7%	3.8	7.1	16
Perth	Middle		\$683	\$1,310	\$114,000	\$420,000	268.4%	3.2	6.1	23
Sydney	Middle		\$785	\$1,045	\$212,750	\$401,000	88.5%	5.2	7.4	13
Adelaide	Outer		\$638	\$959	\$120,000	\$366,000	205.0%	3.6	7.3	15
Brisbane	Outer		\$665	\$1,222	\$138,000	\$397,250	187.9%	4.0	6.2	21
Melbourne	Outer		\$753	\$1,154	\$190,000	\$505,000	165.8%	4.8	8.4	5
Perth	Outer		\$694	\$1,274	\$133,000	\$420,000	215.8%	3.7	6.3	19
Sydney	Outer		\$789	\$1,137	\$249,999	\$479,500	91.8%	6.1	8.1	7
Albury-Wodonga (NSW/VIC)		106,052	\$648	\$954	\$104,000	\$245,000	135.6%	3.1	4.9	34
Ballarat (VIC)		96,097	\$636	\$869	\$101,750	\$259,000	154.5%	3.1	5.7	28
Bendigo (VIC)		91,713	\$628	\$902	\$97,000	\$254,000	161.9%	3.0	5.4	33
Burnie-Devonport (TAS)		82,567	\$528	\$772	\$78,000	\$251,500	222.4%	2.8	6.2	20
Canberra-Queanbeyan (ACT/NSW)		410,419	\$945	\$1,455	\$161,000	\$470,000	191.9%	3.3	6.2	22
Darwin		127,532	\$911	\$1,454	\$162,000	\$460,000	184.0%	3.4	6.1	25
Geelong (VIC)		178,650	\$628	\$908	\$131,250	\$346,750	164.2%	4.0	7.3	14
Gold Coast-Tweed (QLD/NSW)		591,473	\$612	\$1,119	\$180,000	\$432,000	140.0%	5.6	7.4	12
Hobart		214,705	\$576	\$959	\$110,000	\$351,000	219.1%	3.7	7.0	17
Latrobe Valley (VIC)		81,001	\$608	\$728	\$55,000	\$162,000	194.5%	1.7	4.3	35
Launceston (TAS)		106,153	\$553	\$813	\$80,000	\$260,000	225.0%	2.8	6.1	24
Mackay (QLD)		85,700	\$661	\$1,289	\$132,000	\$402,000	204.5%	3.8	6.0	26
Mandurah (WA)		85,814	\$566	\$927	\$120,000	\$385,000	220.8%	4.1	8.0	8
Newcastle (NSW)		546,788	\$589	\$874	\$154,000	\$350,000	127.3%	5.0	7.7	10
Cairns QLD)		150,920	\$682	\$1,224	\$146,500	\$360,000	145.7%	4.1	5.6	29
Rockhampton (QLD)		77,878	\$630	\$1,019	\$92,500	\$300,000	224.3%	2.8	5.6	30
Sunshine Coast (QLD)		251,081	\$559	\$1,044	\$159,950	\$445,000	178.2%	5.5	8.2	6
Toowoomba (QLD)		131,258	\$605	\$1,135	\$100,000	\$331,000	231.0%	3.2	5.6	31
Townsville (QLD)		172,316	\$687	\$1,291	\$124,000	\$390,000	214.5%	3.5	5.8	27
Wollongong (NSW)		292,190	\$635	\$958	\$155,000	\$425,000	174.2%	4.7	8.5	4

\* Capital city population estimates for entire city.

Source: ABS June 2010 estimate, ABS (5).

# Appendix C

## Technical notes and definitions

### Source data

The housing stress analysis is based on NATSEM's STINMOD model, which is a model of Australia's taxation and transfer system. The results for 2011 are based on a 2011 version of STINMOD. STINMOD is based on ABS Income surveys. Households with negative or zero income were excluded from the analysis. This is a common treatment for these households, as their incomes may not be a reliable guide to their standard of living. Unless otherwise cited, the data presented in tables and charts in this report were calculated by the authors from these two models.

The housing affordability numbers are based on median house prices obtained from RP Data which source their numbers from Valuer Generals' information from each state and territory. The income data was obtained from NATSEM's synthetically created regional model. Broadly, the data is an amalgam of ABS survey data (Survey of Income and Housing) and ABS Census data for SLAs.

### Housing affordability

Housing affordability is expressed as the ratio of median house price to median annual after-tax household income. The higher the ratio, the harder it is to get into the housing market. Note that it does not show how many years it would take to pay off a house, because it does not take into account interest rates; and usually a household would not devote their whole household income to paying off the house.

### Housing stress

In this report, a household is defined to be in housing stress if its housing costs take up more than 30 per cent of its after-tax income. Thus, within any geographic area or social category, the extent of housing stress is measured by the proportion of households where more than 30 per cent of their after-tax income goes on housing costs.

This is a very simple but sufficient indicator of housing stress. This measure was also refined by restricting the calculation to the lowest two quintiles of the income distribution adjusted by household size.

Also, in some instances, before-tax rather than after-tax income is used. In this study, we have used after-tax income because we consider this a better measure of income that can be spent on housing costs. An analysis has shown that estimates and characteristics of those in housing stress do not vary substantially depending on the choice of gross or after-tax income (Yates and Gabriel 2006).

### Household reference person

In STINMOD, the household reference person was the person in the household with the highest income, unless the household was a lone parent household with dependent children, in which case it was the lone parent.

### Confidence Intervals

All ABS surveys are subject to some level of inaccuracy due to the fact that the ABS samples only a subset of the population and uses this subset to represent the total population. This inaccuracy is called the sampling variability.

A confidence interval is an interval within which we can say we are 95 per cent confident that the true figure (ie the figure we would have got if we had sampled the whole population) lies.

The difference between two values estimated from a survey is said to be statistically significant if the confidence intervals for the two values do not overlap (so we are 95 per cent confident that they are different); and not statistically significant if the confidence intervals do overlap (so we are not confident that the two values are different). The term "significant" is used in this report to refer to differences that are significant at 95 per cent level of confidence.

### Relative Standard Errors

Similar to confidence intervals, a Relative Standard Error (RSE) is an estimate of how good the estimate is, given the sampling variability. Typically, an estimate from a survey with an RSE of less than 25 per cent is considered a reliable estimate, so it represents the Australian population well; between 25 and 50 per cent it should be used with caution; and more than 50 per cent, it is unusable. All estimates in this publication have RSEs of between 0 and 25 per cent.

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Suggested citation: Phillips, B. (2011), The Great Australian Dream - Just a Dream? AMP:NATSEM Income and Wealth Report, Issue 29, July, Sydney, AMP.