

Executive Summary

This report, *2013 State of Supply Report: changes in how we live*, looks at market conditions affecting additions to housing supply, changes in housing tenure across dwelling types, the changing pattern of household formation in Australia and the impact of that changing pattern on the assessed balance between housing supply and underlying demand.

Around Australia, most housing markets exhibit dampened demand and construction rates, reflecting an investment environment of relative uncertainty and risk aversion. While prices have edged upward in many places (significantly in Darwin), relatively low levels of demand continue despite historically low interest rates. Nationally, residential development and building activity have increased from their GFC lows but remain slightly down on the subsequent stimulus-induced level, and are still slow by historical comparison.

In the owner occupier sector, overall mortgage commitment data for new dwellings, including those for first home buyers, continue to show subdued market demand. Building approval data indicate a substantial increase in apartments relative to detached houses, and this is reflected in increased mortgage lending to investment buyers. Even assuming they continue, these marked changes in apparent demand will result in quite gradual change across the total stock of new and established dwellings, because typical levels of construction add less than 2 per cent to supply each year.

Owner occupancy has long been the predominant form of housing tenure in Australia. Over the decade 2001 to 2011, Census data confirm a small aggregate reduction in owner occupation from 70 to 69 per cent, with a corresponding increase in rental. A mix of affordability and lifestyle factors is likely to be influencing the rate of home ownership over the decade. Owner occupation is changing inter-generationally, driven by a mix of factors. It declined by between two and four percentage points in all adult age groups except 65 years and over, where it remained high at 82 per cent. This suggests that the overall decline will continue as the present generation of older owners pass on, unless relevant circumstances change significantly.

The data also show that over the decade there has been a significant drop in the proportion of dwellings owned outright and an increase in dwellings owned with a mortgage. This could be due to a range of factors, such as home owners borrowing against their equity to invest in assets including shares, investment property, holiday homes and home renovations.

While rental has increased to over 29 per cent of households, the number and proportion renting social housing almost halved, despite burgeoning waiting lists, from 5.8 per cent of households in 1998 to 3.9 per cent in 2010. The Council has

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previously noted that despite the addition of over 20,000 units from the Commonwealth's stimulatory response to the global financial crisis, social housing's share of housing stock increased little and will decline quickly without continued investment. A lack of affordable housing obviously has the greatest impact on the more vulnerable in our society who are likely to be long-term renters and least able to compete in the private market.

Housing consumption patterns and the demand for new dwellings have shifted significantly over the past decade, driven by a range of demographic, cultural and economic factors. Since 2001, a reversal of the decades-long decline in household size has taken place despite demographic trends such as the ageing of the population pushing in the opposite direction. After adjusting for a changing age and geographic mix, Australians now occupy fewer dwellings per head of population than they used to do. The Council believes that this change has been at least partly driven by lags in the recognition of, and response to, changes in the level and locations of population growth exacerbated by rigidities in planning and development approval arrangements in many places. The resulting deficiency in supply has contributed to rising house prices, mortgage commitments and rents relative to income that have reduced market demand relative to the underlying propensity of the population to form households.

If Australians in 2011 had the housing consumption patterns they had in 2001, they would occupy an additional 284,000 dwellings (3 per cent more than existing supply). However, 2001 seems to have been a high point in Australians' housing consumption and using different comparison base years generates significantly different calculations. Based on 2006 housing consumption patterns, the gap in 2011 is estimated at 76,000 dwellings. If 1991 housing consumption patterns are the basis for comparison, the gap is 133,000 dwellings.

In short, Australians' rate of housing consumption has declined since 2001, as evidenced by the turn-around in household size. This means there are larger households, despite a decline in the number of families with children and the average number of children per family, as well as fewer dwellings and households per head of population. There are several possible explanations for this.

One explanation lies in the fact that the supply and price of housing constrain current demand. Increases in demand take time to be perceived, evaluated as viable business opportunities, and met by the development and construction industries. Their response to changes in demand may be assisted or limited by access to investment finance, by planning and development approval arrangements as well as by the type, extent and method of financing additional infrastructure.

Migration also affects the nature of household formation through changes in settlement patterns and financial capacity arising from shifts in the balance between restricted and permanent categories, and in migrants' education, skills and financial position.

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Another possible explanation is the phenomenon of younger adults being less likely than in the past to form independent households. This, in turn, probably derives from a mix of generational change in lifestyle preferences and financial constraint.

For the National Housing Supply Council, and for producers, consumers and governments, the most important question arising from changes in household formation and tenure is the extent to which they result from free choice and an efficient housing market supplemented by effective housing assistance programs, or from remediable deficiencies in policies and processes that diminish the supply and increase the price of the housing that Australians want and need.

Introduction

This report is the first part of the *2013 State of Supply Report*, which will be published in stages on the Council's website throughout 2013. Some components of the phased *2013 State of Supply Report* use provisional data and information. A compendium publication, including final data (where available), will be published at a later date.

Earlier this year, the *Housing supply and affordability issues 2012–13* report noted changes to the Council's terms of reference. One of the most significant changes is a greater emphasis on examining broader housing issues, including the interaction between new housing supply and infrastructure provision. As a first step, the Council recently commissioned a study into how the provision of transport infrastructure can impact on housing. The study found that 'city shaping' transport infrastructure projects can produce substantial community benefits, such as shorter travel times and improved access to employment, as well as significant uplift in land values, increased residential density and improvements in effective land supply.¹ The final report from this study will be published on the Council website.

This phase of the *2013 State of Supply* report includes analysis of changes in housing tenure across dwelling types (Chapter 2) and an assessment of the balance between underlying housing demand and supply (Chapter 3).

After reviewing its methodology for assessing the balance between housing supply and **underlying** demand, the Council found that there is still a shortage of homes in Australia based on previous years' patterns of housing consumption. That is, the housing circumstances of the population, in particular the number of people per dwelling, have substantially changed in view of specific age cohorts and locations. The Council estimates that there were around 284,000 fewer households (occupied dwellings) in 2011 than there would have been if housing consumption patterns in 2011 were the same as in 2001.

Release of data from the 2011 Census provided the Council with an opportunity to benchmark its previous work against actual changes in how the population lives. Although 2011 Census data did not show a dramatically different situation from the Council's previous estimates, the population distribution among states and territories did differ to some extent. The Council will publish further analysis of the change in housing consumption by state and territory later this year.

In Australia, the majority of change in housing circumstances occurred between 2001 and 2006, with less obvious changes between 2006 and 2011. The Council maintains that at least part of this shift is due to a lack of affordable and available housing, with the greatest impact likely to be felt particularly by those at the lower end of the rental market.

1 SGS Economics and Planning, *Infrastructure investment and housing supply*, 2013.

Chapter 1 Market demand

As the Council explains it, **underlying** demand is defined as the expected rate of household formation, assuming that previous relationships between housing consumption and the size and age structure of the population continued. Underlying demand is different from **effective** or **market** demand, which is observed in housing sales, leases, finance approvals, homes under construction and, ultimately, the number of dwellings actually occupied. It is expected that, in the long term, there would be a relationship between underlying and market demand because each affects the other.

Market demand is affected by a wide range of factors. These include the level of confidence in the housing market and broader economy; employment prospects and income growth; life-cycle factors; the cost and availability of mortgage finance; and public policy interventions, including cash assistance and tax preferences for first-time buyers. For investors, factors affecting market demand include expectations of rental growth and capital returns, as well as tax considerations for housing compared to other asset classes. The remainder of this chapter explores market demand for housing in more detail, and points to some of the key differences from underlying demand.

Market demand

Identifying a clear and comprehensive indicator of market demand for housing is challenging, primarily because it is not possible to point to a single number that fully encapsulates all the components affecting how demand is expressed in the market place.

There are varying short and long-term factors, and tenure types are affected in different ways. For example, a person on a short-term posting for construction work in a regional mining centre may increase short-term demand for rental accommodation in that place, but should have little (if any) impact on market demand to actually buy a property there.

Across the population, the demand for housing is made up of a range of elements. At its most basic level, housing consumption meets the need for shelter and refuge. For many people, even these basic objectives cannot be met adequately in the market place, so various forms of housing assistance, including social housing, are provided. Among people who can satisfy these basic needs, the demand for housing progresses and usually contains other priorities, such as location relative to jobs, schools and amenities, size and structure relative to the number of people in the household and the nature of their relationship with one another. As people's ability to meet these criteria increases, the demand for housing incorporates elements of discretionary

consumer-spending on larger homes, more expensive fit-outs, larger blocks with gardens, and so on. At the high end of the spectrum, such as for those with a second home, housing can take on more luxurious characteristics. For investors, however, housing has different considerations. The decision to purchase a property may be purely financial and, therefore, sensitive to expectations of rental and price growth and tax considerations.

When considering either market or underlying demand for new housing, it is important to remember that the new home market represents only a small proportion of overall housing stock. Transactions in existing properties will typically represent the vast majority of activity in the market as a whole. It will also be a key component in establishing the sale price of new homes.

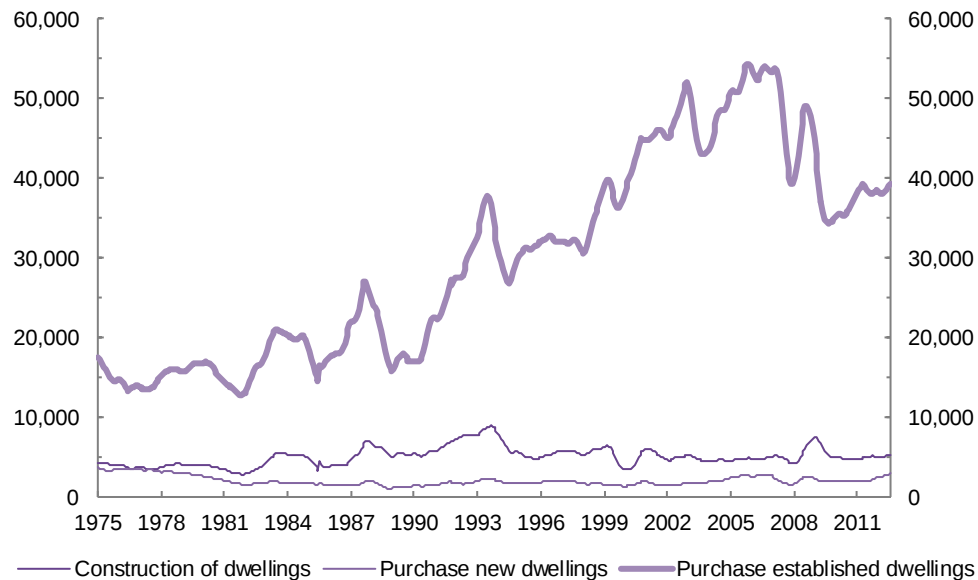
Demand for purchase by owner occupiers and investors forms the main source of data on market demand for housing. While data on these sources do not include demand for rental housing, this is at least partly captured under investor demand.

The following analysis shows that, while it is difficult to summarise conditions across the entire market, most of the measures of these sources still broadly point to relatively weak levels of market demand, albeit with recent modest signs of improvement in some areas.

Mortgage approvals

The number of new mortgage commitments is an early indicator of change in market demand. Typically, around three-quarters of all housing transactions involve a mortgage and it is likely this share is even higher in the investor market due to the tax deductibility of interest payments.

Figure 1.1 Mortgage commitments for owner occupation (monthly), Australia

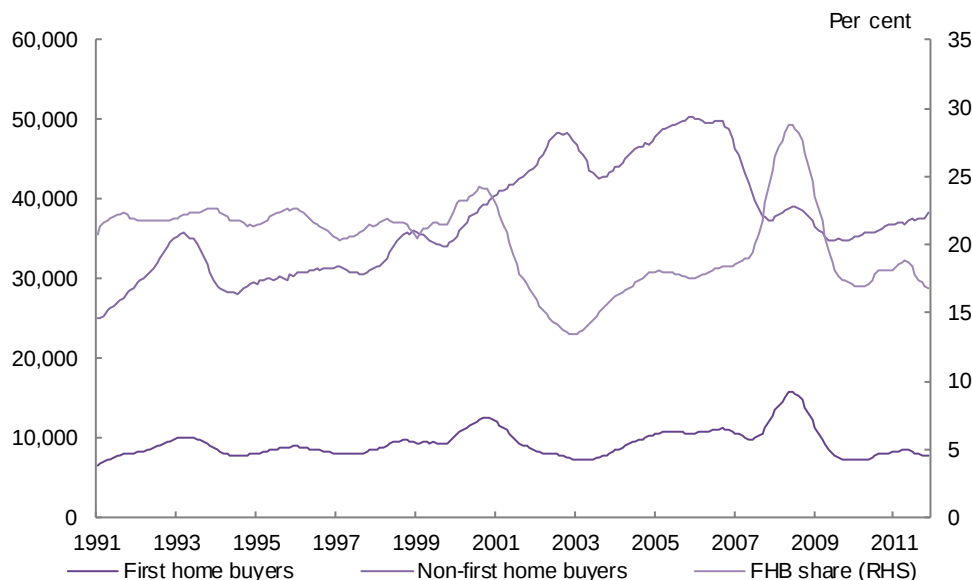


Source: ABS 2013 Housing Finance, Australia, cat no. 5609.0.

Figure 1.1 shows the number of mortgage commitments made by lenders to owner occupiers for home purchase, with activity in the existing dwellings market currently below that seen over most of the last 10 years. The decline in activity following the immediate aftermath of the GFC in 2008 is stark, as is the short-term rebound in the wake of stimulus measures (due to both raising grants for house purchase by first-home buyers and sharp interest rate reductions). Activity in late 2012 and early 2013 was up from the lows of early 2010 and 2011. Nevertheless, the current activity is only at levels last seen in the mid- to late-1990s, when there was significantly lower growth in population and household formation, despite reductions in interest rates.

The data for mortgage commitments for the construction of dwellings by owner occupiers show that there was an even sharper spike following the stimulus in 2009, above activity levels seen immediately before the GFC. However, even though some of the stimulus targeted the new build sector, the 2009 spike in these types of loans was still below the activity of the mid-1980s to mid-1990s. This may reflect the fact that such loans tended to be largely utilised by buyers building detached homes on blocks around the urban fringe, which has now shrunk to a smaller share of new builds. On a long-term comparison, overall mortgage commitment data for new dwellings show subdued market demand from the owner occupier sector.

Figure 1.2 Number of mortgage commitments for first home buyers and non-first home buyers (monthly). Australia



Source: ABS 2013 Housing Finance, Australia, cat no. 5609.0.

Note: Number of loans per month is a 12-month moving average of unadjusted data as seasonally adjusted first home buyer data are not available. The first home buyer share is measured against the right-hand scale.

An important factor when examining mortgage commitments is the role of first home buyers. New market entrants most closely reflect additional market demand, although they are not an exact reflection of demand for new dwellings. Households moving within the existing stock are not directly adding to overall housing demand, although some will add to market demand for new dwellings. Figure 1.2 shows the number of mortgage commitments for house purchase by first home buyers compared to the rest of the market (that is, existing owner occupiers). There was a clear spike and then an immediate drop in first home buyer loans, both in absolute terms and as a share of all owner occupier loans, following the GFC-induced stimulus measures in 2009.

The data in Figure 1.2 shows a modest improvement in activity among non-first home buyers, while first home buyer numbers remain subdued. Typically, first home buyer activity will increase in response to lower interest rates. However, despite mortgage rates declining by around 0.8 per cent in 2012, first home buyer activity has not noticeably picked up.² The number of first home buyer loan commitments in the first quarter of 2013 was 21 per cent lower than the year before, but 2.5 per cent higher for non-first home buyers. One possible explanation for this could be the winding

² The RBA cut its official cash rate by a cumulative 1.25 percentage points over 2012. Over the same period, average standard variable mortgages rates for the banks declined by 0.85 percentage points and three-year fixed rates by 0.80 percentage points (RBA Statistical tables, F5 Indicator Lending Rates).

back of first home buyer grants on existing homes in several states. The first home buyer share of owner occupier loans fell to around 15 per cent in late 2012 and has continued to decline in the first quarter of 2013, which is the lowest in 20 years, apart from a brief period in 2003–4.

There are no equivalent data on the number of loans when analysing investor home purchase demand. However, Figure 1.3a shows the investor share of the value of all mortgage commitments for home purchase. As residential property became a more popular investment class in the 1990s and early 2000s, this share increased and has accounted for just over 40 per cent of activity since 2002. The exception to this was a brief decline in 2009, as owner occupier sector activity picked up following the GFC. There was a sharp rise in first home buyer activity over this period and the investor sector was more subdued, resulting in the investor share decline.

Since the mid-2000s, the investor sector has moved in line with the wider market and, more recently, investor demand has been a little stronger, as Figure 1.3b shows.

Overall, the mortgage finance data of late 2012 and early 2013 point to housing market demand slightly increasing, particularly in the investor sector. However, the level of demand in this sector remains subdued by historic comparison and, while demand has increased among existing homeowners and investors, it is weaker for first home buyers.

Figure 1.3a Investor share (by \$) of mortgage commitments for home purchase (monthly), Australia

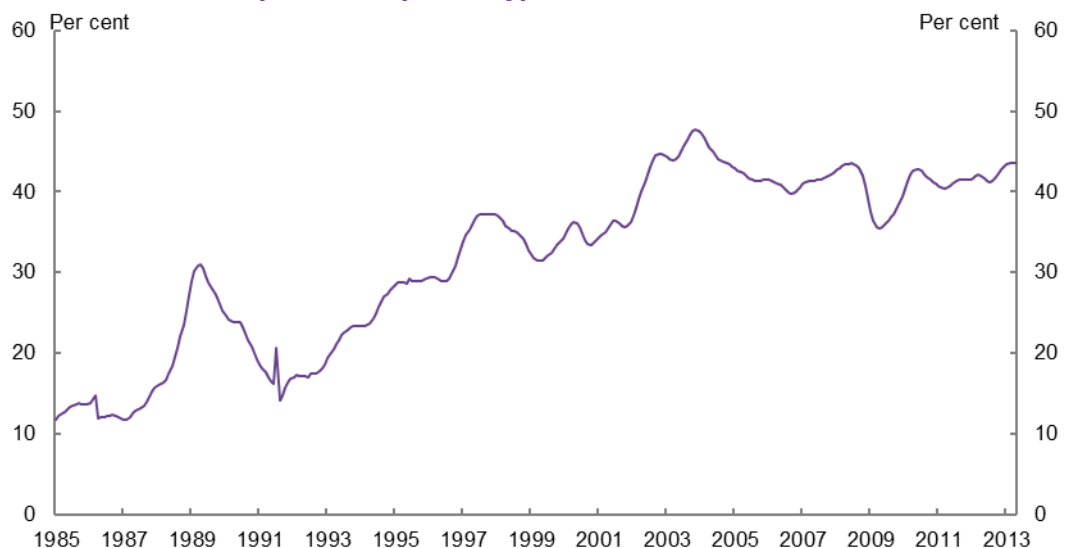
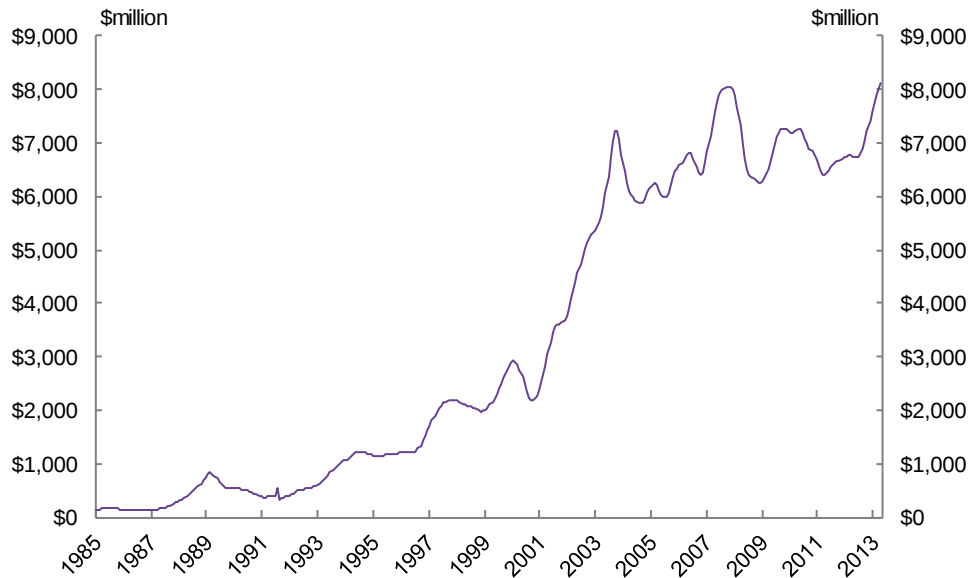


Figure 1.3b Investor value of mortgage commitments (\$'000,000) for home purchase (monthly), Australia



Source: ABS 2013 Housing Finance (trend), Australia, cat no. 5609.0.

Mortgage terms not a clear reason for weak market demand

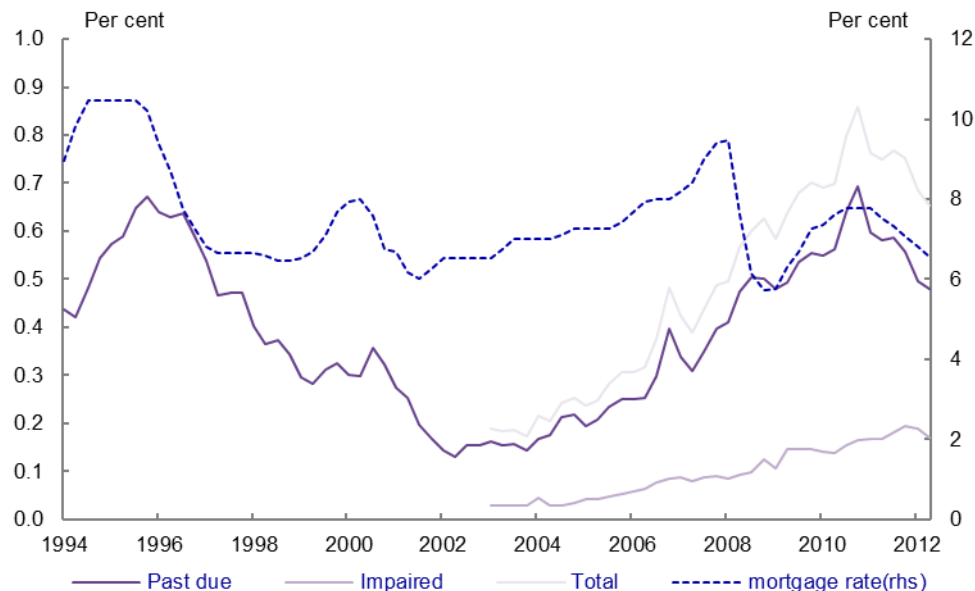
While the volume of mortgage activity provides a strong indication of activity in the market place, the terms on which mortgage commitments are made can have an impact on the overall amount of borrowing for housing purchase and, therefore, on broader activity in the market place. Evidence from overseas illustrates how market demand can significantly increase when credit conditions and accessibility are less constrictive. In particular, these factors led to the sub-prime build up in the US in the early and mid-2000s.

Leading up to the GFC, Australia did not experience the deterioration in lending standards seen in some other economies. While interest rates reduced in several other developed economies at the start of the 2000s, they rose steadily from 2002 until 2008 in Australia. This fact may have limited the appetite of more marginal borrowers to take out a mortgage (and the willingness of lenders to lend to them).

The way loans perform and, specifically, their levels of default, provides some indicator of lending standards. As Figure 1.4 shows, the share of mortgages in arrears has fallen steadily since 2011. Australian levels of arrears are low by international standards, remaining well below 1 per cent even at the recent peak, despite mortgage interest rates being higher than in most other countries. As expected, there is a correlation between mortgage default and interest rates. However, periods of rising rates in Australia have coincided with only modest increases in the share of mortgage holders defaulting. This supports the view that lending standards did not weaken in

the early to mid-2000s and, where they may have, it was certainly not to the same degree as in many other developed economies.³

Figure 1.4 Mortgage default rates (quarterly), Australia



Source: Reserve Bank of Australia, Financial Stability Review, March 2013 and Indicator Lending Rates –F5.
Note: Past due is defined as a loan that is 90 days or more past due but is well secured. The mortgage rate is banks' standard variable rate.

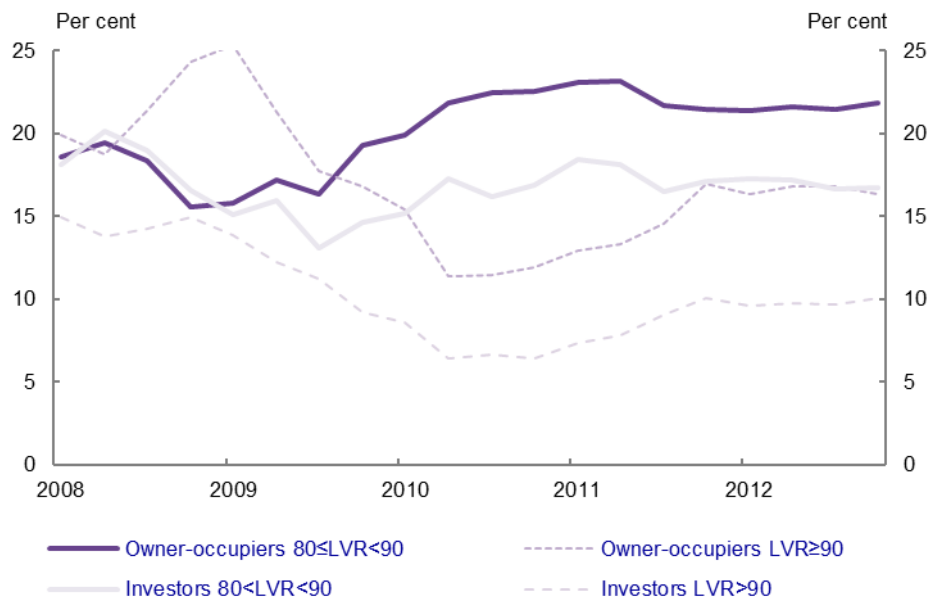
The share of loans taken out at high loan-to-value ratios (LVRs)—that is, 90 per cent plus—is a useful proxy for lender and borrower risk appetite. There was a clear tightening of risk appetites immediately after the GFC, with the share of loans that were taken at high LVRs by owner occupiers falling from 25 per cent in early 2009 to around 11 per cent in mid-2010. This share returned to around 17 per cent in late 2011 and has held reasonably steady since.

Some of this change was driven by the changing composition of those who were taking out loans. First-home buyers are more likely than existing owners to take out high LVR loans. Their increase in the market share of mortgages following the GFC therefore would have boosted the share of high LVR loans.

The share of loans that were high LVR and taken by investors, however, fell from around 14 per cent in early 2009 to around 7 per cent in mid-2010. It then increased to 10 per cent in late 2011, where it has since held reasonably stable (Figure 1.5).

3 While difficult to make direct comparisons due to different definitions, the RBA reported that around 0.8 per cent of mortgages were 90 days or more past due in Australia at the end of 2012 - see p.47 Financial Stability Review (<http://www.rba.gov.au/publications/fsr/2013/mar/pdf/0313.pdf>) The Mortgage Bankers Association reported a rate of around 7 per cent of mortgages being 90 days or more behind or in the process of foreclosure in the USA. The Council of Mortgage Lenders reports that around 1.9 per cent of mortgages are in arrears of at least three months in the UK.

Figure 1.5 New mortgages by loan-to-value ratio (LVR) (quarterly), Australia



Source: Reserve Bank of Australia, Financial Stability Review, March 2013.

Note: LVR = loan-to-value ratio. Data are back-cast before December 2010 to adjust for a reporting change by one bank.

Changes in mortgage criteria alone do not necessarily indicate changes in market demand for housing. A wide range of factors influence financial institutions' decisions on lending criteria and pricing. Mortgage availability and cost will influence market demand, but market demand will also influence financial institutions' decisions around lending criteria. For example, a larger share of loans taken at high loan-to-value and loan-to-income ratios may indicate rising market demand. On the other hand, this may indicate financial institutions relaxing lending standards and looking to increase lending volumes, which in turn can fuel demand. A dramatic example of this occurred in the build-up to the sub-prime crisis in the US.

Broadly speaking, the terms of new mortgages have been relatively stable since 2011. Although there is a slight decline compared to activity before the GFC, this suggests the availability of mortgage credit is currently 'neutral' for market demand for housing.

Building approvals

In the past the Council has tended to view building approvals as a leading indicator of the volume of new housing supply. However, it is worth noting that building approvals also reflect **additional** market demand for housing not satisfied by the stock of existing dwellings. Such a measure of demand is closer to the Council's

current consideration of how housing supply responds to changes in aggregate demand.

Approvals are therefore a strong reflection of market demand for new homes. The construction of detached dwellings is now almost universally commissioned by a buyer rather than a developer or builder. The construction of apartments also now generally requires high levels of pre-sales before commencement. As such, most approvals feed through into a dwelling being financed and, ultimately, built. Analysis of ABS building data since 1984 indicates that around 96 per cent of approvals lead to a building commencement and about 98 per cent of commencements result in completed homes. Overall, around 93 per cent of approvals lead to a new dwelling actually being produced.⁴

There is a considerable difference, however, between the share of detached dwellings (traditional houses) and other dwellings (mainly flats and apartments) that proceed from approval to completion. As might be expected, a larger share of approvals for detached homes (95 per cent) than for other dwellings (85 per cent) lead to new homes being built and there are a number of reasons for this. One reason is that detached homes typically only involve one house. If there is a reason to stop building or re-submit for approval, only one dwelling is affected. The same issue for a multi-dwelling structure, however, can lead to postponing or abandoning more than one dwelling. Given that approval granted for several dwellings in one structure is recorded as multiple dwelling approvals, the same issue disproportionately affects approvals of other dwellings.

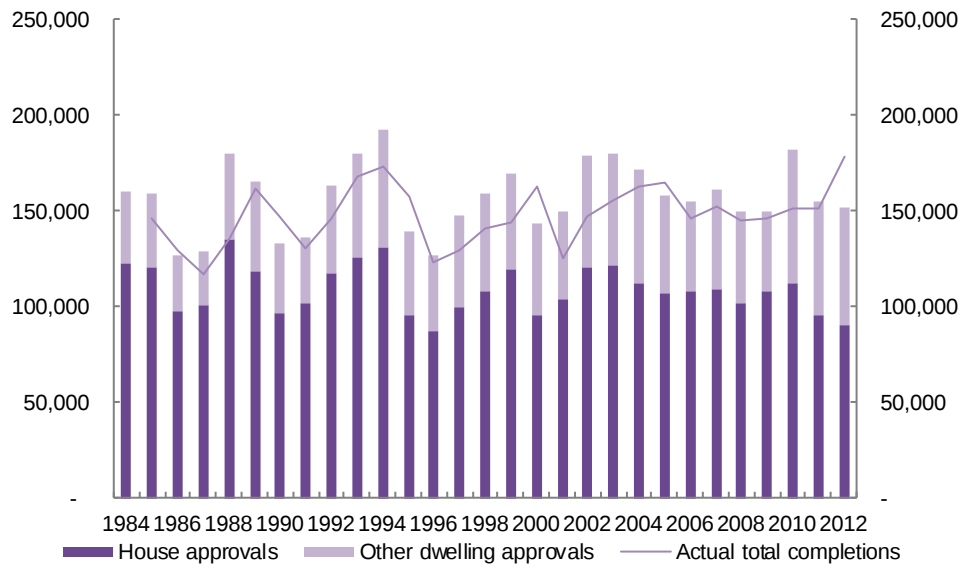
As the mix of new dwellings changes, these different rates of flow from approval to completion will become more significant. Higher density dwellings, such as apartments and townhouses, have comprised an increasing proportion of new properties in recent years and are gradually accounting for a larger share of the overall stock. This changing mix is reflected in the approvals data. Nonetheless, according to past trends, this also means that a slightly lower share of all approvals will actually result in completed homes, and that approvals data may become a less accurate reflection of current market demand.

Figures 1.6a and 1.6b show how the distribution of approvals between detached houses and other dwellings (apartments and townhouses) has changed. Figure 1.6a shows the overall number of dwellings completed, which remains at a relatively subdued level. Approvals data show the number of new properties being produced and the number actually completed have been gradually declining over the last decade, apart from a brief pick-up in 2010. This decline is important particularly when

4 It should be noted that this analysis is based on approvals, commencements and completions for the same periods over 28 years. In reality, there is a time-lag between each stage, and this lag will vary at different times. It is not possible to track cases individually, but the long-time period should 'iron out' volatility. However, there is a small margin of error around the analysis and estimates should be taken as indicative rather than as precise.

it is assessed in the context of an increasing number of people and households. Figure 1.6b shows the proportionate split between housing approvals and other dwelling approvals. It is evident that, since 2009, other dwellings are making up a larger proportion of all approvals.

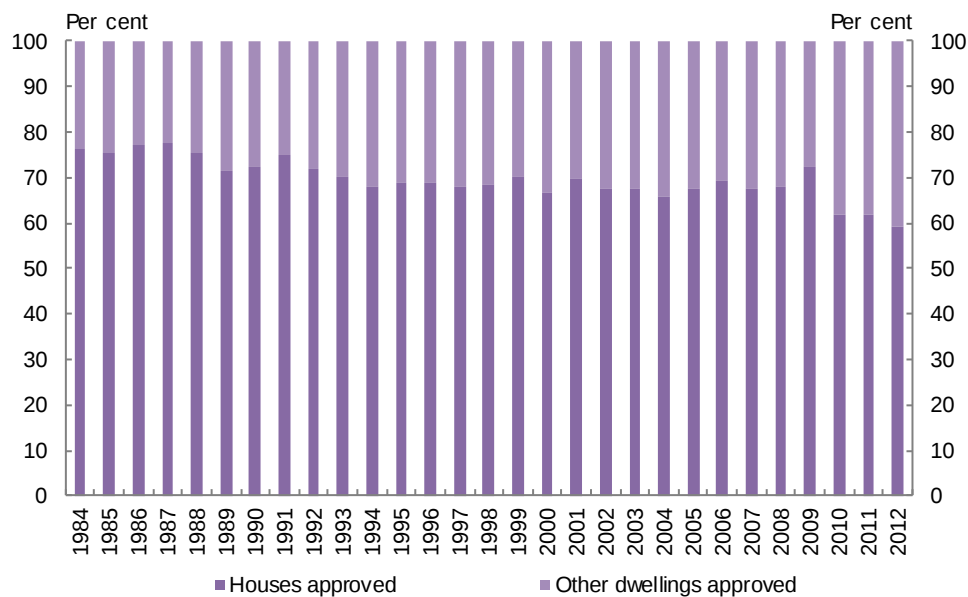
Figure 1.6a Approvals and expected 'feed through' (yearly), Australia



Source: ABS 2013, *Building Activity, Australia*, cat no 8752 and ABS 2013, *Building Approvals, Australia*, cat no 8731. NHSC calculations.

Note: Data for houses and for other dwellings are annual totals and include both public and private sector activity. Actual completions is final ABS data apart from 2012, where the fourth quarter is estimated by a typical feed-through into completions based on average rate of completions to approvals for data since 1984. These are gross additions to stock, and so take no account of losses (demolitions and vacant dwellings).

Figure 1.6b Approval proportions (yearly), Australia

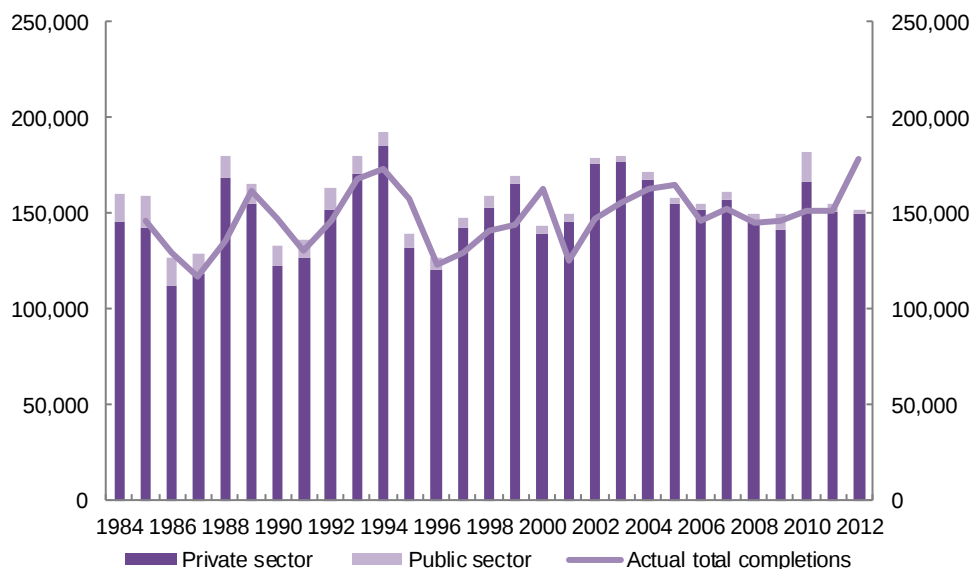


Source: ABS 2013, *Building Activity, Australia*, cat no 8752 and ABS 2013, *Building Approvals, Australia*, cat no 8731. NHSC calculations.

Note: Data for houses and other dwellings include both public and private sector activity.

The analysis above includes approvals for homes being built for the public sector. Figure 1.6c below displays the level of approvals by sector. Figure 1.6a shows 178,000 new dwellings completed in 2012, up from an average of 147,000 per annum for each year since 1984. Using this measure, market demand was up by around 21 per cent in 2012 compared to the average over the previous 28 years. The 178,000 new homes in 2012 reflect the approval levels seen post-GFC under stimulus measures. It is also worth noting that this analysis is based on gross additions to the housing stock and takes no account of stock losses (demolitions and vacant dwellings).

Figure 1.6c Approvals and expected ‘feed through’ (yearly), Australia



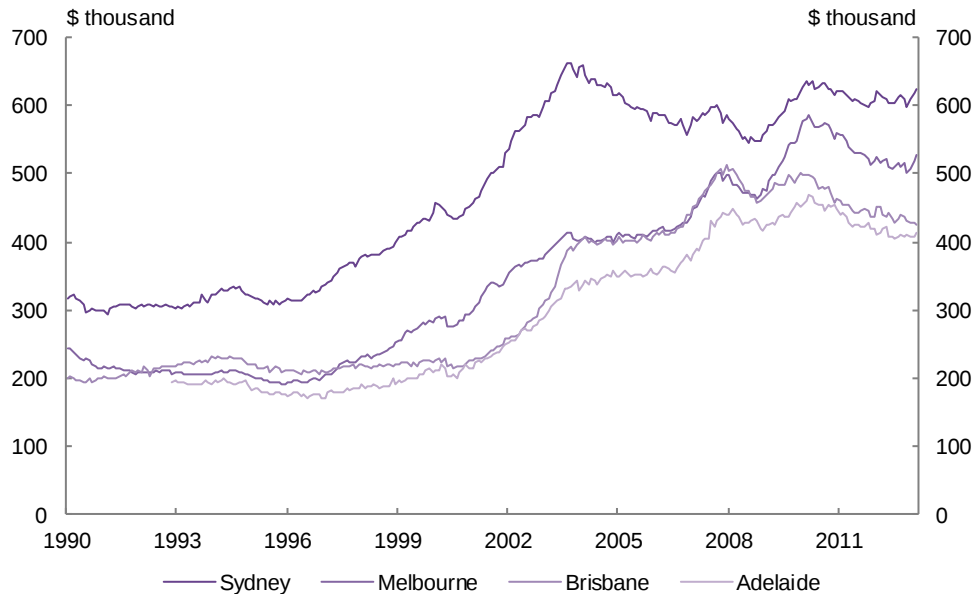
Source: ABS 2013, *Building Activity, Australia*, cat no 8752 and ABS 2013, *Building Approvals, Australia*, cat no 8731. NHSC calculations.

Prices

Movements in dwelling prices are the most commonly cited indicator of the balance between market supply and demand. Transacted price data show what has happened to the price of properties that are bought and sold during a period. These data reflect how market demand and supply, across the entire purchase market, are reconciled. All other things being equal, when dwelling prices increase at a faster rate than incomes and prices for consumer goods, one should generally assume a shortage of supply relative to market demand. Yet all other things are rarely equal.

Figures 1.7 and 1.8 show how real median dwelling prices have evolved across the capital cities since 1990, after adjusting for consumer price inflation. For individual capital city median dwelling prices, see Figures A1.1 to A1.8 of the Appendix.

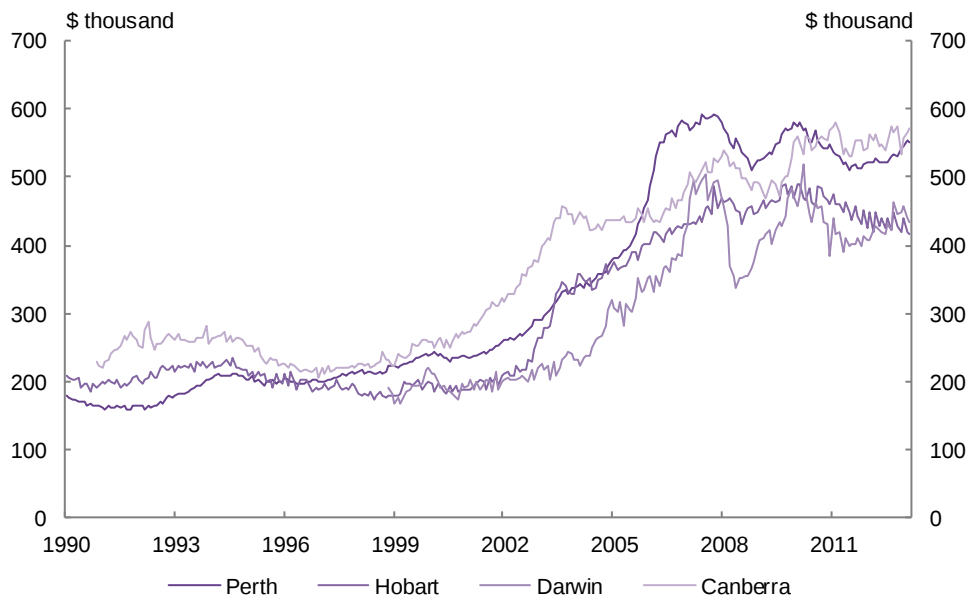
Figure 1.7 Real median dwelling prices, Sydney, Melbourne, Brisbane, Adelaide



Source: RP Data Rismark, unadjusted median price, all dwellings. ABS 2013, *Consumer Price Index, Australia*, June 2013, cat no 6401.

Note: Prices are benchmarked for March 2013 and adjusted to real terms using the Consumer Price Index (CPI) for each capital city. Monthly RP Data has been aggregated to quarterly data.

Figure 1.8 Real median dwelling prices (monthly), Perth, Hobart, Darwin, Canberra



Source: RP Data Rismark, unadjusted median price, all dwellings. ABS 2013, *Consumer Price Index, Australia*, June 2013, cat no 6401.

Note: Prices are benchmarked for March 2013 and adjusted to real terms using the Consumer Price Index (CPI) for each capital city. Monthly RP Data has been aggregated to quarterly data.

It is also important to recognise that dwelling prices and, indeed, a good proportion of market demand, are driven by much more than an individual's or a family's need for shelter. Dwelling prices also reflect changing aspirations for quality of life, changes in the desirability of particular locations, and anticipation of short and long-term returns on investment. Movements in price therefore merely indicate market demand for additional dwelling supply. They will be heavily influenced by the level, location and quality of existing supply, finance availability and cost, as well as by the needs and expectations of sellers. Moreover, the multitude of factors affecting prices could also mean that price changes might occasionally seem to be at odds with the balance between housing supply and demand.

Over the year to March 2013 broader inflation across Australia was 2.5 per cent, at this time nominal dwelling price growth was about 2 per cent across Australia⁵ and higher in Darwin, Perth, Canberra and Sydney, indicating market demand was comparatively strong in these cities. Prices were relatively stable in Melbourne and Adelaide and declined in Brisbane and Hobart, indicating somewhat weaker market demand in those cities.

Auction clearance rates

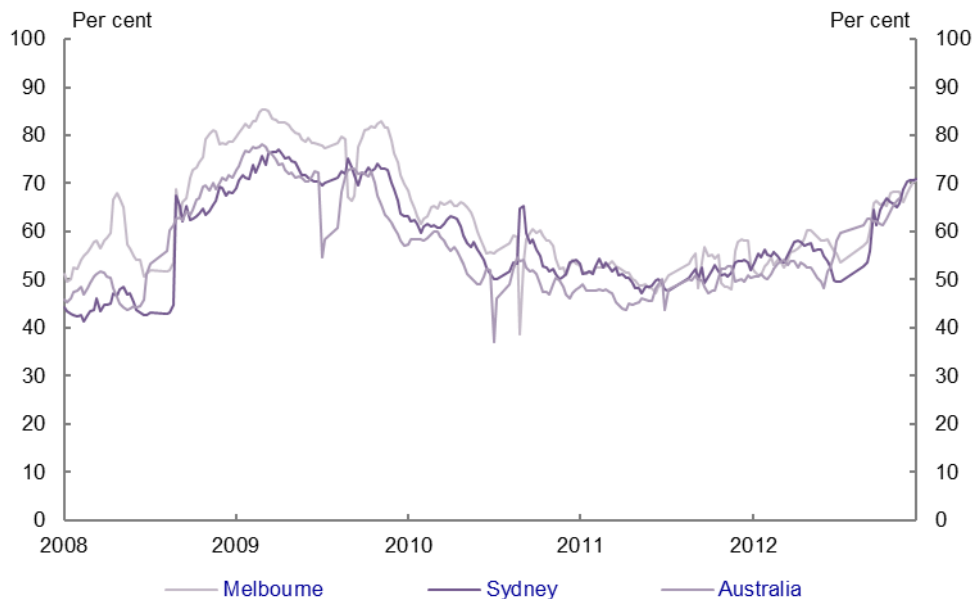
The activity in auction clearance rates is also relevant when assessing market demand. However, this is by no means a comprehensive measure and is a more important part of the market in Sydney and Melbourne than elsewhere. These two cities account for over 80 per cent of auctions across the country.⁶

There was a pick-up in clearance rates towards the end of 2012, particularly in Sydney. This continued into 2013 when rates were at their highest when viewed against the previous three years (Figure 1.9). As with several other indicators, this points to demand having slightly recovered from recent lows.

5 RP data Stratified Median Indices at June 2013

6 Source: Analysis of data from RP Data-Rismark since 2008.

Figure 1.9 Auction clearance rates (weekly), Sydney and Melbourne



Source: RP Data Rismark, weekly auction data.

Note: Data are a four-week moving average, end year data are smoothed to account for 3-4 weeks of no data during this period.

Rental market

The final component of market demand is the rental market, which overlaps directly and indirectly with the demand to buy. Investors buying property to lease directly affect demand to buy, while tenure decisions determine demand for the occupation of investors' dwellings.

Movements in rental prices and vacancy rates together help indicate the balance between supply and demand in this market. Figure 1.10 shows recent changes in the median rent for two-bedroom apartments and three-bedroom houses across capital cities. A breakdown of changes for two-bedroom apartments and three-bedroom houses is available for each capital city in Figures A1.9 to A1.17 of the Appendix.

Figure 1.10 Nominal median weekly rent on apartments and houses (quarterly), capital cities

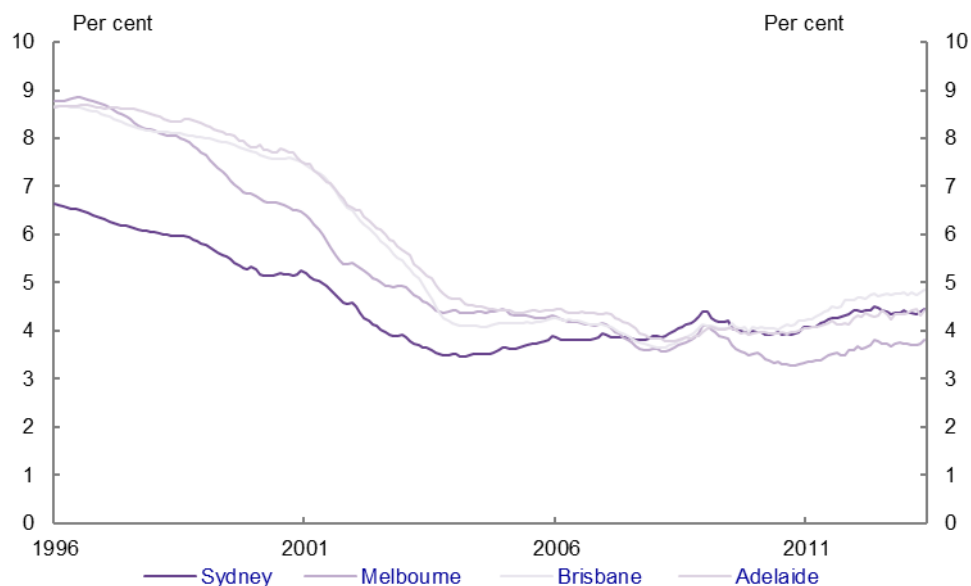


Source: Real Estate Institute of Australia.

Note: Data are median weekly rents paid on three-bedroom houses and two-bedroom units. Based on weighted average of 8 capital cities.

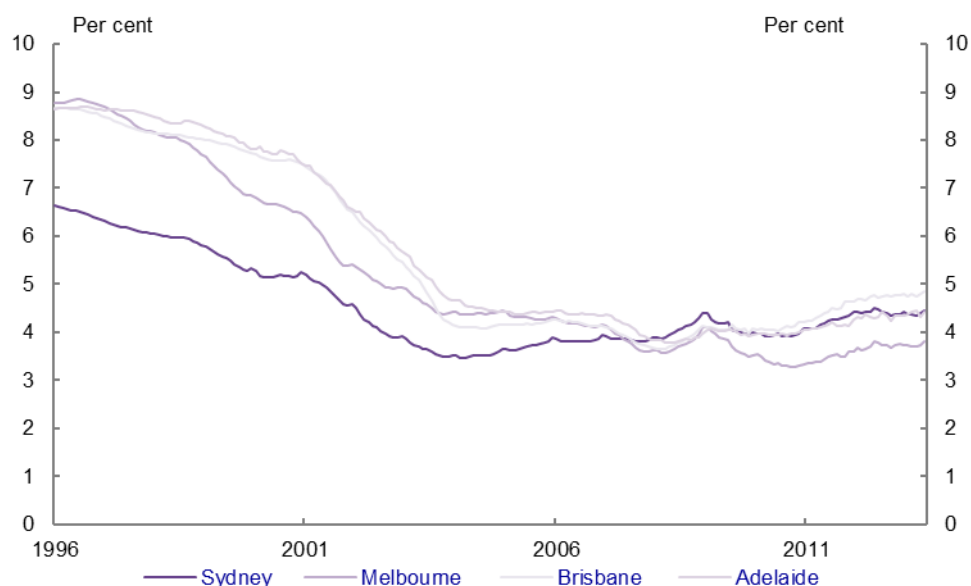
Rental yields that are primarily driven by rents and dwelling values are obviously a key indicator of a property's attractiveness to investors. While there was a significant drop in yields for all dwellings from 1996 to 2004, yields have since grown at a slow rate, see figure 1.11 and 1.12. As at May 2013, yields were highest in Darwin at 6.2 per cent, while Hobart (5.2 per cent), Brisbane (4.8 per cent), Canberra (4.7 per cent), Perth (4.6 per cent), Adelaide (4.4 per cent) and Sydney (4.4 per cent) were all above the national capital city average of 4.3 per cent. Melbourne yields were at a comparatively low 3.8 per cent.

Figure 1.11 Rental Yields (monthly), Sydney, Melbourne, Brisbane, and Adelaide



Source: RP Data Hedonic Gross rental yields (Imputation Method).
 Note: Data are for all dwellings.

Figure 1.12 Rental Yields (monthly), Perth, Hobart, Darwin, and Canberra



Source: RP Data Hedonic Gross rental yields (Imputation Method).
 Note: Data are for all dwellings.

The rental data indicate that national demand for apartments outstrips demand for houses, with rents rising faster in the multi-unit sector since 2006. Over the year to December 2012, the median rent across Australia for a two-bedroom apartment rose by 4.8 per cent to \$399 per week, and by 2.5 per cent to \$390 per week on a three-bedroom house⁷. These increases were around or above the rate of inflation (2.2 per cent)⁸, which suggests relatively strong demand, despite being a little below the growth rates of average rents typical of the last decade.

Vacancy rates⁹ of 3 per cent generally indicate a market in equilibrium. By both market and historical standards, rates in all capital cities except Hobart are low, at around 2 per cent, which shows a relatively strong rental demand and a tight market. For a further breakdown of rental vacancy rates across capital cities, see Figures A1.18 to A1.25 in the Appendix.

It should be noted that, while this report has employed REIA data across a range of topics, the methodology used for its vacancy rate data has previously been questioned due to coverage and transparency issues. Another source of information on vacancies is the data used by Earthsharing Australia in its *Speculative vacancies in Melbourne: 2012 report*, which measures vacancy rates by estimating the number of long-term vacant properties that could potentially be placed on the rental market to increase supply. It thereby picks up not only rental vacancies, but also vacancies due to factors like second homes and normal transitions in ownership. The report establishes long-term vacant properties as those with a low water consumption rate over a six-month period.

The report, therefore, gives a potential measure of vacancy generally, rather than necessarily a measure of how many unoccupied properties are available for occupation. That said, the report estimates Melbourne's vacancy rate to have been 5.9 per cent in 2011, compared to REIA's average over 2011 of 2.1 per cent.

Conclusions

A wide range of factors drive market demand. Market demand is far more volatile and cyclical in nature than underlying demand. However, these two types of demand do influence each other. On the one hand, population and household formation changes affect the long-term trajectory of housing supply. On the other, the drivers of market demand may affect the formation of new households. Market characteristics will therefore inevitably play a role in shaping both household formation decisions and underlying demand.

7 Real Estate Institute of Australia

8 ABS (2013) Consumer Price Index, Australia, Jun 2013, Cat no 6401.0

9 Source: Real Estate Institute of Australia.

The challenge faced by the building industry is that its product must both respond to and work within market demand, which is established in relation to current costs and prices. Since the turn of the millennium, housing has clearly become more expensive in both absolute and relative terms, as well as in both the rental and owner occupier markets. It is therefore unsurprising to see relatively lower market demand.

There have been some signs that, when developers can produce housing at the more affordable end of the spectrum, there is a strong current demand that is ready to be tapped into. This indicates, among other things, that there is a pool of underlying demand that could become market demand if the cost of housing was lower.

Most market indicators continue to point to an environment of relative uncertainty and risk aversion fostering relatively low levels of demand. Prices have edged upward in many places. While activity levels have increased from GFC lows, they are slightly down on subsequent stimulus-induced activity, and slow by historic comparison.

Chapter 2 Tenure and the dwelling stock

In *Housing supply and affordability issues, 2012-13*, the Council highlighted some key trends in dwelling stock and housing tenure. Detached homes remain by far the most common type of property across Australia. However, flats, units and apartments accounted for an increasing share of both new dwellings and total stock between 2001 and 2011.

The analysis in that report also showed a slowing rate of new households forming, particularly among young adults, and a decline in home-ownership rates across most age groups. The overall level of home-ownership, however, has been supported by an ageing population, since older households are more likely to live in their own homes.

This chapter extends this analysis and examines housing tenure for different types of property, as well as how this changed over the decade to 2011,¹ which is supplemented with some data from earlier periods in order to illustrate longer-term trends. Such changes reflect both changes in preference (with households looking for more accessible locations compromising with smaller dwellings) and changes in affordability constraints (with financially constrained households increasingly able to become home owners in a specific location only if they purchase a smaller, higher-density dwelling).

National trends in tenure and dwelling type

The Council report *Housing supply and affordability issues, 2012-13* found that 29 per cent of private occupied dwellings in Australia were rented in 2011, an increase from 27 per cent in 2001. At the same time, the share of dwellings that were owner-occupied declined from 70 per cent to 69 per cent. Within the owner occupied stock there has been a notable fall in the share of homes owned outright from 42 to 33 per cent (of all properties) and an increase in the share owned with a mortgage from 28 to 36 per cent. The report also found that home-ownership (both outright and owned with a mortgage) has decreased for households in all age groups between

1 All data in this chapter is sourced from the 1991, 2001, 2006 and 2011 Censuses of Population and Housing, based on private dwellings occupied by a usually resident household on Census night – dwellings occupied by visitor and group households are excluded. The ABS notes that information captured on Census night may not represent a fully comprehensive picture of housing tenure. However, the Council's view is that, at worst, the information gives a clear indication of trends over the decade.

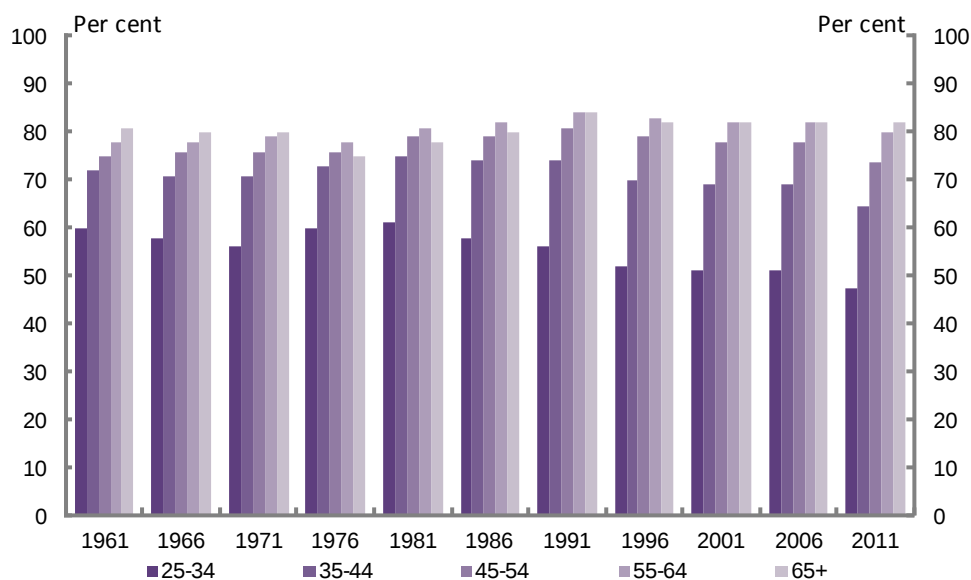
NHSC 2013 State of Supply Report: Changes in how we live – Chapter 2: Tenure and the dwelling stock

2001 and 2011, with the exception of those with a reference person² aged 15-24 years or 65 years and over.

With the exception of data on tenure by state (Table 2.3), and unlike the previous report,³ the analysis in this chapter, excludes dwellings that were occupied by a group household. Since this accounts for a relatively small proportion of overall dwellings, the exclusion of this category does not significantly impact on the more detailed findings in this chapter.

A pattern of declining home-ownership is evident over a longer period. At an aggregate level, Census data show a persistent decline in home-ownership for 24-35 year olds from around 1981 and for 35-44 year olds from 1991. Declines for households in older age groups are observable in varying degrees from 1991 (Figure 2.1).

Figure 2.1 Home-ownership rates by age of household reference person, 1961 to 2011



Source: Census data from Censuses of Population and Housing, 1961-2011.

2 The Family/Household Reference Person Indicator identifies the person who is used as the basis for determining the relationships within a household. It is usually the person who has identified himself/herself as Person One on the Census Household Form. The reference person must be someone who is usually resident in the household and aged 15 years or over and is present on Census night.

3 In *Housing Supply and Affordability Issues, 2012-13*, the analysis on tenure in Chapter 2 – An update on Australians' Housing and Living Arrangements included group households.

Dwelling stock changes

Detached dwellings accounted for just over three quarters (76.5 per cent) of all occupied dwelling stock in 2011, with semi-detached dwellings accounting for 9.5 per cent and flats, units and apartments for 13.0 per cent. Changes in the composition of the occupied dwelling stock over time have seen a decline in the proportion of detached houses, and an increase in the proportion of the higher-density dwellings. However, major compositional changes to the overall stock take a long time to evolve. The changes observed over the past two decades have had only a modest impact on the composition of the overall occupied dwelling stock.

Household tenure patterns

Table 2.1 Proportion of occupied dwellings that are detached or higher density, by household type and tenure, 2001 and 2011.

Tenure Type				Owned outright				Owned with a mortgage				Rented				Total — all tenure types(a)			
Dwelling Type				Detached house		Higher- density Dwelling		Detached house		Higher-density Dwelling		Detached house		Higher-density dwelling		Detached house		Higher-density dwelling	
				2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Household type				Per cent															
Couple	family	with	no	89.4	89.0	9.3	10.0	86.4	83.0	13.2	16.8	50.4	47.7	48.1	51.4	81.2	78.2	17.6	21.0
			children																
Couple	family with children			95.5	94.2	4.1	5.6	95.9	92.7	3.8	7.2	76.0	73.8	22.8	25.7	92.3	89.0	7.1	10.7
One-parent	family			90.4	88.4	9.1	11.1	88.9	86.6	10.8	13.3	67.5	70.0	31.7	29.5	79.5	79.2	19.9	20.4
Other	family			82.2	83.9	17.1	15.6	78.3	76.1	21.7	23.8	47.4	49.2	52.3	50.1	66.3	66.3	33.3	33.1
Lone person	household			73.3	73.8	24.0	24.0	69.6	38.9	29.7	19.2	27.5	34.2	69.9	63.7	55.3	57.4	42.2	40.7
Total				87.1	85.5	11.6	13.3	89.8	86.2	9.8	13.6	52.0	54.4	46.4	44.5	76.7	76.5	21.6	22.6

Source: 2001 and 2011 Censuses. 2001 data are from 1 per cent Census sample file, and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Mortgaged dwellings include dwellings being purchased under a rent/buy scheme. Dwellings where the structure and/or tenure are 'not stated' are excluded from the totals. 'Flats' include all properties defined by the ABS as: flat, unit or apartment in a one or two-storey block; flat, unit or apartment in a three-storey block; flat, unit or apartment in a four or more storey block; and flat, unit or apartment attached to a house. 'Semi-detached + terrace' includes properties defined by the ABS as: 'semi-detached, row or terrace house, townhouse etc with one storey'; and 'semi-detached, row or terrace house, townhouse etc with two or more storeys'.

(a) Components presented in the table for detached housing and higher density housing do not total 100 per cent. This is because the total for tenure includes all other tenure types, and the total for dwelling type includes other dwelling types. Other dwelling type includes: caravan, cabin, houseboat; improvised home, tent, sleepers-out; and house or flat attached to a shop, office, etc. All other tenure types include: being occupied rent-free; being occupied under a life tenure scheme; and other tenure types.

There are differences in the type of dwelling and the tenure in which different kinds of households live (Table 2.1). The vast majority of households that own their home (outright or with a mortgage) live in a detached house. In the Council's previous report, the increase in the proportion of households living in higher-density dwellings, particularly couples with no children and couples with children, was noted.⁴ Table 2.1 shows that this increase was most evident among those couples with or without children who owned their home with a mortgage and, as such, were somewhat more likely to be more recent entrants into the housing market.

For households that rent, over half (54.4 per cent) rented a detached house in 2011, an increase from 52.0 per cent in 2001. This trend was most obvious for lone person households and one-parent families. The rental market includes both private and social/public rentals. The increase in proportion of households renting has been due to an increase in rentals from a private landlord, while public rental through a state/territory housing authority has been declining. Data from the ABS Survey of Income and Housing show that, in 2010, 23.7 per cent of all households rented from a private landlord, an increase from 20 per cent in 1998, while 3.9 per cent of all households rented through a housing a state/territory housing authority compared with 5.8 per cent in 1998.⁵ The Council has previously noted that the relative market share of social and subsidised housing will not be maintained without continued investment.⁶

These changes in tenure and dwelling type should be considered along with changes in the composition of households. Between 2001 and 2011, there was a decrease in the proportion of dwellings accommodating couples with children and an increase in the proportion accommodating couples without children. The increase in couples without children is consistent with an ageing population, that is, with increased life expectancy contributing to the longer survival of older couples⁷. This illustrates the complex causation of changes in housing types and tenures. In other words, while some changes are caused by movements in the demographic structure of the population, their impact is moderated by changes in preference. Those changes in preference, in turn, may be due to increased land prices and reduced opportunity to obtain a detached home on the urban fringe that is reasonably well connected to jobs and amenities.

4 National Housing Supply Council 2013, *Housing Supply and Affordability Issues, 2012-13*.

5 ABS 2012, *Australian Social Trends, data cube – Housing* cat.no.4102.0.

6 National Housing Supply Council 2010, *2nd State of Supply Report*, p88.

7 National Housing Supply Council 2013, *Housing Supply and Affordability Issues, 2012-13*.

Tenure by dwelling type

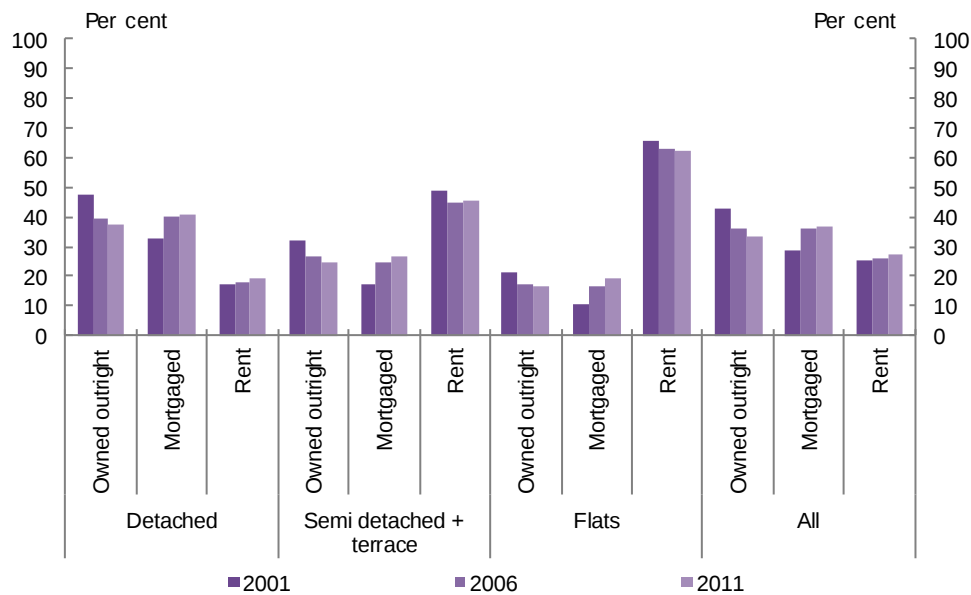
Housing tenure differs across dwelling types. Historically, flats and apartments (flats) are more likely than detached houses to be rented. However, as Figure 2.2 shows, there was a decline in the share of flats rented between 2001 and 2011 from 66 to 62 per cent, with a corresponding increase in the share that were owner-occupied. This may, in part, reflect changing lifestyle preferences and affordability constraints, with some households choosing to purchase smaller higher-density dwellings in more accessible locations.

The majority of the population, however, continue to conform to a traditional model of housing tenure. People living in detached ‘family’ homes are more likely to own their own home while those living in flats are more likely to rent. However, the increase in owner-occupation in flats and apartments, coupled with such dwellings accounting for an increasing share of total stock, means that more of those now entering home-ownership are doing it in dwelling types that tended to be rented. It is likely that the main drivers of this trend are an increasing supply of such dwellings and the deteriorating affordability of detached houses in suitable locations.

Detached houses and semi-detached/terrace houses/townhouses (attached houses) are more likely than flats to be owner-occupied. In 2001, 81 per cent of detached houses were owner-occupied, compared with 79 per cent in 2011. The share of attached houses that were owner-occupied increased from 49 per cent in 2001 to 51 per cent in 2011. As was the case for all types of property, there was a decline in the proportion of attached homes owned outright and an increase in the share where the dwelling was owned with a mortgage.

The shifting balance from outright ownership to ownership with a mortgage is consistent with findings from the Council’s previous report, which illustrated this across most age groups and particularly among older households. The traditional home-ownership model of households paying off their mortgage as they move into their later working years is no longer as widespread. Higher house prices may mean that owners are more likely to take on larger debt and hold this debt for longer. However, easier access to mortgage finance to fund other investments and spending is also likely to have played a major part, along with increased superannuation, which has tended to both reduce the primacy of housing as a form of retirement security and made it possible to repay mortgage debt comparatively late in life.

Figure 2.2 Housing tenure by occupied dwelling type, Australia, 2001, 2006 and 2011



Source: 2001, 2006 and 2011 Censuses. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Mortgaged dwellings include dwellings being purchased under a rent/buy scheme. Dwellings where the structure and/or tenure are 'not stated' are excluded from the totals. 'Flats' includes all properties that the ABS defines as: flat, unit or apartment in a one or two-storey block; flat, unit or apartment in a three-storey block; flat, unit or apartment in a four or more storey block; and flat, unit or apartment attached to a house. 'Semi detached + terrace' includes properties defined by the ABS as 'semi-detached, row or terrace house, townhouse etc with one storey'; and 'semi-detached, row or terrace house, townhouse etc with two or more storeys'.

There are differences in the type of dwelling and the tenure under which people of different ages live (Table 2.2). The vast majority of households who own their home (outright or with a mortgage) live in a detached house, regardless of the age of the household reference person. However, between 2001 and 2011, there was an increase in the proportion of households that live in higher-density dwellings across all age groups with the exception of those aged 65 years and over. This increase was most obvious among those who own their house with a mortgage, and across those where the household reference person was relatively young. The increase in higher-density housing was not replicated widely among renters, with an increase in renting detached houses evident among most age groups.

Table 2.2 Proportion of occupied dwellings that are detached or higher density, by age of reference person by tenure, 2001 to 2011

Tenure Type	Owned outright				Owned with a mortgage				Rented				Total — all tenure types				
Dwelling type	Detached house		Higher-density Dwelling		Detached house		Higher-density dwelling		Detached house		Higher-density dwelling		Detached house		Higher-density dwelling		
Age of Reference Person	Per cent																
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	
	15-24 years	79.3	74.9	19.5	23.6	90.2	81.5	12.3	18.3	45.3	50.9	52.6	48.2	57.0	60.2	41.4	38.9
	25-34 years	82.3	79.0	15.7	19.9	88.0	79.2	11.8	20.6	72.2	51.1	36.6	48.2	72.3	65.7	26.7	33.8
	35-44 years	89.7	87.0	9.2	11.9	64.9	87.4	7.2	12.4	61.1	62.0	37.0	37.1	82.8	78.9	16.2	20.6
	45-54 years	91.7	89.3	7.2	9.6	93.0	89.5	6.7	10.3	53.9	61.3	43.9	37.3	83.5	82.4	15.4	16.8
	55-64 years	90.1	88.1	8.4	10.6	87.4	87.1	11.7	12.6	50.4	52.6	47.5	45.7	83.2	81.0	15.2	17.8
	65 years and over	82.9	83.3	15.9	15.5	83.5	84.4	16.9	15.2	33.2	39.6	65.6	59.2	74.4	75.3	24.4	23.5
	Total	87.1	85.5	11.6	13.3	89.8	86.2	9.8	13.6	52.0	54.4	46.4	44.5	78.4	76.5	20.4	22.6

Source: 2001 and 2011 Censuses. 2001 data are from 1 per cent Census sample file, and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Mortgaged dwellings include dwellings being purchased under a rent/buy scheme. Dwellings where the structure and/or tenure are 'not stated' are excluded from the totals. 'Flats' includes all properties that the ABS defines as: flat, unit or apartment in a one or two-storey block; flat, unit or apartment in a three-storey block; flat, unit or apartment in a four or more storey block; and flat, unit or apartment attached to a house. 'Semi-detached + terrace' includes properties defined by the ABS as 'semi-detached, row or terrace house, townhouse etc with one storey'; and 'semi-detached, row or terrace house, townhouse etc with two or more storeys'. Total — all tenure types includes all other tenure types, as well as all other dwelling type, so components presented in table do not add to total.

(a) Components presented in the table for detached housing and higher-density housing do not total 100 per cent. This is because the total for tenure includes all other tenure types, and the total for dwelling type includes other dwelling types. Other dwelling types include: caravan, cabin, houseboat; improvised home, tent, sleepers-out; and house or flat attached to a shop, office, etc. All other tenure types include: being occupied rent-free; being occupied under a life-tenure scheme; and other tenure types.

Tenure by state and territory

Table 2.3 Tenure, proportion of private occupied dwellings, by state and territory, 2001 and 2011.

Tenure Type	Owned outright		Owned with a mortgage		Total home-ownership		Rented	
State/territory	2001	2011	2001	2011	2001	2011	2001	2011
	Per cent							
NSW	43.5	34.1	24.9	34.2	68.4	68.3	28.8	29.8
Vic	45.2	35.1	29.4	36.8	74.6	72.0	23.0	26.3
Qld	38.2	29.7	27.8	35.4	66.0	65.1	31.3	32.9
SA	41.2	33.7	30.4	36.2	71.6	69.9	25.7	27.7
WA	37.3	30.2	33.9	38.7	71.1	69.0	25.9	28.5
Tas	43.2	37.1	29.8	35.0	72.8	72.1	24.8	25.9
NT	17.6	16.3	29.5	31.8	47.2	48.0	48.8	46.8
ACT	34.6	28.8	35.1	39.5	69.7	68.3	28.9	30.4
Australia	41.8	32.9	28.2	35.8	69.9	68.7	27.4	29.3

Source: 2001 and 2011 Censuses of Population and Housing, Expanded Community Profile.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor households. Mortgaged dwellings include dwellings being purchased under a rent/buy scheme. Dwellings where the tenure is 'not stated' are excluded from the totals. Other tenure type is included in total for tenure, but not shown in this table. Therefore, components for total home-ownership and rented do not add to 100 per cent.

Table 2.3 shows housing tenure across the states and territories. A shift from owned outright to owned with a mortgage was observed across all states and territories between 2001 and 2011. The greatest decline in dwellings owned outright occurred in Victoria, Queensland and New South Wales. In 2011, Tasmania (37.1 per cent) and Victoria (35.1) had the highest proportion of dwellings owned outright. In 2011, the Australian Capital Territory (39.5 per cent) and Western Australia (38.7 per cent) had the highest proportion of dwellings owned with a mortgage.

Between 2001 and 2011, there were increases in the proportion of dwellings rented in all states and territories, with the exception of the Northern Territory. The largest increases in rental occurred in Victoria and Western Australia. In 2011, the states with the highest proportion of dwellings rented were the Northern Territory (46.8 per cent) and Queensland (32.9 per cent). The following sections of this chapter provide more detailed analysis of dwelling type and tenure among the states and territories.

Detached dwellings by state and territory

Detached dwellings make up the vast majority of the occupied dwelling stock across Australia (Table 2.4), accounting for over three-quarters of all such properties in 2011. While there are differences in this share across the country, in most states and territories, there was a decline between 1991 and 2011 in the proportion of the occupied stock comprising detached houses.

Detached houses as a proportion of total occupied stock was highest in Tasmania at 87 per cent, followed by Western Australia and South Australia at a little over 80 per cent.

The proportion of total stock comprising detached houses was lowest in the Northern Territory and New South Wales (69 per cent and 71 per cent, respectively). The Australian Capital Territory has experienced the greatest decline in the proportion of detached housing to total stock over the decade to 2011 (from 79 per cent to 74 per cent). The lower proportion of detached houses in the Northern Territory at least partly reflects the fact that it has a significantly larger share than other states and territories of occupied dwellings that are 'caravans, cabins, houseboats', 'improvised homes, tents, sleepers-outs' and 'houses or flats attached to a shop, office, etc'.

Table 2.4 Detached houses as proportion of occupied dwelling stock, 1991, 2001, 2006 and 2011

	1991	2001	2006	2011
	per cent			
NSW	76.6	73.4	72.5	70.6
Vic	82.6	80.4	78.6	78.0
Qld	84.0	81.5	80.5	79.5
SA	78.8	79.4	80.4	80.4
WA	81.4	81.0	81.4	81.1
Tas	86.8	87.4	87.1	86.7
NT	70.5	70.9	71.3	69.0
ACT	82.4	78.9	77.5	74.1
Australia	79.8	78.3	77.8	76.5

Source: 2001, 2006 and 2011 ABS Censuses of Population and Housing. 2001 data are from Expanded Community Profiles, while 2006 and 2011 data are from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Cases where dwelling type is known but tenure is 'not stated' and 'not applicable' are included.

The most common tenure across the detached housing stock is still owner-occupation (Figure 2.3). As noted earlier in this chapter, the share of owner-occupied dwellings fell between 2001 and 2011. However, in 2011, almost four-fifths of detached houses were owner-occupied. Again, consistent with the trend across the total dwelling

stock, there has been some shift from outright ownership to homes owned with a mortgage.

In 2011, the Northern Territory had the lowest proportion of detached houses that were owner-occupied at 55 per cent, a share that increased by around 1 percentage point from 2001 (Figure 2.3). Victoria and Queensland had the highest rate of ownership (outright or with a mortgage) for detached houses in 2011 at 82 per cent. In Victoria, this proportion fell by 3 percentage points over the decade, and in Queensland it increased by 6 percentage points. The Council hypothesises that the latter may have been partly the outcome of retirees migrating to Queensland, having sold their homes in the more expensive southern capital cities.

It is evident that states with relatively low levels of detached housing tend to be those with large capital cities and high land prices, where larger detached dwellings are likely to be out of reach for many potential buyers. It is also evident; however, that denser forms of dwellings are becoming more prevalent in smaller cities and regional centres (Canberra being a case in point). This may be driven by the rising cost of servicing land and, thus, the price of detached housing, but could also be due to changing life-style preferences, particularly those of younger people expecting to move for work, to delay having children and to have fewer children compared with previous generations.

Figure 2.3 Proportion of detached houses that are owner-occupied by state/territory 2001, 2006, 2011



Source: 2001, 2006 and 2011 ABS Censuses of Population and Housing. 2001 data are from Expanded Community Profiles, while 2006 and 2011 data are from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Owner-occupied dwellings include: dwellings owned outright, dwellings owned with a mortgage, and dwellings being purchased under a rent/buy scheme.

Dwellings for which structure and/or tenures are 'not stated' are excluded from totals.

Figure 2.4 Proportion of detached dwellings that are rented, by state/territory 2001, 2006, 2011



Source: 2001, 2006 and 2011 Censuses. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Dwellings for which structure and/or tenures are 'not stated' are excluded from totals.

The relatively high proportion of overall of rented dwellings in the Northern Territory is displayed in Figure 2.4 as applying to detached houses. Queensland, Western Australia, and South Australia experienced the largest increase in the share of rented, detached houses over the decade to 2011. This is consistent with an overall increase in the proportion of dwellings that are rented in these states between 2001 and 2011.

Semi-detached, terrace and townhouses dwellings, by state and territory

Semi-detached, terrace and townhouses (referred to as 'attached houses') make up a relatively small share of occupied housing at just under 10 per cent in 2011 (Table 2.5), an increase from 7.4 per cent in 1991. These properties accounted for 14 per cent of occupied dwellings in the Australian Capital Territory and over 10 per cent in New South Wales, South Australia, Western Australia and the Northern Territory.

Table 2.5 Semi-detached, terrace and townhouse share of occupied dwelling stock, 1991, 2001, 2006 and 2011

	1991	2001	2006	2011
	per cent			
NSW	6.6	9.1	9.6	10.5
Vic	7.3	8.0	8.8	9.2
Qld	3.8	6.6	7.4	8.1
SA	13.3	11.5	10.3	10.5
WA	11.6	11.2	10.2	10.3
Tas	5.9	5.2	3.9	5.2
NT	7.9	10.3	9.9	11.1
ACT	9.6	12.6	12.9	14.1
Australia	7.4	8.7	8.9	9.6

Source: 2001, 2006 and 2011 Censuses. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Dwellings for which structure and/or tenures are 'not stated' are excluded from totals.

Data for semi-detached, terrace and townhouse include properties defined by the ABS as: 'semi-detached, row or terrace house, townhouse etc with one storey'; and 'semi-detached, row or terrace house, townhouse etc with two or more storeys' (based on records where dwelling type is recorded). Cases where dwelling type is known but tenure is 'not stated' and 'not applicable' are included.

While the increase in attached houses as a share of all dwellings may not appear dramatic, it comes from a low base. As with the increase in the share of flats and apartments, this may reflect increased demand for small dwellings due to affordability constraints, as well as the greater emphasis on infill and higher-density development seen in many cities.

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Figure 2.5 Share of semi-detached, terrace and townhouse dwellings that are owner-occupied, by state/territory, 1991, 2001, 2006, 2011



Source: 2001, 2006 and 2011 Censuses. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Dwellings for which structure and/or tenures are 'not stated' are excluded from totals.

Data for semi-detached, terrace and townhouse include properties defined by the ABS as: 'semi-detached, row or terrace house, townhouse etc with one storey'; and 'semi-detached, row or terrace house, townhouse etc with two or more storeys' (based on records where dwelling type is recorded). Cases where dwelling type is known but tenure is 'not stated' and 'not applicable' are included. Owner-occupied dwellings include dwellings owned outright, dwellings owned with a mortgage and dwellings being purchased under a rent/buy scheme.

Owner-occupation of attached houses increased from 2001 to 2011 in all states and territories (Figure 2.5). A decline in outright ownership of attached houses in most states and territories was more than offset by an increase in the share owned with a mortgage. The largest overall increase in the proportion of these properties that were owner-occupied occurred in Queensland and South Australia, both of which experienced an increase of around 6 percentage points. However, in 2011, the highest proportion of owner-occupied attached dwellings was in Victoria and New South Wales (58 per cent and 56 per cent respectively). Tasmania had both the lowest share of attached housing and the lowest share of owner-occupied attached housing.

Figure 2.6 Share of semi-detached, terrace and townhouse dwellings that are rented, by state/territory 2001, 2006, 2011



Source: 2001, 2006 and 2011 Censuses. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Dwellings for which structure and/or tenures are 'not stated' are excluded from totals.

Data for semi-detached, terrace and townhouse include properties defined by the ABS as: 'semi-detached, row or terrace house, townhouse etc with one storey'; and 'semi-detached, row or terrace house, townhouse etc with two or more storeys' (based on records where dwelling type is recorded). Cases where dwelling type is known but tenure is 'not stated' and 'not applicable' are included.

A significantly larger proportion of attached houses are rented compared with detached houses (45 per cent and 20 per cent, respectively). However, there was a decline in the share of these properties being rented between 2001 and 2011 across all states and territories (Figure 2.6). The decline was greatest in South Australia, Queensland and the Northern Territory.

Flats, units and apartments by state and territory

Flats, units and apartments account for a relatively small share of overall occupied dwelling stock, (13 per cent in 2011). However, this share has increased in recent years and that is likely to continue. More and more, the focus of strategic plans for many major cities is now on accommodating population growth by way of increasing the density of existing urban areas, rather expanding outwards beyond the city fringe.

Table 2.6 Flats, units and apartment as proportion of occupied dwelling stock, 1991, 2001, 2006 and 2011

	1991	2001	2006	2011
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	per cent			
NSW	15.0	16.1	16.9	18.0
Vic	9.0	10.8	11.9	12.2
Qld	9.2	10.2	10.6	11.1
SA	6.9	8.3	8.6	8.6
WA	5.5	6.6	7.2	7.6
Tas	6.0	6.5	8.2	7.3
NT	13.6	13.1	14.3	15.8
ACT	7.7	8.3	9.3	11.6
Australia	10.4	11.7	12.3	13.0

Source: 2001, 2006 and 2011 Censuses of Population and Housing. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Data for flats, units or apartments include properties defined by the ABS as: 'flat, unit or apartment in a one or two-storey block'; 'flat, unit or apartment in a three-storey block'; 'flat, unit or apartment in a four or more storey block'; and 'flat, unit or apartment attached to a house' (based on records where dwelling type is recorded). Cases where dwelling type is known but tenure is 'not stated' and 'not applicable' are included.

As Table 2.6 shows, the proportion of the entire dwelling stock accounted for by flats, units or apartments increased across all states and territories in the 20 years between 1991 and 2011. The increases were largest in the Australian Capital Territory (3.9 percentage points), where flats, units and apartments account for 12 per cent of all housing stock in 2011, and New South Wales (3 percentage points), where flats, units and apartments now account for nearly one in five of all dwellings (18 per cent).

The share of flats that were owner-occupied increased between 2001 and 2011 in all states and territories (Figure 2.7). The largest increases in the proportion of owner occupied flats was in the Australian Capital Territory (10 percentage points) and the Northern Territory (6 percentage points), albeit starting from a lower base in both cases. This partly reflects the increasing proportion of additions to dwelling stock that are flats, units and apartments. The Council has previously noted that the construction of higher-density forms of housing approached or exceeded growth in detached housing over a sustained period⁸ only in the Northern Territory and the ACT.

New South Wales had the highest share of flats in owner-occupation at 38 per cent in 2011, and an increase from 33 per cent a decade earlier. This compared to an Australia-wide increase of just over three percentage points to 35 per cent.

⁸ National Housing Supply Council 2013, *Housing Supply and Affordability Issues, 2012-13*.

Figure 2.7 Share of flat, unit and apartment dwellings that are owner-occupied by state/territory 2001, 2006, 2011



Source: 2001, 2006 and 2011 Censuses. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Mortgaged dwellings include dwellings being purchased under a rent/buy scheme. Data for flats, units or apartments include properties defined by the ABS as: 'flat, unit or apartment in a one or two-storey block'; 'flat, unit or apartment in a three-storey block'; 'flat, unit or apartment in a four or more storey block'; and 'flat, unit or apartment attached to a house'. Dwelling and tenures 'not stated' and 'not applicable' are excluded from both tenure and dwelling structure totals.

Tasmania and the Northern Territory had the largest share of rented flats in 2011 (Figure 2.8). This remained the most common type of tenure for these properties, at over 60 per cent across all states and territories, with the exception of New South Wales (where it was just below this mark). There was a decline in all states and territories in the proportion of flats rented between 2001 and 2011. This was particularly so in the Australian Capital Territory (10 percentage point decline) and the Northern Territory (7 percentage point decline). This is consistent with the increasing proportion of additions to housing stock that are higher-density dwellings in these territories, coupled with more households choosing to purchase and live in higher-density dwellings.

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**Figure 2.8 Share of flat, unit and apartment dwellings rented by
state/territory 2001, 2006, 2011**



Source: 2001, 2006 and 2011 Censuses. 2001 data are from Expanded Community Profiles 2006 and 2011 from Tablebuilder.

Note: Data are based on occupied private dwellings on Census night and exclude dwellings occupied by visitor and group households. Data for flats, units or apartments include properties defined by the ABS as: 'flat, unit or apartment in a one or two-storey block'; 'flat, unit or apartment in a three-storey block'; 'flat, unit or apartment in a four or more storey block'; and 'flat, unit or apartment attached to a house'. Dwelling and tenures 'not stated' and 'not applicable' are excluded from both tenure and dwelling structure totals.

Conclusion

This chapter and the previous Council report observe a shift in tenure occurring between 2001 and 2011, with a decrease in home-ownership and a corresponding increase in renting. Furthermore, those who own their own house are now more likely to do so with a mortgage. Although the magnitude of the change in aggregate home-ownership is not substantial, it is replicated in all states and territories. It is also consistent with the trend to lower ownership rates in younger age groups that became evident in census data and surveys of income and housing throughout the preceding decade, if not longer. It is also evident that home-ownership rates are lowest in states with the largest cities and the highest proportions of people living in major urban centres.

If the trend toward increasing rental tenure continues, this could have significant implications for the development and construction industries, as well as for financial institutions and government policy. The rental market in Australia is relatively unsophisticated, because the supply-side is dominated by individual investors owning one, two or more negatively-geared dwellings. Unlike its equivalent in the commercial

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office arena, the residential rental sector is not recognised as a distinct asset investment class and there is little or no investment into this sector by institutions like superannuation funds. While banks have been happy to support investment by retail ‘mum-n-dad’ investors drawing on equity growth in their home and investment properties, they are likely to be more circumspect in the face of low and uncertain growth in residential property prices.

Moreover, most of the market seems to be geared to short-term leases that align with the traditional view of renting as a transitional or temporary tenure (for example, for students, staff and managers whose time in the area is limited).

Renting is sometimes perceived as the tenure of last resort for lower income households and others who cannot access home-ownership. While the social housing sector provides affordable rental for long-term tenants, it cannot satisfy demand, with the result that the private rental market is the primary source of rental housing for most who would qualify for social housing. Rents are higher and the duration of occupancy is managed by the almost universal device of short-term leases. It is inevitable that the rental market will need to change in order to accommodate increased demand for longer-term rental accommodation, and that the policy settings that govern rent assistance for lower-income households and the provision of social housing will need to be re-examined in this light.

This chapter has also identified signs of a shift toward higher-density housing (comprising flats, units, apartments and semi-detached housing, such as townhouses). Higher-density housing accounted for around one-quarter of all occupied dwellings in 2011, an increase from a decade earlier. Contrary to trends in tenure across the dwelling stock as a whole, a larger share of higher-density dwellings were owner-occupied than a decade earlier. It is important to note that, while higher-density housing now accounts for a greater proportion of new housing construction than in the past, the impact on the composition of the overall housing stock is modest. In the last half century, however, the share of higher-density dwellings has increased nearly threefold (from less than 8 per cent of all occupied private dwellings in 1961 to almost 23 per cent in 2011).

There is likely to be a range of cultural and economic reasons for the shift toward higher-density dwellings. Among other factors, the increased focus on higher-density residential development, particularly near transport hubs and employment opportunities within existing urban boundaries, means these properties may be more attractive than detached homes built on greenfield sites located further from city centres, especially if the latter lack good-quality public transport infrastructure.

The Reserve Bank of Australia has also noted the recent increases in approvals to build higher-density housing in spite of approvals for detached housing remaining

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subdued.⁹ It further noted that rising land prices relative to incomes and increased congestion had made living on the urban fringe less attractive, while a shift in preferences to living closer to city centres and existing infrastructure may have increased the attractiveness of higher-density dwellings.

Increased owner-occupation of high-density dwellings may also be partly explained by the cultural expectations and circumstances of migrants. Previous work commissioned by the Council¹⁰ has shown that some categories of migrants, particularly students and newly-arrived skilled migrants, are more likely to live in higher-density dwellings.

Research by the Grattan Institute has also pointed to changing household preferences for higher-density housing. Before taking account of budget constraints, the preferred housing option for many households is a relatively large detached dwelling, located near the city, shops, and in the same area as friends and family. However, when budget constraints and other trade-offs are considered,¹¹ the prevalence of that preference diminishes, with many switching their preference to higher-density housing. The Grattan Institute study found unmet demand for such housing in Sydney; their research indicated that more households preferred higher-density dwellings than there was stock available.

Changes in the nature of apartments being built may also have increased owner-occupation of higher density dwellings. The last Council report found that the share of flats with three or more bedrooms increased from just less than 13 per cent in 2001 to almost 18 per cent in 2011, which could mean that there are now more apartments that are a closer substitute for detached dwellings.

While overall home-ownership rates have fallen for detached housing, the share owned with a mortgage has increased noticeably in the decade to 2011. This is likely to partly reflect higher house prices feeding into larger mortgages later in life. However, as noted above, it could also reflect greater use of mortgage finance secured on a primary residence (a relatively inexpensive way to fund other spending and investment, particularly among more wealthy households). Longer life-expectancy and the ability to stay in the workforce longer than previous generations might also explain the ability and willingness of some households to extend a mortgage later into life.

Some of the change in tenure and dwelling patterns observed over the period 2001-2011 may be in response to the composition of available housing supply — households may adapt their preferences according to what is available. It is also likely

9 Speech by Assistant Governor (Economic) of the Reserve Bank of Australia Christopher Kent on 14 March to the Australian Institute of Building.

10 Khoo, SE, McDonald, P, Temple, J and Edgar, B 2012, *Scoping Study of Migration and Housing Needs, report for the National Housing Supply Council*.

11 Kelly, J.F., Weidmann, B., and Walsh, M., 2011, *The Housing We'd Choose*, Grattan Institute, Melbourne.

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that the designers, developers, builders and financiers have responded to changing preferences. As noted, there were modest changes to the composition of the total dwelling stock over the decade to 2011, which is unsurprising, given the inherent inertia in the housing system —new supply adds only around 1.6 per cent¹² to the total stock each year. There were also changes in tenure — a clear trend of falling owner-occupation of detached dwellings and rising owner-occupancy of higher density dwellings. Barring a transformation in the factors that drive the changing attractiveness of these dwelling types (particularly in relation to transport infrastructure, the incidence and impact of congestion, access to jobs, and availability of higher density dwellings) the Council believes this is likely to continue for some time.

12 National Housing Supply Council 2013 *Housing Supply and Affordability Issues, 2012-13*.

Chapter 3 The housing gap

Key Findings

- In 2011, Australian's housing consumption has reduced by some 284,000 dwellings compared with housing consumption in 2001, after adjusting for population growth and distribution, and changes in age structure.
- In other words, an additional 284,000 dwellings would have been needed in 2011 to maintain the rate of housing consumption that existed in 2001.¹
- Using housing consumption patterns from different base years highlights changes in housing consumption in recent years. If 2006 were the base year, the gap in 2011 would be 76,000 dwellings. If 1991 were the base year, the gap would be 133,000 dwellings.
- The difference between 1991-based, 2001-based and 2006-based estimates of the gap in 2011 is a measure of how Australians adjusted their housing consumption and pattern of household formation over the period, influenced by, among other things, supply and affordability constraints.
- 2001 represents something of a high water mark for Australia's housing consumption; the last decade has seen a reversal of the decades-long decline in household size, despite demographic trends such as population ageing pushing in the opposite direction.

Introduction

This chapter reviews the balance between the 'underlying demand' for housing and the current housing supply, based on the 2011 Census of Population and Housing and revised population estimates.

The Council estimates and projects underlying demand primarily in order to assess whether the rate of housing production has been, is, or will be sufficient to meet the housing needs of a growing and changing population.

1 These are based on living arrangements recorded in the 2001 Census applied to the Australian resident population at 30 June 2011.

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Underlying demand is a theoretical construct. It is an estimate of how many households there would be — and accordingly how many primary dwellings would be needed — if the housing system (the housing market and various housing assistance measures) did not constrain people's choices about their living arrangements. Accordingly, underlying demand is estimated by examining the demography of the population — its size, birth and death rates, migration, age distribution, gender mix and family formation patterns —and assessing its underlying propensity to produce households. However, a household is not measured as a person, couple, or family as such, but the occupants of a dwelling; this means that patterns or trends in housing consumption must be combined with demographic variables to estimate underlying demand. The formation of separate households and actual market demand for housing are constrained by whether there are dwellings available, and by a wide range of social and economic factors. All the factors that have influenced housing consumption in the past are implicitly included in measures of underlying demand.

In effect, then, the Council's estimates of underlying demand are an extrapolation of past housing consumption patterns and trends. These estimates are adjusted for subsequent changes in the size, age structure, gender mix, and geographic distribution of the population, but not for changes in any other influences on housing consumption and production.

The Council's previous estimates of underlying demand have been based on population data from the census, converted into household estimates by applying intercensal trends in the likelihood of people being members of households of various types and sizes, and projected in accordance with birth and death rates and assumptions about net international and interstate migration.

The release of data from the 2011 Census of Population and Housing has helped the Council ascertain what has actually been happening to housing consumption and household numbers over the decade since 2001. It has also enabled direct observation of net changes in housing supply as opposed to the Council's cumulative estimates of net supply. The latter estimates start with the stock at the 2001 Census, adding subsequent cumulative dwelling completions² and subtracting estimated demolitions. In the absence of recent and comprehensive data, the Council's estimates of stock losses are crude. As readers of previous reports would know, the Council's estimate of the gap between supply and underlying demand also requires assumptions about the proportion of housing stock that is unavailable, for example second or holiday homes, dwellings vacant while undergoing renovation, and dwellings that at any one time are vacant because they are in transition from one occupier to another.

The Council's report *Housing Supply and Affordability Issues 2012-13* and the immediately preceding Chapter in this report describe changes in housing supply and housing consumption (described as living arrangements in the earlier report) between

2 Sourced from the ABS Building Activity Survey.

2001 and 2011. The previous report (Chapter 5) also reviewed the Council's methodology, and the data on which it depends. It noted that improved processes for assessing and adjusting for the undercount in the 2011 Census of Population and Housing (Census), led to recognition of a large intercensal error in population estimates going back for a decade or more.³ Previous population estimates were inflated and have been recast back to July 1991. The impact of inflated population estimates on the accuracy of household estimates is unlikely to be proportional, and is still being assessed. It is clear, however, that recalculating previous estimates using the same measures and revised data would involve prohibitive logistical and cost challenges. The earlier report foreshadowed that the Council might adopt a revised, albeit conceptually similar, approach to assessing the historical relationship between the supply of dwellings and number and size of households.

The remainder of this report describes and employs this approach.

This revised method generates a range of estimates of underlying demand by applying actual point-in-time age-specific housing consumption rates obtained from previous censuses (1991, 2001 and 2006) to the age structure of the population at a later point in time (in this report, 30 June 2011). In essence, the resulting estimates of underlying demand answer the question 'what would the demand for housing in 2011 be if, allowing for changes in the age and gender mix of the population, housing consumption patterns had remained unchanged since the base year?' The resulting estimates of underlying demand are then compared with the actual number of households (assuming one household per occupied dwelling) to estimate the gap. In addition, age-specific housing consumption rates are compared between 2001 and 2011 to help explain what has changed and guide the search for causation.

Previously the Council produced estimates and projections of underlying demand based primarily on assumptions about the continuation of trends in age-specific household formation rates (such as the declining propensity of young adults to form a new household) revealed by previous censuses. This approach is likely to be retained to project future numbers of households as a guide to future underlying and market demand assuming the continuation of observed trends in (rather than fixed rates of) household formation and housing consumption.

An advantage of the new measure for assessing historical underlying demand is that it uses a consistent data source for both underlying demand and supply. Supply is measured as the total number of dwellings at the census; intercensal changes in total supply measure net changes in the housing stock. The previous measure relied on adding estimates of net additions to housing supply (using assumptions based on limited and often dated information on demolitions and dwellings unavailable for occupation) to the occupied stock at the previous census.

³ NHSC (2013) *Housing Supply and Affordability Issues 2012-13* p.117. For further information see ABS 3250.0 - Information Paper: Ensuring the Quality of Rebased Population Estimates, June 2011.

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The 2011 Census showed that over 10 per cent of all dwellings were occupied by visitors only (approximately 422,000) or were unoccupied (approximately 934,000) on Census night.⁴ The proportion of unoccupied dwellings is slightly larger than in 2006 and reflects a range of factors. In a previous report⁵ the Council identified from 2006 Census data that unoccupied dwellings are 1.8 times more likely to be located outside a capital city,⁶ and particularly likely to be in coastal holiday destinations, whereas population growth, and hence demand for housing, are typically greater in or near capital cities and other areas where employment is expanding. In short, areas with high levels of vacant housing are likely to have a relatively large proportion of homes, apartments or shacks used as holiday residences, or to have a proportion of dwelling supply stranded by the movement of economic activity and jobs.

The reasons for dwellings being vacant on Census night have not been recorded since 1986. In that Census, the majority of unoccupied dwellings were holiday homes or were in transition (for sale, between tenants, undergoing renovation or about to be demolished).⁷ In previous Council estimates of dwelling supply, these factors had to be taken into account when adjusting gross estimates of additions to the housing stock. Such adjustments are not required with the revised approach. In effect, the new measure assumes that the proportion of unoccupied dwellings at the latest census is the latest available estimate of the proportion of total dwelling supply that is not available for occupation by a newly formed household. While in theory the proportion of vacant dwellings should decline during periods of relatively low growth in housing supply, coinciding with relatively fast population growth, in practice the proportion of vacant housing has been comparatively stable, and actually increased slightly over the period from 2001 to 2011, when population growth substantially outstripped additions to housing supply.

The Council anticipates that the revised method — using point-in-time age-specific housing consumption rates to reveal changes in aggregate housing consumption and their housing supply consequences — will be clearer, easier to comprehend and interpret, and offer more scope for analysis.

Summarising the results of this method, the Council estimates that there were around 284,000 fewer occupied dwellings (which equate to households)⁸ in 2011 than there

4 NHSC (2013) Housing Supply and Affordability Issues p.21.

5 NHSC (2010) 2nd State of Supply Report, p.37.

6 NHSC (2010) 2nd State of Supply Report, p.37 see Table 3.5 Unoccupied private dwellings by capital city and balance of state for a State by State breakdown.

7 See NHSC (2010) 2nd State of Supply Report, page 38 for discussion of census data on reasons for vacancies.

8 In the ABS census dictionary: A household is defined as one or more persons, at least one of whom is at least 15 years of age, usually resident in the same private dwelling. Under this definition, all occupants of a dwelling form a household and complete one form. Therefore, for Census purposes, the total number of households is equal to the total number of occupied private dwellings as a Census form is completed for each household from which dwelling information for the household is obtained. ABS 2013 2901.0 - Census Dictionary, 2011
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Chapter34902011> (accessed 03/07/2013).

would have been if housing consumption patterns in 2011 were the same as they were in 2001 (Table 3.5). Looking at the States and Territories, initial results from the new measure continues to show a gap (between the number of occupied dwellings in 2011 and the number there would have been if housing consumption rates in 2001 had continued) in New South Wales and Western Australia, a larger gap than previously estimated in Victoria and South Australia, and a smaller change in housing circumstances in Queensland than previously measured.⁹ As explained in Chapter 1, these estimates do not purport to be the balance between *market* demand and supply at a point in time. Rather, they reflect changes in how households occupy available dwellings.¹⁰ Supply-side issues (like the pace and nature of additions to supply, prices and home loan interest rates) may be the main reason for a gap, but demand-side factors are also relevant (for example, changes in buying power arising from the level and distribution of real household income; growth or decline in the number of households associated with increased or reduced rates of family breakdown; and changing housing preferences associated with the timing and number of children). Further analysis is required to ascertain the causes.

Turning to the effect and meaning of results from different base-years, changes in housing consumption since 1991 point to 2001 being a high point in housing consumption and housing supply, with more separate households and dwellings across nearly all age groups than was the case in the censuses before or since.

It is not yet possible to conclude what has caused the decline in the rates of household formation and housing consumption since 2001. The decline might reflect inadequate additions to supply relative to population growth, or it might be that fewer homes are being built in response to changes in people's preferences and capacity to purchase or rent a home. The Council believes that there is an element of both. Stretched affordability and a lack of additional housing supply in areas with access to employment opportunities are likely to have affected some people's ability and willingness to form new households.

9 A State-by-State analysis of the changing patterns of housing consumption will be published in future. These initial results are based on estimates of the gap on a State and Territory basis which were undertaken prior to the release of final estimated resident population numbers for 2001 and 2011. The results may change when the recast Estimated Resident Population figures are incorporated.

10 Occupied dwellings are counted by place of enumeration in the Census while household reference persons are counted by place of usual residence. They are not reconciled, so in any given suburb a dwelling may be counted as unoccupied while the household who usually live there are also counted as living in that suburb. This measure avoids the problem by counting the number of households usually resident as the number of occupied dwellings.

Households, occupied dwellings and the Census

The gap between how many households there are, and how many there would be if, after adjusting for changes in the size and demographic structure of the population, past household formation trends had continued, suggests that there is a potential housing shortage, deteriorating housing affordability, or something else that has reduced the formation of new households.

In the census, and indeed logically, the number of households equals the number of occupied dwellings. Therefore, fewer households means fewer occupied private dwellings. Looking at the difference between the growth in underlying demand (assessed as the continuation of past rates of consumption) and the growth in the actual number of households (as measured in occupied dwellings in the census) is equivalent to comparing the increase in underlying demand with net growth in the stock of occupied dwellings over the same period.

The census records each person's status in a household. This analysis focuses on the household member recorded as the household reference person. The household reference person is used as the starting point for determining relationships between the usual residents of a household.

From census data, the Council has identified those people who were recorded as either the household reference person in a family household,¹¹ or where more than one family reside in the household the household reference person in the first family,¹² and those recorded as the household reference person in a non-family household such as a group household. In a single person household, that person is the household reference person.

Table 3.1 and Figure 3.1 show the proportion of people in each five-year age group recorded as a household reference person at the 1991, 2001, 2006 and 2011 Censuses. The proportion of people recorded as a household reference person increases rapidly from 20 per cent in the 20-24 year age-group to around 50 per cent

11 A family is defined by the ABS as two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who are usually resident in the same household. Each separately identified couple relationship, lone parent-child relationship or other blood relationship forms the basis of a family. Some households contain more than one family.

12 A maximum of three families can be coded to a household. Data for the most recent two censuses (2006 and 2011) are also available for people who were recorded as reference person in a second or third reference in a family. For 2001 those recorded as the second reference person were identified. The Council have not counted additional family reference persons because there can only be one household in a private occupied dwelling. In 2001 there were 56,000 second household reference persons recorded in the Census (third reference persons were not recorded). In 2006 there were 93,000 (and 3,000 third reference persons) and in 2011 there were 128,000 (and 5,000 third reference persons).

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in the 35-39 year age group. It continues to increase gradually and less consistently to nearly 60 per cent for those aged 75 and older.

Table 3.1 Share of persons in each age group recorded as a household reference person (propensity by age to form a separate household) by age group, Australia, 1991, 2001, 2006 and 2011

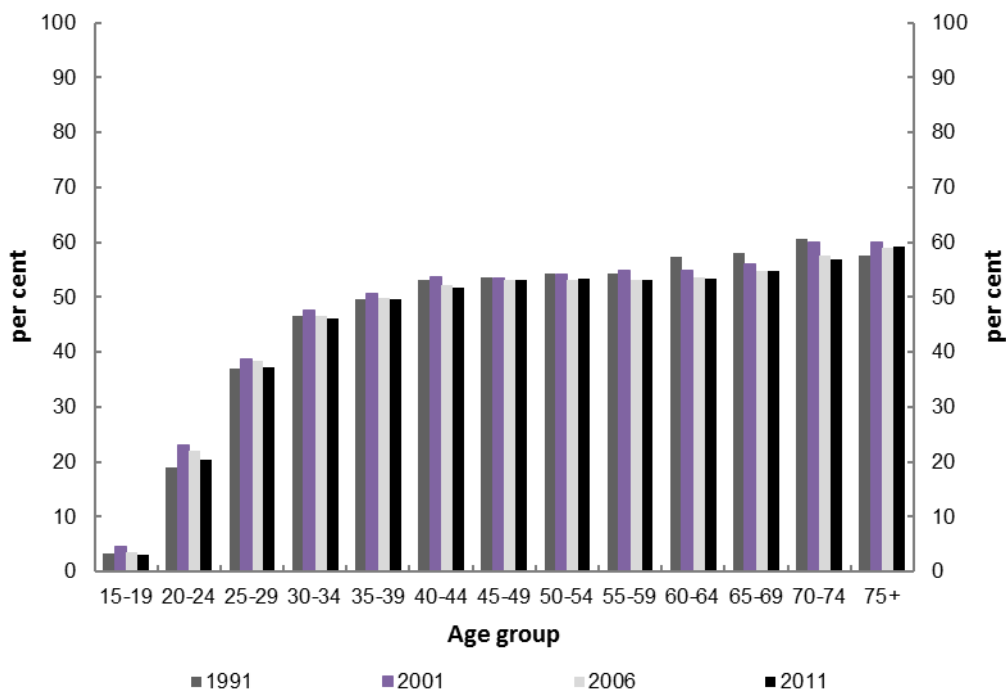
	1991	2001	2006	2011
	per cent			
15-19	3.3	4.6	3.6	3.0
20-24	19.1	23.1	22.0	20.4
25-29	37.1	38.8	38.5	37.2
30-34	46.5	47.6	46.5	46.1
35-39	49.7	50.7	49.9	49.7
40-44	53.2	53.7	52.1	51.8
45-49	53.7	53.4	53.1	53.2
50-54	54.4	54.3	53.1	53.4
55-59	54.2	54.9	53.1	53.1
60-64	57.4	55.0	53.7	53.4
65-69	58.1	56.0	54.8	54.7
70-74	60.7	60.0	57.5	56.9
75+	57.7	60.1	59.1	59.3
Total	43.1	45.6	44.9	44.7

Source: Australian Bureau of Statistics Censuses of Population and Housing 1991, 2001, 2006 and 2011.

Note: 2006 and 2011 data are based on place of usual residence. Only persons recorded as household reference person of the family in a household, or the first family where more than one family reside in the household, or as household reference person in a non-family household are included. 1991 and 2001 based on 1 per cent Census sample, with visitors excluded as equivalent to place of usual residence. 1991 data includes all household/family reference persons and lone person households making it possible to count more than one household per dwelling in 1991, however the small number of dwellings with two or more families is unlikely to affect the results significantly. 2001 data includes reference person in primary family and reference person in non-family household.

A change in the age structure of the population will lead to a different number of households for a given population size. For example, population ageing (a higher proportion of people in older age groups) will increase the number of households because older people are likely to live in smaller households, mostly as couples or lone persons.

Figure 3.1 Share of people recorded as household reference person, Australia, by age group, 1991, 2001, 2006 and 2011



Source: Australian Bureau of Statistics Censuses of Population and Housing 1991, 2001, 2006 and 2011.

Note: 2006 and 2011 data based on place of usual residence. Only persons recorded as household reference person of the family in a household, or the first family where more than one family reside in the household, or as household reference person in a non-family household are included. 1991 and 2001 based on 1 per cent census sample, with visitors excluded as equivalent to place of usual residence. 1991 data includes household/family reference (so does not exclude additional family references in same household) and lone person household. 2001 data includes reference person in primary family and reference person in non-family household.

It is notable that compared with 2001, the proportion of people recorded as a household reference person in 2011 was smaller in all age groups, particularly among the younger and older age groups. However, the comparison between 1991 and 2011 is not as clear cut. While the proportion of people recorded as a household reference person was smaller in 2011 in most age groups, this was not the case for all age groups and the overall rate was actually higher.¹³

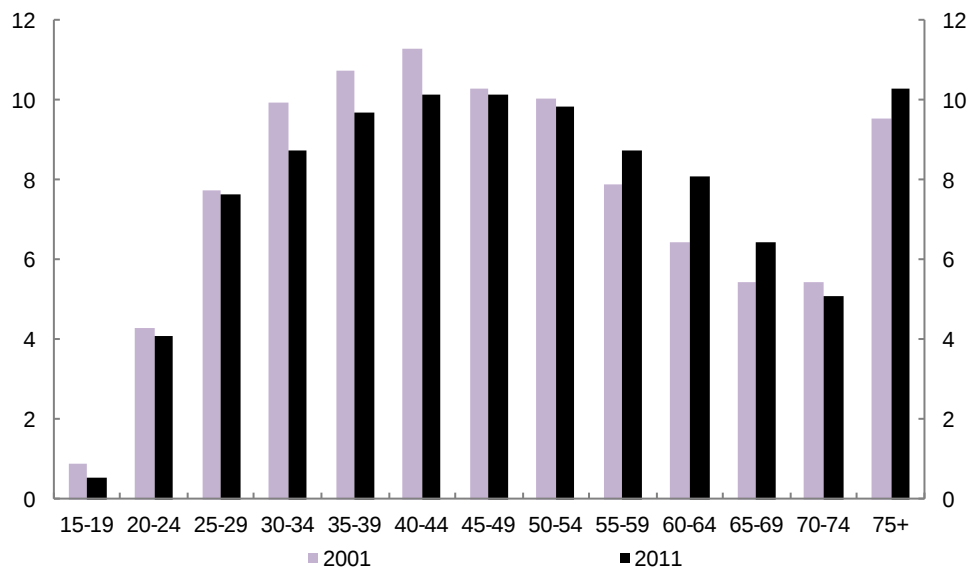
The rise in the overall proportion of household reference persons in 2011 compared with 1991 partly reflects the ageing of the population over the period, although ageing is only one of a number of factors, as is evident from the smaller proportion of household reference persons in 2011 compared with 2001. People aged 65 years and over as a proportion of the population aged 15 years and over increased from 14.5

¹³ As noted in table 3.1 there is possibly some double counting of household reference people in 1991 but not enough to affect the results significantly.

per cent in 1991 to 17.1 per cent in 2011.¹⁴ Other things being equal, an increasing proportion of older people, combined with their greater likelihood of living in a small household (and thus greater likelihood of being the household reference person), will increase the total number of households.

Figure 3.2 shows the age distribution of households in 2011 compared with 2001. Ageing of the population is very evident, with proportionately fewer households in the younger age groups and, conversely, proportionately more in the older age groups. The Council's approach to assessing the balance between housing supply and underlying demand intentionally controls for the effect of population growth and population ageing but measures the aggregated effect of changes over time in age-specific propensities to form households (as in Figure 3.1). The emergence of a positive or negative difference in the aggregated housing consumption rate between any two years will be the outcome of changes since the base year in these age-specific propensities. The real challenge, of course, is to decipher the underlying reasons for these changes.

Figure 3.2 Percentage distribution of households by age of household reference person, Australia 2001, and 2011



Source: NHSC calculations based on ABS Censuses of Population and Housing 2001, and 2011 and ABS (2013) Australian Demographic Statistics 2011 Census Edition — Final, Cat no. 3101.

14 ABS 2012, *Australian Demographic Statistics*, June Quarter 2012, cat no 3101.0.

Number of households

As only one person is identified as a reference person in a household, the total number of reference people should equate to the number of households. However, because every census misses some people in its count on Census night, simply adding together all the household reference people recorded in a census does not necessarily produce a correct estimate of the number of households at census time. In 2011, the Australian Bureau of Statistics (ABS) found that the undercount of people was equivalent to 1.7 per cent of the population. It has not provided an estimate of the undercount of households.

In this report the Council has estimated the number of households by multiplying the proportion of household reference persons recorded in the census in each age group (split by gender) with the number of people in each age group by gender in the estimated resident population (ERP)¹⁵ — the ABS' adjusted estimate of the population usually resident that includes those missed in the census count.¹⁶ A state and territory analysis using this method will be published in future.

The total number of households (assuming only one household per occupied dwelling) produced by this method is shown in Table 3.2. The ABS has not yet published estimates of the number of households for 2011, and is not planning to publish such estimates or household projections before 2014.

Table 3.2 Estimated number of households (occupied dwellings)

	Year ending June 30			
	1991	2001	2006	2011
Australia	5,830,000	7,004,000	7,367,000	8,063,000

Source: NHSC calculations based on Australian Bureau of Statistics (ABS) Censuses of Population and Housing 1991, 2001, 2006 and 2011 and ABS (2013) Australian Demographic Statistics 2011 Census Edition — Final, Table 59. Estimated Resident Population By Single Year Of Age, Australia (final estimates rebased to the 2011 Census and recast estimates back to September 1991) Cat no. 3101.

Note: NHSC estimates for 2006 and 2011 are based on the characteristics defined by place of usual residence. As place of usual residence is not available for 2001 and 1991, people recorded as visitors are excluded.

Estimates assume one household per dwelling.

The estimates exclude people recorded in non-private dwellings (NPD) from the number of households.

Data are rounded to the nearest thousand.

¹⁵ ERP as published June 2013. The ABS has made a one-off revision to historical ERP data from September 1991 to June 2006. The process used to implement these revisions has been referenced as 'recasting'. (ABS 2013, 3101.0 - Australian Demographic Statistics, Dec 2012). These recast estimates have been used in the calculations for this chapter.

¹⁶ For example, in 2011 in Australia 44.36 per cent of women aged between 35-39 years were recorded as a household reference person. The ERP for this group was 791,706. Therefore the Council estimate that there were 432,563 households in Australia ($791,706 \times 0.4436$) with a female household reference person aged 35-39 years. This was repeated for each five-year age and sex group for those aged 15 years and over for Australia for the censuses taken in 1991, 2001, 2006 and 2011.

The Council's approach to estimating the number of households (occupied dwellings) will not produce the same figures as future ABS estimates of the number of households. There are a number of potential reasons for future ABS household estimates to differ from those produced by the Council using census data and the ABS' adjusted estimates of resident population.¹⁷

Analysis throughout the rest of this chapter compares household numbers produced by the Council for differing time periods. Because the Council's analysis looks at how the distribution of households' circumstances have changed over time, differences in the ABS and Council measures should not invalidate the conclusions.

This issue is likely to arise again in the context of future publication by the Council of the projected number of households from 2011 to 2031. The number of households (occupied dwellings) estimated to measure the gap in 2011 differs from the number of households estimated in 2011 as the base point for projection of the number and types of future households.¹⁸ This issue will be addressed in future publications when updated household projections are published. The most important thing about both sets of estimates is how they highlight the changes in Australians' housing circumstances and the likely reasons for those changes.

2011 — Have housing circumstances changed and by how much?

The next step in the analysis is to compare housing circumstances across different periods. Taking household reference rates from a previous period allows the Council to compare the number of households there would be if those same circumstances were in place for a different population size and composition at a different point in time (for example if the age-related propensities observed in 2001 were applied to the population in 2011).

17 Different measurement techniques are likely to produce different estimates of the absolute numbers of households. The five year age group 'headship' count used here will not produce as accurate an estimate of the absolute number of households (occupied dwellings) in 2011 as the ABS is likely to produce with a more sophisticated estimation method and different treatment of the census undercount. The analysis in this chapter assumes households in the census are representative of those not included in the census which may not be the case. It is plausible, for instance, that the person undercount is largest for people in single person households, with the effect that the aggregated household undercount is proportionally larger than the person undercount.

18 The 2011 estimates of the number of households in this chapter are similar to the number of occupied dwellings in the Census and represent the occupied housing supply. The number of households in the Council's projections (to be published later) will not be based on occupied dwellings but on the likelihood of each individual belonging to a particular household type. As this alternate ex-ante estimate of the number of households is not constrained to the number of occupied dwellings it is likely to be higher than ex-post counts.

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In other words, this step is equivalent to an ‘all other things being equal’ experiment. The population size, age/gender and geographic split are set at the 2011 level. Meanwhile, the proportion of people who are household reference persons is varied in accordance with the propensities in earlier censuses in each gender and age group. This allows comparison between present and past circumstances. The difference between the two quantifies how circumstances have changed — whether the 2011 population, after adjusting for gender and age, is living in relatively more or fewer households (and therefore occupied dwellings) than might have been expected if past housing consumption patterns had continued.

The emergence of fewer than expected dwellings may or may not indicate impediments to the efficiency of the supply-side in recognising and responding to changes to emerging demand. While the Council believes that the availability and cost of housing are likely to be a factor, changing social and economic trends are also likely to have had an influence.

Table 3.3 provides estimates of how many occupied dwellings there would have been in June 2011 if the likelihood of being a household reference person the 1991, 2001, 2006 and 2011 censuses (by age group and gender) is applied to the estimated resident population at June 2011, split by age group and gender. A key finding is that there would have been more households (occupied dwellings) in Australia than was actually the case in each subsequent census. In other words, there were relatively fewer households in 2011 than there would have been if the population continued to consume housing as in the past.

Table 3.3 Estimated number of households at 30 June 2011 based on household formation propensities in 1991, 2001, 2006 and 2011

	Base year			
	1991	2001	2006	2011
Australia	8,196,000	8,347,000	8,140,000	8,063,000

Source: NHSC calculations based on ABS Censuses of Population and Housing 1991, 2001, 2006 and 2011 and ABS (2013) Australian Demographic Statistics 2011 Census Edition — Final, Table 59. Estimated Resident Population, Australia (final estimates rebased to the 2011 Census and recast estimates back to September 1991) Cat no. 3101.

Note: Years are year ending June 30. Data is rounded to the nearest thousand.

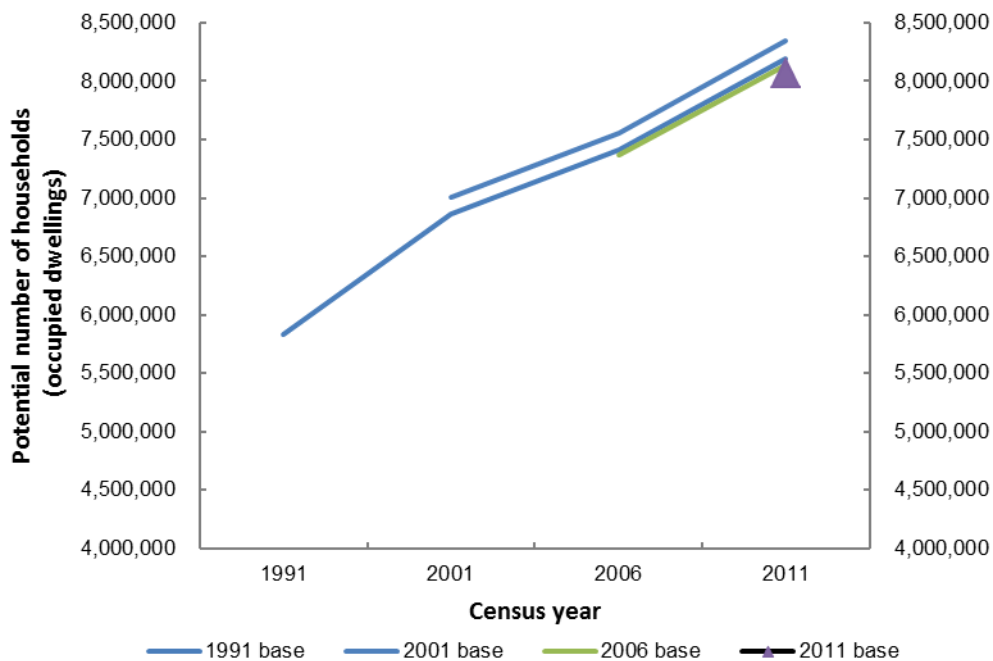
In 2011, there were 284,000 fewer households than would have been observed had the 2001 likelihood of being a household reference person remained unchanged.

Of the censuses analysed, there is a bigger difference between patterns in housing consumption and the resulting number of households when 2001 is used as the comparison base year, than when either 1991 or 2006 is used as the comparison base year.

Figure 3.3 shows the number of households produced by applying the household reference proportions (by gender and age group) in 1991, 2001, 2006 and 2011 to the population in the comparison base year and subsequent census years. The red line shows the number of households there would be if housing consumption patterns seen in 2001 continued from 2001 to 2006 and 2011. The 2001 patterns show a

noticeably larger level of underlying demand than is shown when using other base years, further illustrating that it was a 'high water mark' for housing consumption patterns.

Figure 3.3 Underlying housing demand for varying consumption patterns, Australia (number of households)



Source: NHSC calculations based on ABS Censuses of Population and Housing 1991, 2001, 2006 and 2011 and ABS (2013) Australian Demographic Statistics 2011 Census Edition — Final.

Note: Each line shows the number of households that would be produced by the Council's methodology for each set of household reference propensities. When the reference base and the period are the same (for example the 2006 reference base in 2006) the figure is the Council's estimate of the actual number of households at that point.

The housing 'gap' in 2011

As noted above, the Council estimates that compared with living arrangements in 2001 there were around 284,000 fewer occupied private dwellings in 2011 than there would have been if housing consumption preferences and opportunities in 2011 were the same as they were in 2001.

The comparison with the 2001 base (household references proportions in 2001) is conceptually consistent with previous estimates from the Council of the balance between underlying housing demand and supply since 2001, but different in two key respects.

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The Council's previously published cumulative housing shortfall in 2011 used an underlying demand measure incorporating a dynamic element. For the period 2001 to 2006, underlying demand was measured by the projected number of households in each year as published in the ABS Household projections. It was assumed to evolve each year in line with changes seen over the four censuses up to and including 2001 — so, for example, the increase in underlying demand in any intercensal year (between 2001 and 2006) was driven partly by population growth and structure and partly by an assumed continuation of changes in household formation propensities seen over the two preceding decades.

After 2006 the household formation component of Council's measure of underlying demand was modelled from the likelihood of a change in living arrangements measured from changes between 2001 and 2006 censuses.¹⁹

The housing shortfall estimates produced by the new measure in this report do not include this dynamic 'evolving' element of household formation. Instead, estimates of growth in underlying demand are derived from population and structure and by applying housing consumption patterns²⁰ observed at the census in the comparison base year (1991, 2001 or 2006) to the 2011 population.

The other major difference is that dwelling supply growth is taken from the observed increase in the number of occupied dwellings estimated from the census. Unlike the previous measure there is no need to adjust the flow of new dwellings being built for demolitions and for a certain share being vacant, which is desirable because the information available on demolitions and vacancies is incomplete and is often dated.

Although the exclusion of second homes and other so-called vacant dwellings clearly excludes an element of supply that could conceivably be made available for additional households, the proportion of vacant stock has been fairly constant over time and, as stated above, areas with relatively large proportions of vacant stock tend to be areas of low demand. In any event, the focus of this report is on the difference between additions to housing supply and consumption since the base year, and what they would have been if households and housing stock continued to develop in accordance with propensities in the base year. Since the same definition of supply is used to make this comparison, and it includes all dwellings that are occupied in the base and later periods, the exclusion of vacant properties has little practical import.

Table 3.4 provides a comparison of the two approaches.

19 Measures of underlying demand previously published for 2007 to 2011 were drawn from household projections modelled by McDonald and Temple using net transition probabilities. This is discussed at length in previous Council reports, for example on pages 152-159 of the *State of Supply Report 2011*. The Council will publish future projections of the potential underlying demand (the projected number of households) based on the model but will not be using them to calculate a housing 'gap'.

20 Estimates in this report are based on snapshots of housing consumption patterns as observed at each census whereas previous reports have subtracted estimated occupied dwellings from the projected number of households based on modelling previously observed household formation patterns.

Table 3.4 Housing gap at end-June 2011 under previous and new methodologies

Concept	Previous method	New method (census years)	New method (non-census years)
Underlying Demand	Cumulative growth in demand measured by: Age-specific household formation patterns from four censuses (up to 2001) applied to Age breakdown of estimated resident population projected to 2006 and Age-specific patterns of how people transition between household types (over the period 2001-2006) applied to Age breakdown of estimated resident population projected from 2006	Age-specific housing consumption patterns from census base year (2001) applied to Age breakdown of population in current census year (2011)	Age-specific housing consumption patterns from base census year (2001 and or 2006) applied to Age breakdown of estimated resident population projected for current year
Minus			
Housing Supply	Cumulative growth in supply measured by: Number of dwellings at most recent census plus Construction activity since most recent census discounting for Estimates of housing stock losses since most recent census and Estimates of housing vacancy changes since most recent census	Age-specific housing consumption patterns from current census year (2011) applied to Age breakdown of population in current census year (2011)	Age-specific housing consumption patterns from most recent census applied to Age breakdown of population from most recent census and Construction activity since most recent census discounting for Estimates of housing stock losses since most recent census and Estimates of housing vacancy changes since most recent census
Equals 'Gap'	228,000 dwellings in 2011	284,000 dwellings in 2011	

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Table 3.5 compares previously published estimates of the gap for the year ending June 2011, and that produced by the new measure using 1991, 2001 and 2006 patterns of housing consumption. The key point to consider is that the gap produced by the new measure is simply an indication of how living arrangements have changed between 2011 and each of these points in time, expressed as a number of households or occupied private dwellings (assuming only one household per dwelling).

This method cannot estimate change year-on-year; it can only compare two points in time when the proportion of household reference persons is recorded, notably at the 5-yearly Census of Population and Housing, although a hybrid measure could be used that adds an estimate of annual net additions to housing stock to the number observed at the last census, and applies housing consumption propensities in the base year to the estimated number of households in each age category in the target year.

Table 3.5 Housing gap at end-June 2011 comparing previous and new measures

	Previous estimate of cumulative gap	1991 base	2001 base	2006 base
Australia	228,000	133,000	284,000	76,000

Source: NHSC calculations based on ABS Censuses of Population and Housing 1991, 2001, 2006 and 2011 and ABS (2013) *Australian Demographic Statistics 2011 Census Edition — Final*. cat no. 3101.0.

Note: Estimates are rounded to the nearest thousand.

Results for the housing ‘shortfall’ using the 2001 census base are higher than previously published estimates. Underlying demand estimates for 2001 to 2006 under the previous measure incorporated projected population growth for that period that was lower than actual population growth over the period. A crude adjustment of 2.5-2.6 people per household would have led to around 60-65,000 households more than the existing estimate of underlying demand between 2001 and 2006. Such an adjustment would mean the housing shortfall was larger by the same amount.

The population at June 2011 lived in comparatively fewer occupied dwellings than would have been expected if the housing consumption patterns of 20 years ago had continued. There were a smaller number of households in 2011 than there would have been if the population in 2011 had the same living arrangements as measured in the 1991 Census.

The housing ‘shortfall’ in 2006

Overall this analysis supports a key point made in chapter 5 of *Housing Supply and Affordability issues 2012-13*. A larger change in housing consumption patterns actually took place from 2001 to 2006, than from 2006 to 2011.

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Table 3.6 compares estimates for the gap produced by the previous method for end-June 2006, and that produced by the new method using 1991 and 2001 consumption patterns (the equivalent comparison as Table 3.5). The difference between previous and new estimates is substantial.

Table 3.6 Housing shortfall at end-June 2006 under previous and new measures

	Estimate using previous measure (b)	Estimates using new measure(a)	
		1991 base	2001 base
Australia	22,000	41,000	188,000

Source: (a) NHSC calculations based on ABS Censuses of Population and Housing 1991, 2001, 2006 and 2011 and ABS (2013) *Australian Demographic Statistics, December Quarter 2012* cat no. 3101.0.

(b) Unpublished estimate of gap at 2006, NHSC calculations using *Australian Demographic Statistics, December Quarter 2010*. Table 20 Projected number of households by State at June 2006, and building completions data adjusted for vacancies and demolitions.

Note: Estimates rounded to the nearest thousand.

The results in Table 3.6 show a shortfall of a potential 188,000 occupied dwellings emerging between 2001 and 2006. This suggests that there was a larger adjustment in housing consumption patterns across the country between 2001 and 2006 than between 2006 and 2011 as almost two thirds of the 284,000 gap recorded in 2011 had already emerged by 2006. This was also demonstrated in the Council's previous report by compositional analysis of the sources of change in household formation over the intercensal periods between 1961 and 2011.²¹ At an aggregate national level, this was not apparently due to substantial demand pressure driven by a relatively high rate of population growth in the earlier period (the rate of population growth, was higher between 2006 and 2011 than between 2001 to 2006),²² nor to a relatively low rate of building activity (gross new dwelling completions averaging 150,000 per year over both periods). Other factors were at work. At the state and territory level, initial results suggest there were departures from the national average that could account for part of the national reduction in housing consumption in the period between 2001 and 2006, but more work is required to identify and quantify the various possible sources at regional, state and national levels.

21 NHSC (2013) *Housing Supply and Affordability Issues 2012-13* p.109.

22 ABS (2013) *Australian Demographic Statistics, Dec 2012* cat no 3101.0 says the 'final rebased ERP of Australia at 30 June 2011 was 22,340,000 persons, an increase over the most recent intercensal period (2006-2011) of 1,889,100. During this five year period, the population grew by 9.2 per cent compared with 6.1 per cent for the previous intercensal period (2001-2006) where growth was 1,176,300'.

What housing circumstances changed between 2001 and 2011?

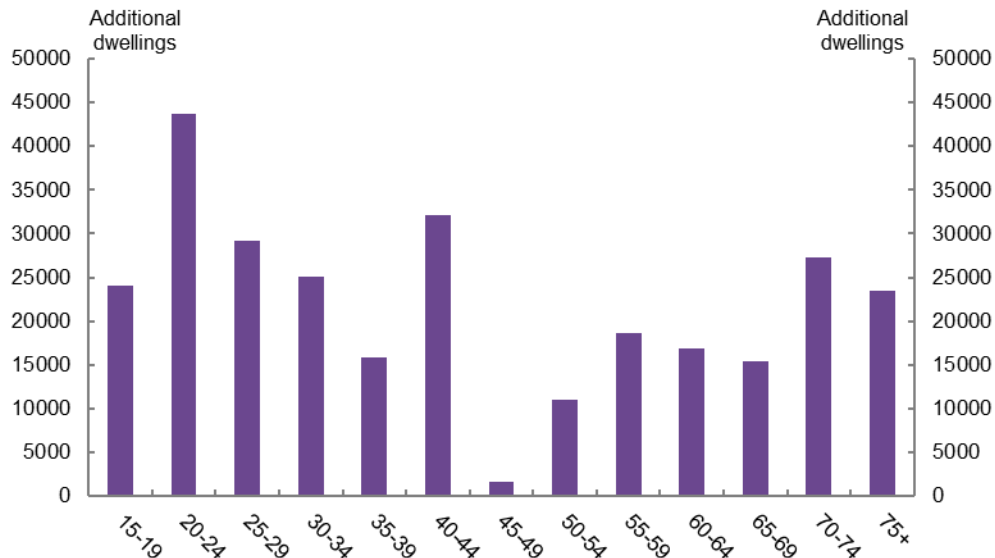
Results from the 2011 Census showed the population of Australia was not quite as large as previously estimated, particularly in the 15-19 and 20-24 year age groups. It also recorded a shift in the distribution of the population among the States and Territories. Queensland in particular had less people resident in 2011 than previously estimated.²³

There is an element of circularity between housing consumption patterns and population growth. Higher rates of population growth are (at least in the short term before the housing stock adjusts) likely to lead to lower rates of separate households forming. For a fixed level of occupied housing stock, more people imply a larger average household size and a reduction in the proportion of people who are a household reference person. So changes in the proportion of people who are a household reference person will likely at least partly reflect and adjust with population growth. However, over the longer run, an increase in housing supply would be expected to follow strong job growth and population growth in a region, assuming there are no constraints on building appropriate new supply.

A change in the age structure of the population is likely to be reflected in housing consumption patterns. The new approach to presenting the data allows for analysis of changes in household reference person rates by each five year age group (thus adjusting for the changed age structure). The difference in housing consumption in 2011 compared with 2001 is shown for Australia as a whole in Figure 3.4. Comparisons for each of the States and Territories will be published in the future. More recent changes in population distribution that differ from the projected distribution underpinning earlier estimates of underlying demand are likely to impact on the relative gap across the States and Territories.

²³ See ABS (2013) *Australian Demographic Statistics, Dec 2012* feature article Final Rebasing of Australia's population estimates September quarter 2006 to June quarter 2011.

Figure 3.4 Underlying demand for additional dwellings if housing consumption in 2011 was the same as in 2001, Australia (shortfall of occupied private dwellings), by age of household reference person (284,000 total additional dwellings)



Source: NHSC calculations based on ABS Censuses of Population and Housing 2001, and 2011 and ERP for end-June 2011 from ABS *Australian Demographic Statistics, December Quarter 2012* cat no. 3101.0.

Note: The quantum for each age group represents the number of additional households (occupied dwellings) there would be for if the same proportion of that age group were recorded as a household reference person in 2011 as was the case in 2001.

Nationally, the decrease in the proportion of persons who were household reference people in 2011 compared with 2001 was mostly in the younger and older age groups²⁴. That is, the likelihood of being the household reference person decreased most for the young and the old, meaning people in these age groups were more likely to be living with other people in 2011 than they were in 2001.

The period from 2001 to 2011 saw a dramatic change in the younger age group with the influx of several hundred thousand overseas students. Overseas students appear to have a quite different pattern of housing usage than the Australian-born groups dominant in the age group in 2001. The impacts of the likelihood of overseas students

²⁴ There may be a degree of volatility around the data at a more disaggregated level, particularly in the smaller States and Territories. The 2001 household reference rates were calculated from the one per cent Census sample and will therefore have a slightly wider margin of error than the 2011 data. In addition, the ABS is continually working to improve data collection techniques, so interpretation of guidelines may vary a little over time. The smaller the area looked at, the wider the margins of error are likely to be.

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to be in group households and non-private housing would have been concentrated in this age group.²⁵

As the Council first noted in 2011,²⁶ the increase in life expectancy at age 50, particularly for men,²⁷ means more spouses will be surviving, which decreases the proportion of older people living alone. Figure 3.4 also points to a relatively large number of additional dwellings that would have been required for those aged 40-44 years if 2001 housing consumption patterns applied in 2011. This may be due to declining rates of relationship breakdown. While only a proxy for the different types of relationship breakdown for people co-habiting, the divorce rate for those aged 40-44 years (the age group with the highest rate of divorce) was lower in 2011 than 2001, and the difference in rate was greater than for older age groups.²⁸ If this age group are more likely to live in a family household than the same age group a decade earlier, rather than as more than one household after a relationship dissolves, there would be comparatively fewer households, with a larger average household size and a lower likelihood of being the household reference person.

Why change the approach for estimating the housing gap?

In the past, the Council has produced estimates and projections of a housing gap based on its assessments of the growth in *underlying* demand and of growth in the occupied housing stock. As *Housing Supply and Affordability Issues 2012-13*²⁹ explained in detail, some of the data (particularly for the estimated resident population) that underpins the Council's estimates of underlying demand has been recast. However, not all inputs into the models used by the Council have been, or will be, updated on a consistent basis.

The Council has previously estimated how many households would have formed if past household formation patterns continued, after adjusting for population growth and compositional (most importantly age structure) change — this is termed *underlying demand*. This estimate of underlying demand is then compared to net additional housing supply to quantify a housing gap or surplus).

25 NHSC (2013) *Housing Supply and Affordability Issues 2012-13*. See p.34 Table 2.6 Living arrangements of persons aged 15-24 years and 25-34 years, by country of birth, 2001-2011, and p.69 for further discussion of living arrangements of overseas students and the 15 to 24 year age group.

26 NHSC (2011) *State of Supply Report 2011*, p.22.

27 Life expectancy at age 50 for men was another 29.9 years in 2001 and 32.0 years in 2011; for women it was 34.1 years in 2001 and 35.6 years in 2011. See ABS (2012) *Deaths, Australia, 2011* Cat no. 3302.0, Table 3.9 Life expectancy selected ages Australia 2001-2011.

28 Source: ABS 2012, *Marriages and Divorces, Australia, 2011* cat no. 3310.0. For males aged 40-44 the divorce rate fell from 13.3 (divorces per 1,000 ERP) in 2001 to 10.3 in 2011. For females it fell from 12.8 to 10.5.

29 See chapter 6 (pages 107-124) on *Housing Supply and Affordability Issues 2012-13*

One key input into the estimation of the housing gap is population growth. Following the results of the 2011 Census, the ABS revised the estimated resident population (ERP) for Australia down at June 2011. The ABS has also recast earlier estimates of the population back to 1991. A second key input is the likelihood of a given population to form separate households, which changes in response to available supply as, by definition, the number of households is equal to the number of occupied dwellings. These data are key inputs into the estimates of the number of households and changes in the Council's measure of underlying demand.

Briefly, the revisions to ERP and the flow-on impacts on other measures means that it is not possible to produce an updated assessment of underlying demand, and therefore of the supply gap or surplus, using the Council's previous method. Also it will not be practicable to produce a time series of underlying demand from 2001 to 2011 that is consistent with the revised ERP, and the ABS is not expected to produce revised household estimates.

The Council has devised the new approach for presenting the impact of these changes on estimates of the existence and size of any housing gap outlined in this chapter as a response to these data constraints.

Conclusions

Changes to population estimates, and a range of challenges associated with sourcing comparable data to assess the balance between housing supply and underlying demand, have led the Council to develop a more transparent measure of the difference between underlying demand and the supply of housing. Past estimates have been dynamic (incorporating a level of change in the formation of new households that might be responding to supply constraints) and have required assumptions on what share of newly built homes leads to additional occupied stock. The current (static) estimates are based on housing consumption at a point in time and eliminate the need to make assumptions on the supply side. There are a number of benefits from the change:

- The new measure means the Council's estimates of a potential housing shortfall are no longer exposed to revisions to the historic population or earlier and out-dated household projections.
- While conceptually consistent with previous estimates, the new measure is more straight forward, with a fixed 'anchor point' of comparison. The housing gap in 2011 produced in this chapter for the 2001 Census housing consumption patterns indicates that there would be 284,000 additional occupied dwellings in 2011 in Australia if the population (as measured by age, and gender) lived as it did in 2001.

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- As the new measure does not allow for underlying demand to adapt and be influenced by more recent events between censuses it is not as useful for predicting potential future demand as the household projections previously used. However it avoids the inconsistent 'sliding base' of changing living arrangements for different periods. The previous method for estimating underlying demand was based on household forming from one set of probabilities from 2001 to 2006 and another from 2008 onward, with probabilities interpolated for the intervening period. In effect, underlying demand as measured for the housing shortfall estimate is now defined against a set of historic circumstances, rather than evolving over time as circumstances change.
- It eliminates uncertainty around supply side estimates. The Council has long noted the challenges in estimating net housing supply growth, particularly adjustments for demolitions and vacancies. The new method eliminates this problem at each census point as it looks solely at how households occupy the stock. Specifically, it focuses on occupied dwellings and is based on the assumption that the number of occupied dwellings and the number of households are equal.
- Under the new measure, unless new housing is occupied it does not add to supply. Occupied housing is presumably in a location where there is demand (with access to employment opportunities and services) and is therefore available and affordable to at least some households. This is an important point to bear in mind when looking at aggregate dwelling stock data. Although the absolute number of dwellings is greater than the number of households some households are still affected by a shortage of affordable, available housing. Adding more dwellings that are unaffordable and/or inaccessible to those households will have little direct impact on easing any housing shortfall. (See Table 3.7 for more detail.)
- Previously the Council has assessed the balance between housing supply and demand based on relatively old data from 2001 or 2006. The 2011 Census has provided an opportunity to reassess and has led the Council to the conclusion that many of the assumptions employed to generate previous estimates of the housing shortfall have been superseded by subsequent changes in housing consumption patterns.
- The new measure allows for more detailed analysis of where the changes in housing consumption patterns have occurred, both by age and by geography.

Table 3.7 Change in housing measures between 2006 and 2011

	Underlying demand (2001 base)	Underlying demand (2006 base)	NHSC estimated households	Gross completions	Net completions	Unoccupied dwellings	
							%
2006	7,555,000	7,367,000	7,367,000	na	na	830,376	10.4
2011	8,347,000	8,140,000	8,063,000	na	na	934,470	10.7
change	792,000	773,000	696,000	746,000	679,000	104,094	0.3
% change	10.5	10.5	9.4	na	na	12.5	na

Source: NHSC calculations based on ABS Censuses of Population and Housing 1991, 2001, 2006 and 2011 and ABS *Australian Demographic Statistics, September Quarter 2012* cat no. 3101.0. ABS 2013, *Building Activity, Australia*, cat no 8752. ABS Census *Quickstats*, Australia.

Note: Completions (net and gross) are the sum of September quarter 2006 to June quarter 2011 inclusive. Net completions are adjusted for demolitions (8.4 per cent) and vacancies (5.9 per cent) based on previous Council estimates.

The key point from the analysis is that housing circumstances changed significantly between 2001 and 2011, and were also different from those seen in 1991. 2001 looks to have been the peak for how households occupied the dwelling stock, as defined by how many households there were relative to the age-adjusted population. This measure also ‘deteriorated’ from 1991 to 2011, though not to the same extent as from 2001 to 2011.

This raises a question about the impact of choosing 2001 as a point of equilibrium. Previous work by the Council has suggested that varying this starting point a few years either side of 2001 for each jurisdiction did not have a great impact on the aggregate housing shortfall. However, that analysis was based on annual changes in underlying demand evolving in line with long-term trends — effectively the annual changes (such as the household formation propensities) in underlying demand were constant while a different starting year was picked. With the new measure, choosing a new starting point (for example 1991) means identifying a different comparison base year.

As with any benchmark, if comparison is made with a high point, subsequent situations are more likely to appear worse. However, there are some factors such as rising incomes and overall standards of living that might be expected to keep the rate of formation of separate households at high levels compared to the past, or even result in a trend increase in the formation rate. Alternatively, it may be that, as finite resources start to constrain housing production in the most desirable areas (as appears the case in parts of capital cities) then the fall off will be sustained.

In short, Australians’ rate of housing consumption has declined since 2001, as evidenced by the turn-around in household size. This means larger households despite a decline in the number of families with children and the average number of children per family, as well as fewer dwellings and households per head of

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population. There are several possible and potentially overlapping explanations for this.

One explanation lies in the fact that the supply and price of housing constrain demand. Increases in demand take time to be perceived, evaluated as viable business opportunities, and met by the development and construction industries. Their response to changes in demand may be assisted or limited by access to investment finance, by planning and development approval arrangements as well as by the type, extent and method of financing additional infrastructure. New households cannot form unless they can obtain a dwelling. Accordingly, household formation rates will almost certainly decline while average household size increases in periods of higher than expected population growth.

Higher housing costs relative to income and falling home ownership rates both point to a lack of available and affordable housing as a contributing factor to the decline. Some of the difference may be explained by other factors, by no means all negative. However, it appears that the supply of accessible new dwellings in areas where people want to live that are connected to places of work has not kept up with the previous levels.

Migration can also affect the nature of housing consumption though changes in settlement patterns and financial capacity arising from shifts in the balance between restricted and permanent categories, and in migrants' education, skills and financial position.

The analysis by age profile highlights where the change has been most acute. There has been a disproportionate decline in the share of household reference persons aged between 15-24 years, which may reflect a larger of share of young adults remaining in education and living in the parental home for longer. The phenomenon of younger adults being less likely than in the past to form independent households requiring separate accommodation probably derives from a mix of generational change in lifestyle preferences and financial constraint. Some of the change among older Australians reflects longer life expectancy for both members of a couple and fewer older people being widowed, meaning that average household size increases (and the share recorded as household reference persons declines).

The aggregate analysis shows where housing circumstances have changed and, to a limited extent, whom they have affected. What it cannot distinguish at this stage is how much of the change has been driven by financial constraints, specifically higher housing costs to which a lack of available dwellings may have contributed, and how much is due to a change in preferences and broader social and economic trends.

For the National Housing Supply Council, and for producers, consumers and governments, the most important question arising from changes in housing consumption patterns is the extent to which they result from free choice and an efficient housing market supplemented by effective housing assistance programs, or

from remediable deficiencies in policies and processes that diminish the supply and increase the price of the housing that Australians want and need.

Future work

While it is not practicable to analyse the years between censuses, the Council is exploring options for producing reliable annual updates. Annual updates will still involve using building completion data to estimate net dwelling additions and comparing this with estimates of underlying demand. Some of the analysis around underlying demand and the estimates of net housing supply can be updated with census information.

The 2011 Census has provided the Council with an opportunity to reassess its estimates of net housing supply growth. This reassessment will include recalibrating demolitions and vacancy rates with more recent, and hopefully more reliable, data. Data on total dwelling counts are yet to be released by the ABS from its follow-up work around the Census, but will form a crucial building block for the estimates.

These possible approaches will not produce a housing gap estimate that can simply be added to the estimates in this chapter. Each census marks a new starting point for assessing the balance as it shows how the housing stock and the population are reconciled at that point in time.

In this report, the balance between underlying demand and supply is assessed by applying a static standard (housing consumption rates at a previous point in time) and comparing this with what actually eventuated at a later point.

The Council is developing projections of the number and type of future households that will provide a measure of underlying demand to inform assessment of future dwelling production requirements. These projections of the number of households, from 2011, are based on changes to living arrangements seen between 2006 and 2011. They are not constrained to the occupied stock and thus cannot be added to the existing census-based stock figure.

Another stream of future work may be more detailed examination of local markets, incorporating how housing circumstances have changed and comparing this to changes in housing costs and vacancies. This could include examining the drivers of change in tenure and the obstacles to affordable home ownership and affordable rental.

Finally, the Council may look to extend the analysis of underlying demand beyond the simple patterns of housing consumption examined here. This may include investigating the impact of other explanatory factors in housing consumption patterns

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such as how long a person has lived in Australia,³⁰ the balance between living in a capital city against living elsewhere in a state, access to services and infrastructure, and specific economic drivers such as the changing fortunes and impact of the resources sector on the level and geographic distribution of housing demand and supply.

30 See NHSC (2013) *Housing Supply and Affordability Issues 2012-13*, p. 68 -73 for discussion of impacts on housing consumption of length of time living in Australia.