The Dynamics of Housing Affordability for Young Households in Melbourne Australia, 2006-2016

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Abstract

This paper investigates the dynamics of housing affordability for young households in Melbourne from 2006 to 2016 and also reveals the effect of the grant on housing affordability among suburbs. Firstly, this paper utilises the ratio measure to provide a general guide to housing affordability. Then the entry measure method is used to compare an estimated affordable price with the median market property price to determine whether the suburb is affordable for young households. Furthermore, the first homeowner grant (FHOG) is incorporated into the affordable property price to evaluate the effect of FHOGs on the affordability of suburbs in the Melbourne metropolitan area. Result are shown in term of changes in the number of suburbs that are considered affordable over time with and without first home buyer support scheme. The results show property becoming less affordable for young households in 2016 compared to 2006, however, the situation was worse during 2010 and 2011. Lower interest rates have significantly improved housing affordability while the FHOGs only had small effects.

Housing Market; Urban and Regional Policy

The Dynamics of Housing Affordability for Young Households in Melbourne Australia, 2006-2016

This paper investigates the dynamics of housing affordability for young households in Melbourne from 2006 to 2016 and also reveals the effect of a government-provided subsidy on housing affordability among suburbs. Firstly, this paper utilises the ratio measure to provide a general guide to housing affordability. Then the entry measure method is used to compare an estimated affordable price with the median market property price to determine whether the suburb is affordable for young households. In the final step, the first homeowner grant (FHOG) is incorporated into the median property price to evaluate the effect of FHOGs on the affordability of suburbs in the Melbourne metropolitan area. Result are shown in term of changes in the number of suburbs that are considered affordable over time with and without first home buyer support scheme. The results show property becoming less affordable for young households in 2016 compared to 2006, however, the situation was worse in 2010 and 2011. Lower interest rates have significantly improved housing affordability while the FHOGs only had small effects.

Introduction

Housing affordability is now considered a serious issue in Australia and is receiving increasing political and academic attention. It is widely accepted that residential properties are relatively unaffordable across Australia and especially in Sydney and Melbourne, though measurements of affordability vary. Historically, housing affordability is usually directly linked to the relationship between median income and median price, with the price to income ratio being the generally accepted measure.

Ownership rates in Australia used to hover around the 70% mark then declined to a record low of 67% in 2011. The slump has been especially acute among young buyers where the rate is even lower for the 25 to 35-year-old age group (Wilkins, 2014). Less than half of young households in Victoria own a property and are experiencing the financial benefits of ownership much later than their predecessors. This paper targets affordability among young households in Melbourne as they are often more vulnerable

than other demographic groups during affordability crises due to limited savings and strict borrowing constraints.

As young buyers are often the traditional first-time buyer cohort, the housing policies researched here are the First Home Buyer (FHB) Support Schemes, specifically the First Home Owner Grant (FHOG). The FHOG was introduced in July 2000 as a cash grant to offset the cost of the GST on houses, with the amount of the subsidy changing a number of time since then. The efficiency and effectiveness of the FHOG have been heavily debated and many unintended consequences noted including, increasing property prices (Guest, 2005) and benefits extending to wealthy families instead of low to medium income earners (Berry, 2013). In addition to the FHOGs the Victorian government has other policies to assist first home buyers including the first home buyer stamp duty exemption and additional grants for regional property (Blight et al, 2012).

This paper aims to provide an analysis of housing affordability for young households in Melbourne and examine the effects of First Home Owner Grant (FHOG). The following two key research questions are addressed:

1. What is the change in housing affordability for young households in Melbourne over time?

2. To what extent did the first home owner grant improve affordability for young households in Melbourne?

This paper begins with a literature review focussed on what housing affordability means and common practises used to measure housing affordability. This is followed by a review of First Home Buyer (FHB) Support Schemes including details on the FHOG policy. Methods used in this paper are the ratio measure and entry measure which will

be explained in more detail in the methodology section. Results will be presented and the limitations of this paper discussed in the final section.

Defining Housing Affordability

As the name suggest, housing affordability is a problem that began to attract attention in the 1980s as low-income and middle-class households were experiencing financial barriers to homeownership. Affordability is generally considered an issue if households cannot get adequate and appropriate housing within a certain percentage of the household income (Hulchanski, 1995). Thus, the housing affordability issue usually focusses on the relationship between housing expenditures and household income (Linneman et al, 1992; Whitehead, 1991; Gabriel et al, 2005). Housing expenditures include but are not limited to purchase price, equity requirements, mortgage payments and rents.

Housing affordability includes a range of housing problems with the most observable ones including the inability to cover the continuing costs of a mortgage or rent after meeting other household expenditures. Prices that are too high, high low-to-value ratios and strict down payment and other lending requirements all feed into these issues. Households also face the trade-off between housing cost and other factors like the location of employment, transport, and health care when they balance housing cost and income, given their particular circumstances (Gabriel et al, 2005).

Housing affordability is often described as "housing stress" and can be manifest in a number of ways.   It can be short-term or a one-off issue of being unable to pay a housing deposit or rental bond or it can be an ongoing problem where income is insufficient to meet housing costs (after other expenditures). Redundancy or unpredicted increases in rent can contribute to the problem. It can also refer to issues

like over-crowding or insecurity of tenure (Gabriel et al 2005). "Affordability is often taken as a proxy measure for all forms of housing stress" (Urban Research Centre, 2004).

In Australia, "home ownership affordability" and "rental affordability" are generally considered as separate issues (Linneman et al, 1992). For home buyers, affordability is referring to the accessibility of home ownership, particularly related to the ability of younger households to access the home ownership for the first time (Richards, 2008). It is further broken down into purchase affordability (securing funds to purchase a property) and repayment affordability (the ability of households to maintain mortgage payments) (Gan & Hill, 2008). This paper focuses on home ownership affordability, especially purchase affordability.

Affordability Measures

Maclennan and Williams' (1990) definition of affordability states that:

> 'Affordability' is concerned with securing some given standard of housing (or different standards) at a price or rent which does not impose, in the eyes of some third party (usually government), an unreasonable burden on household incomes.'

This statement defines affordability with "some given standard", begging the question, what is the standard? Because housing affordability is as much of a conceptual problem as it is a practical problem, many studies in Australia as well as internationally provide a fair bit of ambiguity about the concept with no widely agreed upon standard. This is generally because property is a local issue and different markets lead to different assumptions and descriptions for housing affordability (Gabriel et al, 2005).

Furthermore, definitions within the same geographic area vary when standards for housing affordability are defined by different researchers or the local government. In academic studies, variables like the simple concept of housing cost can be different, as some include utility costs and others do not. This section will discuss the main methods used in the field, highlighting the advantages and limitations of each.

Ratio Measures - the 30/40 rule

Ratio measures remain the most widely used criteria for determining housing affordability in Australia, by assessing the percentage of income spent on housing. Historically, housing expenditures exceeding 30 per cent of the gross income of a household indicate an affordability problem. Because housing expenditures tend to rise with home prices, a simple 'housing cost to income' ratio calculated directly from median house prices and median household incomes is typically used. The ratio is then compared at different points in time to determine the change in housing affordability. Both the Real Estate Institute of Victoria (REIA) index and HIA index are based on this approach. There are only two variables, income and housing costs, though different approaches may use gross income or disposable income and there is some variety across studies as to what is to be included in housing costs. Data availability often limits the scope of what is or is not included in the measure. Furthermore, the ratio is sometimes refined so that variables other than median income and median property price are used in calculations.

The ratio measure is very easy to calculate and the data relatively easy to acquire, but it is not without controversey. Firstly, it is a single measure for all tenures, locations and household types (Hancock, 1993) and does not consider the quality of housing stock and over-crowding factor (Linneman et al, 1992; Burke et al, 2004). The method

assumes all families and individuals have the same ability to pay and does not consider capacity to meet other non-housing living costs (Gabriel et al 2005). Further, the 30/40 rule has no clear rationale behind it. Additional research has introduced some complementary indicators that try to capture the variations in household types, needs and capacities to pay mortgages or rents.

Residual income approach

Unlike the ratio measure, the residual measure is concerned with the capacity to maintain an acceptable standard of living. It focusses on housing costs and living standards, and whether the disposable income remaining after housing costs covers essential household expenditures under current income (Milligan, 2003). The idea behind the residual income method is that households should be able to afford both housing and non-housing expenses (Karmel, 1998a & b). If a household can't afford its non-housing expenses after the housing cost is paid, then it is considered unaffordable.

This measure requires that a minimum acceptable level of income be set to support an adequate standard of living and can be determined either normatively or relatively (Burke and Ralston, 2003). It is up to the researcher to judge what to include for non-housing needs. The two common used measures of living standards for non-housing cost component are:

• The Henderson poverty line, established by the Commission of Inquiry into Poverty (chaired by Ronald Henderson) in 1974;

• The budget standard developed by the University of New South Wales Social Policy Research Centre in 1998 (Gabriel et al, 2005).

The main advantage of the residual measure is that it is more accurate for different

household types than the ratio measure since it considers the differences in non-housing needs for different household types. It is more suitable for small area analysis and is helpful for examining housing affordability for low income households (Saunders, 2004). At the same time, it relies on judgement regarding non-housing costs, which requires more onerous data collection that can be complex and time consuming (Gabriel et al, 2005). Like the ratio measure, this method can be used for both home ownership affordability and rental affordability.

Entry measures - accessibility/deposit gap

Both the ratio measure and residual measure for affordability focus more on the ongoing costs of housing and less on the "entry requirement". There is limited work in this area yet the main idea is to measure the cost barriers or supply conditions that inhibit entry into the housing market. This can be measured using size of the deposit gap and the threshold income requirement, typical dwelling prices or rents relative to income, and the amount of housing stock available to lower income households.

One way to use this method is to determine the maximum house price affordable under certain assumptions and compare it with property price or cost of new construction. Alternatively, the deposit gap can be determined using house price and the amount of loan a household can borrow. Affordability can be measured by the difference between maximum affordable price and market price or the size of deposit gap. This method is useful for monitoring market change over time and to provide guidelines for affordability. It enables the identification of the scale for different income ranges and is more complex than the ratio measure as it requires additional data (Gabriel et al, 2005).

This research considered all three methods, but focus is limited to the ratio measure and entry measure.   This will be discussed in more detail in the methodology section.

First Home Buyer Support Schemes

The First Home Owner Grant is arguably the most well-known first home buyer policy and has received more attention and criticism than any other policy. When it was first implemented in the early oughts, it applied to both new and existing property. An additional $7,000 grant was introduced for new homes only between March and December 2001. The additional grant then reduced to $3,000 in December 2001, then from June 2002 the FHOG reversed back to $7,000 for both new and existing property (Dungey et al, 2011). During the Global Financial Crisis (GFC), the FHOG boost was introduced and the grant increased to $14,000 for an existing home and $21,000 for a new home (Blight et al, 2012). The boost was reduced in 2009 and ended in 2010. The Victorian government also supplemented state grants on top of the national one. The amount of FHOGs provided to Victoria households are summarised in Figure 1 below.

Figure 1: First home buyer support in Victoria
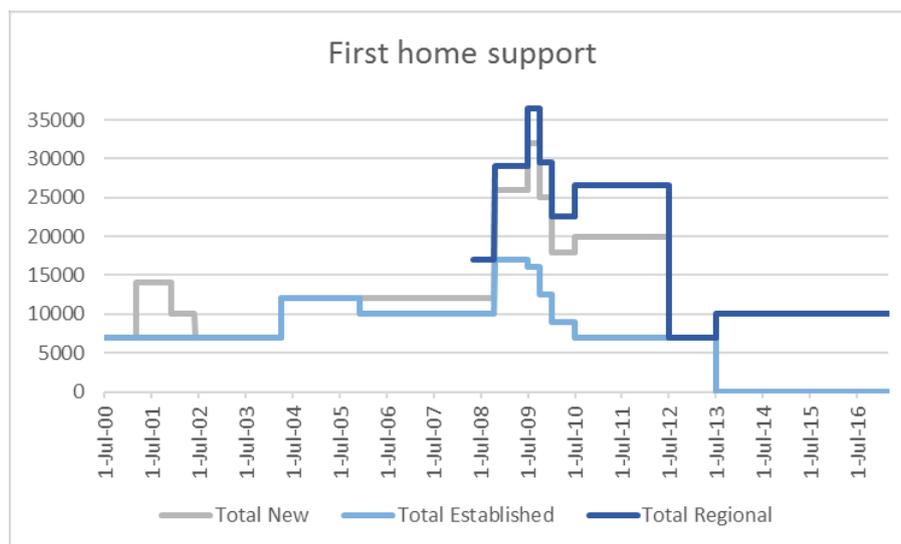
The effects of FHOGs have been hotly debated. For example, Blight et al (2012) suggests the FHOG increased house prices by approximately $57,321 or 18.8%, finding

a positive correlation between the FHOG and the growth in finance for first home buyers in both number and amount. The authors posit that the grant increased demand, and since the supply of housing is inelastic, property prices increased. FHOG are also considered inequitable (Wood et al, 2003) as there is no income or wealth test. Anon (2003) and Berry (2013) assert that the FHOG has been exploited as about $2 billion in benefits have gone to higher-income households.

The effect of the $7,000 FHOG only increased the number of households from rent to own by 1.3%; 2.3% when grant was doubled to $14,000 as estimated in Wood's (2003) microsimulation model. Based on a case study in Sydney, Randolph et al (2013) concluded there was incontrovertible evidence that FHOG does not work nor does it address affordability concerns. There is a gap in the field for a formal investigation on the effect of first home buyer schemes on housing affordability in Victoria, and this research attempts to partially fill this gap.

Methodology

This paper is a case study of Melbourne covering the period from 2006 to 2016. The measures used here are quantitative rather than qualitative; this research focusses on income and price and the effect the first home owner grant has on value. It focusses on home affordability generally and purchase affordability specifically, as these are the primary concerns for first home buyers.

The ratio measure and entry measure are used in this research. The ratio measure is relatively easy to calculate and will be used for general guidance. Gross income is used for households' income; housing costs only include property price and mortgage repayment. The entry measure is a better model for estimating purchase affordability as the deposit gap and maximum affordable property price are used.

A summary of the assumptions of this model are:

- Young households are defined as people aged between 25 and 34

- Households income = gross income

- Average young households' income = 1.5 times of mean young individual's income

- Housing cost only includes property price and mortgage repayment

- Mortgage repayment = 30% of households' annual income

- Mortgage term = 30 years

- Minimum deposit required = 10% of property price

- Economic indicators, like the interest rate, remain at current levels

- Young households have savings equal to 1 year of income

- Interest rate used is home loan variable rate

Null hypothesis: There is no significant difference in housing affordability for young home buyers in Melbourne with the FHOG than without the FHOG.

Ratio measure

The ratio measure is used as a general guide for housing affordability for young households. Two ratios are calculated, the price to income ratio and the mortgage repayment to income ratio. Income data for young individuals and property price data are collected and price to income ratio calculated using median property price divided by mean income.

Average mortgage repayment is calculated using average mortgage size for first home buyers (assuming most first home buyers are young households) and average interest rates during that year. The payment is divided by mean income to get the mortgage repayment to income ratio with results showing the change in housing affordability over

time.

Maximum affordable price (MAP)

The entry measure focusses on entry barriers into the property market.   In this research, a maximum affordable price (MAP) is determined under the assumption stated earlier. The MAP is calculated using average young households' income, assuming savings equal to 1 year of income with the remainder financed. Annual income determines the maximum loan that can be borrowed.   The maximum loan is calculated using interest rate data with the monthly payment equal to 30% of monthly income data. The mortgage term is 30 years or 360 loan repayments.

$$MAP = Savings + Maximum\ Loan$$

The maximum affordable price (MAP) is compared with the median market price (MMP) in each suburb with the market price separated between houses and units. If the MAP exceeds the MMP, then that suburb is affordable for young households, but if the MMP exceeds the MAP, then the suburb is considered unaffordable for first home buyers.

Maximum affordable price with FHOG (MAPF)

The MAP is added to the FHOG to create a new maximum affordable price (MAPF) where

$$MAPF = Savings + Maximum\ Loan + FHOG$$

In this case both the savings and maximum loan have not changed with the FHOG, as FHOG is a once off payment and is likely to have no or very little impact on an individual's borrowing capacity. The MAPF will be compared to the median market

price (MMP) in each suburb. The addition of the FHOG to the MAP (MAPF) is

expected to increase the number of suburbs considered affordable for first home buyers.

Analysis and results

The data are summarised in Table 1.

Table 1: Data descriptions

Data Type	Description
Policy Data	National policy as well as Victoria policy on first home buyers
FHOG Data	Detailed data about FHOG from 2000
Income Data	Average individual income of people aged between 25 to 34 at local government area level, up to 2010-11, annual data, source: ABS
Wage Index	Wage price index on total hourly rate of pay up to 2017, annual data, source: ABS
Property Price -House	Median house price for each Melbourne suburbs up to 2016, annual data, source: vic.gov
Property Price - unit	Median unit price for each Melbourne suburbs up to 2016, annual data, source: vic.gov
Loan Data	Number of first home buyer loans and the average size monthly data, source: ABS
Interest rate	Home loan variable rate collected from 2006 to 2016, monthly data, source: Loansense.com

This research covers 27 local government areas (LGA) as shown in Table 2 and 295

suburbs under these LGAs, which covers the entire greater Melbourne area (not shown

for the sake of brevity).

Table 2: Study area

Local Government Area	
City of Banyule	City of Melbourne
City of Bayside	City of Melton
City of Boroondara	City of Monash
City of Brimbank	City of Moonee Valley
City of Casey	City of Moreland
City of Darebin	City of Port Phillip
City of Glen Eira	City of Stonnington
City of Hobsons Bay	City of Whitehorse
City of Hume	City of Wyndham
City of Kingston	City of Yarra
City of Knox	Shire of Cardinia
City of Manningham	Shire of Mornington Peninsula
City of Maribyrong	Shire of Yarra Ranges
City of Maroondah	

Income data has been analysed and the *average* (mean) individual income for those between 25 and 34 chosen to represent the income level of the young individual in Melbourne (Appendix 1). However, because the data are only available up to 2010-11 and only at the LGA level, the wage price index (Table 3) is used to estimate the income for young individual from 2011 to 2016.

Table 3: Wage Price Index

	Jun -2010	Jun -2011	Jun -2012	Jun -2013	Jun -2014	Jun -2015	Jun -2016	Jun -2017
Wage price index	102.8	106.7	110.4	114	117.1	120.3	123.1	125.6

The model further assumes there are 1.5 earners for average households, therefore young household income equals 1.5 multiplied by the mean individual's annual income.

Property price data were found on the Victorian government's Property and Land Titles

website, which includes the median property price for house or unit by suburb from 2006 – 2016. It is calculated using information lodged with the government every time a property sale is completed. These data are processed to match the local government areas where the suburbs are located. MAP and MAPF were calculated using processed data according to the method discussed above. MAP and MAPF for each of the LGAs can be find in Appendices 2 and 3.

Price to income ratio

The ratio measures provide a general guide of housing affordability for young households in Melbourne. Details of the ratio measure calculations can be found in Appendix 4.

As seen in Figure 2, the price to income ratio suggests houses are very unaffordable for young individuals. For example, in 2010-2011, houses are about 9 times the annual income of young individuals. In 2016-17 that same house is estimated to be 11 times greater than the annual income of young individuals. Although units are more affordable, the data suggests they are also becoming out of reach. The ratio increases significantly after the Global Financial Crisis as property prices grow quickly but incomes grow at a much slower rate. In 2009-10 the interest rate was relatively low (Figure 3), and when combined with the effect of housing policy designed to boost demand, both contributed to a property price boom. The FHOG boost and low interest rates were no longer available after 2012 as the property market cooled down and the price to income ratio decreased slightly. As interest rates reached record lows over the more recent term, increasing property prices, especially for houses, resulted in an increasing trend for the house price to income ratio. Since 2013 unit prices have increased at a similar rate to young individual's income, but the price is still almost 9

times income. This ratio suggests it is almost impossible for households with only one income earner to afford a property, but if there at least 1.5 earners, then property becomes reasonably more affordable.

Figure 2: Price to income ratio
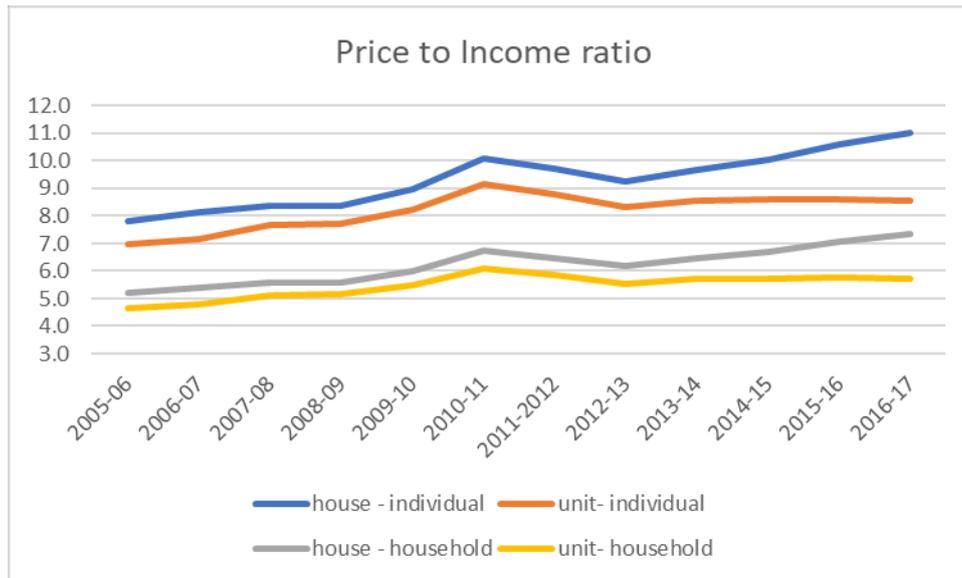
Loan repayment to income

The loan repayment was calculated using the processed loan data as the present value (loan amount) matched with the interest rate data from that year and a loan term of 30 years or 360 repayments. The annual average (mean) was used to represent the average monthly mortgage cost for first home buyers, the majority assumed to be young households. The mortgage cost is compared to the average annual income. As shown in Figure 3, 30% of an individuals' income is not enough to cover mortgage costs. For households with 1.5 earners, about half meet the 30% threshold. From 2008 to 2012, mortgage repayment was a problem, but the situation improved in 2009-2010. As expected, low interest rates improved this ratio as the lower the interest rate, the lower the loan repayment. Because of this, housing appears to have become more affordable

since 2013 due to the decline in rates, though both ratios suggest property is not very affordable for young households overall. Note that it is possible the average loan size is underestimated, thus ratio measures are likely to be biased and can only be serve as a guideline.

Figure 3: Average loan repayment as a percent of income for young buyers
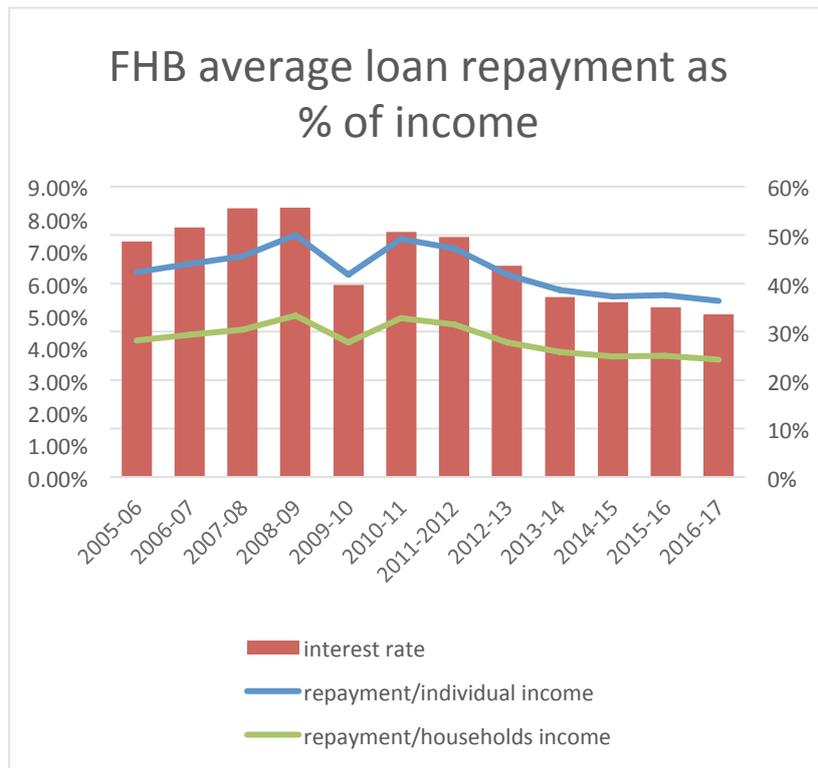
Suburb affordability

A comparison of MAP/MAPF with MMP for houses and units for 295 suburbs is shown in Figure 4. Comparing the 2006 data with 2016, it is clear there are fewer suburbs that are affordable for young households (about 10% less or 29 suburbs) for both units and houses (grey and blue lines, respectively). It also shows the housing affordability crisis from 2010 – 2011, when young households could only access about 10% of the Melbourne house market and 20% of the unit market. It recovered gradually after July

2012 as interest rates decreased and young households could borrow more based on their income.

Figure 4: Suburb affordability for first home buyers as a percent of total suburbs
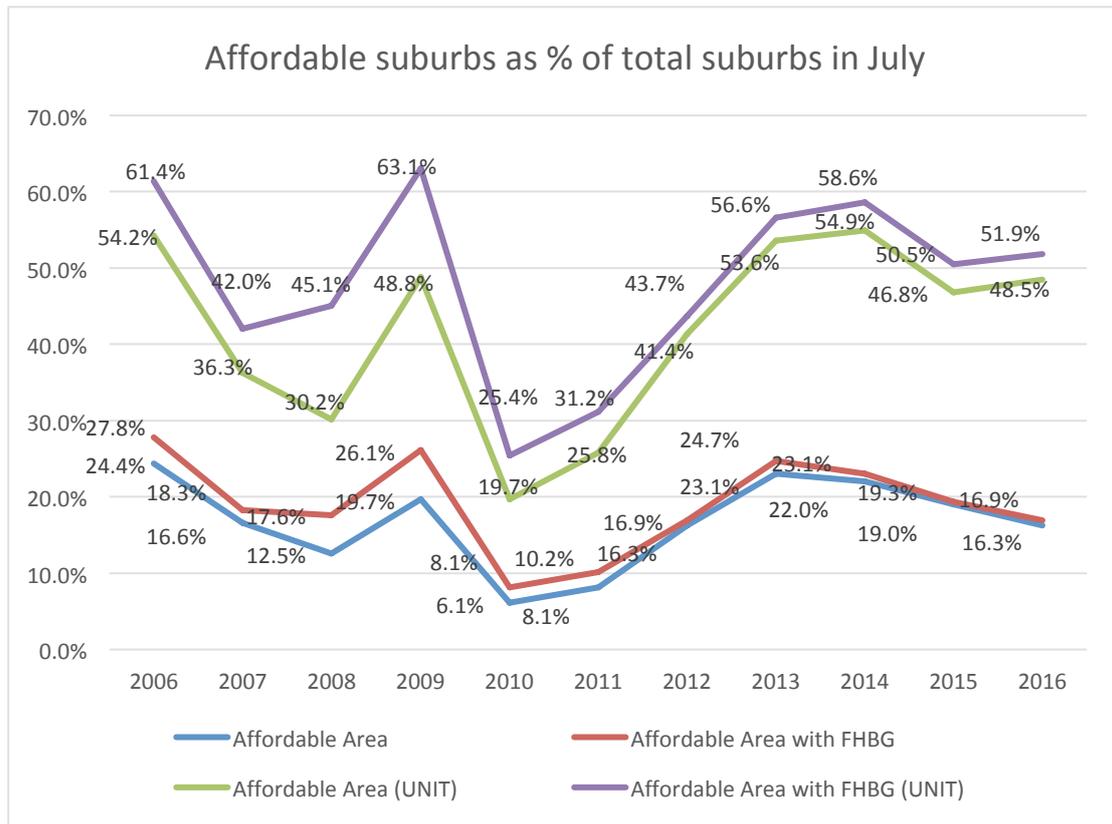
The interest rate continues to decrease from 2014 to 2016, though at a slower rate than in earlier years. This effect of improving borrowing capacity has been offset by the increase in the property prices, especially in the house market where only about 16% of suburbs were affordable for young households in 2016.

The impact of the FHOG is the difference between the two lines (grey and yellow for units and blue and orange for houses).   The greatest effect is in 2008-09 when the FHOG boost ($14,000 for existing or $21,000 for new homes) was available. As a temporary measure the boost was effective in the short term but did not improve long-

term affordability. It is likely that the boost stimulated demand, contributing to the long-term increase in property prices. Without the boost, housing affordability was reduced and the effect of the remaining grant became negligible in the house market although it still improves affordability in the unit market. Further, it is likely that interest rate changes are a more significant factor in affordability than the FHOG.

Conclusions & Limitations

This research is a starting point to discover the dynamics of housing affordability for young households. The results are subject to many assumptions, and further research is recommended. Limitations include:

- The use of the median market price. Younger households are unlikely to purchase the median property in a suburb, thus the use of a lower quantile market price will produce different results. In that case the number of affordable suburbs will likely be larger than what this model suggests.

- The income that is used is the average (mean) income for people aged 25 to 34 and may not represent the true income level for young households.

- The model assumes young households will have one year's income as saving. This may be too optimistic.

- It also assumes that FHOG cannot increase the maximum loan young households can borrow. This assumption may not be true.

It is clear that young households having only one earner with average income will find home buying in Melbourne problematic, but when households have 1.5 earners, then the market becomes more affordable. Since unit prices do not grow as quickly as house

prices, the unit market is much friendlier to young households with average incomes.

Interest rates have a significant impact on housing affordability because low interest rates decrease monthly payments (positive effect on affordability, all else held constant). However, if interest rates remain low for a long enough period, the reduced payments may be offset by increased borrowing capacity resulting in larger loans (negative effect on affordability). Furthermore, when borrowing capacity is increased, either through FHOG or lower interest rates or both, the corresponding increase in demand will exacerbate growth in property prices, offsetting the reduced borrowing constraint (negative effect).

This leads us to conclude that, based on the results of this study, that the FHOG is not an appropriate method to improve housing affordability over the long term. However, it may allow more households to afford a property in short term, provided the amount of the grant is high enough. It is important to note that because the FHOG has no income or wealth test, it can be exploited by wealthier households. Further, the FHOG may also increase property prices as the contribution of additional capital to the market stimulates demand.

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Appendix

Appendix 1: Average income for individual aged between 25-34

	AverageIncome									
	$ 2005-06	$ 2006-07	$ 2007-08	$ 2008-09	$ 2009-10	$ 2010-11	$ 2011-2012	$ 2012-13	$ 2013-14	$ 2014-15
Victoria	40900	42520	44417	46006	46649	48977	50675	52328	53751	55220
Banyule	43703	45601	47743	49554	50211	52266	54078	55842	57360	58928
Bayside	50262	52142	54154	54882	56612	58692	60727	62707	64413	66173
Boroondara	47457	49147	50245	51541	51783	54665	56561	58405	59993	61633
Brimbank	39122	40307	42160	43252	43657	45682	47266	48807	50135	51505
Casey	38980	40428	42242	43945	44747	47198	48835	50427	51798	53214
Darebin	39837	41549	42945	44368	44705	46601	48217	49789	51143	52541
Glen Eira	44283	45957	47317	48382	48673	50567	52320	54027	55496	57012
Hobsons Bay	43944	45794	47749	49376	49099	51221	52997	54725	56213	57750
Hume	39115	40407	42332	44262	45030	46977	48606	50191	51556	52965
Kingston	42369	44143	46327	47761	48495	50937	52703	54422	55902	57429
Knox	40958	42765	45086	46971	47798	50530	52282	53987	55455	56971
Manningham	44979	47089	49442	50995	51402	53484	55339	57143	58697	60301
Maribyrnong	41337	42779	44105	46188	46575	48957	50655	52306	53729	55197
Maroondah	41170	42644	44955	46630	47789	50087	51824	53514	54969	56471
Melbourne	43576	44735	46435	47852	49077	50860	52624	54340	55817	57343
Melton	40087	41910	44006	45689	46335	48601	50286	51926	53338	54796
Monash	40984	42510	43712	45427	45495	47288	48928	50523	51897	53315
Moonee Valley	45233	47032	49463	50896	51498	53997	55869	57691	59260	60879
Moreland	40551	41955	43794	45534	45882	48053	49719	51341	52737	54178
Port Phillip	50181	52119	54310	55268	55206	58446	60473	62445	64143	65896
Stonnington	48910	51021	52787	53661	53589	56849	58820	60738	62390	64095
Whitehorse	43841	45149	47164	47837	48392	49900	51630	53314	54764	56260
Wyndham	42064	43870	46248	47885	47764	50193	51934	53627	55085	56591
Yarra	46141	48325	50314	51832	52653	55561	57488	59362	60977	62643
Cardinia	38505	40163	42172	43627	44940	47753	49409	51020	52407	53840

MAP	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-2012	2012-13	2013-14	2014-15
Victoria	285,069	286,616	286,704	296,466	363,530	333,606	349,353	387,687	432,445	450,7
Banyule	304,605	307,384	308,172	319,329	391,288	356,009	372,813	413,721	461,486	481,0
Bayside	350,321	351,475	349,554	353,663	441,170	399,780	418,650	464,588	518,224	540,1
Boroondara	330,770	331,287	324,322	332,134	403,538	372,350	389,925	432,711	482,668	503,1
Brimbank	272,676	271,699	272,135	278,719	340,213	311,162	325,850	361,604	403,352	420,4
Casey	271,686	272,514	272,664	283,185	348,708	321,488	336,663	373,605	416,737	434,4
Darebin	277,660	280,071	277,202	285,910	348,380	317,422	332,405	368,879	411,466	428,9
Glen Eira	308,648	309,784	305,423	311,777	379,303	344,436	360,694	400,273	446,484	465,4
Hobsons Bay	306,285	308,685	308,211	318,182	382,622	348,891	365,359	405,449	452,259	471,4
Hume	272,627	272,373	273,245	285,227	350,913	319,983	335,087	371,855	414,786	432,3
Kingston	295,307	297,556	299,032	307,775	377,915	346,957	363,334	403,201	449,751	468,8
Knox	285,473	288,267	291,022	302,684	372,484	344,184	360,430	399,980	446,157	465,0
Manningham	313,499	317,414	319,139	328,615	400,569	364,305	381,501	423,363	472,240	492,2
Maribyrnong	288,114	288,362	284,690	297,639	362,953	333,470	349,210	387,528	432,269	450,5
Maroondah	286,951	287,452	290,176	300,487	372,414	341,167	357,271	396,473	442,246	460,9
Melbourne	303,720	301,547	299,729	308,362	382,451	346,432	362,784	402,592	449,071	468,1
Melton	279,402	282,504	284,051	294,423	361,083	331,045	346,671	384,710	429,125	447,3
Monash	285,654	286,549	282,153	292,735	354,537	322,101	337,305	374,317	417,532	435,2
Moonee Valley	315,269	317,030	319,275	327,977	401,317	367,800	385,161	427,423	476,770	496,9
Moreland	282,636	282,807	282,682	293,424	357,553	327,312	342,762	380,373	424,287	442,2
Port Phillip	349,756	351,320	350,561	356,151	430,213	398,104	416,895	462,640	516,052	537,9
Stonnington	340,897	343,919	340,730	345,795	417,612	387,226	405,504	449,999	501,951	523,2
Whitehorse	305,567	304,337	304,435	308,265	377,113	339,893	355,937	394,993	440,595	459,2
Wyndham	293,182	295,716	298,522	308,574	372,219	341,889	358,027	397,312	443,182	461,9
Yarra	321,598	325,746	324,768	334,009	410,318	378,453	396,317	439,804	490,579	511,3
Cardinia	268,376	270,728	272,213	281,135	350,212	325,269	340,622	377,998	421,638	439,5

Appendix 3: MAPF

MAPF	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-2012	2012-13	2013-14	2014-
Victoria	297,069	298,616	296,704	322,466	388,530	353,606	369,353	394,687	442,445	46(
Banyule	316,605	319,384	318,172	345,329	416,288	376,009	392,813	420,721	471,486	49
Bayside	362,321	363,475	359,554	379,663	466,170	419,780	438,650	471,588	528,224	55
Boroondara	342,770	343,287	334,322	358,134	428,538	392,350	409,925	439,711	492,668	51
Brimbank	284,676	283,699	282,135	304,719	365,213	331,162	345,850	368,604	413,352	43
Casey	283,686	284,514	282,664	309,185	373,708	341,488	356,663	380,605	426,737	44
Darebin	289,660	292,071	287,202	311,910	373,380	337,422	352,405	375,879	421,466	43
Glen Eira	320,648	321,784	315,423	337,777	404,303	364,436	380,694	407,273	456,484	47
Hobsons Bay	318,285	320,685	318,211	344,182	407,622	368,891	385,359	412,449	462,259	48
Hume	284,627	284,373	283,245	311,227	375,913	339,983	355,087	378,855	424,786	44
Kingston	307,307	309,556	309,032	333,775	402,915	366,957	383,334	410,201	459,751	47
Knox	297,473	300,267	301,022	328,684	397,484	364,184	380,430	406,980	456,157	47
Manningham	325,499	329,414	329,139	354,615	425,569	384,305	401,501	430,363	482,240	50
Maribyrnong	300,114	300,362	294,690	323,639	387,953	353,470	369,210	394,528	442,269	46
Maroondah	298,951	299,452	300,176	326,487	397,414	361,167	377,271	403,473	452,246	47
Melbourne	315,720	313,547	309,729	334,362	407,451	366,432	382,784	409,592	459,071	47
Melton	291,402	294,504	294,051	320,423	386,083	351,045	366,671	391,710	439,125	45
Monash	297,654	298,549	292,153	318,735	379,537	342,101	357,305	381,317	427,532	44
Moonee Valley	327,269	329,030	329,275	353,977	426,317	387,800	405,161	434,423	486,770	50
Moreland	294,636	294,807	292,682	319,424	382,553	347,312	362,762	387,373	434,287	45
Port Phillip	361,756	363,320	360,561	382,151	455,213	418,104	436,895	469,640	526,052	54
Stonnington	352,897	355,919	350,730	371,795	442,612	407,226	425,504	456,999	511,951	53
Whitehorse	317,567	316,337	314,435	334,265	402,113	359,893	375,937	401,993	450,595	46
Wyndham	305,182	307,716	308,522	334,574	397,219	361,889	378,027	404,312	453,182	47
Yarra	333,598	337,746	334,768	360,009	435,318	398,453	416,317	446,804	500,579	52

Appendix 4: Ratio Measure Results

	Ratio Measure Result							
	Average income for individual aged 25 to 34							
Victoria	40,900	42,520	44,417	46,006	46,649	48,977	50,675	52,328
	Mortgage repayment to Income Ratio							
interest rate	7.30%	7.74%	8.33%	8.35%	5.94%	7.60%	7.44%	6.54%
average mortgage repayment p.a	17331	18736	20278	22990	19502	24075	23899	21857
repayment/ household's income	28%	29%	30%	33%	28%	33%	31%	28%
repayment/ individual's income	42%	44%	46%	50%	42%	49%	47%	42%