

GENERATION STRESSED

House prices and the cost of living in
the 21st Century



Discussion Paper

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About Per Capita

Per Capita is an independent progressive think tank, dedicated to fighting inequality in Australia. We work to build a new vision for Australia based on fairness, shared prosperity, community and social justice.

Our research is rigorous, evidence-based and long-term in its outlook. We consider the national challenges of the next decade rather than the next election cycle. We ask original questions and offer fresh solutions, drawing on new thinking in social science, economics and public policy.

Our audience is the interested public, not just experts and policy makers. We engage all Australians who want to see rigorous thinking and evidence-based analysis applied to the issues facing our country's future.

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Executive Summary

In this discussion paper, we estimate the total cost of a mortgage as a proportion of wages over the 30-year life of a standard home loan. To do this, we compared home prices, mortgage rates, and wage changes to see what proportion of a median income would go to covering the cost of the median mortgage.

The results reveal a significant increase in the lifetime expenditure on the median mortgage over three decades, and a consequent reduction in the spending capacity of average Australian households.

For a Silent Generation family buying in 1970, the average repayment cost over the course of the mortgage was 11.2% of their gross income.

For a Baby Boomer family buying a home in 1985, the average repayment cost over the life of the mortgage came out at 19.5% of gross income.

For a Generation X family though, who bought in 2000 and have approximately nine years left to go on their mortgage, we estimate they will spend 25.5% of their gross income on servicing mortgage debt.

That is a 130% increase in the lifetime cost of owning a home over 30 years.

It may seem counterintuitive that a home is significantly more unaffordable for current mortgagees, given that the Boomer Family had to pay double-digit interest rates in eight of the first 11 years of their mortgage, while the Gen X family have ridden the wave of low interest rates since the Global Financial Crisis (GFC).

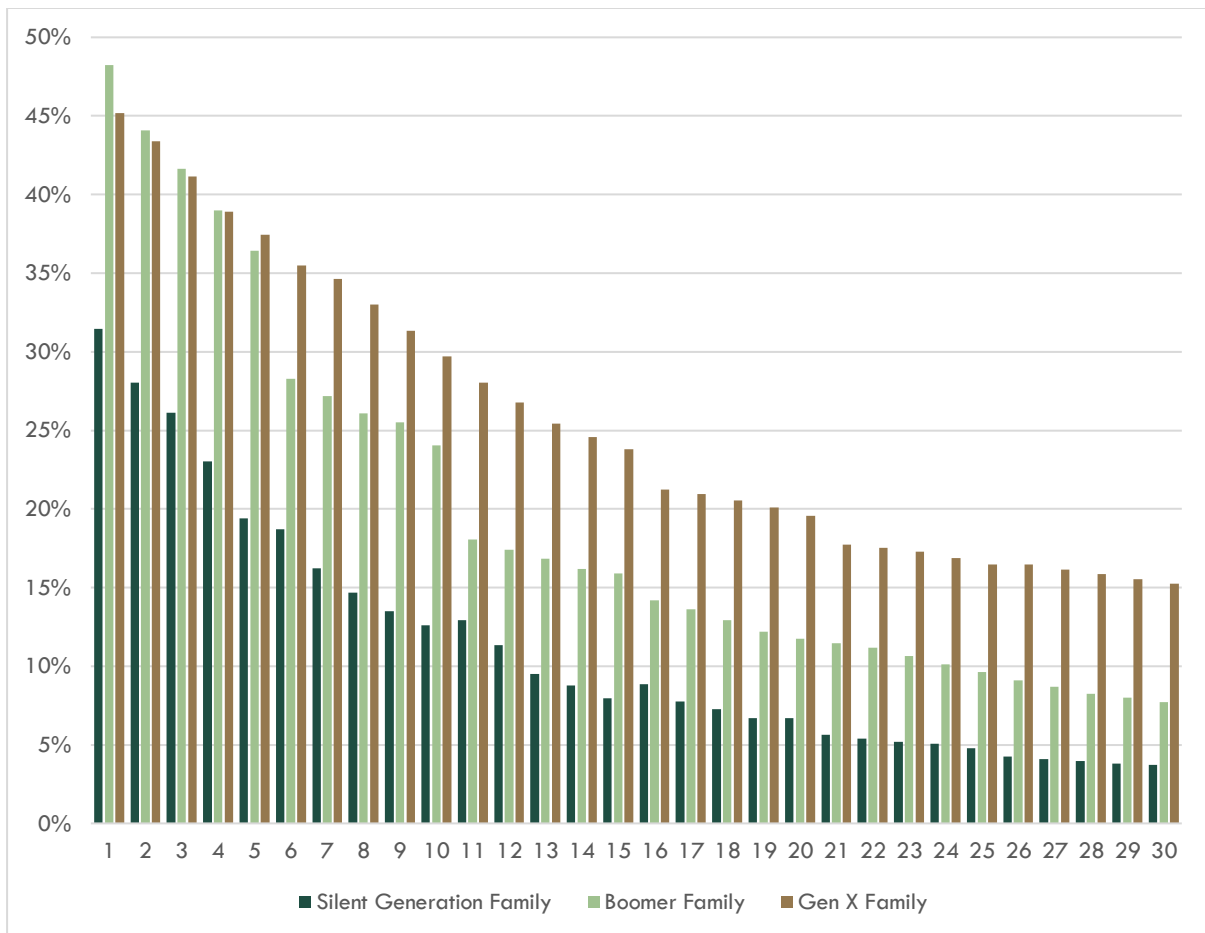
The fact is, though, judging housing affordability solely on the basis of interest paid is a crude measure. Low interest rates may appear to benefit households, but they contribute to spiralling house prices and reflect a failure of monetary policy to balance the economy over successive decades in order to effectively keep critical asset prices in line with wage growth.

Annual inflation rates in the 1970s rose as high as 15.25%, reducing the real value of the mortgage debt of the Silent Generation family rapidly. So, for the Silent Generation and the Boomer Families, the first few years of payments were high, but quickly tapered away.

High inflation led to high nominal and real wage growth for these two generations, and real wage growth was also strong: wages grew 1.69% more than inflation per year for the Silent Generation household and 1.23% for the Boomer household. However, real wage growth has collapsed since 2012, and we estimate that median wages will grow just 0.83% per year for the Generation X household.

For the Generation X family, low wage and inflation growth means that their debt declines much more slowly in real terms than did that of previous generations (see Figure 1).

Figure 1
Mortgage repayment as percentage of gross annual income



The household debt of the Silent Generation family was worth around 3.7 years of median full-time male annual earnings in the first year of the mortgage, but after five years over half of the debt had been inflated away to just 1.8 times annual earnings.

Thirty years later, the initial mortgage debt taken on by the Generation X family equated to 5.6 times annual earnings, and was still at 4.1 times after five years.

We estimate the Gen X family is paying \$1425 per month on their mortgage in 2021. If they were on the same repayment trajectory as the Boomer family their monthly bill would be \$910, while if they were on the Silent Generation trajectory it would be just \$440 a month.

For the individual family, this is a huge loss of income - almost \$1,000 a month - that would be better directed toward education, health or other living expenses. For the nation, it represents a significant constraint on household consumption, which accounts for more than half of Australia’s economic activity.

Ultimately, we argue that the role of inflation and wage growth needs to be front and centre when looking at changes to mortgage affordability between generations, and that our principal measure of inflation, the Consumer Price Index (CPI), fails to adequately account for the increase in the cost of living for mortgagee households. We hope that this paper will contribute to a renewed focus on how low inflation and wage growth are contributing to intergenerational inequality, in this instance through the housing market.

Introduction

Housing policy in Australia has, since the end of the second world war, been geared towards encouraging home ownership for all. Unlike in Europe and the USA, policies that acknowledge that a significant proportion of residents will rent a home throughout their lives, such as rent controls or protection for long term tenure, have been eschewed in favour of facilitating home ownership.

More recently, and particularly since the turn of the 21st century, federal government policy has encouraged investor speculation in the housing market, pushing up prices and shifting the role of housing in Australian society away from one of home or shelter and towards a financialised investment-asset model.

At the same time as fiscal policy incentives for investor speculation in the housing market began to take effect in the first decade of the 21st century, monetary policies underpinning wage and inflation growth began to fail in the wake of the GFC.

As a result, the Great Australian Dream of home ownership is now under significant strain.

Australia's tax and transfer policies, social security system and retirement income settings are all predicated on the assumption that the average family is able to own a home outright well in advance retirement from the workforce. Yet failures of monetary policy, and the deliberate skewing of fiscal policy towards supporting asset prices at the expense of wage growth over the last two decades, are now actively undermining this assumption and putting our nation's ongoing prosperity and living standards at risk.

This discussion paper explores how the affordability of home ownership has changed between generations over the last half century. We show that the common framing of mortgage affordability places far too much emphasis on short term interest rates, and far too little on inflation and wage growth.

Section 1 explores trends in house prices, home ownership rates and affordability through national statistical information and self-reported trends in the Household Expenditure Surveys (HES). Despite the relatively benign increase in housing costs reported in the CPI, the evidence in this section shows a clear trend toward increasing housing unaffordability, debt stress, and a significant divergence between rich and poor households.

Section 2 presents three home purchase case studies. Our first family, the Silent Generation Family, buys in 1970. The second, the Baby Boomer Family, buys in 1985. Our last case study, the Generation X Family, buys in 2000. Through these case studies, we show that despite much higher interest rates of up to 16%, mortgages were far more affordable for the Silent Generation and Baby Boomer Families than they are for Generation X Families.

The cost of servicing a median mortgage on a median wage rose from 11.2% of income for the silent Generation Family, to 19.5% for the Baby Boomer Family, and up to 25.5% of income for the Generation X Family. This means that servicing a mortgage increased by nearly 130% from 1970 to 2000.

The implications of such huge increases in housing costs are far from trivial at either the household or macroeconomic level.

With mortgage repayment costs effectively increasing by 130% between 1970 and 2000, mortgagee households are paying a far greater share of their income to fulfil their basic need for shelter, rather than spending it on other goods and services.

Given that mortgage costs are not reflected in our main cost of living measure, the CPI, we argue that inflation is being under reported, which has enormous implications for all mortgagee households, but particularly those whose wages, pensions or benefit increases are linked to the CPI.

Ultimately, we pose the question of whether the CPI adequately captures changes to the cost of living between generations, since the CPI explicitly ignores the rising cost of buying a home by treating house purchases as an asset investment rather than as household spending.

At the macro level, the swelling of the housing market means a huge and growing proportion of national wealth is tied up in unproductive assets. The residential housing market is now worth \$8.1 trillion,¹ a large proportion of which could be redirected toward far more productive means.

In 2010 Dr Gavin Putland, honorary director of the Land Value Research Group estimated that house prices were over-valued by as much as 45%.² Based on this estimation, and given that house prices have risen even faster since 2010, this means there is effectively at least \$3.65 trillion, equivalent to two years of GDP, locked away in unproductive housing assets.

Given these large micro- and macro-economic implications, Section 3 presents an option for incorporating the house prices into the CPI, one which has been suggested previously by Chief of Australian Economics at the Commonwealth Bank of Australia, Gareth Aird.

We conclude that without significant policy reform, the Australian model of mass home ownership, in place for more almost 80 years, will fail. We present some policy recommendations specifically aimed at reining in excessive property price growth, but urge policy makers to focus on the crisis of low wage growth versus over-inflated asset prices, and to rethink the way we incorporate house price rises into our cost of living measures.

¹ <https://www.corelogic.com.au/news/australian-housing-market-surpasses-8-trillion-valuation>

² <https://thenewdaily.com.au/finance/property/2017/03/03/last-housing-crash/>

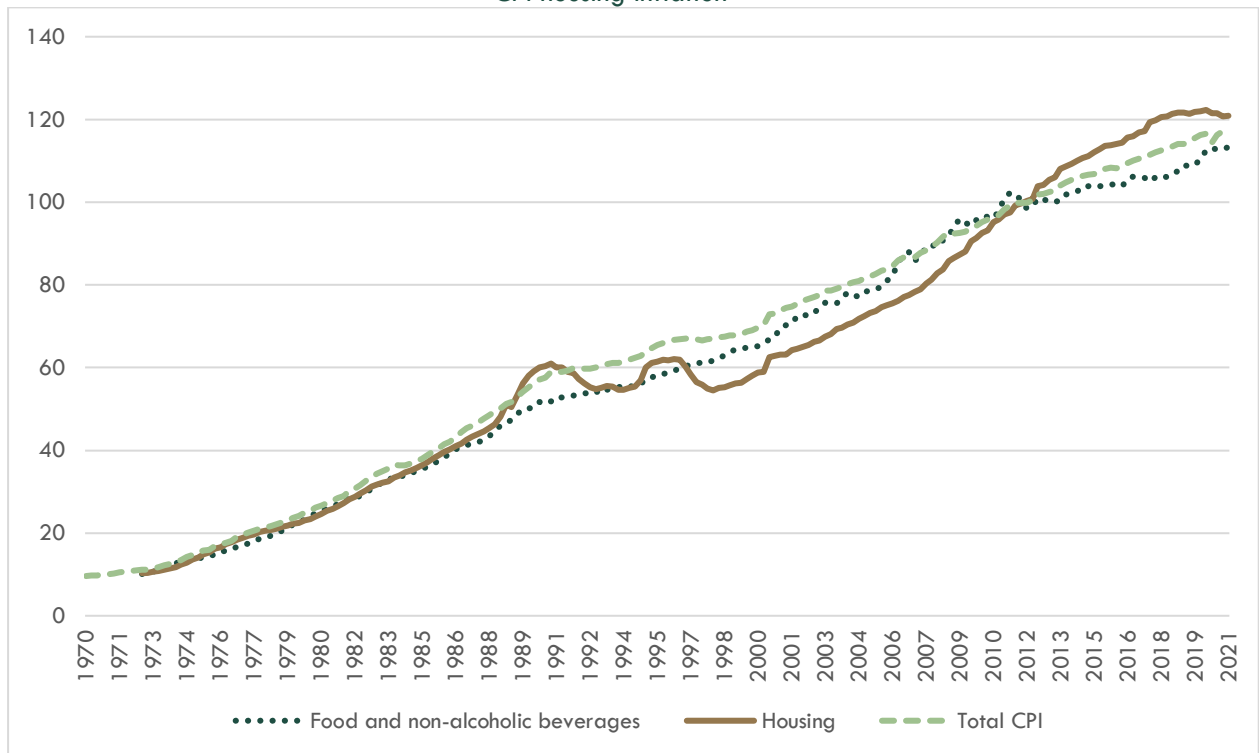
Section 1 - How housing costs have changed

Housing costs in the CPI

Measuring changes in the cost of housing can be done in a number of ways. The Australian Consumer Price Index (CPI) takes average rental costs and the price of constructing an owner-occupied house minus the land value, enabling different time periods to be compared relatively easily. Using this method, the CPI housing metrics show that housing costs have increased relatively similarly to overall inflation since 1970, albeit with significant ramps and dips.

It shows housing costs stabilising in 2017, with the series ending 3 points higher than overall inflation, and for comparison, around 6.5 points higher than food and drink.

Figure 2
CPI housing inflation



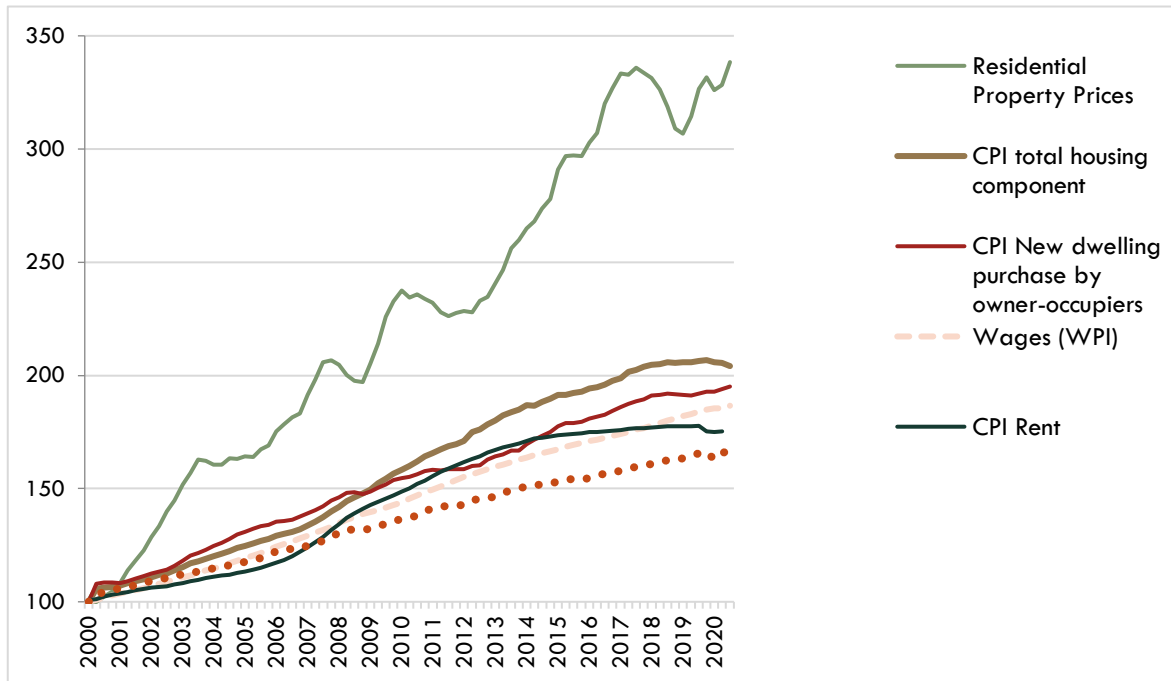
Source: ABS 6401 tables 3 and 4

However, this very moderate increase is well out of step with changes to prices of residential property.

As shown in Figure 3 below, the pace of house price rises has far outstripped the housing component of CPI or general prices over the past 20 years. Placed side by side, house price changes since the millennium dwarf the housing components of the CPI. In fact, the residential property price index has increased twice as fast as the CPI over the past two decades.

With this enormous change to housing costs not accounted for in the standard CPI measure, it is valid to question whether the CPI measures actual changes in the cost of living between generations.

Figure 3
Housing, Wages and CPI



Source: ABS, multiple; RBA

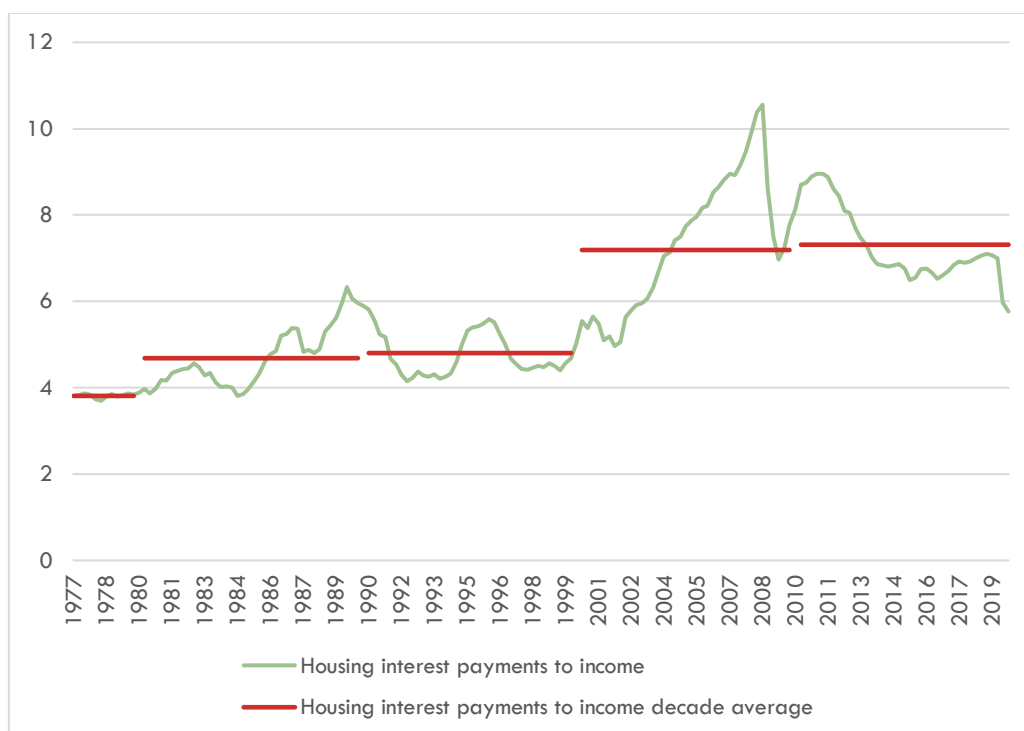
Many economists argue that the era of low interest rates since 2010 has largely offset the cost of mortgage principle. To examine this issue, the Australian Bureau of Statistics (ABS) has developed several complementary inflation measures incorporating average mortgage payments, which suggest that average costs haven't really shifted much when compared to general inflation.³

While this may be true when comparing new mortgages in previous times with new mortgages now, record low inflation has also meant that, in real terms, mortgage debt for median wage earners remains high over time, and stagnant wage growth makes mortgage payments less affordable, over the long run than in previous decades. We explore this in more detail in Section 2.

As shown in Figure 4 below, the proportion of disposable income going toward mortgage payments has steadily increased over the last four decades and, while the trend since the GFC is sharply downward, the decade average bars show an almost doubling since the 1970s.

³ Selected living cost indexes <https://www.abs.gov.au/methodologies/selected-living-cost-indexes-australia-methodology/dec-2020>

Figure 4
Ratio of interest payments on housing debt to quarterly household disposable income



Source: RBA statistical tables, household finances, selected ratios E2. Authors' calculations of decade averages

Housing Costs and the Household Expenditure Survey

The Household Expenditure Surveys (HES), conducted every four years since 1984, also gives a very different picture to that painted by CPI statistics: households report that the average proportion of their housing expenditure (rent, mortgage payments, etc), increased from 12.8% in 1984 to 25.1% in 2015-16.

This pattern is even more revealing when the HES data is broken down by wealth quintile.

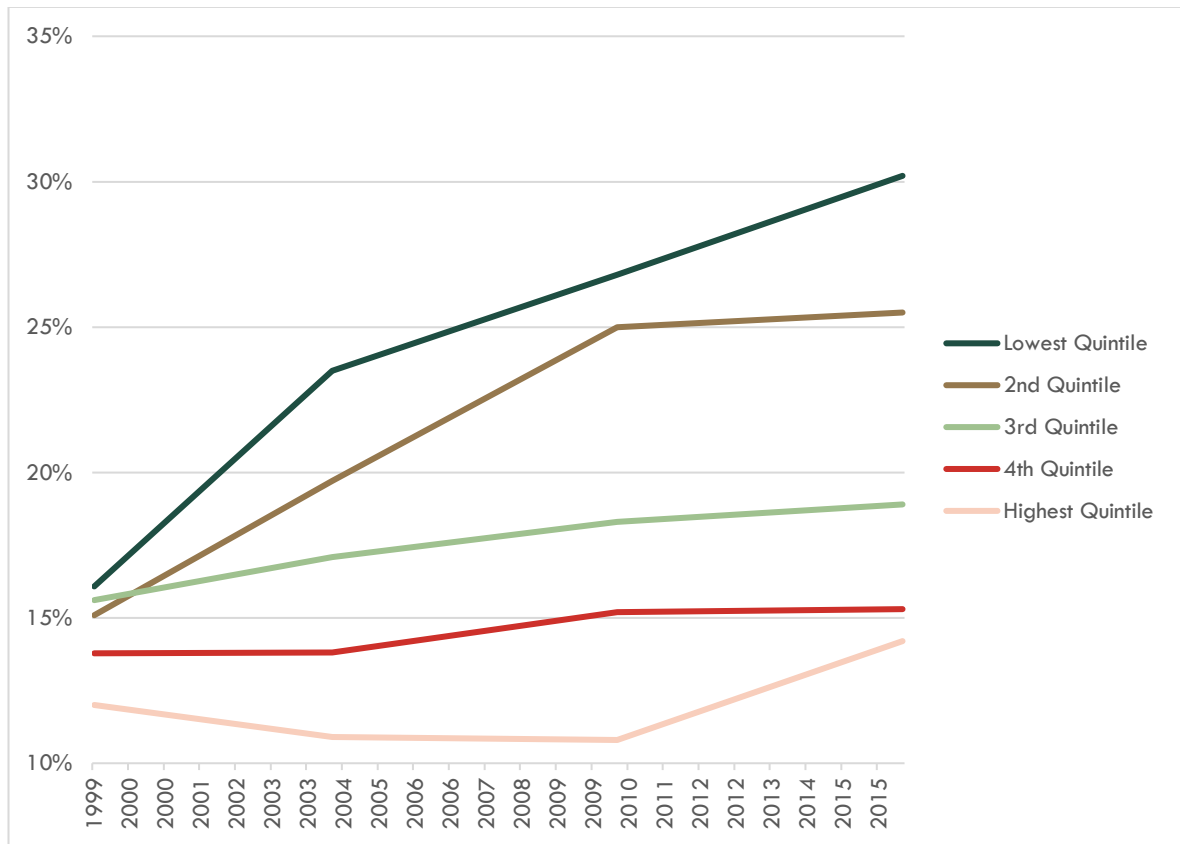
While it is more common to discuss the HES by income quintiles, when it comes to housing using income quintiles obscures the real impact of rising house prices. This is primarily due to the high proportion of age pensioners who own their homes outright but are grouped into the lowest income quintile – that is, they are wealthy in assets yet poor in income.

While there is not a perfect correlation, the lowest two net worth quintiles are more likely to be renters and residents of social housing, and the highest quintile is most likely to own a home outright. Owners with a mortgage are likely to be spread through all quintiles, but with a far larger proportion in the third and fourth quintiles.

In the lowest wealth quintile, 92% of households are renters, with just 3.8% as owner occupiers. The top two quintiles are effectively the inverse of this situation with roughly 3.5% renting and 96% of these households in an owner-occupied dwelling, 55% of which had no mortgage.⁴

⁴ ABS 6523 Household Income and Wealth, Tables 3.6, 7.5, 7.3.

Figure 5
Percentage of household income spent on housing, by household net worth



Source: ABS, Household expenditure surveys, 2003-04 to 2015-2016

As Figure 5 shows, there is an enormous divergence in housing costs for the different wealth quintiles since the turn of the 21st Century.

For the highest quintile, housing costs are the lowest of any group in 1999 at 12%. These costs actually reduce between 1999 and 2010, before sharply increasing to 14.2% in 2016. The lowest two deciles report roughly 15% and 16% expenditure on housing in 1999 and increase dramatically up to 2010. While decile 2 saw housing costs level out by in 2015-16 survey, the least wealthy quintile saw their housing costs increase to over 30%.

This increase in housing cost inequality is particularly troubling, since households in the lowest two deciles are least likely to be paying down a mortgage, while for the top income groups payments are far more likely to be returned through property ownership and increasing asset prices. This means that for people outside the housing market, there is an increasing cost associated with the ballooning property market, which they must absorb while receiving none of the benefits of increasing asset prices.

This shift in spending practices between rich and poor households indicates that the CPI is becoming less useful as a universal cost of living indicator, with the averaging process in CPI construction disguising the increasingly high costs for shelter for people not on the property ladder.

It seems likely that the CPI is significantly overestimating inflation for outright home-owner households,⁵ while significantly underestimating it for less wealthy households.

⁵ Which the ABS along with many statistical agencies discusses in terms of unaccounted “imputed rents”. See: <https://www.abs.gov.au/research/people/housing/estimates-imputed-rent-australia/estimates-imputed-rent>

This divergence is also reflected in the property assets and debts of different net worth quintiles (see Table 1). In 2017-18, there were very few households in the lowest net worth quintile who owned property, and those that did were, on average, in negative equity of around 10 per cent of the value of their homes, while the highest wealth quintile had housing assets worth close to seven times their housing debt.

Table 1
Household net worth quintiles 2017-2018 (estimates \$'000)

	Lowest	Second	Third	Fourth	Highest	All households
Property assets						
Value of owner-occupied dwelling	9.4	169.8	435.8	659.1	1,225.2	500.6
Value of other property	*8.5	43.7	76.0	145.5	628.5	180.4
Total property assets	18.1	213.5	512.1	802.9	1,854.0	680.9
Property liabilities						
Principal outstanding on loans for owner occupied dwelling	8.3	103.5	143.6	125.3	130.4	102.6
Principal outstanding on other property loans	*11.7	33.8	47.7	80.5	141.3	62.9
Total property loans	20.0	136.2	191.9	206.2	270.2	165.2
Total property asset:debt ratios	0.91	1.57	2.67	3.89	6.86	4.12

Housing tenure and home ownership by cohort

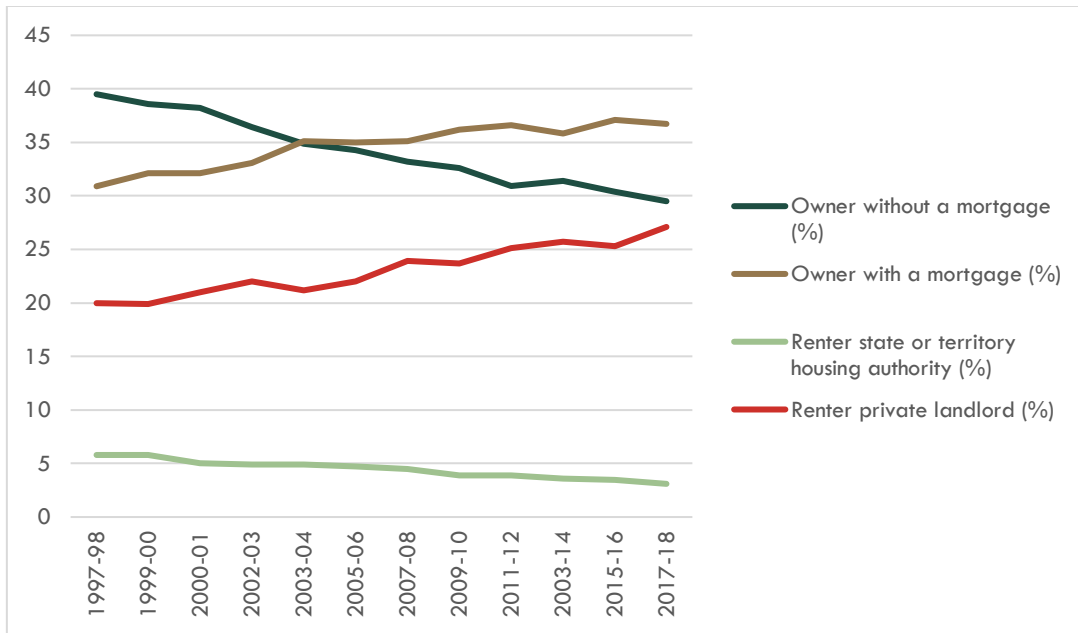
A useful indicator of how ballooning home prices are affecting affordability is the huge shift in the nature of housing tenure over the past couple of decades. While Australia was quick to abolish policies such as rent control in the 1950s in favour of mass home ownership, this model is now under significant strain.

The number of outright home-owners has shrunk by a quarter between 1997-98 and 2017-18, from about 40% of the population to 30%. Meanwhile the number of private renters has increased from 20% to 27%.

This means that people are renting for longer while saving for a mortgage deposit, and many others are simply locked out of home ownership altogether, particularly in the capital cities.⁶ The effect is that the benefits of outright home ownership are deferred, with people enjoying fewer years living mortgage free, while the cost of getting to outright ownership are higher.

⁶ <https://theconversation.com/australia-had-rent-control-in-wartime-war-on-coronavirus-demands-the-same-response-135694>

Figure 6
Housing tenure, 1997-98 to 2017-18



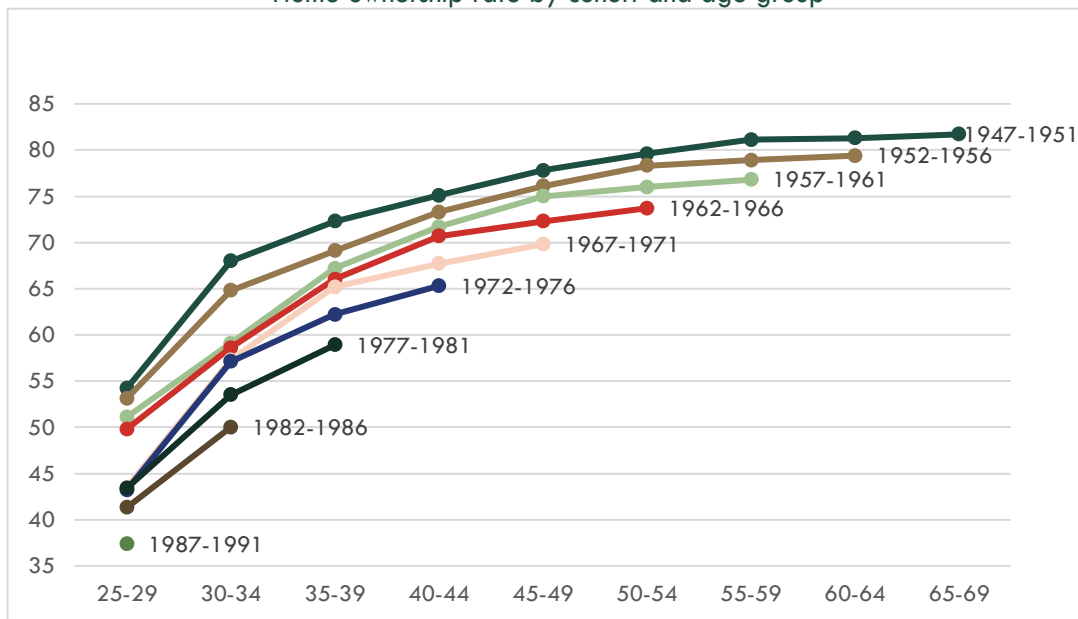
Source: Australian Bureau of Statistics, Housing Occupancy and Costs 2017-18

This is a significant break with the generally accepted Australian housing model of widespread home ownership, and becomes clearer when looking at home ownership rates by birth cohort and age.

As shown in Figure 7 below, the rate of home ownership among 25-29 year olds has fallen from 54% among people born between 1947 and 1951, to 37% for those born between 1987 and 1991.

While this may be partially explained by longer time spent in education, the gap remains high and persistent even for prime age workers in the 35 to 49 year old categories.

Figure 7
Home ownership rate by cohort and age group



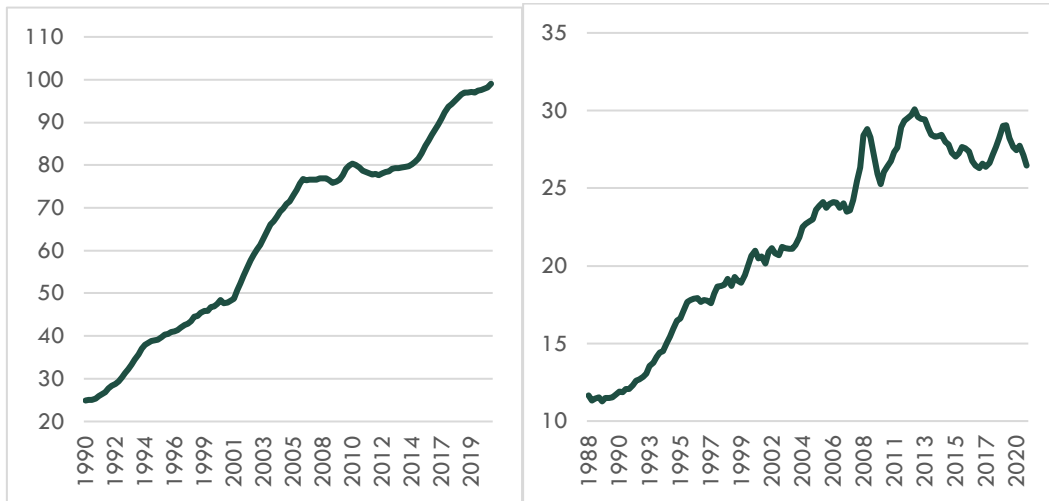
Source: (Australian Institute of Health and Welfare⁷)

⁷ Australian Institute of Health and Welfare. (2020). Australia's welfare 2019.

For households that do own their home, the effect of rising house price rises has not resulted in greater debts necessarily being offset by greater assets (see Figure 8, below). High real terms mortgage debt means that the average housing debt to asset ratio has doubled since the early 1990s, albeit moderated by record low interest rates since the GFC.

Low wage and inflation growth has also led to housing debt increasing in relation to incomes, from 25% to 99% for owner occupiers.

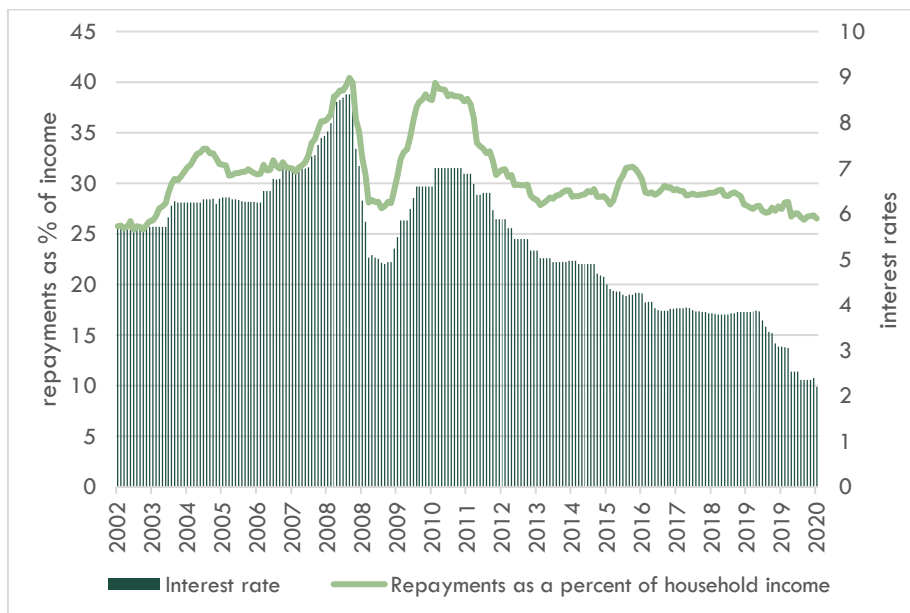
Figure 8
Housing Debt to Income (Left) and Housing Debt to Housing Assets (right)



Source: RBA statistical tables, household finances, selected ratios E2

While interest rates are currently low, they will not be forever. These massive increases in household debt create significant vulnerability to even modest interest rate hikes. Figure 9 below shows just how decoupled interest rates have become from affordability. Stagnant wages cannot reduce real terms mortgage debts, meaning mortgage repayments as a percentage of income have not reduced in line with interest rate declines since 2013.

Figure 9
Interest Rates and Mortgage Repayments as a % of Household Income



Source: RBA Statistical Tables, E2 household finances – selected ratios

The effect of rising housing debt on households and the macro economy

Rising housing debt burdens have significant macro- and microeconomic implications. This huge increase in real household debt produces a large “debt overhang effect”, reducing consumer spending by 0.3% with every 10% increase in debt (Price et al., 2019).

The RBA estimate that consumer spending at the household level would have been higher if household debts had not ballooned over the past two decades. Significantly, this holds for increases to gross debt as well as net debt: that is, households curtail spending when their debt increases, even if the value of their home grows and their net debt position remains the same⁸ (Price et al., 2019).

An issue which receives far too little attention from both economists and psychological researchers is the relationship between debt levels and mental health. But what evidence there is suggests a causal relationship between high debt and elevated risks of depression, anxiety, stress and thoughts of suicide, as well as poorer physical health.⁹

Another effect is that, as house purchases become less affordable, it is more common that parents of first home buyers experience a cost of living hit if they assist their children with the purchase. This occurs through re-mortgaging, downsizing to release equity, taking on default risk by standing as guarantor, or providing living space to their children while they save for their deposit.

These costs are not readily quantifiable but the trend for parental help with home-buying and mortgage servicing is startling. Digital Finance Analytics estimates that the proportion of first-time buyers receiving help from their parents is now 60%, up from less than five per cent in 2010, while the average parental financial contribution has risen from less than \$25,000 to nearly \$90,000 over the same period.¹⁰

This is a crucial argument against dismissing increased debts by arguing that they are offset by increased assets, and raises serious concerns for the sustainability of Australia’s cherished commitment to intergenerational mobility.

In this section, we have outlined how rocketing house prices, low wage growth and a decline in affordable housing are reflected in available statistics. Home ownership is declining generationally, housing costs are up for the poorest households, and mortgage debts are not being offset by rising asset prices. Importantly, the trends show that housing debt servicing costs is only being moderated, *not reduced*, by the current record low interest rate period.

⁸ Price, F., Beckers, B., & La Cava, G. (2019). The Effect of Mortgage Debt on Consumer Spending: Evidence from Household-level Data. RBA Research Discussion Paper, RDP 2019-0.

⁹ See Amit, N., et al (2020). Relationship Between Debt and Depression, Anxiety, Stress, or Suicide Ideation in Asia: A Systematic Review. *Frontiers in Psychology*, 11, and Angel, S. (2016). The Effect of Over-Indebtedness on Health: Comparative Analyses for Europe. *Kyklos*, 69(2), 208–227.

¹⁰ <https://www.abc.net.au/news/2021-05-03/the-bank-of-mum-and-dad-house-prices-property-first-home-buyer/100102132>

Section 2 - Estimating the affordability of mortgages over three generations

In this Section, we estimate total house purchase costs by incorporating changes to inflation, wages, interest rates and house prices. Each plays a significant role:

- House prices have grown very quickly since the late 1990s;
- Inflation prior to the turn of the 21st Century was far higher than since. Inflation averaged just 2.1% in the 2010s, compared to 8.3% in the 1980s and 9.8% in the 1970s;
- The effect of inflation on housing costs are mediated by interest rates: in the 1980s annual interest rates averaged a whopping 13.21%, compared with 6.07% in the 2010s.
- Real changes to wages are crucial to our understanding of the relative costliness of home ownership. For example, the past decade has seen anaemic median nominal wage growth of roughly 3%, with many people effectively seeing no increase to their pay packet. By comparison, in the 1970s - although inflation was extremely high at 9.8% - nominal wage growth outstripped inflation significantly with an average annual increase of around 13%.

So, while first-time buyers prior to the house price boom from the late 1990s onwards certainly had far lower house prices, and therefore smaller deposits to contend with, their monthly payments were increased by far higher interest rates. Late Gen Xers, Millennials and Gen Zeds, on the other hand, struggle longer to save the deposit for ballooning house prices, but then experience relatively lower interest repayments. At the same time, though, wages have been largely stagnant for the past decade while in previous decades they have increased faster relative to inflation.

In the rest of this section, we estimate how these elements interact.

Case studies of first-time home buyers

Let us consider a family buying a house in Sydney in 1970, another in 1985 and another in 2000. We will call them the Silent Generation Family, the Baby Boomer Family and the Generation X Family respectively. Each family relies on a single full-time earner at the median wage, and is buying a median-priced house.

In these examples, we use the gross average weekly male earnings and median house prices.¹¹ It would be preferable to use a more refined measure of wages, but unfortunately there are data limitations which make AWE the most practical metric¹². Similarly, with house prices, national weighted averages would be preferable, but are not available for the whole period.¹³

We assume that the household will have paid a 20% deposit and will be aiming to pay off the mortgage over a 30-year period.

We use annual average mortgage rates from the RBA, and re-mortgage each family every five years, using the average interest rate over the five-year period.¹⁴ Again, it could be argued that this is unrealistic since families will generally re-mortgage when it is most advantageous to them. However, rates often varied widely between individual years, meaning that it is easy to create misleading

¹¹ Abelson, P., & Chung, D. (2004). Housing Price in Australia: 1970-2003. Department of Economics Research Papers, 9/2004, 1–21 for 1970-1980 estimated median house prices and REIA estimated median house prices 1980-2020

¹² for example, the Wage Price Index only goes as far back as 1998.

¹³ Sydney was chosen as the most populous city. Since it has seen the highest house prices, these figures will overestimate for other less expensive areas.

¹⁴ RBA Australian Economic Statistics F5, Lending rates; Housing loans; Banks; Variable; Standard; Owner-occupier

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outcomes. Treating each family to the same five-year rate-averaged re-mortgage process makes our estimations more broadly applicable to the general experience of homebuyers in each era.

Table 2
The different generational families compared

	Silent Gen Family	Boomer Family	Gen X Family
Purchase Year	1970	1985	1990
Median monthly total Male FT Earnings	\$337.13	\$1887.17	\$3831.97
Median Sydney house price	\$18,700.00	\$92,200	\$328,000
House price:income ratio (years)	4.62	4.07	7.13
Deposit (20%)	\$3,740.00	\$18,440	\$65,600
Mortgage debt	\$14,960.00	\$73,760	\$262,400
Deposit/annual earnings ratio	0.92	0.81	1.43
Mortgage debt/annual earnings ratio	3.7	3.26	5.71
Average interest rate (30 years)	10.61%	9.31%	5.76%
Average annual wage growth (nominal)	8.74%	4.72%	3.22%
Average annual inflation rate	6.93%	3.57%	2.43%

As shown in Table 2, each family has to save a significantly different amount for the deposit.

For the Silent Generation Family, the deposit is worth just over 11 months of salary. For the Baby Boomer Family, the deposit drops to 9 months and 3 weeks of salary, while for the Generation X Family, the deposit is double that rate, worth close to 18 months of salary.

Interest rates

The interest rates encountered by each generation are very different, ranging from 3.1% forecast for this year, to 16.46% in 1989.

It is important to remember that the timing of high or low rates plays a significant role in paying off a debt, with a high front end of a loan meaning greater overall costs. The Silent Generation Family experiences the highest overall rate, at 10.61%, but the Boomer Family experience higher initial interest rates, which affects the overall weight of interest. The Generation X Family have moderate rates for the first half and low rates for their second half of the repayment window.

Table 3
Interest Rates for each Family

Silent Generation Family Mortgage Rates		Boomer Family Mortgage Rates		Generation X Family Mortgage Rates	
Jan 1970 - Dec 1974	7.64%	Jan 1985- Dec 1989	14.62%	Jan 2000- Dec 2004	6.93%
Jan 1975- Dec 1979	9.71%	Jan 1990- Dec 1994	11.73%	Jan 2005- Dec 2009	6.93%
Jan 1980- Dec 1984	11.80%	Jan 1995- Dec 1999	8.16%	Jan 2010- Dec 2014	6.81%
Jan 1985- Dec 1989	14.62%	Jan 2000- Dec 2004	6.93%	Jan 2015- Dec 2019	5.19%
Jan 1990- Dec 1994	11.73%	Jan 2005- Dec 2009	7.61%	Jan 2020- Dec 2024	3.41%
Jan 1985- Dec 1991	8.16%	Jan 2010- Dec 2014	6.81%	Jan 2025- Dec 2029	4.50%
Average	10.61%	Average	9.31%	Average	5.63%

How do these different rates play out in each mortgage? Figures 10, 11 and 12 show the proportion of mortgage payments going toward interest and that going toward the principal over the 30-year mortgage for each family.

The Silent Generation Family pays an incredible 233% interest on their loan principal over the course of their mortgage, with the Baby Boomer Family not that far behind at 217%. For the Generation X Family however, the average interest rate of 5.63% means that they will pay just 120% of the principal value in interest over the life of the mortgage.

The Silent Generation Family don't see the transition point from paying down more of the principal than interest until around 24 years though the mortgage, and for the Boomer Family it is at 20 years. The Generation X Family, on the other hand, reaches the point of paying more principal than interest a year in 2016, just 17 years into the mortgage.

Figure 10
Silent Generation Family proportion of interest and principal in mortgage payments

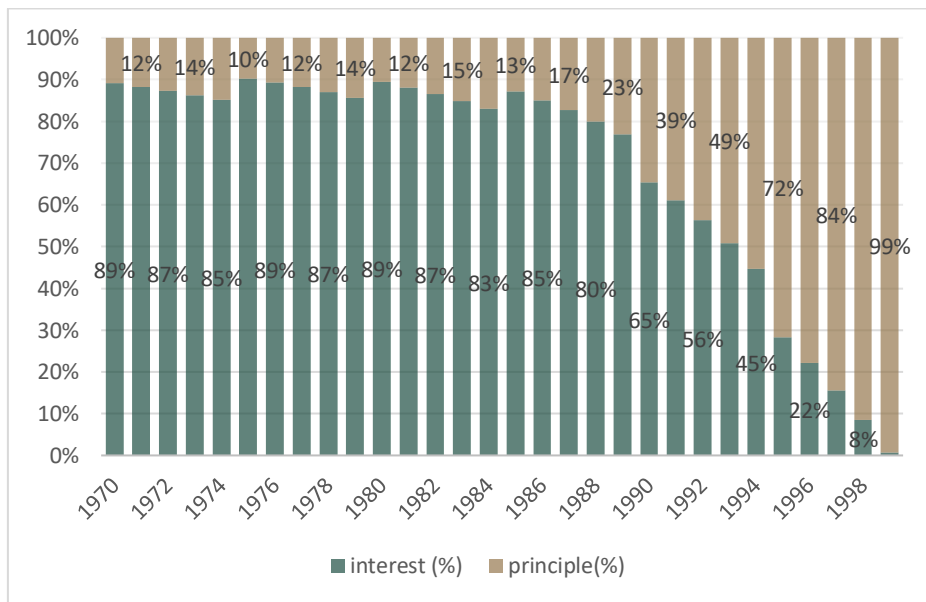


Figure 11
Baby Boomer Family proportion of interest and principal in mortgage payments

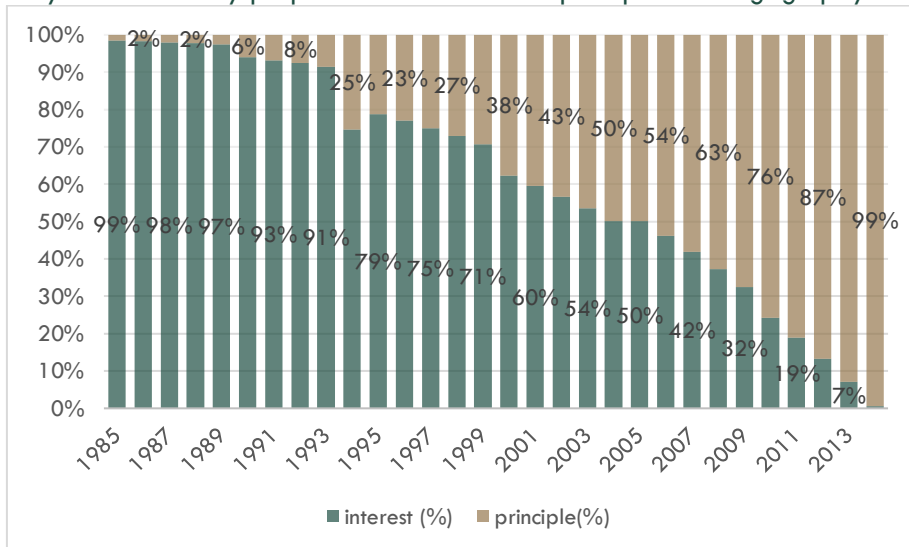
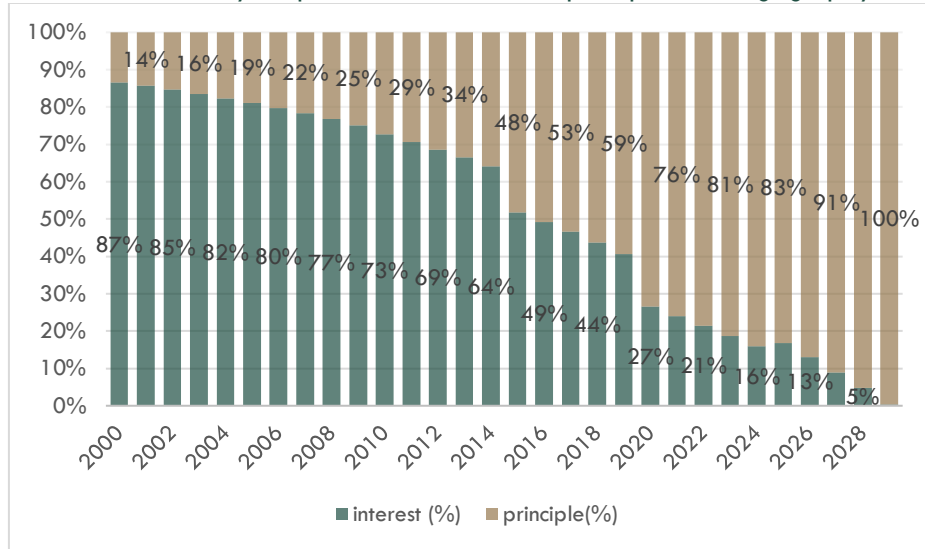


Figure 12
Generation X Family Proportion of interest and principal in mortgage payments

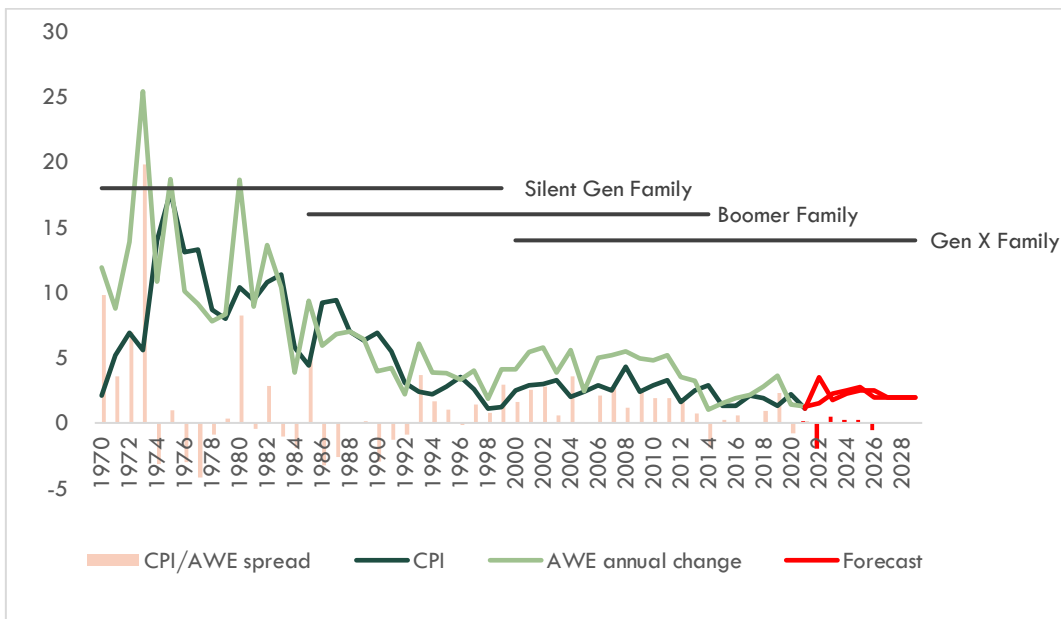


Wages and inflation

If we were judging the lifetime cost of a mortgage only by the amount paid in interest, the Generation X family were winners by a country mile. However, the cost of interest is not an adequate measure of affordability, which is more accurately a function of changes to house prices, interest rates, inflation and wages combined.

Over the 30 mortgage year periods we are using for comparison, the Silent Generation Family saw average annual inflation of 6.93%, with double digit inflation when the oil shocks of 1973 and 1979 smashed import prices and manufacturing. However, wage rises were consistently higher than inflation over the life of their mortgage, averaging 8.74% (nominal), meaning that on average, wages rose 1.69% faster than inflation per year (see Figure 13).

Figure 13
Inflation and wages (percentage change from previous year)



Source: ABS 6401, Tables 1 and 2; ABS 6345 Table 1

The Baby Boomer Family experienced 15 years of high inflation, until roughly the turn of the 21st Century, when a stable period of healthy inflation between 1.8% and 4.3% commenced. Overall, their annual inflation averaged 3.57%. Wages grew slower than inflation for 5 years during the 1980s, but still averaged 4.74% (nominal) over the 1985-2014 period – that is wages rose, on average, 1.23% faster than inflation per year.

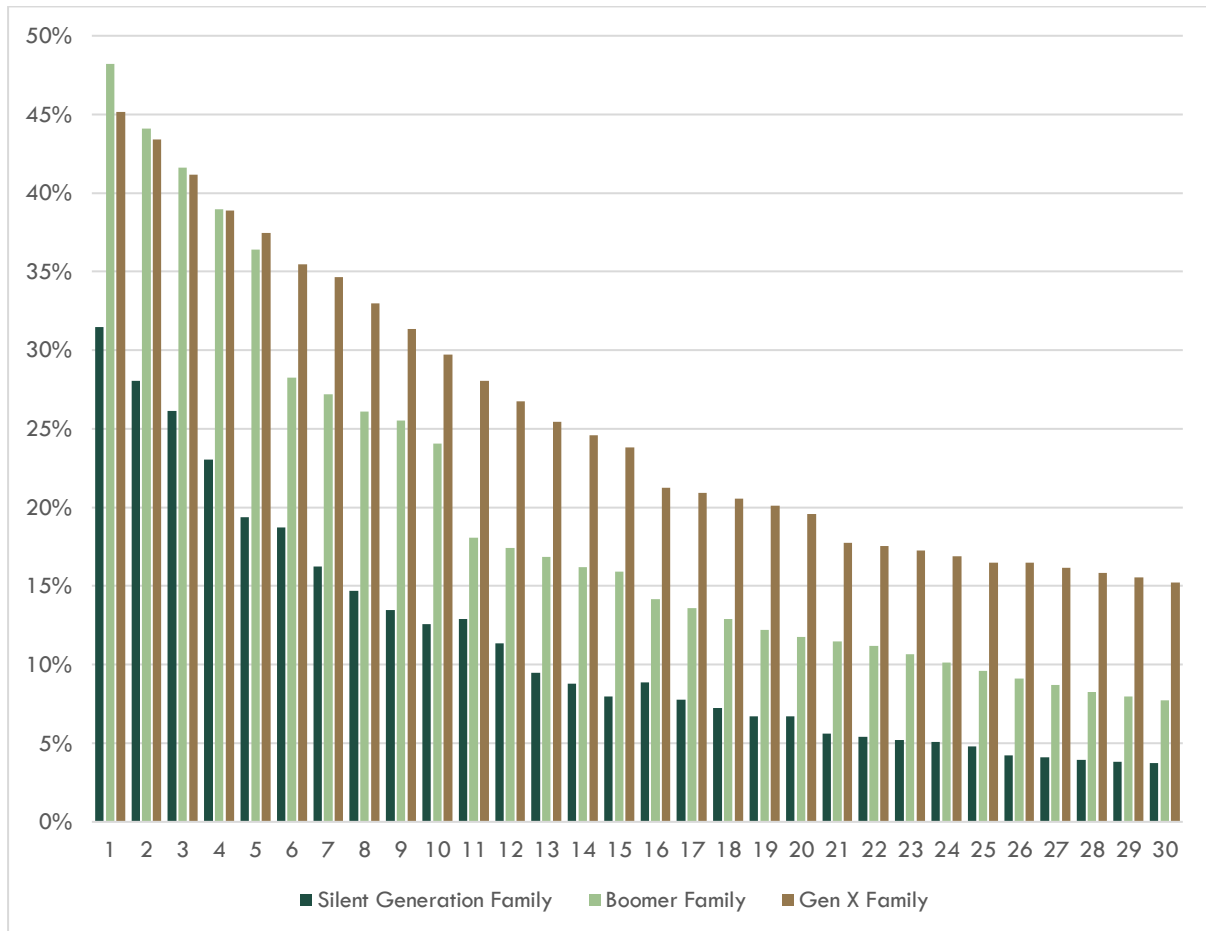
The Generation X Family see the lowest period of inflation up to 2020, and assuming that the 2021 Federal Budget forecasts are accurate, inflation is likely to remain very low up to 2025. Beyond 2025, we estimate the rate based on the 2016-2025 average rate. Based on these assumptions it is likely that inflation will go beyond 3.5% in only three of the 30 years of their mortgage. The predicted average inflation rate over the 2000-2029 period is 2.43%.

Wages also have been growing extremely slowly since their home purchase in 2000, and (including estimates based on the 2021/2022 Federal Budget forecasts) average 3.22% increase per year, meaning that wages grow on average just 0.91% faster than inflation per year, the lowest of the three case studies.

The effect of inflation and wage growth mortgage affordability

As shown in Figure 14 below, the proportion of income that the Silent Generation Family dedicates to servicing the mortgage starts relatively low thanks to fairly moderate inflation at the start of the 1970s, and falls away rapidly. This is because high inflation and strong wage growth inflate away the real-terms mortgage debt through the mid-1970s to the early 1990s. This reduces the cost of the mortgage dramatically.

Figure 14
Mortgage repayments as a percentage of gross annual income



Their experience shows that despite myriad other problems caused by inflation in the 1970s, high inflation and concomitant high nominal wage growth reduced the relative value of mortgage debt very quickly. By 1980 (year 10 of the mortgage) the Silent Generation Family was spending just 12.6% of their income on servicing the mortgage, down to just 6.7% by 1990 (year 20 of the mortgage).

The Silent Generation Family spends an average of 11.2% of gross income on servicing its mortgage over 30 years.

The Baby Boomer Family paid eye-watering double-digit interest rates in eight of the first 11 years of their mortgage, which meant that their mortgage payments accounted for 48% of their income in year one. However, they started from a healthier position when looking at house prices compared to wages - their house price to income ratio of 4.07 plays a significant role in reducing the mortgage weight compared to the other families in our analysis. They also experienced high inflation in the first six years of their mortgage (an average of 7.5%) which helped bring down mortgage debts quickly in real terms.

While their mortgage-payment-to-income ratio declined at a less rapid rate than did that of the Silent Generation, steady inflation and wage rises still brought down the relative cost of the mortgage at a moderate rate. By year 11 of the mortgage (1996) the family was spending 18% of their income on the mortgage. In the final six years of the mortgage, the Boomer Family was spending less than 10% of income on the mortgage.

The Baby Boomer Family spends an average of 19.5% of gross income on servicing its mortgage over 30 years.

The Generation X Family see the slowest drop in costliness. Despite low interest rates, the low inflation of the era and stagnant wages during the latter half of the mortgage period mean that the mortgage debt is only slightly inflated away. This keeps mortgage repayments relatively high as a proportion of income, despite lower interest rates. After 13 years of payments (2013), the family is still spending more than 25% of income on the mortgage, and the proportion of income never goes below 15%.

The Generation X Family will spend an average of 25.5% of gross income on servicing its mortgage over 30 years.

In summary, the effect of low wage growth and low inflation are far more material to the affordability of a mortgage than is commonly understood.

The overall cost of buying a house increased by 74% - from 11.2% to 19.5% - between 1970 and 1985, in part due to the very high interest rates in the early years of the Boomer Family mortgage. Yet despite relatively low interest rates this century, the cost of a home purchase increased by another 54% - to 25.5% on income - for the Gen X Family, who purchased in 2000.

Between the Silent Generation and the Gen X Family, the cost of buying a home has increased by 128%.

To put these differences in dollar terms, we estimate that the Generation X Family is currently paying \$1425 per month, around 17.5% of their income. If they were to be on the same mortgage repayment trajectory as the Boomer Family, that monthly payment would be reduced to \$910 per month. If they were on the same repayment trajectory as the Silent Generation Family they would be paying just \$440 a month.

Section 3 - Incorporating house prices into cost of living indices

In the previous Sections, we discussed the rapid changes to housing costs and how these affect the cost of living, particularly for low net-worth households. The examples of the Silent Generation, Boomer Family and Gen X Families showed how changes to home prices, interest rates, wages and inflation have combined to create a far costlier home purchase outcome for more recent buyers due to higher deposits and monthly repayment amounts, and less favourable asset-to-debt ratios.

We have demonstrated that the increased cost of housing is having a significant negative impact on household living expenses, and reducing discretionary spending power by households in the 21st century. Our current cost of living indices, most particularly the CPI, do not adequately capture the impact on day-to-day household costs and standards of living, treating as it does home purchases as asset investments rather than costs of living.

So how can house prices be effectively incorporated into inflation and cost of living measures?

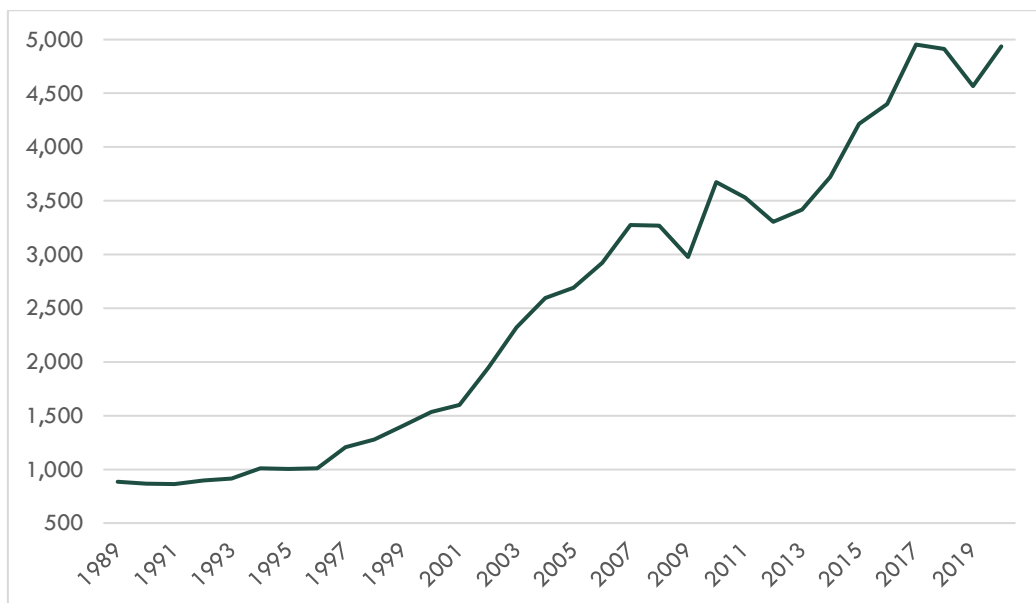
CPI and house prices

As mentioned in Section 1, the housing component of the CPI “...includes all expenditure on rents, utilities, purchase of new dwellings (excluding land) and other expenditures on shelter-related goods and services... [this includes] major improvements to existing dwellings and fixed appliances such as cooling and/or heating systems, dishwashers, hot water systems and ovens”¹⁵

The sale of existing properties is considered a transfer of ownership rather than the purchase of a new product by the ABS, which is standard practice among national statistical agencies. However, the price of land has been the most rapidly rising component of residential property prices for two decades.

Between 2000 and 2020, residential land values increased by an average of 19.1% a year as shown in Figure 15 below.

Figure 15
Residential land value, \$ billions, constant values (\$=2020)



Source: author’s calculations based on ABS 5204.0 Table 61. Value of Land, by Land use by State/Territory, adjusted to 2020 prices

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<https://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/6461.0Main%20Features82018?opendocument&tabname=Summary&prodno=6461.0&issue=2018&num=&view=>

This means that the CPI does not do a good job at estimating the cost of living for people entering the housing market, whether saving for a deposit or paying down a mortgage.

The impact of this failure in measurement is not trivial: the CPI, as our main measure of inflation, is critical not just in relation monetary policy, but to how wages are set, and the way in which income support payments such as unemployment benefits and parenting payments are adjusted.

For example:

- The JobSeeker Payment, Parenting Payment Partnered and Special Benefit rates are usually adjusted on 20 March and 20 September each year in line with CPI movements over the preceding six-month period;
- Youth Allowance and Austudy rates are only adjusted once a year, on 1 January, in line with CPI movements over a 12-month period;
- Parenting Payment Single is adjusted in line with CPI movements in the same way as JobSeeker Payment but is also benchmarked to 25% of Male Total Average Weekly Earnings (MTAWE).

The Consumer Price Index plus Housing

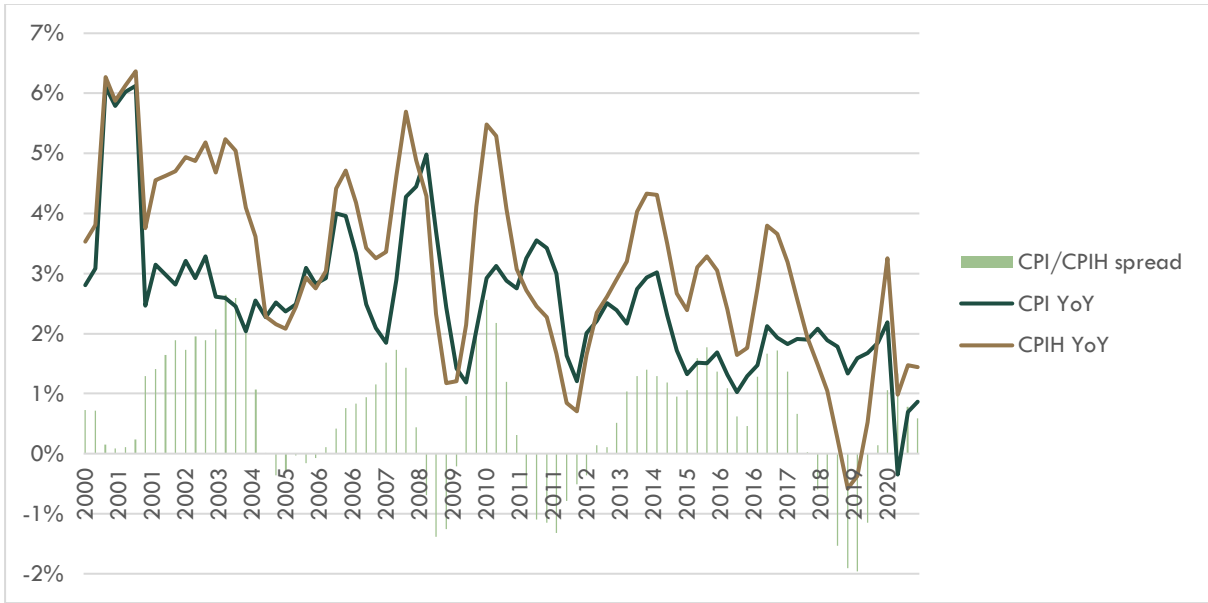
Gareth Aird, Head of Australian Economics at the Commonwealth Bank of Australia (CBA), takes the view that the CPI is a “very poor” cost of living measure due to house price exclusion.¹⁶ Aird suggests the addition of residential property prices to the CPI, which he calls the Consumer Price Index plus Housing (CPIH).

The CPIH takes the standard CPI and augments it by substituting 10% of the CPI value for changes to house prices in the residential property prices index.

We estimate the CPIH since 2000 in Figure 16 below. The differences between year-on-year changes in the CPI and CPIH measures shows a significant divergence over the past 20 years: the CPI averages 2.48% while CPIH averages 3.09% between 1998 and 2020 a significant difference of 0.61% higher inflation per year when housing costs are added.

¹⁶ <https://www.abc.net.au/news/2017-04-20/inflation-data-suffers-from-exclusion-of-housing/8457718>

Figure 16
CPI and the CPIH, year on year

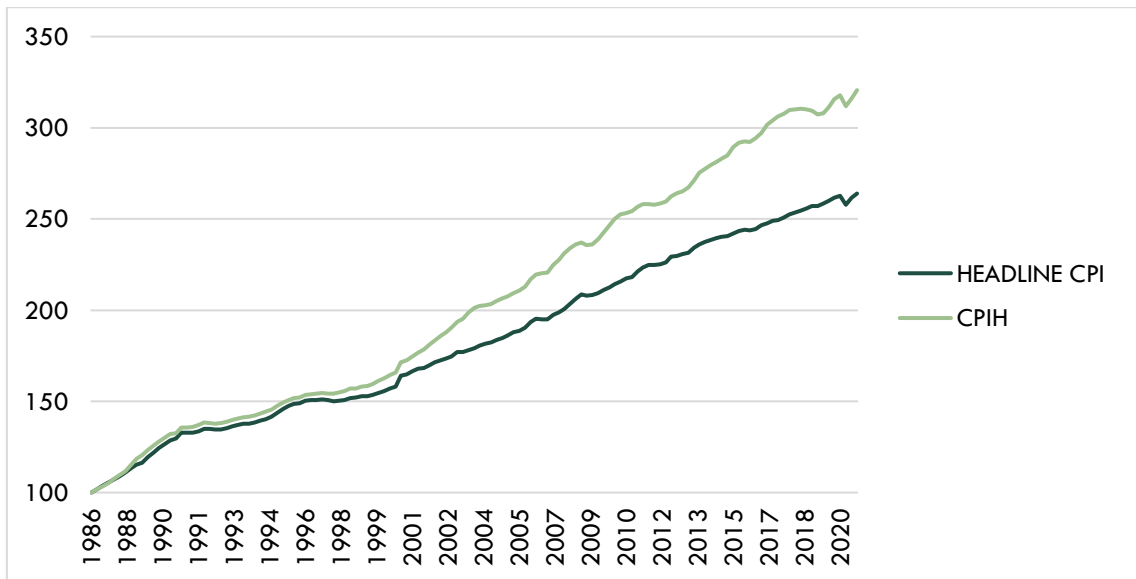


Sources: Author's calculations based on ABS, 6416.0 Table 1, ABS 6401.0 Tables 1 and 2

Plotting the aggregate changes shows a stark divergence between the CPI and the CPIH around the turn of the 21st Century. This coincides with the introduction of the 50% Capital Gains Tax Discount by the Howard/Costello Government in 2000.

Figure 17 below show that between 1986 and 2000, changes to house prices did not lead to majorly different outcomes between the CPI and CPIH. Soon after however, the CPI and CPIH diverge dramatically, and by 2020 the CPIH is roughly 60 points higher than the CPI.

Figure 17
CPI and the CPIH

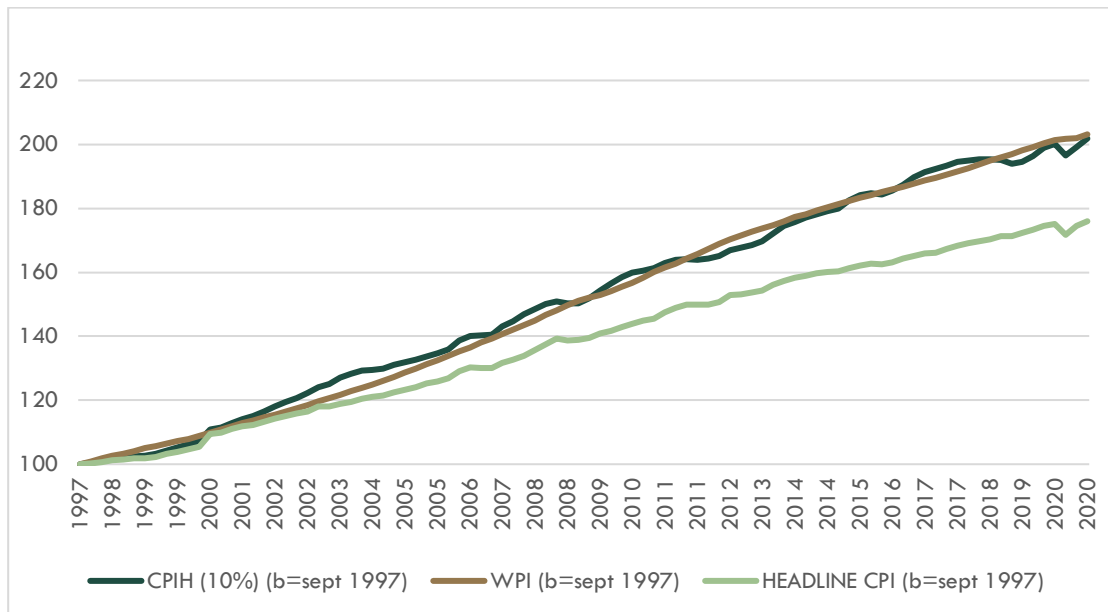


Sources: Author's calculations based on ABS, 6416.0 Table 1, ABS 6401.0 Tables 1 and 2

The logical question, given our case studies in Section 2 then is, how does this increase in cost of living compare to wage growth over the same period.

In 1997 the ABS began producing a wage price index (WPI) to show changes to average wages. Over the 1997-2020 period, the data again shows how there was essentially a break around the millennium, where wages went from growing faster than the CPIH, to essentially level pegging, as shown in figure 18 below.

Figure 18
CPI, CPIH and WPI Compared



Sources: Author's calculations based on ABS, 6416.0 Table 1, ABS 6401.0 Tables 1 and 2, ABS 6345.0 Table 1

The implications of Aird's approach are stark. It suggests that once house price inflation, are taken into proper consideration, Australian working families have, on average, not seen a sustained increase in real disposable income, and therefore in their standard of living, since the end of the 20th Century.

However, there is major caveat to the CPIH. Setting the housing component at 10% is not based on an explicit theoretical or methodological foundation, and is likely too high.

Suggesting that average wages have not increased at all since the millennium overestimates the impact of house price rises on the cost of living for the millions of families who were already in the housing market before the turn of the 21st Century. Clearly, for outright owner occupiers and people who bought prior to the late 1990s housing boom, rising house prices are a net positive in terms of their own wealth. If anything, such families will have experienced a drop in mortgage payments due to the decline in interest rates.

For this reason, a lower house price component anchored with a clear methodological or theoretical foundation would be preferable, and is something we hope to return to in a future publication.

The CPIH is not a perfect solution to including overall house prices into the CPI. But as demonstrated in Section 2, the lifetime cost of a home purchase has increased by 130% between 1970 and 2000 in real terms, and this factor is effectively excluded from our most important inflation measure.

We hope that this paper will spark a discussion as to how house price affordability can be better incorporated into inflation measures.

Conclusion

Since the 1950s, housing has played a central role in Australia's welfare model - home ownership has been described as the "fourth pillar" of social insurance, with equity tending to be used to supplement welfare standards when an unexpected shock, like poor health, hits a family, or during retirement.¹⁷

But the decline of home ownership and the increasing debt burden associated with a home purchase, means that this pillar is crumbling. First-time buyers are aging, with their average age now 36.¹⁸

With home ownership increasingly deferred, the debt risks associated with home ownership are increased, and the utility of outright ownership is reduced, with owners enjoying fewer years of a mortgage- and rent-free home.

This is contributing to growing intergenerational inequality, with people under 35 at risk of being the first generation of Australians since Federation with lower living standards than their parents.¹⁹

Our first conclusion is that monetary policy choices have higher distributional effects than is commonly recognised.

Any monetary policy regime will have distributional consequences.²⁰ During the era of "price stability" and inflation targeting, speculation, deregulation, perverse tax incentives and an under-supply of new housing has helped to create highest rate of price volatility ever seen in the housing market.

We have shown how low wage growth and sub-optimal inflation affects mortgage affordability despite reductions in interest rates.

There are some macro-prudential options that the RBA could use to reduce the house price bubble. It could, as the Reserve Bank of New Zealand is doing, consider house price sustainability in its policy making.²¹ It could raise deposit requirements, which would reduce some of the speculative froth in the market, since investors tend to be far more leveraged than owner-occupiers.

The federal government could axe tax incentives for investors, particularly the Capital Gains Tax Discount, and remove or limit negative gearing.

State governments could work harder on rezoning land for residential use to speed up home building.

But given the inability of the RBA to reach its inflation target over the past eight years, perhaps it is time to ask why inflation targeting is its core mandate. Structural underemployment and stagnant productivity, leading to anaemic wage growth, have been far more harmful to economic outcomes for middle- and low-income earners than has inflation.

Our position is that genuine full employment – a secure job for anyone who wants one, with enough hours of work to provide an income adequate to maintain living standards – is a solution to the current crisis in wages and productivity. This would require monetary and fiscal policy to operate in concert, with greater democratic control of monetary policy. Full employment, properly managed, would bring about steady inflation and wage growth which would help with the ticket price affordability of houses, and the ongoing cost of mortgage repayments.

Our second conclusion is that there is a significant problem with how inflation is measured, since home purchase costs are not adequately incorporated.

¹⁷ See Ong, R., Jefferson, T., Austen, S., Haffner, M., & Wood, G. (2014). Housing equity withdrawal in Australia. Issue, 176, 1445–3428, and Yates, J., & Bradbury, B. (2010). Home ownership as a (crumbling) fourth pillar of social insurance in Australia. *Journal of Housing and the Built Environment*, 25(2).

¹⁸ <https://www.money.co.uk/guides/first-time-buyers-around-the-world>

¹⁹ <https://grattan.edu.au/report/generation-gap/>

²⁰ Skidelsky (2019), *Money and Government*

²¹ <https://www.rbnz.govt.nz/news/2021/05/why-the-reserve-bank-is-concerned-about-new-zealands-rising-house-prices>

If our social welfare model is predicated on mass home ownership, factoring the total cost of a home purchase must be incorporated into cost of living measures.

The CPI is a classic “least worst” option for measuring inflation, and many of the compilers of the CPI at the ABS admit to some of its flaws. However, failing to properly incorporate the single largest cost for most Australians – that of buying a home – requires that the measure be adjusted or complemented by another measure.

CPI is central to macroeconomic policy making. because it is used to adjust many pay rates and benefits, and informs the RBA’s monetary policy, getting cost of living measures right is critical. Whether this means the CPIH or another measure is used is open to debate, but this is a conversation that must be had.

Finally, it is worth discussing the outlook for home buyers since 2000. It is clearly a fool’s errand to attempt to forecast 30 years into the future to see what affordability will look like, but all the trends – low inflation, stagnant wages, rapidly rising house prices - point toward a crisis of even higher sustained costs throughout the mortgages of those families who have bought a home in Australia’s over-inflated housing market more recently.

Currently, wage growth is predicted to be less than 2% this year, while inflation is likely to miss the 2-3% target once again.²² Should interest rates rise without concomitant wage increases, recent mortgage holders will suffer significantly as their mortgages become unaffordable.

²² Lowe, P. (2021). The Labour Market and Monetary Policy. RBA Speeches, 1–13. <https://www.rba.gov.au/speeches/2021/sp-gov-2021-07-08.html>