FINANCE VERSUS HOUSEHOLD NEEDS: THE HOUSEHOLD EXPENDITURE MEASURE

Janet Burstall

The Household Expenditure Measure (HEM) is a quarterly updated benchmark that Australian banks use to assess applications for mortgages and to manage their financial risk. The HEM provides an estimate of the minimum consumption needs for households of various compositions. Comparing this with each mortgage applicant's income and expenses enables banks to calculate the surplus household income from which the interest and loan repayments can be made. That surplus sets a maximum amount for periodic home loan payments - and therefore the allowable loan size for each household. Concurrently, it determines the future revenue stream that a bank can expect to receive from a household in the form of mortgage payments.

From a political economic perspective, the HEM epitomises the connection between households, finance, and the transfer of risk in recent decades (Bryan and Rafferty 2018). Its distinctive role in mortgage lending may also be seen as an example of finance creating more effective ways to capture value from households and labour. This is an additional dimension for understanding the close links between financialisation and inequality (Peetz 2018: 48). There is a direct relationship between finance and households as suppliers of labour. At least in Australia, this relationship between banks and households' earning and spending capacities is underpinned by calculations of household minimum living standards via the HEM. This suggests the relevance of an analytical approach that applies the traditional Marxist concept of surplus in relation to to the regular necessities of labour and household reproduction, extending it

Burstall, J. (2023) 'Finance versus household needs: The household expenditure measure' *Journal of Australian Political Economy* No. 91, pp. 56-82. beyond the employment relationship to financial relationships more broadly. This can highlight how financialisation enables capital to find new ways to accumulate future value, thereby both reshaping and entrenching the domination of labour by capital.

Taking this broader view, this article analyses the nature and effects of the HEM. First, it describes the HEM calculation and its relation to households' living standards. Second, it explores the banks' rationale in adopting the HEM as a means of assessing households' capacity to pay. Third, it examines the role played by state agencies, such as the Reserve Bank of Australia (RBA) and the Australian Prudential Regulatory Agency (APRA). Fourth, it explores why and how households seek to maximise their capacity to pay for home loans and the consequences of doing so. Fifth, attention turns more explicitly to situating these concerns in relation to Marxian political economy. A concluding section discusses alternative approaches to meeting societal needs for housing without recourse to financialised arrangements such as the HEM.

The HEM calculation and living standards

The HEM was introduced by Australian banks in 2010 as a specifically Australian form of a model of 'Net Income recognised for Serviceability' (NIS) (Bryan and Rafferty 2018:148). The HEM calculations are based on data from the Household Expenditure Survey (HES) conducted by the Australian Bureau of Statistics (ABS). The HES data is augmented with data on the quarterly Consumer Price Index (CPI) to take account of the increases in living costs for a wide range of household items. The HEM differentiates between households on the basis 13 bands of income, as well as by geographical location (Melbourne Institute 2014).

The HEM groups 600 expenditure categories according to whether they are considered 'absolute basics' (spending that cannot be avoided or varied), 'discretionary basics' (spending that cannot be avoided but can be reduced in times of need) and 'luxury' (spending that can be avoided). The company that manages HEM subscriptions for the lending institutions says that these three categories ensure that the HEM 'is not overly generous by design' (RFi Analytics 2018a).

After the HEM was introduced, a study by Dargan (2012) compared its results with the widely used Henderson Poverty line (HPI). This showed the HEM assessed a single adult with no children as needing an income of 88.5 percent of the poverty line. The HEM category farthest below the poverty line, at 73 percent, was a household with a single adult and three dependents – in practice, a household most likely to be headed by a single mother. A couple with two or three children was assessed under the HEM at around 99 percent of the HPI. The only household type with a HEM assessment above the poverty line was a couple with no dependents or one child (Dargan 2012). The Commonwealth Bank labeled the standard of living afforded at the HEM benchmark as 'modest, but above the level of "substantial hardship" as it includes some discretionary expenditure, which consumers would generally be able to give up if required' (Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry 2018b: 36). This standard of living is the basis of bank lending policy.

A Bank of America/ Merrill Lynch (BAML) report in 2011 pointed to banks 'playing down the cost of living [...] below the Henderson Poverty Index [...] By the banks using low default living costs, they are able to artificially inflate the level of debt they can provide to borrowers' (Liondis 2011). 'Houses and Holes' (2011) quoted the BAML report as saying that 'the average bank cost-of-living assumption is seven percent lower than the [Henderson] poverty index, 14 percent lower than our [Merrill Lynch] barebones budget, and even more for our adjusted [living costs, based on] ABS survey [data]'.

A precise account of the HEM methodology of calculation is not publicly available and the HEM dataset is subject to confidentiality, although an outline of HEM methodology was obtained through correspondence with RFiAnalytics, the agency which sells it. HEM subscribers (at a minimum cost of \$1,850 per annum) must agree not to release any of its data or reports (RFiAnalytics 2018b). The data appears to have been published openly only once. in 2012, attributed by Dargan (2012) to the Commonwealth Banks' HEM (CBA), until information came from a NAB exhibit at the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (2018a: 197-202) (Financial Services Royal Commission –FSRC). Publications of the main state agencies with responsibilities related to the HEM provide the primary source material for the following discussion of the purpose and management of the HEM.

The RBA estimates that a little less than 15 percent of home buyers borrow the maximum amount allowed by the HEM (RBA 2018b: 35). This amounts to around 100,000 households a year who take out a maximum HEM loan, based on an estimate of about 700,000 home loans issued annually (Illion 2020: 6). It is not reported how many more borrow close to the maximum.

The HEM's impact also needs to be considered in the context of the scale and rapid growth of home lending. Australian bank lending to households grew by 77 percent as a proportion of GDP between 1960 and 2010, faster than in any of the other 16 advanced economies studied by Jordà et al. (2016: 13). A 2020 study reported that there were '6 million home loans, worth a collective \$2.1 trillion, covering an average debt of \$456,000 on new loans less than two years old' and 37 percent of Australian households are mortgaged home buyers (Illion 2020: 3). In 2018, 'Australian banks' mortgages are equivalent to 80 percent of the economy [...] [and] Australian household debt exceeds 120 percent of GDP' (Heath et al. 2018). Home lending is the most lucrative business in Australian banking, with the 'big four' banks (ANZ, CBA, NAB, Westpac) taking combined profits of around \$20 billion per annum (Yeates 2022).

Why did banks invent the HEM and how do they use it?

Banks developed a NIS model after the experience of the economic recession of the early 1990s, during which they had suffered their largest losses in forty years (Gizycki 2001: 20). Even though unemployment had reached about 11 percent and mortgage interest rates 17 percent, housing loan losses were much lower than business loan losses (Debelle 2010). Significantly, households were seen as more reliable debtors than businesses, having a capacity to continue payments for housing even when their incomes were squeezed and hardship was experienced.

Up to the 1980s, lending banks had assessed income for a mortgage on the basis of consistent fortnightly pay slips. Regulation required a Loan to Value Ratio (LTVR) not exceeding 90 percent of the property value and a Debt Service Ratio (DSR) not exceeding 30 percent of household income (Laker 2007: 3-4). Then a general view emerged in the banking sector that households were able to carry more debt than than the existing LTVR and DSR rules enabled (Debelle 2010). The shift to a NIS model was the outcome. According to the Australian Prudential Regulation Authority (APRA), only around half of banks used it by 1996; but ninety percent were doing so by 2006 (Laker 2007: 3-4). The shift to a NIS model was associated with an increased proportion of lending going to households. Between 1988 and 2010, household lending grew to 58 percent of the total value of bank loans, while the share of business fell from 62 percent to 35 percent (Debelle 2010).

The HEM version of the NIS model was commissioned by the banks' Risk Managers Roundtable in 2010 as a further step towards improving risk management. More precise calculation of the financial positions of households enabled banks to assess and price the risk of household arrears and default, whilst maintaining the NIS approach as a competitive basis for signing up customers and maximising their loans.

The detail contained in the HEM tables allows banks to closely examine each household's finances and convert their position to an asset with associated risks (Bryan and Rafferty 2018: 194). This approach to the analysis of household finances is similar in character to that applied to business balance sheets when setting the terms for business loans. As such, the relative shift of lending from business to households extended what had previously been a business-specific form of evaluation. Furthermore, it enabled the banks to bundle and sell mortgage repayment streams — which they were already doing - with now more systematically calculated risks of default, based on the complex data captured by the HEM assessment process.

The business perspective of banks extends further to matters of household well-being and financial stress. Consultants and industry experts monitor household consumption needs and measures of consumer sentiment, such as confidence, financial anxiety and stress (North 2018b; NAB 2018; Dun & Bradstreet 2014; Moody's Investor Service 2017). These measures help investors to predict household demand, capacity to pay, and the risks associated with the assets they hold as mortgage payment income streams. Thus, through the HEM, household incomes, living standards, welfare and stress are treated as manageable risk factors that underpin bank profits.

How does the state relate to the HEM?

Through its regulatory roles, the state is the second major player in the institutional and financial market processes. The principal agencies responsible for bank regulation are the Reserve Bank of Australia (RBA)

and the Australian Prudential Regulatory Authority (APRA). The RBA addresses systemic financial stability, while APRA oversees the viability or prudency of banks and other financial institutions, including supervision of bank lending standards, within which the HEM is an integral component. Both the RBA and APRA are aware of the systemic risks that arise because a critical mass of households can become unable to maintain mortgage repayments on a HEM barebones budget (Lowe 2017; ASIC 2017: 5; Richards 2016), especially when they have unrealistically low estimates of essential living expenses and overstated borrowing capacity (Laker 2007: 4).

The consumer protection provisions of the National Consumer Credit Protection Act (NCCP Act) are also relevant to the banks' use of the HEM as the calculation tool for assessing each customer's capacity to pay. Enforcement and administration of the NCCP Act is the shared responsibility of Australian Securities and Investments Corporation (ASIC) and the Australian Consumer and Competition Commission (ACCC). The principles of consumer protection and competition for which both ASIC and the ACCC are responsible can be in contradiction, as has been in the case of the HEM and home lending. Such problems were revealed when the Financial Services Royal Commission (FSRC) and ASIC brought public scrutiny to the failings of consumer protection and specifically to the HEM.

These tensions and contradictions associated with the regulatory agencies relevant to the HEM can be further analysed according to three distinct themes: financial stability, competition versus consumer protection, and public scrutiny.

Financial stability

The RBA's first Financial Stability Review (FSR) (RBA 2004) signified a new direction for the RBA, pointing to the need to take oversight 'without impeding socially valuable financial innovation and efficiency' (Davis 2011: 345). The RBA Deputy Governor observed that risk-taking had become a more important dimension since deregulation (Battellino 2007: 81). The publication of the FSR coincided with the first data on arrears and mortgage stress published by the RBA and APRA, and almost every one of the subsequent twice-yearly issues has considered trends in owneroccupier mortgages.

The HEM ties banks and the RBA together in managing risk through securitisation. Since 2015, the RBA has accepted self-securitised collateral from banks on condition that 'detailed information about an asset-backed security's structure and its underlying assets be made available' to the RBA (Fernandes and Jones 2018: 2). This information in the RBA's 'Securitisation Dataset contains timely and detailed data on each and every one of the mortgages underlying Australian residential mortgage-backed securities (RMBS)' (Fernandes and Jones 2018: 1). This granular securitisation data, which banks collect when they assess loans via the HEM criteria, is used by the RBA 'to thoroughly assess the credit quality of the asset-backed securities accepted as collateral' (Kohler 2017). The RBA also assesses 'the household sector's financial resilience' (Bilston, Johnson and Read 2015: 1).

Several RBA papers reveal that the reason for this work is concern for the 'resilience of banks to household credit risk' (Bilston and Rodgers 2013: 28). The RBA is aware of the significant risks 'to financial stability and, consequently, to the broader macro economy' (Bilston, Johnson and Read 2015:1) arising from household sector lending. In 2021, the RBA was concerned about a build-up of these risks associated with prolonged low interest rates, high household debt and the sustainability of house prices (RBA 2021: 61). It stated that: 'Survey data suggest that borrowers with a small NIS are more vulnerable to both falling behind on their loan payments and having lower liquidity buffers available to shield their consumption in the event of an adverse shock to their income or expenses' (RBA 2021: 54). The RBA responded with Mortgage Macroprudential Policies (MMPs) which include serviceability assessment margins, debtto-income and loan-to-valuation ratios, applied across the board but 'typically designed to reduce the supply of credit to those borrowers who are contributing most to the identified systemic risk, without excessively constraining other borrowers or activity in the housing market' (RBA 2021: 61).

From 2022 onwards, higher inflation and rising interest rates have brought new challenges for both households and financial stability. The RBA noted that key risks from tighter global and Australian financial conditions could lead to 'disorderly declines in asset prices and disruptions to financial system functioning' while 'increasing debt-servicing challenges' would be magnified by a possible 'sharp increase in unemployment' (RBA 2022a: 2). This is a web of shocks connecting systemic stability and household finances, exacerbating the risks that had built up by 2021 whilst interest

rates were low. Households who borrowed near the maximum allowable by the HEM have nothing left to cut from their household expenses as their mortgage payments rise with interest rates. For some households, their capacity to pay is exhausted. However, the RBA and other agencies respond only to the risk to systemic financial stability, a risk that arises because lenders operate at the margins of household solvency. To date, the RBA has not referred to any need to protect households struggling to survive on poverty level budgets from losing their homes.

Competition vs consumer protection

The rationale for the reform of mortgage lending requirements was to make 'product innovation' possible and to 'widen the range of households who can access finance', according to the Assistant Governor of the Reserve Bank (Debelle 2010). This product innovation was driven by lenders competing for customers and volume, to the extent that the lending institutions can be called 'home loan factories' (Yeates and Grieve 2021). Any bank with particularly tight lending standards - and slower approval processes – tends to lose customers to other banks that are willing to rapidly issue a larger loan. Where borrowers are competing in housing markets with other homebuyers, larger loans have immediate attraction, even if they carry longer term risk for households.

After the Global Financial Crisis had shown the hazards of systemic risk from mortgage lending, the Labor Government enacted the 2009 National Consumer Credit Protection Act (NCCP Act). It transferred authority for consumer credit protection from the States to the Commonwealth. It was the 2009 Act that prompted the banks to commission the HEM in 2010. The Act requires lenders and brokers to make 'reasonable inquiries' (\$130), to assess that each consumer has the capacity to repay without 'substantial hardship' (s117, 1(b)), and not to issue 'unsuitable' (s129) loans. The Act was intended to combine consumer protection - via responsible lending standards - with promotion of financial stability (Commonwealth of Australia, House of Representatives 2009: 7148).

ASIC was assigned the authority to enforce lending standards as part of its consumer protection role; and to assist industry to transition to the new obligations. Three years after the NCCP Act came into law, the RBA and Treasury moved to tighten lending standards, as a means of reducing the risk to financial stability posed by household insolvency. In 2014, ASIC applied the requirements of the NCCP Act when it amended regulations aiming for 'more realistic assessments' of household needs (APRA 2017). ASIC and APRA observed that these tighter lending standards would not be initiated by individual banks because of competitive pressures (Byres 2018). There was 'no first-mover advantage to tightening their policies' (Richards 2016: 6). ASIC sought to overcome this barrier by bringing banks together for consistency of serviceability methodology, particularly the application of the HEM (APRA 2017: 13).

Even though responsible lending standards had appeared to be for the purpose of consumer protection, APRA as the supervisor of banks was concerned with *corporate* risk, rather than adequacy of household income after meeting commitments to make repayments to banks. It stated that it expected lending institutions 'to be able to articulate and be aware of commercial and other reasons for these differences [in lending standards], and any implications for [their own] risk profile and risk appetite' (APRA 2017: 13). APRA's objective was 'not to eradicate differences in risk appetite or the ability to offer competitive terms' (Richards 2016).

More recently, fintechs saw home buyer demand for faster loan approvals; and responded with digital mortgages that the major banks are also moving into (Yeates 2022). These 'make greater use of automation to test if borrowers can afford a loan' (Yeates and Grieve 2021), with potential to further overestimate household capacity to pay. These digital mortgage platforms allow for the collection of big data and for more finely calibrated analysis and correlation of the attributes of borrowers with risk.

Overall, legislated consumer protection via responsible lending standards has not altered the banks' competition for customers and calculated risk-taking based on the HEM.

Public scrutiny

The HEM and lending standards came under public scrutiny from the FSRC when ASIC prosecuted Westpac (ASIC vs Westpac 2019) for its failure to adequately validate income under the NCCP Act. In 2018, the FSRC had tabled examples of the previously secretively guarded standards of income adequacy in the HEM. It recommended both prosecutions of banks and amendments to the law if necessary to enable successful prosecutions (Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry 2019: 57). Commissioner

Hayne expected banks to reduce reliance on the HEM, resulting in tightening of credit, in order to comply with the NCCP Act (Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry 2019: 58). However, neither of these happened, quite the opposite¹.

In 2017, ASIC alleged that Westpac had not made the required inquiries into customer's actual living expenses under the NCCP Act and had issued 'unsuitable' loans. Justice Perram sided with Westpac and found that 'substantial hardship' was not relevant, as households can reduce their expenses, saying 'I may eat Wagyu beef every day washed down with the finest shiraz but, if I really want my new home, I can make do on much more modest fare' (s76) (Australian Securities and Investment Commission vs Westpac 2019).

Evidently, the FSRC's and public's expectations that the law would protect households from poverty level repayment commitments have been disappointed. Rather than serving as a minimum living standard to protect households, the HEM has set a maximum living standard above which banks are able to contract households to make mortgage repayments. Furthermore, many observers and the FSRC note systematic efforts by banks to lend beyond the limits that the HEM would define. Previously, governments and the state - through social and industrial policy and regulation – accepted a greater degree of responsibility and accountability for recognising minimum needs, setting subsistence standards of living and protecting households from poverty. Those levels were contested and improved by workers and their families, through collective union and political action. The HEM as a 'commercial in confidence' mechanism applied by the banks to each customer as a household or individual – and regulated indirectly and behind the scenes - is inaccessible to effective public, trade union or other form of scrutiny, challenge or accountability.

¹ The Coalition Government, post-COVID, also contradicted the recommendations of the FSRC in 2021 when it sought to make amendments to the NCCP Act under the title of Supporting Economic Recovery. The amendments - that failed in the Senate - would have protected banks from prosecution by softening responsible lending provisions and removing ASIC's role as a regulator of them. Only APRA's macro-prudential role in relation to lending standards was to remain (Pyburne 2021).

How have households been affected by the HEM?

The key element is *needs*. It is because households are central to meeting people's basic life needs that household lending has become the most profitable and lowest risk business for finance. The need for housing is fundamental. Housing is the largest item in - and a growing proportion of - household budgets (ABS 2017, AIHW 2021: 122). Looking through the lens of needs shows the HEM's impact on household life as a relationship between households and finance, labour and capital, thereby pointing to the heart of the problem in a clearer way than analysis of inequality does.

Households' trade-off their earning capacity, other household expenses and needs against the security of homeownership. The risk of becoming unable to meet HEM calculated mortgage repayments must be weighed against the stresses and unaffordability of rental housing (AIHW 2021 121-8), and the perceived benefits of home ownership (AIHW 2022). The three key aspects of these processes are how the HEM affects housing affordability, economic security and the pressures that flow through to labour market participation and unpaid labour time.

Affordability

The RBA saw financial deregulation as enabling a wider range of households to access finance and so own a home (Debelle 2010); but the opposite eventuated. An Assistant Governor of the RBA acknowledged this when noting that, from the 1980s as 'credit availability went up, effective interest rates went down, and that enabled an expansion in the demand for housing, and, because most of the stock of housing is already there, that results in a bidding-up of housing prices' (Commonwealth of Australia, House of Representatives Standing Committee on Tax and Revenue 2022: 134).

According to Census data, the home ownership rate in Australia rose rapidly in the late 1940s, throughout the 1950s and into the 1960s, peaking in 1966 at 71.4 percent. Since then, the upward trend has not continued and, since 2000, there has been a downward trend. The 2016 census revealed a home ownership rate of 67.1 percent. Figure 1 on the next page shows this census data. The shorter line in Figure 1 shows the result of surveys undertaken since the 2011 census, confirming the downward trend in recent years.

75 7 Surveys 70 Census 65 60 55 50 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020

Figure 1: Australia's home ownership rate, 1900-2015

Sources: ABS, Census data; Housing Occupancy and Costs (4130.0).

Source: Eslake (2017).

The HEM is an overlooked factor in this decline in housing affordability and rates of home ownership. Policy favouring housing as an investment (Pawson 2018: 138-9) also increases price competition between investors, and households who need homes. Home ownership becomes more desirable as affordable and secure rental accommodation near to employment becomes harder to find. This increases the pressure on households to subject themselves to the risks of maximising home loans and to minimise their other consumption.

The rise in house prices relative to household income closely matches the rising owner-occupier household debt-to-income ratio (as shown in Figure 2). The average house price-to-income ratio was below 40 percent until the mid 1980s, when deregulation allowed for an expansion of domestic credit (Edey and Grey 1996: 10). The closing of the gap between the two lines in Figure 2 in the early 1990s suggests that the use of NIS/HEM models was effective at identifying and then tapping household surplus. Capture of that surplus in mortgage commitments continues to track the increased rate of growth in household debt and house prices.

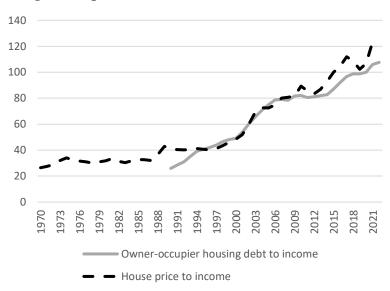


Figure 2: The ratio of housing debt to income and the ratio of average house prices to income, Australia 1970-2021

Sources: OECD (2022), RBA (2022b).

The ratio of average house price to income could not have increased so rapidly under the old DSR and LTVR measures. The HEM is a more precise means of allowing mortgage repayments to be set at the limit of households' financial capacity.

The maximum loan size that a bank will approve can also be a critical factor in raising house prices because that inflationary process is partly driven by competition between households wanting to buy their own homes, especially first home buyers. The two critical components that a household must assemble to buy a home are sufficient savings for the deposit and sufficient future income surplus to commit to mortgage repayments. Both have become increasingly problematic, particularly for households with relatively low incomes.

While this article does not survey the interactions between the HEM and all the other lending policies and metrics that affect home ownership, it does suggest that the HEM-accelerated difficulty of saving enough for a deposit could be a significant contributory factor in explaining the intensification of inequalities of home ownership identified by Konings et al. (2021).

Easier lending standards, along with government subsidies to first home buyers, might appear to benefit an individual homebuyer but, collectively, all home buyers become worse off in the twin markets of housing and finance. The expansion in credit availability that came with the HEM increased the amount each household could commit to purchasing a home, which intensified competition between borrowing households and extended the time that it would take to earn enough to repay the loan. In these respects, competition between banks for customers intensifies the competition between home buyers.

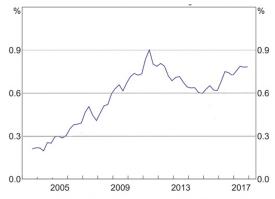
Security and risk of loss of homes

Some of the stresses arising from these processes can be seen in other evidence about households at risk of defaulting on their loans. People who get into arrears with their payments are at risk of losing their homes and face the potential loss of their savings stored in the house as an asset. The premise of the HEM surplus income approach means that households can lose their ability to pay because of even small changes in circumstances, such as arising from insecure employment and earnings, unexpected expenses and interest rate rises.

Prior to be counted in statistics on "non-performing" loans or mortgage delinquency, households have generally been struggling financially for some time to avoid losing their homes. Hence available statistics provide a lagging representation only of households most at risk of losing their homes. Figure 3, based on a data series that the RBA and APRA began in 2003, indicates that the percentage of housing loans that were 'nonperforming' tripled between 2003 and 2011 and, despite some subsequent fluctuations, remained more than double in 2017. Non-performing is defined by a combination of how many days since the last payment was due and the level of equity that the borrower holds.

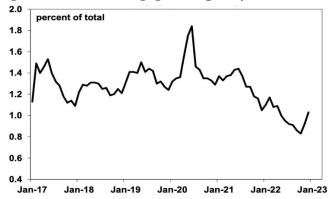
For evidence on trends since 2017, an alternative data source must be used, as shown in Figure 4. This relates to 'mortgage delinquency' based on 30day arrears in mortgagees' payments. It indicates that, while the rate of delinquency fell during the period of pandemic support and low-interest rates, it began to rise again in early 2023.

Figure 3: Banks' non-performing housing loans (domestic books, share of housing loans)



Source: RBA (2018a: 21).2

Figure 4: Annual mortgage delinquency rate



Source: Mousina (2023), AMP (2023).

 $^{^2}$ APRA changed the basis for data collection on residential mortgages in 2021, making it too difficult to continue the comparison to more recent data (APRA 2022).

According to S&P Global, in February 2023 'nonconforming mortgage arrears' reached 3.2 percent of loans, compared with 2.66 percent in the previous month (Sweeney 2023). The RBA Bulletin of March 2023 foresaw a rise in the number of 'more vulnerable borrowers' who are 'more exposed to large increases in interest rates and typically have fewer margins of adjustment to their financial situation' as a result of expiring fixed interest rate mortgages that were available during the Covid period (Lovicu et al. 2023). Households counted in these statistics had been bearing financial stresses for some time prior - stresses exacerbated by wider contemporary economic shocks such as rising interest rates and falling house prices. Negative equity has arisen for some of them; and the extent of this negative equity is strongly correlated with whether a loan in arrears transitions to foreclosure (Bergmann 2020: 33).

The stresses relate to many interconnected aspects of household life, including 'job security, changes in real income, changes in costs of living, their loans and debts and savings, and net worth' (North 2018a), and in categories 'such as utilities, savings, wages, job security, health, ability to fund retirement, cost of living, government policy' (NAB 2018). Not surprisingly, the lowest income households are most at risk. Of the 5 percent of households with required mortgage payments greater than 50 percent of their disposable income in 2016, the majority were in the lowest income quintile (RBA 2018a: 21). According to the RBA: 'Households who borrowed close to the largest amount they could were almost entirely at the lower end of the income distribution of mortgagor households' (RBA 2018b: 36). Moreover, this burden does not diminish over time:

As loans age (or season), borrowers face a higher cumulative chance of shocks to employment or family circumstance, which may cause financial difficulty. This can be observed from the upward trend in arrears rates over time for loans of different cohorts (RBA 2018c: 7).

Effects on paid work, women and time

Other important consequences of the HEM arise from the increasing pressures on income, work, consumption and time. The capacity of households to earn -i.e. paid labour time - is essential to the HEM income surplus calculation. Households can improve their position both by curtailing expenses and by increasing their income. For most households though, the only way to significantly increase income is to increase earnings from work. Because this means longer hours of work, the struggle to make mortgage repayments translates into pressure on households' time. This is evident in the results of the 2019 HILDA survey which reported on changes in household hours worked in relation to experiences of financial stress (Wilkins *et al.* 2021: 51) and on 'mean time spent on paid and unpaid work combined'. Between 2002-2019 both men and women, partnered with dependent children, increased their average time on paid and unpaid work by 3-4 hours per week, with women averaging 75.7 hours, about 2 hours more than men (Wilkins *et al.* 2021: 88). ³

Households with more labour force participants have an advantage over single income households in borrowing, which is reflected in the connection between dual income households and higher home ownership (Hall 2017: 43). Women's right to financial independence – and the personal freedom that the feminist movement expected it to avail –has been transformed from a liberating independent or surplus income into a financial necessity. The NIS methodology reinforces this. So, for example, women's rising labour force participation rates reflect the need 'to add to household incomes as men's labour market opportunities falter' (Jefferson and Preston 2009: 122) and mortgage repayments are harder to maintain.

Because the increase in women's labour force participation has not been accompanied by a reduction in individuals' average working hours, households with two adults now contribute more hours of paid labour: indeed, they are usually compelled to do this in order to compete in the housing market. Not only are single income households least able to compete to buy homes, their need for personal time away from paid work is harder to meet whilst maintaining mortgage repayments.

Fearing losing their homes as both a place to live and as an asset, households, especially lower income households, have been increasingly pressured to increase their earnings by both increasing working hours and reducing consumption. Concurrently, the competition between households to purchase a home, with demand sustained by unrealistic assessments of household capacity to pay, has accelerated house price growth and declining affordability, particularly disadvantaging single-income and female-headed households.

³Because most published working hours data, even more so than earnings data, is for individuals, not households, household working time trends are difficult to understand and respond to.

There are also heightened financial consequences of relationship breakdown in the context of mortgage commitments. Single mothers are more intensely affected by the HEM which, as noted earlier, assesses them as able to survive at the lowest percentage (73 percent) of the Henderson poverty line. What else could support this assessment of single mothers than that they will go to greater lengths than anyone to survive, raise children and meet their needs?

A Marxian political economic perspective on the HEM

The growth of wage labour in the nineteenth century provided the conditions for Marx's work on the labour theory of value as an exposition of the hidden mechanism and calculations behind capitalist exploitation. Marxist theory differentiates between necessary labour time for production of the necessities of waged workers and their households and labour time that is surplus to the production of those necessities. This framework of analysis provides a possible means of understanding how the HEM relates to surplus in an era of financialisation. This era coincided in Australia with the end of national collective bargaining and the erosion of secure employment that occured during the last two decades of the 20th century. Financial institutions use the HEM to test household incomes for containing a surplus in the form of current income, while also expecting a capacity to increase future income, including by spending more time in paid labour. The HEM calculates a boundary between necessity and surplus, which applies after the household has obtained income in return for time spent at work - rather than, as in Marx, based on the wage and surplus labour time. This suggests that financialisation has refined a new form of value extraction (not creation) that is still limited by, and rooted in, the necessities of the cost of reproduction of labour power but focused on future value (Postone 2017: 51-2) – with all the unpredictability that entails – rather than only on payment for labour power that has already been expended.

The surplus takes a money form with the HEM, rather than the form of direct labour time. This surplus is defined as household income that is surplus to consumption by labour. In the context of wage labour, consumption and other needs are contested as claims by unionised labour on the basis of the wage in relation to the cost of living. In the HEM, the level of minimum need and surplus income is determined by the bank and

calibrated to each household, projected into the future as a commitment by the household to make payments. The HEM thereby expresses a continuity of capital's necessary interest in living standards.

Marx (1973: 286) noted that labour's private savings and expected capacity to save were of interest to capital in the 19th century, particularly for assessing prospects for reducing wages. It would be consistent with this observation that capital in the 20th century in Australia is aware of labour's capacity to save (*i.e.* to set aside income as surplus to immediate consumption) in relation to both credit and housing (Bryan 2008).⁴ Seen in this context, the HEM is a mechanism for capital to manifest its interest in working class capacity to save, with calculation of the *risks* of households finding themselves committed beyond the limits of their ability to meet their immediate consumption needs at some point in the future.

Financialisation does not negate the performance of paid labour as the underpinning of value. Households, as the source of HEM-defined and risk-assessed repayments, are able to make these repayments only because they work to earn enough to do so. The time horizon of financialised value is not limited in the way that the value of wage labour is. The banks use the HEM, as an income surplus model and as a risk assessment tool, to capture future value with indifference to household needs in insecure and volatile circumstances.

Seeing the HEM in this way suggests connections between consumption and savings, surplus and capacity to pay, risk and the future, households and finance. It points to continuities in these themes in capital's interest in extracting value. The implication is that the role of finance and housing are structural components of the relationships between labour and capital, such that living standards and livelihoods cannot be assured in the sphere of incomes alone, whether coming from paid work or income support.

The HEM calculation sets the terms for a relationship between banks that are aiming for certainty of capital accumulation and households that are dependent on income from labour and seeking to own a home. These households reliably pay predictable long-term streams of revenue to banks, in a context of broader financial volatility and their own income insecurity. The predictability for banks is precisely because households are the site of

⁴ The implications of this for a system of private savings for retirement, *i.e.* superannuation (Pickette 2021) also deserve critical attention from the labour movement.

meeting subsistence needs, such that they absorb the broader economic shocks in their own struggle to survive and keep their homes.

The methodology of the HEM means that banks formulate their strategies for profit on the basis of calculations about areas of household life that had previously been objects of social policy. In parallel, the emphasis of the state has shifted towards monitoring risks to financial stability and away from responsibility for social welfare. Thus, the HEM embodies structural factors in Australian capitalism that are beyond 'failure of government policy and the persistence of bad ideas' (Pawson 2018: 139) and that underly insecure and declining living standards, especially the insecurity and declining affordability of housing.

These adverse effects of the HEM suggest a need to reconsider the apparent neutrality of the concept of financial stability. Is it really about protecting and benefitting all, households and investors alike? Indeed, what the RBA describes as disruption to the 'smooth flow of funds' (RBA n.d.) would mean widespread losses and disruption to the wider economy, harming everyone. However, while the RBA devotes considerable attention to the potential threat to stability if a critical mass of mortgaged households has insufficient income surplus to meet their repayment obligations, the policies always allow for some households below the critical mass to bear the weight of financial stress and experience foreclosure. The latter generally include the lowest income households attempting to own a home.

Because the HEM pushes some households towards the limits of their capacity to pay into the future, there is always a danger that the limits will be reached. In 2023, more households are approaching those limits: household mortgage payments are increasing with rising interest rates while negative equity has developed where house prices have fallen. These are circumstances which should concern social policy and elicit assistance, rather than loss of homes and greater securities trading. However, there is still no publicly defined benchmark of minimum needs that banks cannot transgress. The various remits of state agencies in relation to the HEM erect barriers to asserting public accountability of finance; and their combined weight in favour of finance has also allowed a HEM below the Henderson poverty line to continue.

From a political economic perspective, we can therefore see the application of the HEM is not so much a product of a neo-liberal state and public policy as an initiative of financial capital itself. The state has been drawn into new forms of responding to banks and finance, following the period in which it withdrew from social policies that supported minimum living standards as measured against publicly available calculations. No agency is responsible for - and no party of government is committed to - asserting and protecting the needs of households against banks.

Rather, finance can be seen as having displaced government and state responsibility for the welfare of households in relation not only to mortgage regulation, but also over-riding the value of increases in wage incomes which are converted by banks into capacity to repay a mortgage rather than supporting household living standards. State agencies work to monitor and manage the risks generated by this relationship between finance and households, but their purpose is to avoid bank insolvency and to maintain systemic stability rather than the well-being of households. Indeed, financial system stability could be undermined if state action were to require a transparent and realistic HEM which supported less stressful standards of living and helped to lower housing costs for households. Evidently, state intervention and regulation for the benefit of households requires a radical rethink.

Conclusions and alternatives

The distinction that the HEM makes between household income that is necessary for subsistence and the surplus that is available for other consumption spending has two significant previous incarnations in Australian history. These are the Minimum Wage that was introduced in 1907 and the Henderson Poverty Index (HPI) that was introduced in the 1970s. Both made the distinction with a view to guiding improvements in public policy that would reduce poverty and put a floor under low incomes. By contrast, the HEM makes the distinction in order to maximise the take of privately owned finance, places downward pressure on household consumption above its definition of necessity, and is kept secret from the people whose lives it affects. It has the opposite purpose of the Minimum Wage and the HPI.

Alternative ways of resourcing societal needs for housing and wellbeing need to be considered. For a start, the HEM could be immediately taken out of the proprietary domain of banks by being required to be made public information. Subjecting the HEM to public scrutiny would then open possibilities for collective contestation of its social impact. The NCCP

Act's measures against loans that are 'unsuitable' or that lead to 'substantial hardship' are contradicted by the banks' application of the HEM.

Households need access to credit without committing themselves to the limit of their capacity to pay, particularly because of the prodigious cost of housing in modern Australia. If publicly owned and accountably governed savings and loans institutions were to replace the finance and credit institutions that are currently concerned only to capture future value and transfer risk, this purpose might be better served. A government that prioritised societal needs over capital accumulation would also need to replace the existing state agencies implicated in the HEM with new agencies accountable to that priority.

Recognising that secure, affordable housing is a social need, to be collectively assured, would also mean turning away from providing housing primarily through market competition. It would require extensive public housing provision and tenant protections, allowing households to escape from the pressures to compete to secure a home purchase and to commit to mortgage repayments to the limits of their capacity. Collective and social measures to meet household needs also require curbing the profitability of finance and real estate, implying significant disruption to the current financial system and asset values.

Further attention to household needs, relating to both time allocation and income, is also implied. Incomes policy, including a Universal Basic Income, should be on the reform agenda. Minimum standards of income defined to meet the needs of whole households, combined with a shorter standard working week, would create greater protection from time pressures for all households and enable single income households to avoid poverty.

Financialisation has produced distinctive relations between capital and working-class households, which the HEM epitomises. Recognising this, it should become evident to households and workers that these other flows of value that dominate their lives are just as relevant to their exploitation as is earning wage income. Bryan and Rafferty (2018: 198-200) contend that organisations need to 'advocate and enact' responses to risk shifting and financialisation. The political will and collective agency to address these issues requires a basis in critical political economic understanding.

Janet Burstall completed a research Master degree in Political Economy at the University of Sydney in 2019.

jbur5470@alumni.sydney.edu.au

References

Australian Bureau of Statistics (2017) Household Expenditure Survey, Australia: Summary of Results, online: https://www.abs.gov.au/statistics/economy/finance/household-expenditure-survey-australia-summary-results/latest-release#average-household-spending

Australian Institute of Health and Welfare. (2021) Australia's welfare snapshots 2021, online: https://pp.aihw.gov.au/getmedia/e4f22915-cdf3-4a81-a101-edb87407b444/Australias-welfare-snapshots-2021.pdf.aspx

Australian Institute of Health and Welfare (2022) Home ownership and housing tenure, online: https://www.aihw.gov.au/reports/australias-welfare/home-ownership-and-housing-tenure

Australian Prudential Regulation Authority (2017) Prudential Practice Guide APG 223 Residential Mortgage Lending, February, online:

https://www.apra.gov.au/sites/default/files/APG-223-marked-up.pdf

Australian Prudential Regulation Authority (2022) Quarterly authorised deposit-taking institution statistics. 6 December, online: https://www.apra.gov.au/quarterly-authorised-deposit-taking-institution-statistics

Australian Securities and Investments Commission (2017) Review of mortgage broker remuneration: Report 516, online: http://download.asic.gov.au/media/4213629/rep516-published-16-3-2017-1.pdf

Australian Securities and Investments Commission v Westpac Banking Corporation (Liability Trial) (2019). FCA 1244, 13 August, online: http://www.austlii.edu.au/cgi-bin/viewdoc/au/cases/cth/FCA/2019/1244.html

Battellino, R. (2007) Australia's experience with financial deregulation: address to China Australia Governance Program, *Reserve Bank Bulletin*, August; 77-81, online: https://www.rba.gov.au/publications/bulletin/2007/aug/pdf/bu-0807-3.pdf

Bergmann, M. (2020) The determinants of mortgage defaults in Australia: evidence for the double-trigger hypothesis. (Research Discussion Paper) online: https://www.rba.gov.au/publications/rdp/2020/pdf/rdp2020-03.pdf

Bilston, T., Johnson, R., and Read, M. (2015) Stress testing the Australian household sector using the HILDA Survey (Research Discussion Paper). Reserve Bank of Australia website, online: https://www.rba.gov.au/publications/rdp/2015/pdf/rdp2015-01.pdf

Bilston, T. and Rodgers, D. (2013) A model for stress testing household lending in Australia, *Reserve Bank Bulletin*, December; 27-38, online: https://www.rba.gov.au/publications/bulletin/2013/dec/pdf/bu-1213-4.pdf

Bryan, D. (2008) Minimum Living Standards and the Working-Class Surplus: Higgins, Henderson and Housing, *Labour History*, Nov. 95; 213-221.

Bryan, D. and Rafferty, M. (2018) Risking together: how finance is dominating everyday life in Australia, Sydney: Sydney University Press.

Commonwealth of Australia. House of Representatives (2009) Parliamentary Debates (Official Hansard): National Consumer Credit Protection Bill 2009 Second Reading speech, 25 June (C. Bowen, Minister for Financial Services, Superannuation and Corporate Law and Minister for Human Services), online: https://parlinfo.aph.gov.au/parlInfo/genpdf/chamber/hansardr/2009-06-25/0010/hansard_frag.pdf;fileType=application%2Fpdf

Commonwealth of Australia. House of Representatives Standing Committee on Tax and Revenue (2022) The Australian Dream: Inquiry into housing affordability and supply in Australia, Canberra, online: https://parlinfo.aph.gov.au/parlInfo/download/committees/reportrep/024864/toc_pdf/TheA ustralianDream.pdf;fileType=application%2Fpdf

Byres, W. (2018) To All Authorised Deposit-Taking Institutions: Embedding sound residential mortgage lending practices. APRA, https://www.apra.gov.au/sites/default/files/Letter-Embedding-Sound-Residential-Mortgage-Lending-Practices-26042018.pdf

Dargan, O. (2012) Servicing calculators are changing! Home Loan Experts website, 15 Feb, online: https://www.homeloanexperts.com.au/blog/news/mortgage-lending-calculators-formajor-lenders-are-changing/

Davis, K. (2011) The Australian financial system in the 2000s: dodging the bullet, Reserve Bank of Australia Conference: the Australian economy in the 2000s, Sydney: Reserve Bank, 301-345, online: https://www.rba.gov.au/publications/confs/2011/pdf/davis.pdf

Debelle, G. (2010) The state of the mortgage market: address to Mortgage Innovation Conference, Sydney: Reserve Bank of Australia. 30 March. online: https://www.rba.gov.au/speeches/2010/sp-ag-300310.html

Dun and Bradstreet (2014) Consumer Financial Stress Index: stress forecast to rise. Online: https://dnb.com.au/article-confidex-financial-stress-forecast-to-rise.html#.XG3ZBRMzZ3Q

Edey, M. and Gray, B. (1996) The evolving structure of the Australian financial system, *The* Future of the Financial System: Reserve Bank of Australia Conference (pp.6-44), Sydney: Economic Research Department, Reserve Bank of Australia. online: https://www.rba.gov.au/publications/confs/1996/pdf/edey-gray.pdf

Eslake, S. (2017) No place like home: the impact of declining home ownership on retirement, Melbourne: Australian Institute of Superannuation Trustees, online: https://www.aist.asn.au/getattachment/Media-and-News/News/2017/No-place-like-homethe-impact-of-declining-home-ow/AIST_Housing-affordability-and-retirementincomes_FINAL-21032017.pdf

Fernandes, K and Jones, D. (2018) The Reserve Bank's Securitisation Dataset, Reserve Bank Bulletin, December, online: https://www.rba.gov.au/publications/bulletin/2018/dec/pdf/thereserve-banks-securitisation-dataset.pdf

Gizycki, M. (2001) The effect of macroeconomic conditions on banks risk and profitability (Research Discussion Paper), Reserve Bank Australia. online: https://www.rba.gov.au/publications/rdp/2001/pdf/rdp2001-06.pdf

Hall, A. (2017). *Trends in home ownership in Australia: a quick guide* (Research paper). Parliament of Australia Parliamentary Library, online:

https://parlinfo.aph.gov.au/parlInfo/download/library/prspub/5363116/upload_binary/5363116.pdf

Heath, M., Cadman, E. and Dormido, H. (2018) *How Australia's banks became the world's biggest property addicts*, 28 June, online: https://www.bloomberg.com/graphics/2018-australia-consumer-debt/?

Houses and Holes (2011) Another ponzi trick exposed, *Macrobusiness*, April 19, online: https://www.macrobusiness.com.au/2011/04/another-ponzi-trick-exposed/

Illion (2020) Mortgage Nation Report: The great Australian debt, online: https://www.illion.com.au/wp-content/uploads/2020/02/Mortgage-Nation-Final-V6-Compressed.pdf

Jefferson, T and Preston, A (2009) Women's earnings security in a context of economic crisis, *Journal of Australian Political Economy*, No. 64, pp.117–138.

Jorda, O., Schularick, M. and Taylor, A. (2016) The great mortgaging: housing finance, crises and business cycles, *Economic Policy*, Vol. 31 No. 85, pp.107-152.

Kohler, M. (2017) *Mortgage insights from securitisation data:* Australian Securitisation Forum Sydney, Reserve Bank of Australia, 20 November, online: https://www.rba.gov.au/speeches/2017/pdf/sp-so-dm-2017-11-20.pdf

Konings, M., Adkins, L., Bryant, G., Maalsen, S. and Troy, L. (2021) Lock-in and lock-out: COVID-19 and the dynamics of the asset economy, *Journal of Australian Political Economy*, No. 87, pp.20-47.

Laker, J. F. (2007) Credit standards in housing lending: some further insights, Address to Institute of Chartered Accountants in Australia. Melbourne, Australian Prudential Regulation Authority, 20 June, online: http://www.apra.gov.au/Speeches/Documents/04-Chart-Acctnts-MN-20-Jun-07.pdf

Liondis, G. (2011) Relaxed lending could be debt trap, Australian Financial Review, April 19, online: http://www.afr.com/business/banking-and-finance/financial-services/relaxed-lending-could-be-debt-trap-20110418-iht67

Lovicu, G., Lim, J., Faferko, A., Gao, A., Suthakar, A and Twohig, D. (2023) Fixed-rate Housing Loans: Monetary Policy Transmission and Financial Stability Risks, Reserve Bank Bulletin, March 16, online: https://www.rba.gov.au/publications/bulletin/2023/mar/fixed-rate-housing-loans-monetary-policy-transmission-and-financial-stability-risks.html

Lowe, P. (2017) Remarks at Reserve Bank Board Dinner, 4 April. Reserve Bank of Australia, online: https://www.rba.gov.au/speeches/2017/sp-gov-2017-04-04.html

Marx, K. (1973) Grundrisse: foundations of the critique of political economy (rough draft), Harmondsworth: Penguin.

Melbourne Institute of Applied Economic and Social Research (2014) *Household Expenditure Measure*, University of Melbourne, March, unpublished, supplied by correspondence 20 May 2018.

Moody's Investor Service (2017) RMBS – Australia. Mortgage Delinquency map: home loan arrears rising in all Australian states, 6 April, online:

https://www.macrobusiness.com.au/wp-content/uploads/2017/04/Report-Mortgagedelinquency-map-home-loan-arrears-rising-in-all-Australian-states-Apr2017-1.pdf

Mousina, D (2023) Econosights: mortgage stress in Australia. AMP, online: https://www.amp.com.au/content/dam/amp-au/documents/insights/econosights-mortgagestress-in-australia.pdf

NAB (2018)Consumer Behaviour **Ouarterly** Survey, April, online: https://business.nab.com.au/nab-quarterly-consumer-behaviour-survey-q1-2018-29510/

Consumer Credit Protection Act (2009)Commonwealth) online: https://www.legislation.gov.au/Details/C2020C00215

North, M. (2018a) Home prices and lending to fall? Digital Finance Analytics, 5 April, online: http://digitalfinanceanalytics.com/blog/home-prices-and-lending-to-fall-perhapshard/

North, M. (2018b) Household finance confidence slides again in March, Digital Finance Analytics, 18 April, online: http://digitalfinanceanalytics.com/blog/household-financeconfidence-slides-again-in-march/

OECD.Stat. (2022)Analytical online: house price indicators. https://stats.oecd.org/Index.aspx?DataSetCode=HOUSE_PRICES#

Pawson, I. (2018) Reframing Australia's housing affordability problem: the politics and economics of negative gearing, Journal of Australian Political Economy. No. 81, 121-43.

Peetz, D. (2018) The Labour Share, Power and Financialisation, Journal of Australian Political Economy, No. 81, 33-51.

Pickette, R. (2021) Superannuation, financialisation and income inequality, Journal of Australian Political Economy, No. 88, 31-51.

Postone, M. (2017) The current crisis and the anachronism of value: a Marxian reading, Continental Thought & Theory: a journal of intellectual freedom, 1:4: 150 years of Capital, online: https://ir.canterbury.ac.nz/handle/10092/14485

Pyburne, P. (2021) National Consumer Credit Protection Amendment (Supporting Economic Recovery) Bill 2020 (Bills Digest No. 52, 2020). Australian Parliament House, online: https://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/bd/bd2021a/21bd052

Reserve Bank ofAustralia (n.d.) About Financial Stability, online: https://www.rba.gov.au/fin-stability/about.html

Reserve Bank of Australia (2004) Financial Stability Review, March, https://www.rba.gov.au/publications/fsr/2004/mar/pdf/0304.pdf

Reserve Bank of Australia (2018a) Financial Stability Review, April, online: https://www.rba.gov.au/publications/fsr/2018/apr/pdf/financial-stability-review-2018-04.pdf

Reserve Bank of Australia (2018b) Financial Stability Review, October, online: https://www.rba.gov.au/publications/fsr/2018/oct/pdf/financial-stability-review-2018-10.pdf

Reserve Bank of Australia (2018c) Household debt and financial stress (D19/163440). Online: https://www.rba.gov.au/information/foi/disclosure-log/pdf/181925.pdf

Reserve Bank of Australia (2021) Financial Stability Review, October, online: https://www.rba.gov.au/publications/fsr/2021/oct/pdf/financial-stability-review-2021-10.pdf

Reserve Bank of Australia (2022a) Financial Stability Review, October, online: https://www.rba.gov.au/publications/fsr/2022/oct/pdf/financial-stability-review-2022-10.pdf

Reserve Bank of Australia. (2022b) *Household Finances – Selected Ratios – E2* (excel spreadsheet), online: https://www.rba.gov.au/statistics/tables/

Rfi Analytics (2018a) *The Household Expenditure Measure (HEM) www.rfigroup.com* (Supplied by correspondence 20 May 2018).

Rfi Analytics (2018b) Subscription Agreement – Household Expenditure Measure (HEM, www.rfigroup.com. (Supplied by correspondence 20 May 2018).

Richards, H. (2016) A prudential approach to mortgage lending. (Address to Macquarie University Financial Risk Day, Sydney). APRA, online: https://www.apra.gov.au/media-centre/speeches/prudential-approach-mortgage-lending

Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (2018a) *Transcript of proceedings (O/N H-871451)* 14 Mar, online: https://financialservices.royalcommission.gov.au/publichearings/Documents/transcripts-2018/transcript-14-march-2018.pdf

Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (2018b) Commonwealth Bank of Australia and its associated Australian entities (CBA) Round 1 Hearing – Consumer Lending Closing Submissions. 3 April, online: https://financialservices.royalcommission.gov.au/public-hearings/Documents/Round-1-written-submissions/Commonwealth-Bank-of-Australia.pdf

Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (2019) *Final Report Vol 1*, online:

https://www.royalcommission.gov.au/system/files/2020-09/fsrc-volume-1-final-report.pdf

Sweeney, N. (2023) Pandemic buyers fall into negative equity. Australian Financial Review, 15 February, online: https://www.afr.com/property/residential/pandemic-buyers-fall-into-negative-equity-20230213-p5ck33

Wilkins, R., Vera-Toscano, E., Botha, F. and Dahmann, S.C. (2021) *The Household, Income and Labour Dynamics in Australia Survey: Selected Findings from Waves 1 to 19*, Melbourne Institute: Applied Economic & Social Research, the University of Melbourne.

Yeates, C. (2022) Digital mortgage battle to erupt as fintechs eye home loans. Sydney Morning Herald, January 15, online: https://www.smh.com.au/business/banking-and-finance/digital-mortgage-battle-to-erupt-as-fintechs-eye-home-loans-20211213-p59h7l.html

Yeates, C. and Grieve, C. (2021) Highly stressful: Red-hot property market tests banks' home loan factories, *Sydney Morning Herald*, 13 November, online: https://www.smh.com.au/business/banking-and-finance/highly-stressful-red-hot-property-market-tests-banks-home-loan-factories-20211110-p597sc.html