

Questions on Notice – Reserve Bank of Australia
Tim Wilson MP
Chair, House of Representative’s Standing Committee on Economics

- 1. In less than a year the RBA has stated it believes the most likely next movement in rates is up, then that rates would remain stable, then reduced, and now that the economy is at a turning point. Can the RBA outline what confidence it believes Australians can take from such a claim given that the RBA has not a consistent position on the direction on the Australian economy over that period?**

Answer:

In the first half of 2018, the economy was growing at an above-trend pace, the unemployment rate was declining quite quickly, wage growth was picking up and inflation had lifted to be just above 2 per cent. In that environment, our assessment was that we were making progress towards our goals, but that progress was gradual. Given that, the Bank’s assessment was that it was more likely that the next movement in interest rates would be up, but that would be some time away. Towards the end of 2018, the national accounts recorded slower growth and revised lower the previous path of consumption. Inflation was lower than expected but employment growth continued to exceed our forecasts. The global economy also slowed by more than most observers had expected in the second half of 2018. Also surveys of business conditions had declined from well above average to around average in early 2019.

In light of that new information, we revised our outlook such that in February 2019, when we appeared before the Committee, our assessment was that the risks to the outlook for the economy and the probability that interest rates would rise or fall were more evenly balanced. This primarily reflected the change in the outlook for consumption.

Subsequent to that, employment growth continued to exceed our forecast, but inflation and output data were slightly lower than expected. Over the subsequent months, the incoming data resulted in further reassessment of the outlook. The unemployment rate edged up, which together with information that the pick-up in wages growth had stalled, caused us to assess that the economy had greater spare capacity than we had previously estimated. This in turn provided scope for monetary policy to be eased to make further inroads into the spare capacity and ensure greater confidence that we would be able to achieve the objectives of full employment and inflation consistent with the target.

In sum, as the evidence has come in, as is always the case, we have reassessed our view of the path that the economy was on, and adjusted monetary policy in line with that reassessment. The Bank seeks to be as transparent as possible regarding how it views the economic outlook, recognising that often things turn out different from what was expected. We also seek to be transparent about our assessment of the risks around the outlook and explain why outcomes differ from expectations.

- 2. The RBA has flagged the possibility of unconventional monetary policy, including quantitative easing. Can you please advise:**
 - a. The different options the RBA believes are available to it for unconventional monetary policy?**
 - b. If unconventional monetary policy options are being considered outside of quantitative easing?**
 - c. If so, what are the details of these other options?**
 - d. What options for quantitative easing the RBA are currently considering for implementation should economic circumstances seemingly justify?**
 - e. What options for quantitative easing the RBA are not currently considering for implementation should economic circumstances seemingly justify?**
 - f. How they would practically apply?**
 - g. And the volume?**

Answer:

(a-c) While at this point it is unlikely that the Reserve Bank will need to employ unconventional monetary measures, the Reserve Bank Board considered it prudent to understand the issues involved and has studied the experience of other countries. Measures that have been employed elsewhere fall into six broad categories, as follows:

- very low and even negative policy interest rates
- explicit forward guidance that policy rates will remain at a very low level until some time has passed or until certain conditions are met
- purchasing government securities, so as to lower longer-term risk-free interest rates
- providing longer-term funding to banks to support credit creation, typically at a favourable price and on the condition that banks lend
- supporting financial conditions more broadly by purchasing private sector assets, such as mortgage-backed securities, corporate bonds or – in a few cases – even equities
- foreign exchange intervention.

Some of the key lessons that can be drawn from the international experience are:

- the effectiveness of these measures depends upon the specific economic and financial conditions facing each economy at the time, as well as the structure of its financial system
- the measures had been effective in cases where there had been severe dislocations impeding the supply of credit
- they have also been successful in lowering government bond yields, which in turn lowered interest rates across the economy for private borrowers, since government bond yields are the risk-free rates underpinning all these interest rates
- a package of measures that reinforce each other tended to be more effective than measures implemented in isolation
- it is important for the central bank to communicate clearly and consistently about the unconventional measures when they are implemented.

It is worth noting two additional considerations regarding the lessons learnt. First, while there is widespread agreement about the lessons outlined above, a full evaluation of the international experience cannot yet be undertaken as many of the measures that have been applied are yet to be unwound. Second, some of the measures used were intended to address severe financial market dislocation, which is not something that is of concern in the Australian context.

(d) At a cash rate of 1 per cent, the Reserve Bank Board still has scope for conventional policy easing, should it be required. While unlikely at the current juncture, if circumstances were to warrant it, the Board would consider unconventional monetary policy options.

Which of the measures used in other countries would be appropriate for Australia would depend on the specific circumstances at the time. While it is difficult to rule any specific measure in or out, the focus would likely be on reducing the risk-free interest rate. This would involve reducing the cash rate to a very low level and possibly purchasing government securities to lower the risk-free rate further out along the term spectrum.

(e) See above. Which of the specific measures would be not appropriate would depend on the specific economic circumstances.

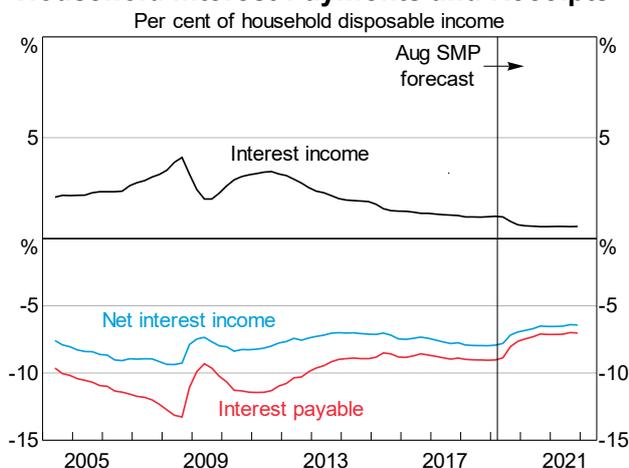
- (f) A number of the measures would not be new. For example, the Reserve Bank already purchases government securities for liquidity management purposes, although this is not the same as the large-scale purchases of government securities often seen in unconventional monetary policy measures. Also, central banks implemented monetary policy a few decades ago largely by purchasing and selling government bonds. In the past, the Reserve Bank has also used foreign exchange intervention when market conditions required this. Just as the Bank did during the global financial crisis, the application of these measures would evolve as required.
- (g) Where unconventional monetary policy measures involve expanding the central bank's balance sheet, how many assets would need to be purchased to achieve the desired outcome would depend on the economic and financial market circumstances of the time.
3. In response to questions about the December Quarter 2012 Bulletin [Households' Interest-bearing assets](#) you outlined that you have not conducted any modelling on the consequences of changing impacts from monetary easing resulting from an ageing population.
- Can you clarify whether you intend to do so?
 - If so, by what date?
 - If not, why not when the RBA's own research highlights it may diminish the economic impact of lowering interest rates?

Answer:

We routinely analyse and update our assessment of the effects of monetary policy on different groups in the household sector. The Reserve Bank Board also discusses distributional outcomes. At the meeting in June, for example, Board members discussed the distributional implications of low interest rates on household incomes (see [June 2019 minutes](#)). These and similar discussions have been informed by the finding that the household sector is, in aggregate, a net payer of interest.

The Board discussed the graphs presented below, which are components of the latest forecasts published in the August 2019 *Statement on Monetary Policy*. (These forecasts were based on a technical assumption that interest rates would move in line with market pricing. At the time the forecasts were prepared, market pricing implied two cuts to the cash rate.) Both interest payments and interest receipts of the household sector would decline in that scenario, with the net effect being a decline in net interest paid and an increase in household disposable income.

Household Interest Payments and Receipts*



* Excludes unincorporates and before adjustments for FISIM
Sources: ABS; RBA

The authors of the 2012 article suggested that it was possible that interest-bearing assets would grow over time as the population ages. Since 2012, household holdings of interest-bearing deposits have increased, but interest payments have increased by more than interest income, because household debt has also increased. Consequently, estimates suggest that lower interest rates would boost aggregate cash flows by more now than in 2012.

In aggregate, Australian households benefit from the effect of lower interest rates. While the income of households with deposits is lower than if rates had not been reduced, the household sector as a whole has around twice as much debt as deposits. Furthermore, the direct cash-flow channel is only one channel through which an ageing population can affect the sensitivity of the economy to monetary policy. For instance, an ageing population can also imply higher levels of wealth, which would mean that the wealth effect of monetary policy is more important today than in the past.

In addition to its ongoing monitoring and analysis, staff have undertaken research into the effects of demographic change in Australia. In 2017, a staff internal note constructed a theoretical framework to consider the effect of demographic change on the economy between 1950 and 2050 (see 'Q3 – Attachment 1.pdf'). Under the framework assumptions, the work predicted a substantial accumulation of assets by households in response to demographic changes. This was found to have a modest effect on consumption and investment shares. But the accumulation of assets led to a decline in the neutral interest rate. In addition, later retirement and higher working-age labour force participation were found to offset pressures on publicly provided pensions.

In 2018, a staff note examined the relationship between changes in monetary policy and the distributions of income and wealth in Australia (see 'Q3 – Attachment 2.pdf'). In the short run, lower interest rates were estimated to reduce income inequality by increasing employment, which boosts incomes by more at the lower end of the income distribution. This work also suggested that the net effect of changes in monetary policy on wealth inequality appears to be small for Australia. A 2016 Bulletin article also touched on this topic – see <https://www.rba.gov.au/publications/bulletin/2016/dec/bu-1216-1a.html>

- 4. In reference to the previous question, are you aware of any research or modelling that assess the changing impact of monetary policy based on an ageing population?**
- a. And if so, what is the research?**
 - b. If none exists to the best of the RBA's knowledge, does the RBA intend to commission any research or modelling into this area?**
 - c. If not, why?**

Answer:

There is external work on this question that looks at the links between an ageing population, the mortgage market and monetary policy. In most cases, the analysis focuses on the United States or other large economies, which have a different experience in terms of demographics and, in the United States at least, labour market participation. A selection of papers includes the following and a broader literature review is attached (see 'Q4 – Attachment 1.pdf').

Wong, Arlene (2016), 'Population Ageing and the Transmission of Monetary Policy to Consumption', https://economics.yale.edu/sites/default/files/files/Events/jf-2016/Arlene_Wong_JMP_Latest.pdf

Kantur Z (2013): 'Aging and Monetary Policy', unpublished working paper

Fujiwara and Teranishi (2008), 'A dynamic new Keynesian life-cycle model: Societal aging, demographics, and monetary policy', *Journal of Economic Dynamics and Control*

The answer to Q3 focuses on the cash flow channel, which is one channel through which an ageing population may affect the sensitivity of the economy to monetary policy. There are also other channels. For example, an ageing population may also imply higher levels of wealth and this could mean that the wealth effect of monetary policy is more important today than in the past. We are currently undertaking some internal work on the effect of the age structure on these other channels. Preliminary results suggest that the sensitivities of housing prices or unemployment to monetary policy across different regions do not vary materially with the age structure.

In addition to these internal projects, the Bank has provided financial support to the Australian Research Council Centre of Excellence in Population Ageing Research (CEPAR). CEPAR is pursuing research on the economic and social challenges of population ageing through work on, among other areas, the macroeconomic effects of an ageing population and the implications of the mature workforce for the labour market and organisations.

- 5. Has the RBA completed any modelling or research on the impact of different interest rate scenarios on those without significant assets (such as home ownership) and/or younger Australians?**
- If so, can you please supply a copy?**
 - If it is currently being completed, what date will it be available?**
 - If not, do you intend to do so?**
 - If no, can you outline why?**

Answer:

Similar to the answer for Question 3, we routinely consider the impact of changes in interest rates on different groups in the community. The cash-flow channel research explores the effect of interest rate changes on households without significant interest-bearing assets, which typically includes young Australians and renters, relative to the effects on households with higher levels of assets. There was an [RDP](#) and [Bulletin](#) article on this topic. For households without significant assets or interest payments and receipts, the transmission of lower interest rates boosting activity and creating jobs would be the most relevant.

- 6. Has the RBA completed any modelling or research on the impact of different interest rate scenarios on those with significant assets (such as home ownership) and/or older Australians?**
- If so, can you please supply a copy?**
 - If it is currently being completed, what date will it be available?**
 - If not, do you intend to do so?**
 - If no, can you outline why?**

Answer:

See responses to questions 4 and 5. The 'saver' households also include older Australians.

- 7. In December 2018 Guy Debelle delivered a speech [Lessons and Questions from the GFC](#) that "QE [Quantitative Easing] is a policy option in Australia, should it be required". Please advise:**
- What were the approvals for this speech within the RBA before its delivery?**
 - To what extent, if any, was there discussion within the RBA of a representative of the RBA discussing options for QE as a policy option?**
 - To whom was this speech circulated prior to its finalisation?**
 - To whom was this speech circulated prior to its delivery?**
 - Whether any modelling of QE had been completed by the date of delivery over the past decade?**
 - If so, can you supply copies of this modelling?**

Answer:

- a) The topic and content of this speech was discussed between the Governor and Deputy Governor before delivery as is standard practice for all speeches.
- b) The speech was read and commented on by senior Bank staff: the Governor and the Assistant Governors of Economic Group, Financial Markets Group and Financial System Group as well as the Department Heads in those Groups. It was also read by the two staff members who helped in the preparation of the data for the speech. This is standard practice for speeches by RBA staff.
- c) The group mentioned in (b), as well as the RBA's media office for proof-reading and type-setting.
- d) As for (b). In addition, as is the Bank's regular practice, the speech was circulated under embargo to media who have signed a deed with the RBA, as well as to the Treasurer's office for information only.
- e) No. As noted in the speech, the RBA had examined the experience of other countries with other tools of monetary policy and have learned from that, as well as the extensive literature on the issue, a sample of which is included below. The Deputy Governor was Chair of the Markets Committee of the BIS for 4 years, and a member of that committee as well as the Committee on the Global Financial System at the BIS for more than a decade. During this period, the experiences and lessons of countries with QE were extensively discussed at these Committees.
- f) N/A

Chung, H, E Gagnon, T Nakata, M Paustian, B Schlusche, J Trevino, D Vilan and W Zheng (2019): 'Monetary policy options at the effective lower bound: Assessing the Federal Reserve's current policy toolkit', FEDS 2019-003.

Gagnon, J, M Raskin, J Remache and B Sack (2011): 'The financial market effects of the Federal Reserve's large-scale asset purchases', International Journal of Central Banking, vol 7, no 1, March, pp 3–43.

Greenlaw, D, J D Hamilton, E S Harris and K D West (2018): 'A skeptical view of the impact of the Fed's balance sheet', NBER Working Papers, no 24687.

Johannes Stroebel & John B. Taylor, (2012) 'Estimated Impact of the Federal Reserve's Mortgage-Backed Securities Purchase Program', International Journal of Central Banking, International Journal of Central Banking, vol. 8(2), pages 1-42, June.

Joyce, M, M Tong and R Woods (2011): 'The United Kingdom's quantitative easing policy: design, operation and impact', Bank of England Quarterly Bulletin, vol 51, no 3, pp 200–12.

Haldane, A, M Roberts-Sklar C Young and T Wieladek (2016): 'QE: The story so far', Bank of England Working Paper, no 624, October.

Christensen, J H E and G D Rudebusch (2012): 'The response of interest rates to US and UK quantitative easing', Economic Journal, vol 122, no 564, pp 385–414, November.

- 8. At the hearing the Governor was asked "We have discussed already today the enthusiasm to have higher wages and wage growth for the economy. What effect do you believe that continuing to increase the super guarantee to 12 per cent will have on workers' disposable income?" In response the Governor answered "I don't have any comment on that. I haven't studied it carefully enough, so I would rather avoid commenting, if you don't mind". As the RBA has now had time to consider the matter, could it please provide a response?**

Answer:

The super guarantee is scheduled to increase from 9.5 per cent to 10 per cent on 1 July 2021, and then increase by 0.5 percentage points each year until it reaches 12 per cent on 1 July 2025. The first 0.5 percentage point increment will take place in the last six months of the Bank's current forecast horizon. We have not examined this in detail yet, given its proposed timing. That said, the effect of changes in the guarantee on wage outcomes can be anticipated to depend on labour market conditions at the time and on the response of wage-setting bodies.

9. Can the RBA advise what the impact on wages would be from the legislated increase in the compulsory superannuation guarantee?

Answer:

Further to the previous response, we have not done any work on how the legislated increase in the compulsory superannuation guarantee will affect wages specifically.

Contacts in our liaison program with business and other interested parties have not raised this as an issue to date. Nor have wage-setting authorities released any information on how changes in the guarantee may affect their decisions. Evidence from past increases in the Guarantee suggest wages growth could be affected, but the timing and size of any effect will depend on labour market conditions at the time and other factors. For example, when the Super Guarantee was increased to 9.25 per cent in 2013, the Fair Work Commission stated in its minimum wage decision of that year that the increase in the minimum was 'lower than it otherwise would have been in the absence of the super guarantee increase'. We anticipate providing more information on the possible impact on wages growth closer to the time the change is implemented.

10. The RBA Governor has argued that low interest rates are not primarily responsible for house prices, while the RBA's own internal modelling, A Model of the Australian Housing Market, concludes otherwise. Respecting there is a diversity of views within the RBA, what is the data that the Governor is relying on for his conclusions?

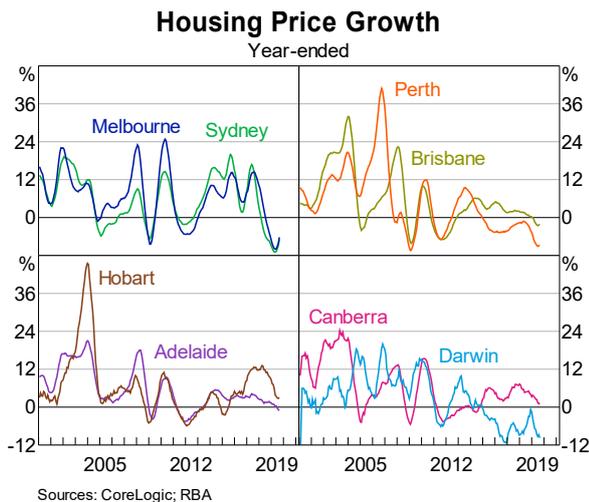
Answer:

Low interest rates are a factor driving housing demand. Over a long period, the structural decline in nominal interest rates stemming from lower inflation and financial deregulation have enabled both higher housing prices and higher household debt relative to income. The Bank has written about this on many occasions (see list below). In the response to lower interest rates, the precise balance between higher prices and additional housing constructed depends on factors such as the flexibility of housing supply, which in turn depends on factors such as the urban structure of the country (<https://www.rba.gov.au/publications/rdp/2001/2001-08.html>) and the existence of zoning restrictions on supply in particular cities (<https://www.rba.gov.au/publications/rdp/2018/2018-03.html>). International literature and cross-country experience confirm the role of supply and of drivers of demand other than interest rates in determining housing price developments; some of this literature is cited in the papers listed here.

Other factors also affect housing demand, and our assessment is that they have been quite important over recent years. In particular, Australia's strong population growth has been an important driver of both housing prices and rents in recent years.

The published model is used as an input into the staff forecasts, but it is not the only model of the housing market used for this purpose, and there are variables that it omits or underemphasises which can be important in some episodes. This is the nature of models based on econometric estimates, which capture the average response of a variable to others, and in most cases do not capture how those responses might vary in different circumstances.

Supporting the conclusion that factors other than interest rates can have a material influence on house prices, housing price developments across different major cities have differed substantially in recent years (see graph). This occurred even though all states face the same interest rates and have seen broadly similar rates of growth in wages and incomes.



In particular, these differences highlight the role of population shifts into and out of particular cities. The effect of city-level population shifts cannot be captured in a national-level model such as the model published earlier this year. For example, the strong growth and subsequent reversal in housing prices in Perth over the past decade or so has been unrelated to movements in interest rates. Rather, it has reflected large shifts in population in response to the mining investment boom and the end of that boom. Similarly, the recent material decline in housing prices in Sydney and Melbourne has occurred at a time that interest rates were broadly steady and therefore could not have been the primary cause of the decline.

Select listing of Bank publications discussing the implications of disinflation and deregulation for housing prices and household debt:

<https://www.rba.gov.au/publications/submissions/financial-sector/financial-system-inquiry-2014-03/financial-developments-since-wallis-inquiry.html>

<https://www.rba.gov.au/publications/bulletin/2015/sep/pdf/bu-0915-3.pdf>

<https://www.rba.gov.au/publications/bulletin/2003/mar/1.html>

<https://www.rba.gov.au/publications/submissions/housing-and-housing-finance/inquiry-productivity-commission-on-first-home/factors-behind-recent-rise-in-house-prices.html>

<https://www.rba.gov.au/publications/submissions/housing-and-housing-finance/inquiry-affordable-housing/>

11. The RBA's 2016 payments survey found 3 per cent of Australians maintain hard cash reserves outside of their wallet over \$1,000. Does the RBA have any more recent data on the number of Australians holding significant cash reserves?
- Could the RBA provide additional information on why Australians keep significant cash reserves?
 - Does the RBA intend to complete another Consumer Payments Survey?
 - If so, when?
 - If not, why not?
 - If it is currently being completed, when will it be available?

Answer:

No. However, the Bank will be conducting the next Consumer Payments Survey later this year (see below).

- a) Data on banknotes outstanding indicate that the overall demand for cash continues to rise in Australia and many other economies. The value of banknotes in circulation in Australia is currently around 4 per cent of nominal GDP, higher than it was 20 years ago and even 50 years ago. There is around \$3,000 cash outstanding for every person in Australia. Since there has been a large decline in the share of transactions undertaken using cash over the past couple of decades, this suggests that there is an increasing role for cash as a store of value.

Using the data on banknotes outstanding, the Bank has attempted to estimate what proportion of banknotes on issue are used for different purposes – transactions, store of value and shadow economy. This research suggests that store-of-value demand by residents and foreigners accounts for around 60 per cent of outstanding banknotes by value. Use of cash for legitimate transactions accounts for around one-quarter of outstanding banknotes by value, with this share having fallen by 1–1½ percentage points per year over the past few decades. Shadow economy uses and banknotes simply being lost account for the remainder (see the table below). For more information see the Bulletin article, [Understanding Demand for Australia's Banknotes](#).

Summary of Banknote Share Estimates

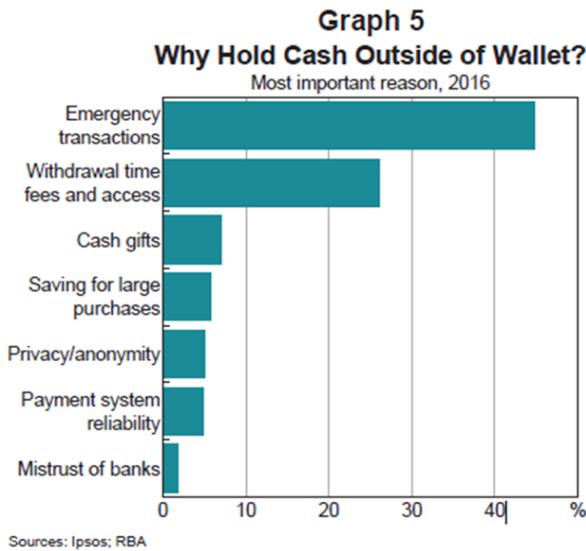
Per cent of total banknotes outstanding, by value

	Estimated range (%)	Central estimate (%)	Range in \$b
Transactional stock – legitimate	15–35	25	\$12–28
Hoarded stock^(a)	50–75	62.5	\$40–60
Australians	at least 10–20		\$8–16+
Foreigners	at least 0–15		\$0–12+
Shadow economy	4–8	5	\$3–6
Lost banknotes	5–10	7.5	\$4–8

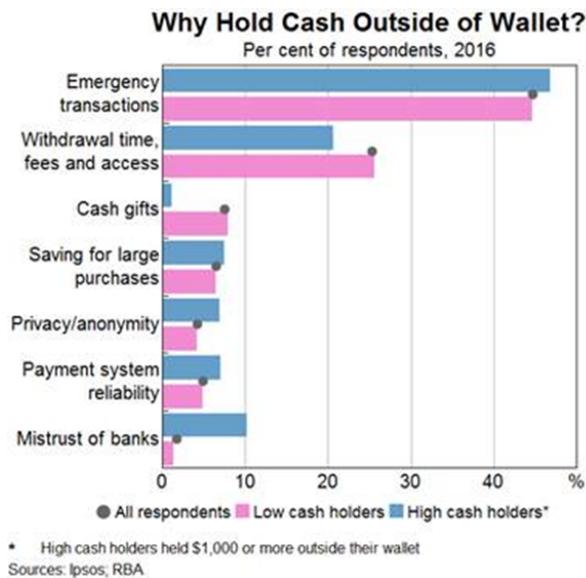
(a) Includes banknotes hoarded as illicit profits from shadow economy activity

There is limited information on why Australians keep significant cash reserves. The most direct evidence is from the Reserve Bank's periodic surveys on consumer payments behaviour. The 2016 survey asked respondents why they kept cash outside of their wallets. The most important reasons cited included: for emergency transactions; to avoid having to withdraw cash frequently and so save time and avoid ATM fees; to give as a gift; as a way to save money; due to a desire for privacy; due to concern about the reliability of electronic means of payment (e.g. to use in case of a card terminal

ouage); and due to a mistrust of banks. Graph 5 from the Bulletin Article ‘[How Australians Pay: New Survey Evidence](#)’ (reproduced here) illustrates the responses. While not stated explicitly, another reason why Australians may be holding cash in reserve is to evade asset tests that are used for means testing various social benefits.



Respondents who held \$1,000 or more outside their wallet tended to cite privacy, payment system reliability, and mistrust of banks as reasons for holding cash proportionally more than those who held less than \$1,000. They cited withdrawal times and cash for gifts proportionally less often. This is illustrated in the graph below.



- b) Yes
- c) October 2019. Our current practice is to conduct the survey every three years. There have been four surveys undertaken so far – the first one being in 2007.
- d) N/A
- e) We intend to publish a Bulletin article on the 2019 Consumer Payments Survey in March 2020, followed by a more detailed research paper in mid 2020.

12. What are the resource allocation implications behind zero (or near zero) interest rates?

13. In reference to the previous question, many claim they result in a gross misallocation of capital in the economy since projects that are not viable proceed. Do you agree?

Answer to questions 12 and 13:

Irrespective of the level of interest rates, a reduction in interest rates will mean that lending for some projects/businesses may occur that may not have occurred at higher rates. However, that does not mean that businesses borrowing at those lower rates are unviable. In making lending decisions, lenders consider the capacity of borrowers to repay the loan under a range of different circumstances, including the possibility that interest rates can rise at any time. Moreover, lending to large businesses is often undertaken with covenants in place that allow banks to review the loan and act if necessary in cases where a business may be facing persistent difficulties.

The cost of finance is only one consideration when companies make investment decisions. There is an extensive literature on the determinants of investment that suggests that interest rates are only one determinant along with other factors, such as expected sales. For some examples, see below.

Similarly, for households, future income growth and returns on assets are as important as the cost of finance. Monetary policy affects aggregate demand and so the expectations for sales, household incomes and asset returns. Moreover, information from the liaison program suggests that required (internal) rates of return for a project to proceed (also known as 'hurdle rates') have not come down in line with interest rates over the past decade or so. This suggests that projects that are unviable at 'normal' interest rates are in fact not proceeding, and even some projects that would be viable might not be proceeding.

Whatever the level of interest rates, at the margin more profitable firms/projects will be able to access finance more readily than less profitable firms/projects.

In some economies with sustained low levels of interest rates, such as Japan, there is evidence that firms that are unviable may be allowed to continue operation because of loan forbearance (on the part of banks and other lending institutions) and low interest rates. These so-called 'zombie firms' can stifle productivity and employment growth. To date, there is little evidence that prevalence of zombie firms is an issue in the Australian economy. In Australia, most firms that make losses and become unviable cease operations or are taken over relatively promptly. And most firms in that category do not have debt from financial institutions, but rather from other sources such as related parties, owners or trade creditors. As discussed above, prudent behaviour by lenders and Australia's robust prudential framework guards against lending for non-viable purposes.

References of analysis on these issues include:

Hambur J and La Cava G (2018) "Do Interest Rates Affect Business Investment? Evidence from Australian Company-level Data", RBA Research Discussion Paper 2018-05

<https://www.rba.gov.au/publications/rdp/2018/2018-05.html>

Fay, R., Gu nette, J. D., Leduc, M., & Morel, L. (2017). Why Is Global Business Investment So Weak? Some Insights from Advanced Economies

<https://www.bankofcanada.ca/wp-content/uploads/2017/05/boc-review-spring17-fay.pdf>

Lane K and Rosewall T (2015) 'Firms' investment decisions and interest rates', RBA Bulletin

<https://www.rba.gov.au/publications/bulletin/2015/jun/pdf/bu-0615-1.pdf>

IMF (International Monetary Fund) (2015), 'Private Investment: What's the Holdup?', in World Economic Outlook: Uneven Growth – Short- and Long-Term Factors, IMF, Washington, DC, pp 111–143
<https://www.elibrary.imf.org/view/IMF081/22085-9781498378000/22085-9781498378000/ch04.xml?redirect=true>

Banerjee, Ryan, Jonathan Kearns, and Marco J. Lombardi. "(Why) Is investment weak?" BIS Quarterly Review March (2015)
https://www.bis.org/publ/qtrpdf/r_qt1503g.pdf

Sharpe SA and GA Suarez (2014), 'Why Isn't Investment More Sensitive to Interest Rates: Evidence from Surveys', Board of Governors of the Federal Reserve System Finance and Economics Discussion Series No 2014-002, rev August 2015.

Sharpe S and G Suarez (2013), 'Do CFOs Think Investment is Sensitive to Interest Rates?', Federal Reserve Board of Governors FEDS Notes, 26 September.

Jagannathan R, I Meier and V Tarhan (2011), 'The Cross-section of Hurdle Rates for Capital Budgeting: An Empirical Analysis of Survey Data', NBER Working Paper No 16770.

Cockerell L and Pennings S (2007) 'Private business investment in Australia', RBA Research Discussion Paper 2007-09
<https://www.rba.gov.au/publications/rdp/2007/pdf/rdp2007-09.pdf>

McDonald RL (2000), 'Real Options and Rules of Thumb in Capital Budgeting', in M Brennan and L Trigeorgis (eds), Project Flexibility, Agency, and Competition, Oxford University Press, Oxford, pp 13–33.

Dixit A and R Pindyck (1994), Investment Under Uncertainty, Princeton University Press, Princeton.
Blanchard OJ (1986), 'Comments and Discussion on "Investment, Output, and the Cost of Capital"', Brookings Papers on Economic Activity, 1986(1), pp 153–158.

14. At the last hearing the RBA Governor stated "At the moment, there are some capacity constraints in parts of the infrastructure sector, but these should not prevent us from looking for further opportunities to boost the economy's productive capacity and support domestic demand, and there's no shortage of finance to do this, with interest rates today the lowest they've ever been". What data, if any, is the RBA using to justify "capacity constraints"?

Answer:

The Bank's business liaison program covers most of the main participants in this part of the construction industry, and the Bank also maintains close contacts with state governments involved in major infrastructure projects. These contacts have stated that many firms servicing the large east coast infrastructure projects are operating close to capacity; firms often indicate that their order books are full with the work that is underway and planned in the near future. Contacts in the industry consistently highlight the shortage of specialised labour, including engineers, geotechnical consultants, surveyors and specialist trades required. More generalist labour skills, however, are reportedly readily available. A few firms also highlight the limited availability of some specialised equipment required to carry out some of these projects in Australia, such as tunnel boring machines and specialised graders. A common message expressed by liaison contacts is a desire for governments to effectively stage and coordinate their projects so that firms are able to adequately meet demand, rather than have all commencing around the same time, which may exacerbate potential labour, capital and materials shortages. For example, project delays (related to later start times or increased project durations) have made it difficult for some firms to coordinate their resourcing between projects. By contrast,

contacts in the industry often express the view that collections of smaller-scale projects are easier to coordinate and do not have as great a need for specialist skills and equipment in short supply.

- 15. When retail banks reduce their interest rates the benefit of the rate cut is often passed through to interest-only investors through reduced monthly payments, while many homeowners with principal and interest loans often see no reduction in their overall repayment with any gap from reduced rates taken as an additional payment off the principal of the loan. Therefore, has the RBA completed any modelling on the diminished stimulatory effect of interest rate cuts when there may be less benefit for home owners?**
- a. If so, can you please supply a copy?**
 - b. If it is currently being completed, what date will it be available? If not, do you intend to do so?**
 - c. If no, could you outline why?**

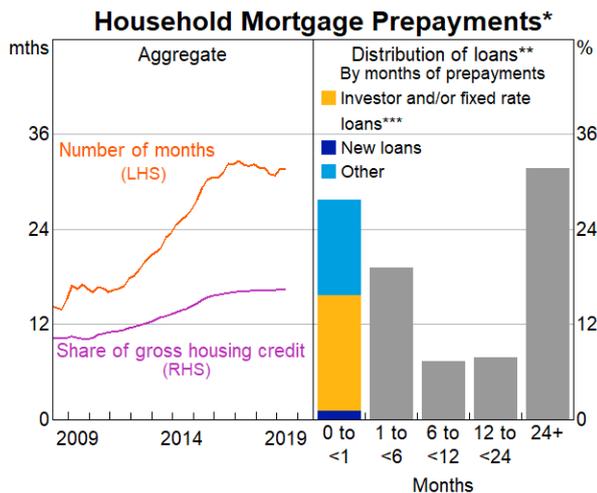
Answer:

(a–c) The RBA has analysed this issue extensively, and published the results of this in the *Financial Stability Review*, the *Statement on Monetary Policy* and other Bank publications (for some examples of recent years see below).

A large share of households with mortgages have variable rate loans; variable rate loans account for around 80 per cent of the stock of housing credit outstanding. Banks have passed through the two recent rate cuts to standard variable rates in a way that is broadly consistent with past behaviour.

All households with a variable rate mortgage benefit from lower required mortgage repayments when banks reduce their standard variable rates. This is true for principal-and-interest loans as well as interest-only loans. Some households may choose to maintain their previous repayment amount following an interest rate reduction; in that case the additional cash flow is used to pay down their mortgages faster than otherwise (often in the form of an increase in their offset or redraw accounts). This would bring them closer to the point at which they will be comfortable with the state of their balance sheets. Thereafter, they may choose to consume more of any increase in their disposable incomes.

Other borrowers may reduce their repayments in the face of lower interest rates by notifying their lender of that intention. There is mixed evidence of whether these borrowers are reducing their repayments at a pace that is different from the past. On the one hand, a reduced appetite for debt among households could suggest that they would be more likely to leave their repayments unchanged in the face of lower interest rates. On the other hand, there are some reasons to expect that there may be a greater propensity to reduce repayments. Through our liaison with banks, we know that the banks are willing to accommodate good quality borrowers who want to reduce their scheduled repayments. Also, the fact that it is now easier for lenders to communicate with their customers and for customers to accept offers to reduce their repayments – via online banking applications and emails – would tend to make it more likely that borrowers reduce repayments compared with earlier decades. As mentioned above, households can also benefit from the flexibility of features such as offset accounts, which can enable households to change their spending patterns even if they choose to maintain their mortgage repayments. Indeed, many households are ahead on their mortgages and have a buffer of savings in offset accounts that they can choose to drawdown.



* Available redraw plus offset account balances
 ** As a share of the total number of loans as at June 2019
 *** These loans have features that discourage prepayments
 Sources: APRA; RBA; Securitisation System

The RBA has undertaken modelling on the aggregate effect of interest rate changes on household consumption. For example, please see a speech by Christopher Kent (2015) ‘Monetary policy transmission: what’s known and what’s changed?’

<https://www.rba.gov.au/speeches/2015/sp-ag-2015-06-15.html>

Unfortunately, the available data do not allow a similar analysis for more detailed sub-groups of borrowers.

Other references of analysis on these issues include:

RBA, Financial Stability Review (2019), Chapter 2 – Household and Business Finances:

<https://www.rba.gov.au/publications/fsr/2019/apr/household-business-finances.html>

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

<https://www.rba.gov.au/publications/rdp/2019/pdf/rdp2019-06.pdf>

La Cava, G, Hughson H and Kaplan G (2016) ‘The household cash flow channel of monetary policy’, RBA Research Discussion Paper.

<https://www.rba.gov.au/publications/rdp/2016/2016-12.html>

RBA, Statement on Monetary Policy (2015), Box E – Offset account balances and housing credit:

<https://www.rba.gov.au/publications/smp/2015/aug/pdf/box-e-offset-account-balances-and-housing-credit.pdf>

RBA, Financial Stability Review (2012), Box B: Households’ mortgage prepayment buffers:

<https://www.rba.gov.au/publications/fsr/2012/sep/box-b.html>

16. In reference to the previous question, has there been any modelling on the comparable stimulatory impact of reduced interest rates on Australians without a mortgage compared to those that have a mortgage?

- a. If so, can you please supply a copy?
- b. If it is currently being completed, what date will it be available?
- c. If not, do you intend to do so?
- d. If no, could you outline why?

Answer:

(a-d) The Bank has undertaken a large amount of research into the transmission of monetary policy at the aggregate level, which informs our understanding of how different cohorts in the community are affected. Comparing two specific cohorts is difficult, as monetary policy works through multiple channels. At an aggregate level, changes to interest rates influence economic activity, employment and inflation through several channels, for example, by changing incentives for households and businesses to save rather than consume or invest and by reducing the amount of interest they pay on debt and the interest received (the 'cash flow channel' referred to in other responses in this document). Changes in interest rates can also lead to changes in the exchange rate and asset prices, which can also influence household and business decisions. For further information, see Atkin and La Cava (2017) and references therein.

Even at the aggregate level, it is difficult to identify exactly how large each of these effects is. Taken together, estimates from work at the Reserve Bank suggest that lowering the cash rate by 100 basis points leads to economic activity, as measured by GDP, being $\frac{1}{2}$ to $\frac{3}{4}$ percentage point higher than it otherwise would be over the course of two years. Lower interest rates and a stronger economy benefit the community as a whole, but the effects on individuals will differ. A comparison of the 'comparable stimulatory impact of reduced interest rates on Australians with and without a mortgage' depends on their personal circumstances, such as employment status, asset holdings and other debt. For example, a mortgage holder will benefit from lower interest rates through higher cash flow, among other channels. The non-mortgage holder may benefit from higher asset values, and/or a stronger labour market.

As noted in other responses, as part of our regular analysis of economic activity, staff carefully consider how monetary policy affects different cohorts in the community. Some recent published work related to mortgage holders versus non-mortgage holders includes:

Christopher Kent (2015) "Monetary policy transmission: what's known and what's changed?" See: <https://www.rba.gov.au/speeches/2015/sp-ag-2015-06-15.html>

Hughson H, G La Cava and G Kaplan (2016), 'The Household Cash Flow Channel of Monetary Policy', RBA Research Discussion Paper 2016-12. See: <https://www.rba.gov.au/publications/rdp/2016/2016-12.html>

Hughson H, G La Cava, P Ryan and P Smith (2016), 'The Household Cash Flow Channel of Monetary Policy', RBA Bulletin, September. See: <https://www.rba.gov.au/publications/bulletin/2016/sep/3.html>.

17. The 2018 Bulletin article, [Perceptions of Job Security in Australia](#), referenced the recent view that low job security is constraining wage growth across a number of advanced economies, including Australia. The bulletin concludes by stating that "the recent decline in perceived job security has been broad based across industries, occupations, job structure and personal characteristics". Given the trend in unemployment since 2014, could the RBA provide additional analysis to why job security across the economy has not improved?

Answer:

Perceived probabilities of job loss, the measure of job insecurity used in the 2018 Bulletin article, have in fact declined somewhat in recent years. This trend is evident both in the HILDA survey data and the ABS Labour Force Survey. However, both measures remain higher than their pre-crisis levels, and the reported expected probability of job loss remains much higher than actual experience of job loss (see Graphs 1 and 4 in the

attachment 'Q17 – Attachment 1.pdf'). We have not done further work explicitly on the question of why these measures have not declined further, subsequent to the release of the Bulletin article. However one possible explanation could be that the probability of job loss has remained fairly constant (see Graph 4 in the attached note). A constant flow of job losses is consistent with a declining rate of unemployment if the recently unemployed can find new jobs sooner on average than in the past. One explanation for the relatively constant rate of job loss could be that this measure includes workers on fixed-term contracts that are not renewed. As reported in a paper presented to the 2019 RBA Conference by Inga Lass and Mark Wooden, the share of workers on fixed-term contracts has trended up over the past 15 years, though not in the past few years.

(See <https://www.rba.gov.au/publications/confs/2019/pdf/rba-conference-2019-lass-wooden.pdf>)

18. In the hearings the following exchange occurred:

“Dr Ellis: ... Very few people have large enough balances that that would form a significant fraction of their income. So, as the governor mentioned, the share of people who have debt and who have a positive effect on their cash flows when interest rates fall more than outweighs the effect on consumption from the people whose incomes have been reduced somewhat.

CHAIR: But you haven't modelled that?

Dr Ellis: Yes, we have. There is data that shows—firstly, there is modelling about the cash flow effect. I can't, off the top of my head, tell you all of the authors, but I know Gianni La Cava was one of them. It was Gianni La Cava and some co-authors; I would have to look it up to give you the other co-authors. So there is a recent paper on the cash flow effect. There is also some of our internal work; we look at the data, and there is more than one dataset that shows this. You can like at the HILDA dataset and some of the ABS household surveys that show you, for the people who get interest income, what fraction of income it is. There are certainly people for whom interest income is a significant fraction of their income, but in the older age group category the bulk of income comes from pensions, superannuation fund income, dividends and, increasingly, increased participation in the labour market”.

Therefore, can you please provide a copy of the cited:

- a. “modelling”?
- b. “recent paper on cash flow effect”?
- c. “internal work”?

Answer:

The modelling and the recent paper on the cash flow effect are available online:

Hughson H, G La Cava and G Kaplan (2016), ‘The Household Cash Flow Channel of Monetary Policy’, RBA Research Discussion Paper 2016-12.

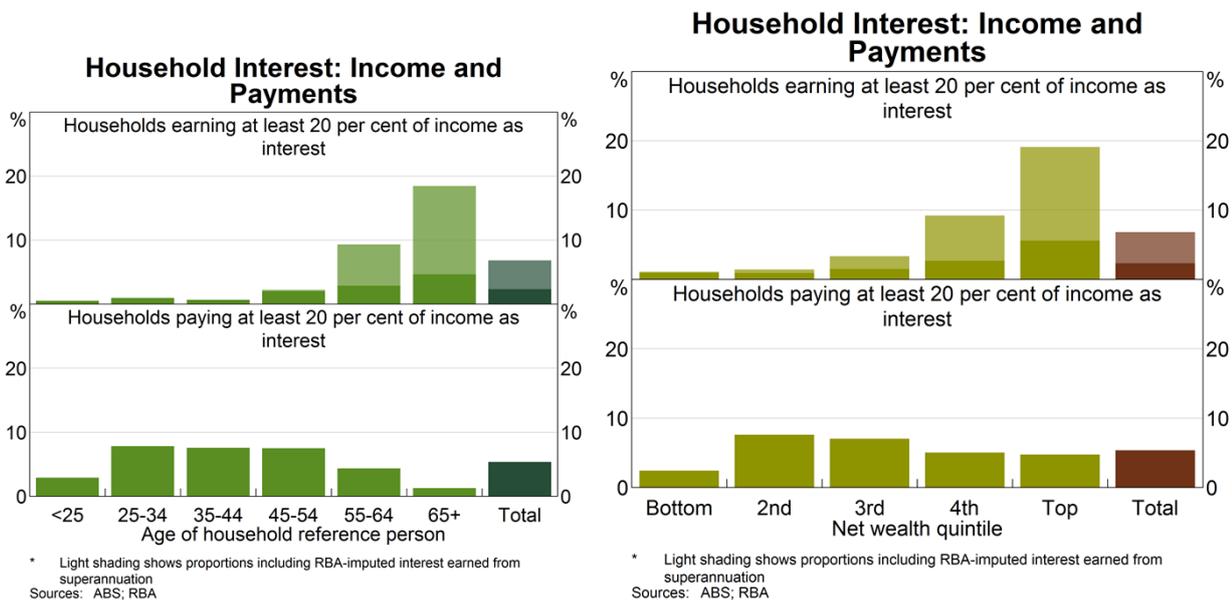
See: <https://www.rba.gov.au/publications/rdp/2016/2016-12.html>

Hughson H, G La Cava, P Ryan and P Smith (2016), ‘The Household Cash Flow Channel of Monetary Policy’, RBA Bulletin, September.

See: <https://www.rba.gov.au/publications/bulletin/2016/sep/3.html>.

The ‘internal work’ referenced in the answer included graphs prepared by staff recently using the ABS Survey of Income and Housing micro database. These data suggest that a very small share of households earn more than 20 per cent of household income as interest. For direct interest earnings, such as from bank accounts, these data suggest the share is in the low single digits for most age cohorts (graph). These data do not identify the source of superannuation earnings, but if we assume about one third of superannuation earnings are from interest earnings, the share of households earning more than 20 per cent of household income as interest

increases is less than one-fifth of households with a head aged over 65 years. If we repeat this exercise for net wealth cohorts, these data suggest that the majority of households earning at least 20 per cent of their income as interest are in the most wealthy and second-most wealthy quintiles of households (graph).



- 19. Has the RBA completed any analysis or modelling on the wealth transfer effects of quantitative easing between either the young or the old and/or those with assets and those without assets?**
- If so, can you please supply a copy?**
 - If it is currently being completed, what date will it be available?**
 - If not, do you intend to do so?**
 - If no, could you outline why?**

Answer:

We have not carried out work on this matter. We have, however, reviewed the research by central banks in other countries where quantitative easing has occurred. These include the papers listed below. We consider the UK experience to be relevant to Australia, because the structure of the financial system, the composition and level of household debt, and pattern of ownership of housing and other assets resembles that in Australia fairly closely.

The general conclusion of this work is that – as for more conventional monetary policy easing – the first-order effect of quantitative easing is to increase incomes for households who would otherwise be unemployed. In Australia as well as in those other countries, the households that benefit most from lower unemployment are young, low-income and have few assets. Asset prices are also supported by this policy, but the effect of this on asset-owners’ incomes and wealth is smaller than the effect of reducing unemployment on lower-income households.

Ampudia M, D Georgarakos, J Slacalek, O Tristani, P Vermeulen and G Violante (2018), ‘Monetary Policy and Household Inequality’, European Central Bank Working Paper Series No 2170

Bunn P, A Pugh and C Yeates (2018), ‘The distributional impact of monetary policy easing in the UK between 2008 and 2014’, Bank of England Staff Working Paper No 720

Colciago A, A Samarina and J de Haan (2018), ‘Central bank policies and income and wealth inequality: A survey’, DNB Working Paper No 594.

Reserve Bank of Australia
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